



## AGE AS AN EFFECT MODIFIER WITH RESPECT TO GENDER IN ORTHODONTICS IN DEEP BITE PREVALENCE.

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**ABSTRACT... Objectives:** To determine prevalence of deep bite and gender association with respect to age. **Study Design:** Cross-Sectional study. **Setting:** Department of Orthodontics Nishtar Institute of Dentistry, Multan. **Period:** 6 months from 15 December 2018 to 14 June 2019. **Material & Methods:** A study with 200 (126 females, 74 males) patients were taken as a sample after being examined in Chi square test was applied to determine association. **Results:** Deep bite was observed in 43% of patients in total sample of 200. Out of which 61.1% is found in females and 38.4% in males. It is also observed that age is an effect modifier with respect to gender. **Conclusions:** There as an insignificant difference in distribution of deep bite males and females. It is observed that with increasing ages deep bite decreases considerably.

**Key words:** Age, Deep Bite, Gender, Orthodontics, Prevalence.

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### INTRODUCTION

Deep bite has been considered one of the most common malocclusions and the most difficult to treat successfully.<sup>1,2</sup> The amount of vertical overlap often varies excessively.<sup>3</sup> The common definition of overbite was developed by Strang<sup>4</sup> who defined it as “the overlapping of the maxillary anteriors over mandibular anteriors in the vertical plane.” Excessive overbite may be caused by uneven eruption of anteriors, or over-development of anterior alveolus bone. Excessive overbite is commonly seen in patients with a Class II relation.<sup>5</sup> A study conducted in Aryan and Mongoloid races of Nepal in 2013 showed incidence of deep bites in 34.9% Aryan and 24.8% Mongoloid races.<sup>6</sup>

Knowledge about the distribution of different malocclusions may help orthodontic practitioners to better understand the extent of problem in relevant geographic location and would help them in proper orientation and management of the conditions.<sup>5,6</sup> Hence aim of the present study was to find out the prevalence of deep bite with respect to age and gender in patients visiting Nishtar Institute of Dentistry, Multan.

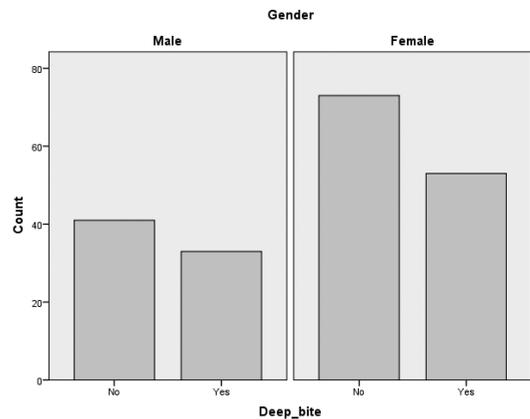
### MATERIAL & METHODS

Present cross-sectional study was conducted at orthodontic department of Nishtar Institute of Dentistry, Multan. A total of 200 (126 females, 74 males) having malocclusion in permanent dentition were cross-sectional sampled in this study. The duration of study was 06 months i.e. from 15 December 2018 to 14 June 2019. Patients included in this study were between 7-48 years having no history of extraction of permanent teeth, and having no grossly decayed teeth. Intra oral examination was done on subjects who visited department of orthodontics in Nishtar Institute of Dentistry Multan. Intra oral examination was carried out with help of mouth mirror and curve probe. Characteristics of deep bite (>4 mm) were recorded.

### RESULTS

In present study proportion of cases exposed to deep bite are 43% of the total sample of 200. In that sample deep bite was observed in 61.1% in females and 38.4% in males. It is 97.9% more likely that the patients presenting with deep bite are males as compared to females. Estimated odds of deep bite in males are 89.2 % higher than

the estimated odds of female patients with deep bite (Figure-1). The odds of deep bite increases as the age increases in both genders. It is 200% more likely for the male patients between 21-27 years to present with deep bite than patients with 7-13 years of age. It is 78% less likely for female patients between 21-27 years to present with deep bite than patients with 7-13 years of age. Chi square test indicates that there is an association between deep bite and gender. We did not observe deep bites in later ages in 28 years onwards (Table-I).



**Figure-1. Gender distribution**

**DISCUSSION**

Deep bite was defined as a condition of excessive overbite, where the vertical measurement between upper and lower teeth is excessive when the mandible is brought into occlusion (Grabner, 2011). Hafez<sup>7</sup> conducted a study on prevalence of deep bite in orthodontic patients in Cairo University in 2014.

Out of patients having deep bite, the majority (80.8%) had mild deep bite, 15% had moderate deep bite and 4.2% had severe deep bite. Higher percentage of males had moderate to severe deepbite, skeletal contributing factors were associated with 15% of patients with deep bite.

Age Group Deep_bite Gender Cross-tabulation.						
Count						
Gender			Deep_Bite		Total	Odds ratio
			Yes	No		
Male	Age Group	7 to 13 yrs	11	17	28	1.00
		14 to 20 yrs	15	20	35	1.16
		21 to 27 yrs	4	3	7	2.06
		28 to 34 yrs	2	0	2	---
		42 to 48 yrs	1	1	2	1.54
	Total		33	41	74	
Female	Age Group	7 to 13 yrs	19	19	38	1.00
		14 to 20 yrs	20	37	57	0.54
		21 to 27 yrs	11	14	25	0.78
		28 to 34 yrs	3	1	4	3.00
		35 to 41 yrs	0	2	2	0.00
	Total		53	73	126	
Total	Age Group	7 to 13 yrs	30	36	66	1.00
		14 to 20 yrs	35	57	92	0.74
		21 to 27 yrs	15	17	32	1.06
		28 to 34 yrs	5	1	6	6.00
		35 to 41 yrs	0	2	2	---
		42 to 48 yrs	1	1	2	1.20
	Total		86	114	200	

**Table-II. Gender association with deep bite.**

There was no difference in the prevalence of specific skeletal pattern between males and females with deep over bite. Amin<sup>8</sup> did a study on prevalence of deep bite in Sulaimani city in Iraq, dental cast of 230 patients were examined. Normal overbite was found in 51% of the patients and deep bite in 41% whereas open bite was found in 8% of the patients. Deep bite was observed in 29.5% males and 30.5% females.

Barala<sup>9</sup> reported prevalence of deep bite in Aryan and mongoloid population. A total of 526 people (260 Mongoloid and 266 Aryan) having malocclusion in permanent dentition were examined. Deep bites in 34.9% Aryan and 24.8% Mongoloid was documented. Thilander and Myberg<sup>10</sup> reported 8.4 % prevalence of deep bite in Swedish school children. Prevalence of deep bite is different in different populations.<sup>11-18</sup>

Within the limitations of this study results showed that there was an insignificant difference in distribution of deep bite in males and females. Emphasis on teaching, research and treatment modalities is suggested in line with these findings.

## CONCLUSION

There was an insignificant difference in distribution of deep bite in males and females. It is observed that with increasing ages deep bite decreases considerably.

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2	Uzma Khan	Data analysis.	
3	Tooba Nihal	Data review.	
4	Iqra Ghaffar	Data collection.	
5	Naeem Murtaza	Review critically.	