ASSESSMENT OF OCCLUSAL TRAITS IN ORTHODONTIC PATIENTS REPORTED AT DENTAL OPD, OF A TERTIARY CARE HOSPITAL

Rafia Shah [a], Qamar un nisa Memon [b]., Khalil Ahmed [c], Nadia Shoukat [d]

a,c,d. BDS, MSC Student in LUMS Jamshoro , Hyderabad

b, MCPS, Associate professor , LUMS jamshoro , Hyderabad

ABSTRTACT

Objective: To determine the occlusal traits and to classify the different kind of occlusal characters with in orthodontic patients. **Material & Methods**: It was a cross-sectional study performed on 200 pre treatment study casts of patients with permanent dentition, regardless of the gender. Study casts were chosen from the patients of orthodontics department LUMHS Hyderabad, after taking informed concerned. **Results:** The calendar age of the derived sample was 12- 25.5 years, with a mean age of 17.19 years (S.D 3.1). Angle's class II 75% and incisor class II Div I 63.5% were the typical features of the sample. Large numbers of patients were found to be with upper anterior teeth proclined and increased over jet. **Conclusion:** The obtained results provide diversified features of malocclusion in orthodontic patients and may determine a base line data which assist in planning orthodontic treatment. It is essential to carry out an epidemiological survey to investigate the prevalence of malocclusion among Pakistani population.

Key words: Malocclusion, Occlusal features, Orthodontic patients.

Correspondence: Rafia Shah, LUMS Jamshoro , Hyderabad email: given.rafiashah2008@hotmail.com

INTRODUCTION:

Occlusion is defined as "any contact between the incising and masticating surfaces of the maxillary and mandibular teeth"[1], while malocclusion is defined as improper relation between teeth in the opposite jaws[2]. Even more basic the definition of what constitute malocclusion varies according to individual investigators. The demand of orthodontic treatment is increasing in most of the countries. Therefore, rational planning of orthodontic measures on a population basis is essential in assessing the resources required for this service. Various numbers of studies carried on the incidence of malocclusion in different populations are shown in Table 1.

The diversity and prevalence figures may depend on population, Ethnic groups, genetic ,sex and age [3-8] .The incidence of malocclusion has been reported to vary from 11 % - 93% [4-6],these significant variations are difficult to explain. This stresses the importance of epidemiological studies in order to obtain knowledge about the prevalence

Table 01 Studies on incidence of malooclusion

Authors	Population	subject	Registration	%
		No - Age		
Grewe et al (1968)	Am. Indians	651 9-14	Angle , modified	65.4
Helm (1968)	Danish	1700- 9-18	Bjork et al. DS	78.5
Foster & Day (1974)	British	1000- 11-12	Angle , modified	59.9
Kerosou et al (1991)	Finnish	458 - 12-18	Bjork et al.	88.0
Hensel (1991)	German	408- 3-10	Angle , modified	77.0
Lew et al (1993)	Chinese	1050- 12-14	Foster & Day	92.9
Harrison & Davis (1996)	Native candian	1438- 7-15	Tooth relationship	61.0
Tschill et al (1997)	French	789- 4-6	FDI 1973	57.6

of different types of malocclusion and the orthodontic treatment need[9]. Categorizing occlusal problem, their prevalence and the necessity for treatment can assist to establish the suitable man power desired in orthodontics.The study is made to evaluate malocclusion pattern among patients appeared for treatment at the orthodontic department of the Liaquat University Hospital, Hyderabad. The study is intended to inquire about the features of occlusal characteristics and to gain knowledge of the incidence of Angle's classes and other dental characteristics in orthodontic patients.

MATERIAL & METHODS

It was a cross-sectional study, carried on 200 pretreatment study casts of patients with permanent dentition, regardless of the gender. Study casts were chosen from the patients of orthodontics department LUMHS Hyderabad, after taking informed consent.

The criteria selected for derived subjects included good quality of study models, having permanent dentition. Patients presenting the history of any dental extraction and previous orthodontic treatment were excluded. The following dental characteristics were recorded using pretreatment plaster models

Angle's classification was used to explain the antero-posterior relationship of the maxillary and mandibular first molars during intercuspation. British Standard Classification of Incisor relationship was followed for the following.

over jet (1–2 mm normal, 3–4 mm mild, 5–6 mm moderate,>7 mm severe, reverse) and overbite (0–2 mm normal, 3–4 mm moderate, 5–7 mm severe).

Means and standard deviations were calculated through descriptive statistics. For data analysis SPSS version 10 software was used.

RESULTS

The calendar age of the derived sample was 12- 25.5 years, with a mean age of 17.19 years (S.D 3.1). Angle's class II 75% and incisor class II Div I 63.5% were the typical features of the sample. Large numbers of patients were found to be with upper anterior teeth proclined and increased over jet.

Table-2: Distribution of sample by Angle's & Incisor classifications

Authors	Population	subject	Registration	%
		No - Age		
Grewe et al (1968)	Am. Indians	651 9-14	Angle , modified	65.4
Helm (1968)	Danish	1700- 9-18	Bjork et al. DS	78.5
Foster & Day (1974)	British	1000- 11-12	Angle , modified	59.9
Kerosou et al (1991)	Finnish	458 - 12-18	Bjork et al.	88.0
Hensel (1991)	German	408- 3-10	Angle , modified	77.0
Lew et al (1993)	Chinese	1050- 12-14	Foster & Day	92.9
Harrison & Davis (1996)	Native candian	1438- 7-15	Tooth relationship	61.0
Tschill et al (1997)	French	789- 4-6	FDI 1973	57.6

Table-3: Distribution of sample by British Standard Classification classifications

Over jet (mm)	1-2 normal 3-4 mild 5-6 moderate > 7 severe Reverse	12 (28.5) 15 (42.8) 6 (13.8) 1 0 210	10 (6.6) 29 (19.3) 47 (31.33) 64 (42.66) 0	3 (20.0) 3 (20.0) 2 (13.3) 0 7 (46.6)	25 (12.5) 47 (23.5) 55 (27.5) 65 (32.5) 08 (4.0)
Overbite (mm)	0-2 normal 3-4 moderate 5-7 severe > 7 extreme reverse Open bite	10 (28.5) 14 (40.0) 6 (17.1) 2 (5.7) 0 3 (8.5)	13 (8.66) 46 (30.66) 67 (44.6) 20 (13.6) 0 4(11.42)	6 (28.5) 2 (42.8) 1 (13.8) 0 2 4	29 (14.5) 62 (31.0) 74 (37.0) 22 (11) 2 (1.0) 11 (5.5)

DISCUSSION

The study was conducted at orthodontic department of LUH Hyderabad on study casts of patients reported to department for treatment. Subjects for this study were taken from patients of both sexes seeking orthodontic treatment including preadolescents, adolescents and adults. 65% of female patients in comparison with 35% male patients in the present study undoubtedly point towards the awareness of orthodontic treatment with in females in our socioeconomic system, this is constant with results of other studies done elsewhere. The outcome of this study demonstrate an increased over jet in 75% of the sample as a chief occlusal finding, with greater rate and severity in Class II patients. The tendency of increased over jet is consistent with the previous surveys done on orthodontic population[10-15].However, 48.7% of the sample presented with modest increase in overbite which is dissimilar to the results of rest of the local studies[15, 16].Hameed and co workers stated skeletal Class II as the commonest antero-posterior example of malocclusion[17-30].in contrast,Shehzad[18] and Afzal[19]reported Angle's Class 1is the major pattern of malocclusion, i.e., 46% and 59.4% respectively. It may be because of the fact of different set of population in study by Shehzad [31]while in study by Afzal[32]data collection was based on Dental OPD patients in contrast to orthodontic OPD patients in different studies. On the other hand, international literature[33] stated Class II malocclusion as more common than Class I & III malocclusion in Asians .Recently a study was carried out by Antanas.S and Cristina.L among Lithuanian school children, they reported that the prevalence of malocclusion according to Angle's classification was found to be Class 1 in 68.4% Class II in 27.7% and Class III in 2.8% .They found increased over jet at about 20.11 %[34].A consideration for uniformity in the method of assessing and reporting occlusal status would be timely so that meaningful and more accurate comparison could be made when planning future studies in this area of research.

CONCLUSIONS

The rate of recurrence of Class I, Class II and Class III malocclusion was found to be 18.6%, 70.5% and 10.9% respectively. Increased over jet seemed to be the most frequent trait in this study. Identifying these problems and their incidence reflects the need for appropriate treatment plan. The results may determine a base line data which assist in planning orthodonti

c treatment. It is essential to carry out an epidemiological survey to investigate the prevalence of malocclusion among Pakistani population.

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