

## Assessment of Malocclusion Pattern and Dentofacial Characteristics in Al-Jouf Population

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### ABSTRACT

**Objective:** To assess the pattern of malocclusion and dentofacial characteristics among Al-jouf Population.

**Materials and Methods:** Individuals in the age group of 7 years and above were incorporated in this study. Pre-treatment orthodontic records of a total of 120 patients were obtained. Data recorded was established on case records, study models, cephalometric x rays and photographs of those patients presently and clinical examined. The data were analyzed by SPSS software (Statistical Package for Social Sciences, version 20.0, Chicago, Illinois, USA). Calculation of descriptive statistics was done and Chi-square was applied.

**Results:** In this study Angle's Class I malocclusion being more prevalent as contrasted with alternate sorts of malocclusion. Increased overjet and crowding were the major occlusal finding. Most patients had orthognathic and retrognathic profile, the difference or association is found to be between malocclusion classes and facial profile. **Conclusion:** This study has attempted to highlight various components which assume an essential part in settling on the choice to begin orthodontic treatment and might give a pattern information for arranging orthodontic treatment to strategy planners and orthodontists with suggestions on the procurement of consideration and the utilization of constrained assets.

**Keywords:** Malocclusion, Dentofacial Characteristics, Al-Jouf.

### INTRODUCTION

Malocclusion bargains the soundness of oral tissues furthermore can prompt psychosocial issues<sup>1</sup>. A methodical and very much sorted out dental care program over any objective populace in a group requires some essential data, for example, the pervasiveness of the condition while various components can depict the impediment and position of teeth, troubles in the meaning of criteria and the institutionalization of analysts have made dependable evaluations of dentofacial attributes troublesome<sup>2,3</sup>. Numerous researches to investigate the prevalence of malocclusion in diversified ethnic groups have been carried out among various population of the world. The studies revealed the prevalence of malocclusion in the range between 11 to 93%<sup>4</sup>. The evaluation of the malocclusion in connection to orthodontic treatment need would be essential to orthodontists with suggestions on the procurement of consideration and the utilization of constrained assets. It will likewise encourage in evaluating the proper assets required, for example, man power, expertise, time, offices and materials. As there is an absence of factual information on malocclusions in this specific topographical territory, this study was directed in the Sakaka, a city in the Al-Jouf province of Saudi Arabia.

#### Objective:

This study aimed to assess the pattern of malocclusion and dentofacial attributes among the population, who visited for orthodontic treatment and to give quantitative data in regards to the pattern of malocclusion and dentofacial qualities in Al-Jouf

orthodontic patients, to discover the frequencies of Angle's classes and other dentofacial attributes alongside the gender orientation contrasts.

### MATERIALS AND METHODS

This study was a descriptive cross-sectional study. Individuals with age of 7 years and above, orthodontic patients with complete pre-treatment records and undergoing orthodontic treatment were included. Data recorded was established on case records, study models, cephalometric x-rays and photographs of those patients presently and clinically examined.

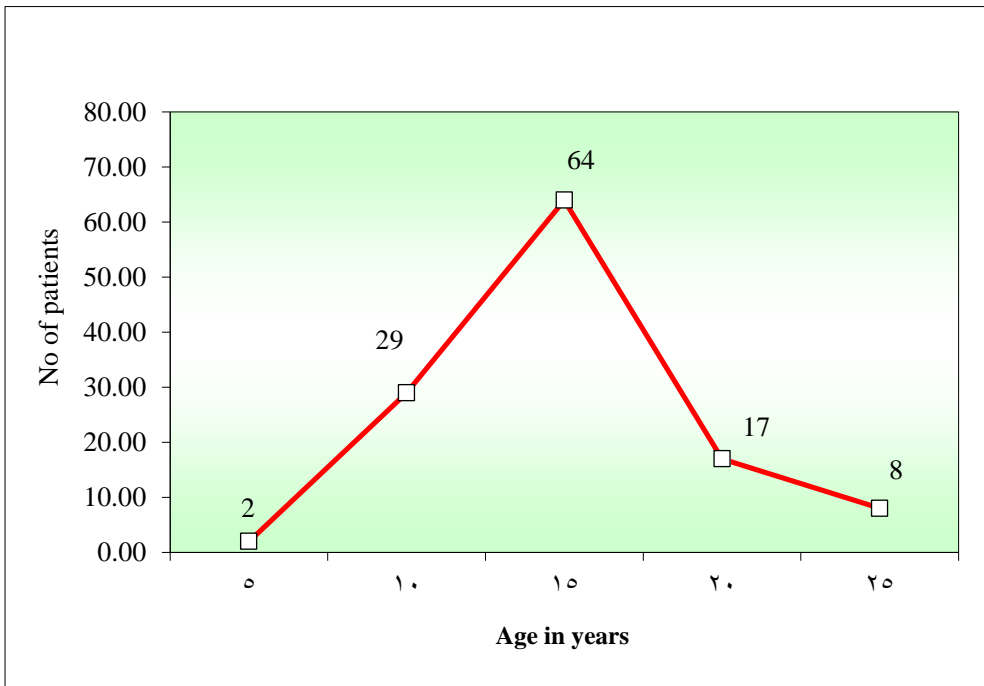
Based on the above selection criteria, pre-treatment orthodontic records of 120 patients were obtained and used for the study.

This sample of 120 records of orthodontic patients included 72 males and 48 males with a mean age of  $13.2 \pm 1.9$  years. An orthodontic assessment of occlusion and dentofacial characteristics was carried out in all subjects.

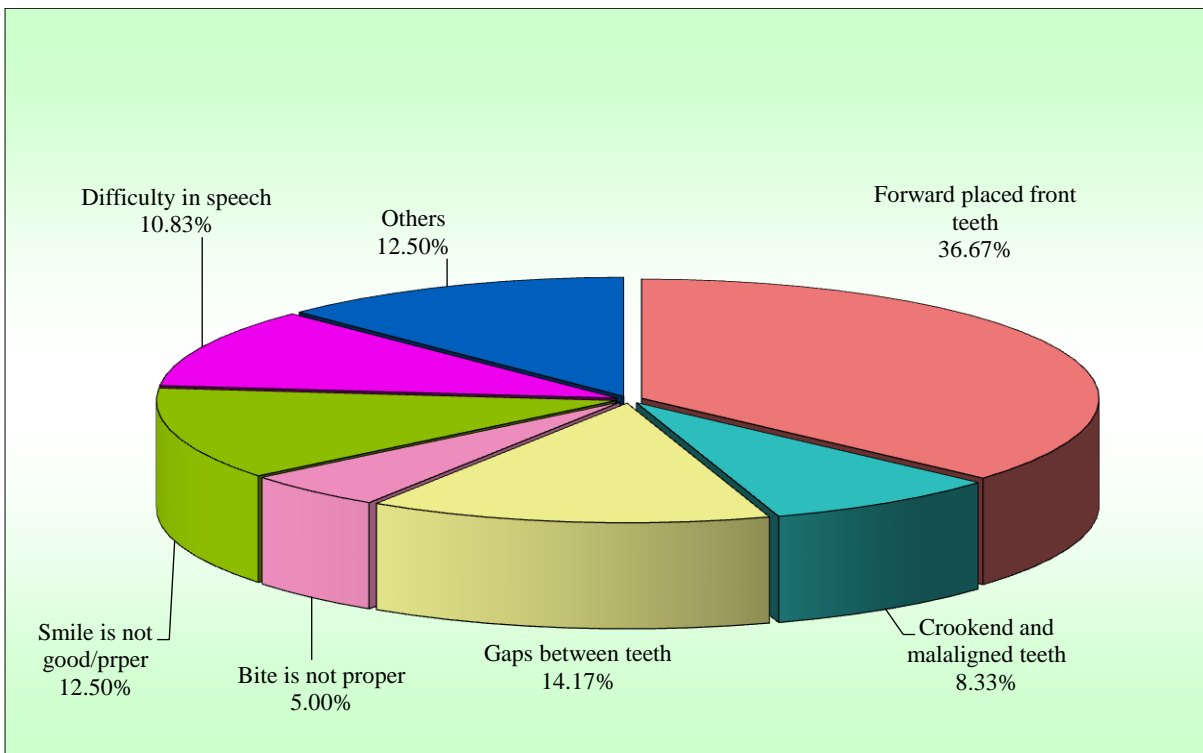
The individual traits of malocclusion and dentofacial characteristics, including sagittal molar relationship, posterior crossbite, overjet, overbite, crowding and spacing of upper and lower arches, habits, temporomandibular joint problems, centric occlusion and centric relation discrepancy, facial type, facial profile and facial asymmetry were assessed in the studied participants.

The data were analyzed by SPSS software (Statistical Package for Social Sciences, version 20.0, Chicago, Illinois, USA). Calculation of descriptive statistics was done and Chi-square was applied.

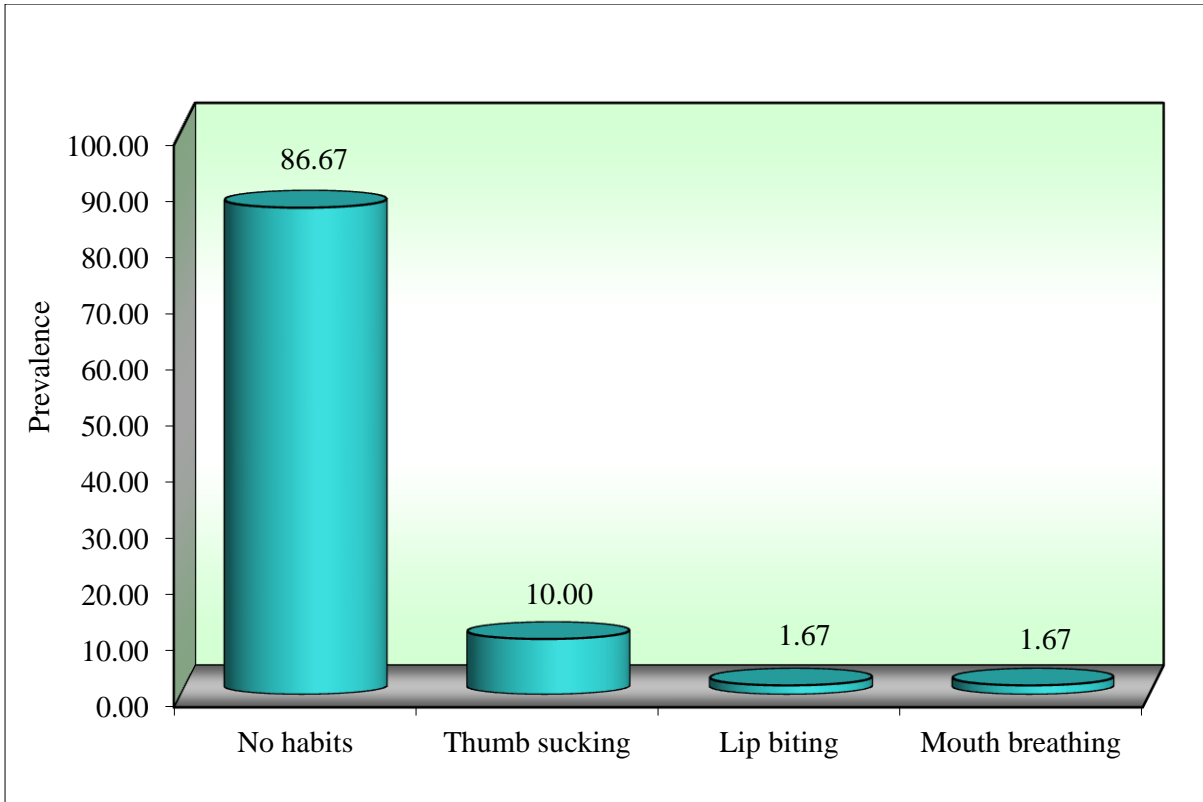
**RESULTS AND DISCUSSION**



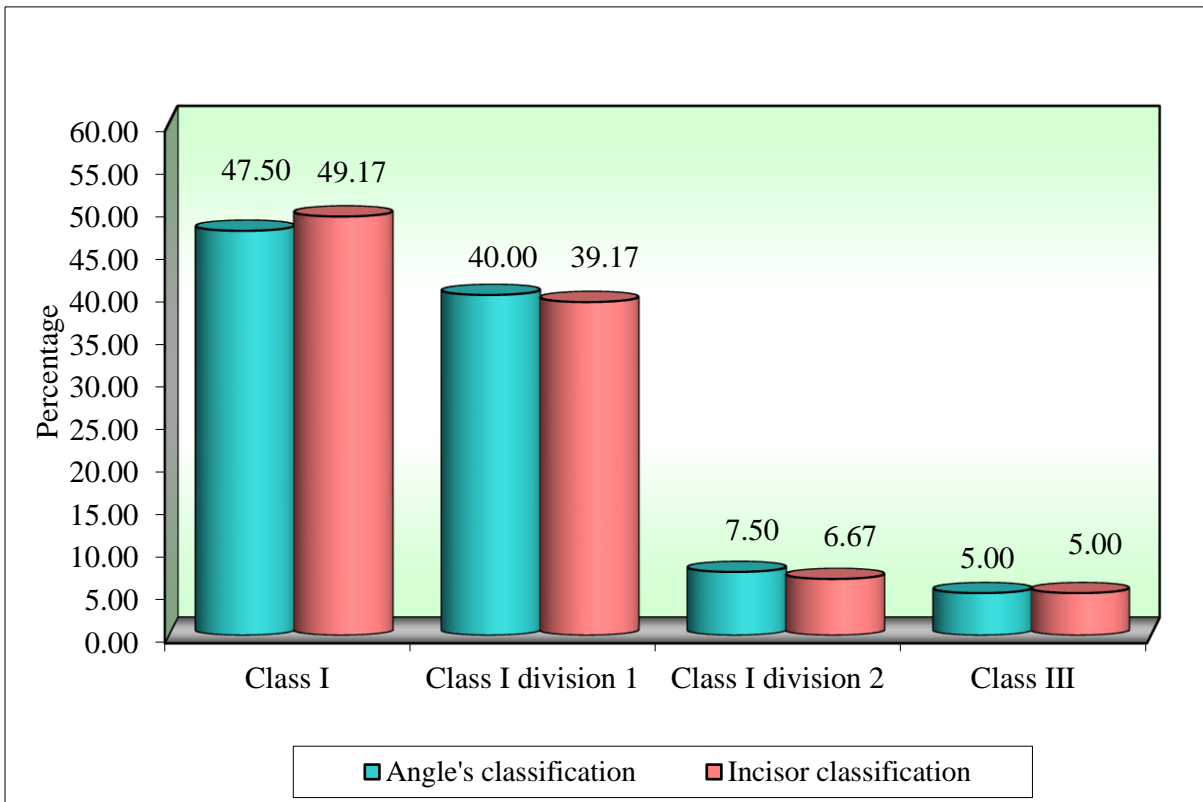
**Figure 1: Age distribution of patients**



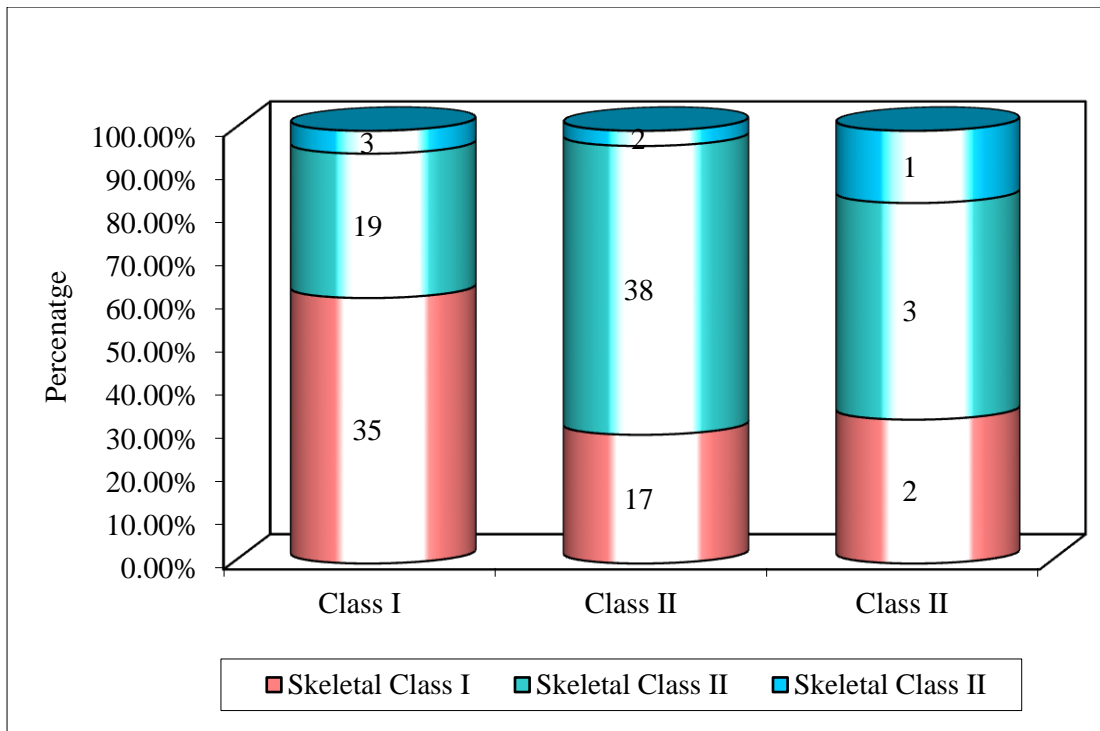
**Figure 2: Chief complaints of the patients**



**Figure 3: Prevalence of oral habits**



**Figure 4: Distribution of sample by Angle's and incisor classification**



**Figure 5: Cross tabulation of Angle's and skeletal classes**

Various variables for assessing the pattern of malocclusion have been applied in this study. The number of inhabitants in this study was the same as that found in different studies of orthodontic patients regarding gender, prevalence of molar relationship and requirement for orthodontic treatment.

The orthodontic populace itself may be an extremely helpful for particular orthodontic therapy-related investigation but notwithstanding, in perspective of the one-sided nature of the example, the information of this orthodontic populace can't be extrapolated to the entire of the population of Saudi Arabia.

## DISCUSSION

In the study population, class I malocclusion was observed to be the most predominant occlusal pattern and constituted the major extent of malocclusion, which is in concurrence with the results of other studies. Whereas few studies reported that Class II malocclusion as more successive than Class I and III malocclusion in Asian population<sup>4,7</sup>.

In this study, increased overjet was observed in 83.33% of the samples as a major, with an increased frequency, this finding was similar to the other studies<sup>4,8</sup>.

Posterior cross bite was 16.57 which as slightly higher than the global reported range between 8 and 16%. The results of the study showed that most patients had prognathic (49.4%) and normodivergent profiles (82.4%), whereas studies in the literature

reported orthognathorthognathic and normodivergent profiles.

Statistically significant association between Angle's and skeletal classes (Chi-square= 12.5392 P = 0.0021) suggest that although Angle's classification of malocclusion is established on anteroposterior relationship of the upper and lower first molars during occlusion, it can also be applied for clinical evaluation of skeletal saggital relationship<sup>9-11</sup>.

## CONCLUSION

The present study has attempted to highlight various elements which assume an imperative part in settling on the choice to begin orthodontic therapy. Recognizing occlusal issues, their frequency and the need for treatment can decide the suitable treatment arrangement and manpower required in orthodontic set up.

## ACKNOWLEDGMENT

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