Original Research

Analysis of Prevalence of Different Forms of Orthodontic Malocclusion Among Children Of Known Population

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ABSTRACT:
Background: Malocclusion is considered one of the most common dentalproblems together with dental caries. The present study was conducted to assess different types of malocclusion in known population. **Materials & Methods:** The present study was conducted on136 patients with misaligned teeth of both genders. All patients were thoroughly examined and type of occlusion, any kind of overjet, overbite, cross bite and rotation etc. was recorded. Results thus obtained were subjected to statistical analysis. **Results:** Out of 136 patients, males were 58 and females were 78.32 had normal occlusion, 54 had class I, 15 had class II div I, 10 had class II div II, 8 had class III, 10 had deep bite and 7 had cross bite. The difference was significant (P< 0.05). **Conclusion:** Among various malocclusion, class I was most common followed by class II.
Key words: Class I, malocclusion, Deep bite

INTRODUCTION

Malocclusion is considered one of the most common dentalproblems together with dental caries, gingival disease and dentalfluorosis.[1] Malocclusion may cause unpleasant appearance,impaired oral function, speech problems, temporomandibular disorders,increased susceptibility to trauma and periodontal disease. Identifying occlusal status in particular population providesimportant information on treatment needs and enables the governmentto draw the appropriate preventive and treatment programs.[2]

Occlusal traits vary among different ethnic groups, and so is the prevalence and severity of malocclusion. A large number of studies on the prevalence of malocclusion have been done in the past. The reported studies showed that prevalence of malocclusion among Indian subjects is as low as 19% to as high as 90%.[3]

As a result, patients who seek orthodontic treatment are concerned with improving theirappearance and social acceptance, often more than they are with improving their oral functionor health. Enhancing these aspects of quality of life is an important motive for undergoingorthodontic treatment.[4] Orthodontic anomalies have been associated with psychosocial distress,poor periodontal condition and impaired masticatory function and so should be regarded as ahealth problem. Although data on orthodontic awareness and treatment needs are very scanty, malocclusion is undoubtedly a public health concern in young population.[5] The present study was conducted to assess different types of malocclusion in known population.

MATERIALS & METHODS
The present study was conducted in the department of Orthodontics. It comprised of 136 patients with misaligned teeth of both genders. The study was approved from institutional ethical committee. All participants were informed regarding the study and written consent was obtained.

Data related to participants such as name, age, gender etc. was recorded. All patients were thoroughly examined and type of occlusion, any kind of overjet, overbite, cross bite and rotation etc. was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

| Gender	Total- 136	
	Males	**Females**
Number	58	78

Table I shows that out of 136 patients, males were 58 and females were 78.

Table II Type of malocclusion

Malocclusion	Number	P value
Normal	32	0.02
Class I	54	
Class II div I	15	
Class II div II	10	
Class III	8	
Deep bite	10	
Crossbite	7	

Table II, graph I shows that 32 had normal occlusion, 54 had class I, 15 had class II div I, 10 had class II div II, 8 had class III, 10 had deep bite and 7 had cross bite. The difference was significant (P< 0.05).

Graph I: Type of malocclusion
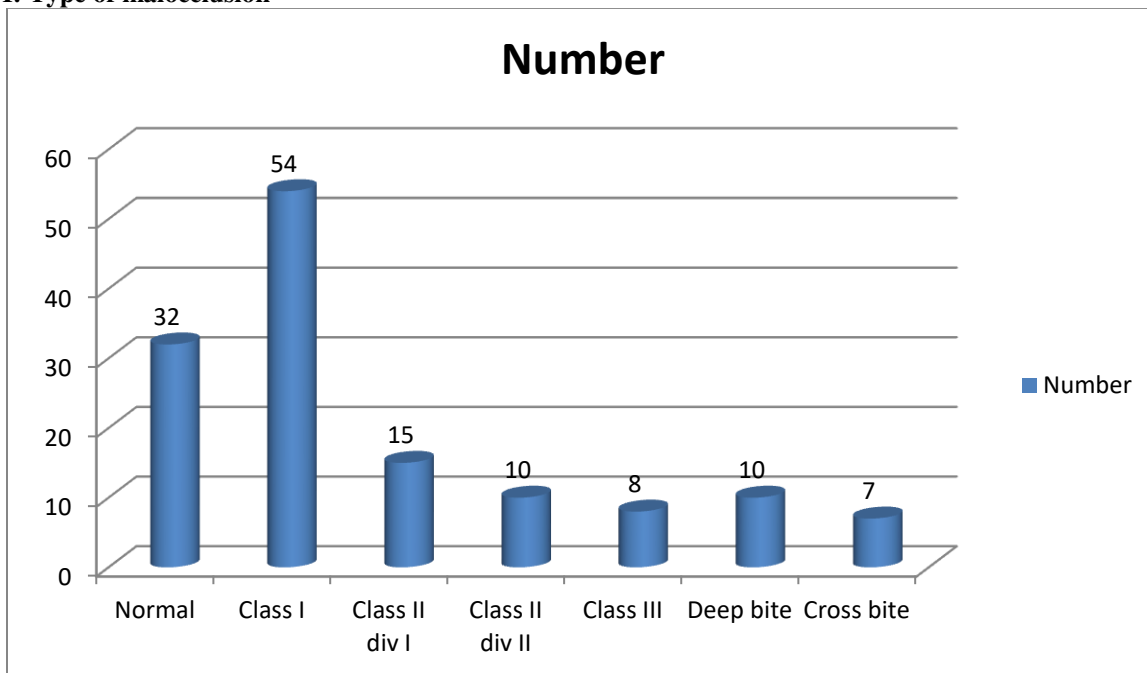
DISCUSSION

Orthodontic anomalies have been associated withpsychosocial distress, poor periodontal condition andimpaired masticatory function and so should be regarded ashealth problem.Malocclusion is not just an invariable disease state, but acontinuous spectrum of occlusal variation, occurring as amyriad of combinations of permutations of a number ofheterogeneous traits or symptoms each with its own widerange of severity and implications in creating a particularmanifestation of occlusion.[6]

The dental malocclusion exhibits the third highest prevalence among oral pathologies, after tooth decay and periodontal disease and comes under worldwide dental priorities.[7]A well aligned dental arch is essential for the health of oral cavity and stomatognathic system and enhances the self-esteem of the individual. To have a good treatment plan for treating malocclusion, there is a necessity to find the prevalence of the condition in the particular population. To find the prevalence of malocclusion, adequate basic information is available in the developed Indiacountries, but developing countries are still lacking this information.[8]

Although many studies have been published that describe theprevalence and types of malocclusion. Some variabilities between their findings and our existed due to the varying methods andindices used to assess and record occlusal relationships, age differencesof the study populations, examiner subjectivity, specificobjectives, and differing sample sizes.[9] The present study was conducted to assess different types of malocclusion in known population. In present study, out of 136 patients, males were 58 and females were 78. We found that 32 had normal occlusion, 54 had class I, 15 had class II div I, 10 had class II div II, 8 had class III, 10 had deep bite and 7 had cross bite.

Mahajan et al[10] found that there were 696 subjects (369 males and 327 females) in the age group of 13-14 years. The malocclusion determination was based on the Angle's classification of malocclusion.The results showed that 83% of the subjects had malocclusion. Class I malocclusion constituted the major proportion of malocclusion, which was found in 67% of the studied population. Class II Division I constituted 8% of the sample size. Class II Division II constituted 6% of the sample size. Class III constituted 2% of the total sample size.Majority of the subjects had Angle's Class I malocclusion with crowded incisors. There is a need to simplify and standardize criteria for assessing malocclusion and to plan the need of orthodontic treatment among the population.

Otuyemi et al[11]grouped the samples into 5 groups being group 1 as normal occlusion,group 2 as class I malocclusion, group 3 class II div I, group 4class II div2, group 5 class III. The class I malocclusion resulted into 57.9%. Mohammed et al[12] in their study the sampling included 289 adolescents with age range 14-17 years. The sample was randomly selected from schools in Makkah governorate to determine the status of their occlusion.Class 1 malocclusion had the highest frequency of 67.13%, classII div-1 was 14.53%, class II div-2 was 10.7%, class III was 7.61%.The normal overjet and overbite values were highest 57.4%, 52.6%, respectively.Frequency of Crowding was observed in 63%, diastema was present in 8.3%, anterior cross bite was 17% and posterior cross bite was 21.4%.

CONCLUSION

Among various malocclusion, class I was most common followed by class II.

REFERENCES

1. Altemus LA. Frequency of the incidence of malocclusion in American Negrochildren aged twelve to sixteen. Angle Orthod. 1959;29(4):189-200.
2. Asiry MA. Occlusal status among 12-16 year-old school children in Riyadh,Saudi Arabia.J Int Oral Health. 2015;7(5):20-3.
3. Ast DB, Carlos JP, Cons NC. The prevalence and characteristics of malocclusionamong senior high school students in upstate New York.Am J Orthod.1965;51:437-45.
4. Atashi MH. Prevalence of malocclusion in 13-15 year-old adolescents inTabriz.J Dent Res Dent Clin Dent Prospects. 2007;1(1):13-8.
5. Behbehani F, Artun J, Al-Jame B, Kerosuo H. Prevalence and severityof malocclusion in adolescent Kuwaitis. Med PrincPract. 2005;14(6):390-5.
6. Borzabadi-Farahani A, Eslamipour F. Malocclusion and occlusal traits in anurban Iranian population. An epidemiological study of 11-to 14-year-old children.Eur J Orthod. 2009;31(5):477-84.
7. Dhar V, Jain A, Van Dyke TE, Kohli A. Prevalence of gingival diseases, malocclusionand fluorosis in school-going children of rural areas in Udaipurdistrict. J Indian SocPedodPrev Dent. 2007;25(2):103-5.
8. El-Mangoury NH, Mostafa YA. Epidemiologic panorama of dental occlusion.Angle Orthod. 1990;60(3):207-14.
9. Emrich RE, Brodie AG, Blayney JR. Prevalence of Class I, Class II, andClass III Malocclusions (Angle) in an Urban Population An Epidemiological Study. J Dent Res. 1965;44(5):947-53.
10. Mahajan N, Kotwal B, Kharyal S, Tomar V, Jamwal AS, Kalvani H. Prevalence of Different Types of Malocclusionin the Patients Visiting Government Dental College, Jammu in India. Int J Sci Stud 2017;5(6):54-56.
11. Otuyemi OD, Abidoye RO. Malocclusion in 12-year-old suburban and ruralNigerian children.Community Dent Health. 1993;10(4):375-80.
12. Mohammed Almalky N, Mohammad Elattar H. Prevalence Of Different Types Of Malocclusion Among School Children In Makkah Governorate of Saudi Arabia. Int J Dentistry Oral Sci.2018;5(6):645-648.