



## **The Prevalence of Malocclusion and Periodontal Diseases and Their Correlation in Samegrelo Region, Georgia**

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### **Dear Editor-in-Chief**

Poor oral health is considered huge dental and social problem worldwide. The WHO has a data of many oral diseases, including dento-facial and periodontal diseases. Dento-facial anomalies due to high prevalence are third priority in oral care. Dento-facial anomalies influence people and may affect aesthetic appearance, facial harmony, disturbances in oral function and most importantly psychosocial well-being (1-4).

Periodontal diseases affect 90% of the population worldwide. According to the WHO, 10-15% of the global population is affected by severe periodontitis (5, 6).

Hence, in some cases, dento-facial anomalies and periodontal diseases are complex and in most cases, it is difficult to establish primary cause, as malocclusion can be the reason for periodontal diseases and vice versa (7).

The aim of this study was to assess the prevalence of dentofacial anomalies and periodontitis, especially in young population, the existence of possible connection among them and the ascertainment of correlations between

any dentofacial anomalies and periodontal diseases.

The study was conducted on 3069 patients who were invited to a dental clinic, Senaki, Georgia. This study obtained the Ethics approval of the Bioethics Commission from February 6 to December 12, 2020. Of the patients who enrolled in the study, 1,740 (56.7%) were women and 1,329 (43.3%) were men, with the redundant number of youths who lived in the same environment.

First, patients filled the special questionnaire, created in order to assess risk factors of periodontitis and Periodontal Screening Index (PSI).

The next stage of the research was to estimate the kinds of occlusion with the clinical research to check inside and outside of the mouth as recommended by the WHO and clinical diagnosis for periodontal diseases. The type of occlusion was determined according to the Engle classification according to the agreement of the sixth teeth, but the case of adentia of the said teeth according to the agreement of the third teeth. Statistical analyses of the research showed



high prevalence of malocclusion and periodontal diseases (Table 1). Almost half of the patients had periodontal disease. The prevalence of peri-

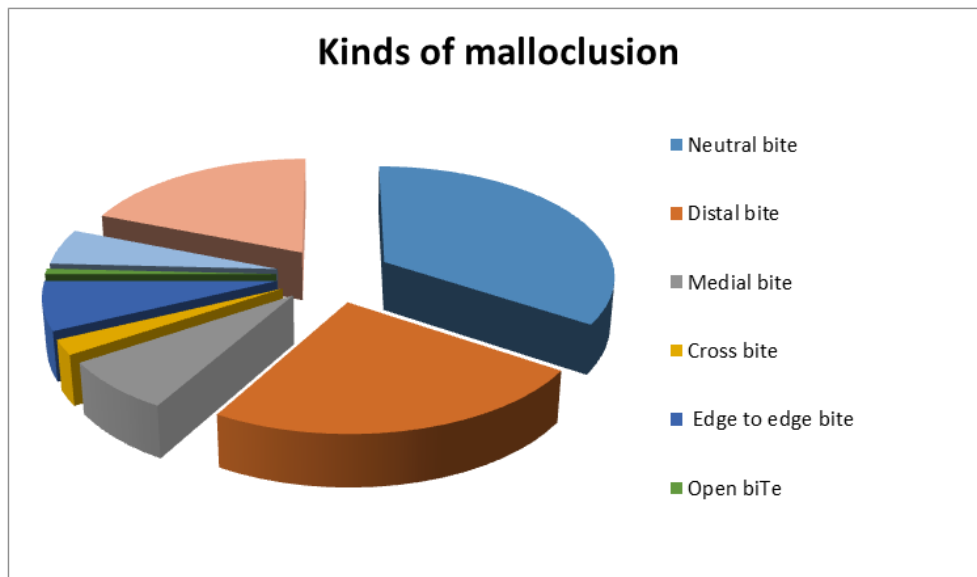
odontal diseases in patients with the dento-facial anomalies or orthognathic occlusion was almost equal.

**Table 1:** Correlation, periodontal status and dento-facial anomalies

<i>Kinds of Malocclusion</i>	<i>0 Healthy</i>	<i>1 Periodontitis</i>	<i>2 Gingivitis</i>	<i>Total</i>
0 Neutral bite	681 (64,6)	261 (24,8)	112 (10,6)	1054 (100)
1 Distal bite	359 (48,7)	250 (33,9)	128 (17,4)	737 (100)
2 Medial bite	124(54,9)	85 (37,6)	17 (7,5)	226 (100)
3 Cross bite	37(53,6)	20(29,0)	12(17,4)	69(100)
4 Edge to edge bite	98 (45,2)	95 (43,8)	24 (11,1)	217 (100)
5 Open bite	17(68,0)	6(24,0)	2(8,0)	25(100)
6 Deep Bite	87(54,7)	52(32,7)	20(12,6)	159(100)
7 Malocclusion diagnosis was not possible	142 (24,4)	433 (74,4)	7 (12)	582 (100)
Total	1545(50,3)	1202(39,2)	322(10,5)	3069(100)

Periodontal diseases and occlusal anomalies are often co-occurring diseases, in many cases it is difficult to determine the primary cause, occlusal anomaly causes periodontal disease or vice versa. Based on the analyze of the study results, the prevalence of periodontal disease was almost

equal in patients with any type of occlusal anomaly or orthognathic occlusion. According to the analyses of results, one-third of the studied patients had any kinds of dento-facial anomalies. Distal occlusion is considered to be the most prevalent dento-facial anomaly (Fig. 1).



**Fig. 1:** Prevalence of malocclusion

Independently existing occlusal anomalies, periodontal diseases and a combination of current periodontal disease and occlusal anomalies were recorded. Statistical analyze of the study results did not confirm significant corellations between any type of occlusal anomaly and periodontal disease.

The high prevalence of the dentofacial anomalies and periodontal diseases was mostly associated with low-socioeconomical status, low-quality medical education, barriers to dental care services and inadegaute oral hygiene.

Special programs should be created and implemented in order to increase dental knowladge of population, prevent prevalence of dento-facial anomalies and periodontal diseases.

### Conflict of interest

The authors declare that there is no conflict of interest.

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