Kaur N et al. Prevalence of Type of Malocclusion in Western UP population.

ORIGINAL ARTICLE

Evaluation of Prevalence of Type of Malocclusion in Western UP population

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ABSTRACT:
Background: Regardless of age, patients and their parents or caregivers expectations about improvements in oral function, esthetics, social acceptance, and body image are important for both general dentists and orthodontists to consider when advising patients about these procedures and during the treatment process. **Aim of the study:** Toevaluate prevalence of type of malocclusion in a known population. **Materials and methods:** The study was conducted in the Department of orthodontics of the dental institution. For the study, we randomly selected 100 subjects from the OPD of dental institute. For the selected subjects, a through oral examination was done initially. The occlusal relationship was evaluated at the centric occlusion. After reviewing the occlusal relationship, the patients were grouped based on Angle's classification of malocclusion into five groups. **Results:** We observed that 59 were male and 41 were female. The highest number of subjects had normal occlusion in both males and females. The least common occlusion in males was Class III malocclusion, whereas in females, class II div.2 malocclusion was the least common malocclusion. **Conclusion**: From the results of present study, this can be concluded that highest number of subjects had normal occlusion. The least common occlusion in males was Class III malocclusion, whereas in females, class II div.2 malocclusion was the least common malocclusion.
Key words: Occlusion, malocclusion, orthodontics.

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INTRODUCTION:
Significance of any disease in particular area can be gazed by its prevalence. This becomes even more important for developing country like India where oral health program and preventive measures are far from satisfying needs.[1]The goal of orthodontic treatment is to attain optimal occlusion within the framework of function, stability and esthetics. The oral-facial region is usually an area of significant concern for the individual because it draws the most attention from other people in interpersonal interactions and is the primary source of vocal, physical, and emotional communication.[2, 3] As a result, patients who seek orthodontic treatment are concerned with improving their appearance and social acceptance, often more than they are with improving their oral function or health. Enhancing these aspects of quality of life is an important motive for undergoing orthodontic treatment.[4, 5] Regardless of age, patients and their parents or caregivers expectations about improvements in oral function, esthetics, social acceptance, and body image are important for both general dentists and orthodontists to consider when advising patients about these procedures and during the treatment process.[6] Hence, the present study was planned to evaluate prevalence of type of malocclusion in a known population.

MATERIALS AND METHODS:
The study was conducted in the Department of orthodontics of the dental institution

For the study, we randomly selected 100 subjects from the OPD of dental institute. For the selected subjects, a through oral examination was done initially. The occlusal relationship was evaluated at the centric occlusion. After reviewing the occlusal relationship, the patients were grouped based on Angle's classification of malocclusion into five group. The ethical clearance for study protocol was obtained from ethical committee of the institution. The inclusion criteria of the subjects selected was

- Presence of all permanent teeth in both arches
- No previous history of orthodontic treatment

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For the study, we randomly selected 100 subjects from the OPD of dental institute. For the selected subjects, a through oral examination was done initially. The occlusal relationship was evaluated at the centric occlusion. After reviewing the occlusal relationship, the patients were grouped based on Angle's classification of malocclusion into five groups, Group 1 included patients with normal occlusion, Group 2 included subjects with bilateral Angle's class I molar relationship and one abnormality such as crowding of anteriors, protrusion or retrusion of incisors, Group 3 included subjects with class II div.1 malocclusion, Group 4 included subjects with class II div.2 malocclusion, and group V included subjects with class III malocclusion. The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student's t-test

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were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistical significant.

RESULTS:
Table 1 shows the prevalence of malocclusion in the subjects reporting to the OPD of the dental institution. We observed that 59 were male and 41 were female. The highest number of subjects had normal occlusion in both males and females. The least common occlusion in males was Class III malocclusion, whereas in females, class II div.2 malocclusion was the least common malocclusion. The results on comparison were observed to be statistically non-significant.

DISCUSSION:
In the present study, we observed that 59 subjects were male and 41 were female. The highest number of subjects had normal occlusion in both males and females. The least common occlusion in males was Class III malocclusion, whereas in females, class II div.2 malocclusion was the least common malocclusion. The results on comparison were observed to be statistically non-significant. Shivakumar KM et al assessed prevalence of malocclusion and orthodontic treatment needs among middle and high school children of Davangere city, India by using Dental Aesthetic Index [DAI]. A Descriptive cross sectional study was conducted among 1000, in the age group 12 to 15 year old school children studying in middle and high schools of Davangere city, India. 10 schools were selected by simple random sampling procedure and 100 study subjects were selected proportionately for males and females by using systematic random sampling procedures in each school. Of the 1000 children examined, 518[51.8%] were males and 482[48.2%] were females. 80.1% school children had < or = 25 DAI scores with no or minor malocclusion requiring no or little treatment, 15.7% had 26-30 DAI scores with definite malocclusion requiring elective treatment, 3.7% had 31-35 DAI scores with severe malocclusion requiring highly desirable treatment and 0.5% had > or = 36 DAI scores with handicapping malocclusion requiring mandatory treatment. It was concluded that 80.1% school children had no or minor malocclusion which required no or slight treatment, 19.9% had definite/handicapping malocclusion requiring definite/mandatory orthodontic treatment. Dacosta OO et al conducted an epidemiological survey of 1,028 children, 544 females (52.9%) and 484 males (47.1%) in Kaduna Nigeria to assess the prevalence of malocclusion in the Northern part of Nigeria.

Table 1: Prevalence of malocclusion

Groups	Males	Females	p-value
Group 1	29	20	0.121
Group 2	10	9	
Group 3	8	5	
Group 4	7	3	
Group 5	5	4	
Total	**59**	**41**	

Fig 1: Prevalence of malocclusion
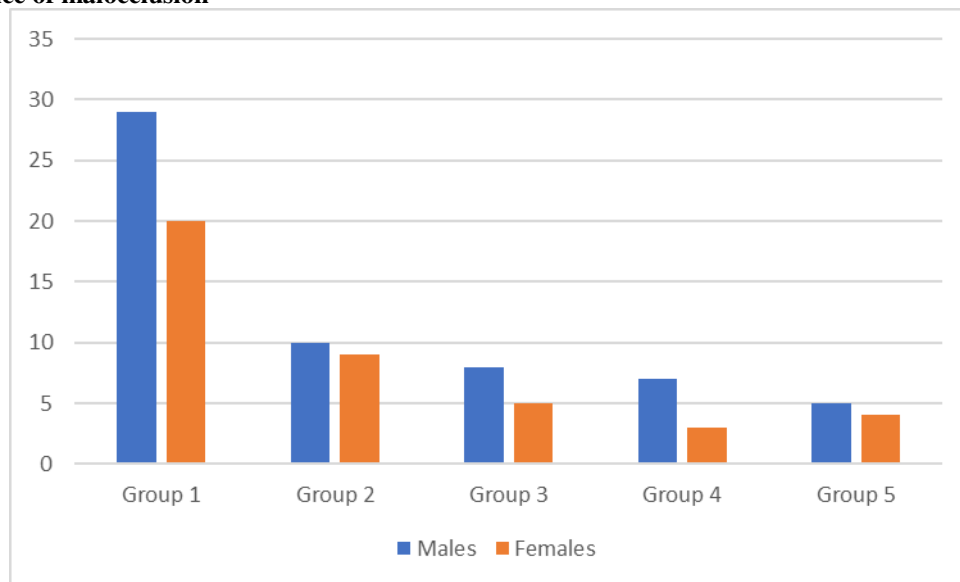
The sample population aged 11-18 years were of Northern Nigeria origin and none had received previous orthodontic treatment. From the results, normal occlusion was seen in 12.2% children, Angle's Class I malocclusion in 84.0%, 1.7% had Angle's Class II while Angle's III was observed in 2.0%. No case of Angle's Class II div 2 was seen. A reduction in the prevalence of Angle's Class II div I was seen to occur with increasing age while an increase in Angle's III malocclusion was noted in the 17-18 years age group. Spacing of the upper anterior segment was observed to occur in 45.9% of children examined while spacing of the lower anterior segment was seen in 30%. Crowding of these segments occurred in 21.6% and 36.3% respectively of the sample population. Using Jackson's method (1962) Overbite I was found to occur in 69.5% of the children examined. Deep bite (Overbite 3) occurred in only 1.6% of those examined. An overjet values of 2-4 mm was the most prevalent occurring in 70.8% of the children. A low prevalence of bimaxilliaryproclination was observed (3.7%).[7, 8]

Onyeaso CO et al analysed the malocclusion pattern among patients who presented for treatment in the Orthodontic Unit of the Dental Centre, University College Hospital, Ibadan, as baseline data for proper treatment planning, teaching and further research. A total of 289 subjects aged 5-34 years with mean age of 10.6 +/- 1.5 (S.D.) years were seen. Angle's classification of molar relationships among those seen is as follows: class I - 76.5%, Class II - 15.5% and Class III - 8.0%. There was increased overjet in 16.2% of the patients, reduced overjet in 0.7% while 2.1% had reversed overjet. Other occlusal abnormalities included: increased overbite (3.8%), reduced overbite (1.4%); anterior open bite (5.2%; crossbite (8.4%) and scissorsbite (0.6%). Crowding, spacing and retained primary incisors constituted 29.7%, 1.4% and 40.1%, respectively. Delayed eruption of canine (1.0%), Bimaxillary protrusion (0.7%), incompetent lips (0.7%), supernumerary teeth (0.7%) malformed tooth (0.3%), mandibular deviation on closure (1.0%) and oral habits (4.5%) were other forms of malocclusion diagnosed. Males were found to have significantly more of classes II and III molar relationships than females. Occurrence of retained primary teeth as well as overjet deviations from normal were significantly higher in females. No significant sex differences were found in the other occlusal disorders: The findings were comparable with previous epidemiological surveys in other parts of the country. Gul-e-Erumet al analyzed the malocclusion pattern and to provide quantitative information on the pattern of dentofacial characteristics among orthodontic population. Varying dentofacial characteristics of 156 patients from June 2002 to April 2004, at the orthodontic unit of the Aga Khan University Hospital were analyzed. Cross tabulations of dentofacial characteristics with Angle's classes were evaluated using chi-square and Kruskal-Wallis tests. Mean age of the sample was 14 years & two months (SD +/- 4.59) with majority 98 (62.8%) were females. The chief complaints in majority of the patients were 'upper front teeth forward' and 'malaligned teeth'. Angle's Class II (70.5%) and incisor Class II Division 1 (64.7%) were the typical features of the sample. There was an increased overjet in 75% of subjects as a major occlusal finding. No statistically significant differences were found in distribution of Angle's classes and dentofacial characteristics between males and females. Statistically significant association between skeletal and Angle's classes was found. It was concluded that the results give a detailed pattern of malocclusion in orthodontic patients and may provide a base line data for planning orthodontic services. There is a strong need of epidemiological survey to find out the prevalence of malocclusion in Pakistani population.[9, 10]

CONCLUSION:
From the results of present study, this can be concluded that highest number of subjects had normal occlusion. The least common occlusion in males was Class III malocclusion, whereas in females, class II div.2 malocclusion was the least common malocclusion.

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