

Dental malocclusions in the anterior sextant, in a group of Mexican patients between 3 and 14 years old.

Frecuencia de maloclusiones dentarias en el sextante anterior, en un grupo de pacientes mexicanos entre 3 y 14 años.

José Murrieta-Pruneda.¹
Dulce Varela-Ramírez.¹
Araceli Rojano-Santillán.²
María Adriano-Anaya.¹
Tomás Caudillo-Joya.¹

Affiliations:

¹Facultad de Estudios Superiores Zaragoza, Universidad Nacional Autónoma de México, Ciudad de Mexico, Distrito Federal, Mexico.

²Facultad de Odontología, Universidad Autónoma de Tlaxcala, México.

Corresponding author: José Murrieta-Pruneda. Facultad de Estudios Superiores Zaragoza UNAM Campus I, Avenida Guetala, Avenida Exploradores Ejército de Ote #66, Ejército de Oriente Indeco II Issste, Iztapalapa, 09230 Ciudad de Mexico, Distrito Federal, Mexico. **Phone:** (55) 56230701. **E-mail:** murrieta1717@gmail.com

Receipt : 10/22/2019 **Revised:** 04/29/2020
Acceptance: 08/31/2020

Abstract: **Aim:** To evaluate the association between the frequency of malocclusions in the anterior sextant with dentition type, age, and sex. **Material and methods:** A descriptive, transversal and prospective study was carried out, in a convenience sample of 200 patients between 3 and 14 years old, of both sexes who attended the pediatric dentistry clinic of Dentistry Faculty from Autonomous University of Tlaxcala, Mexico. A dentist was standardized by a direct method ($k=0.998$, $p=0.0001$). **Results:** Crossbite and edge to edge bite were the most frequent (18% and 17% respectively), in no case the alterations in the previous sextant were related to sex, except altered overjet with age and dentition type (likelihood ratio=18,169, $p=0.0001$) ($X^2=18.820$, $p=0.0001$). **Conclusion:** These observations highlight the importance of the diagnosis of possible alterations in the occlusion of the anterior sextant in both dentitions, in order to preventatively avoid major sequelae.

Keywords: Malocclusion; child; adolescent; cross-sectional studies; overbite; pediatric dentistry.

Resumen: **Objetivo:** Evaluar la asociación entre la frecuencia de maloclusiones en el sextante anterior con el tipo de dentición, la edad y el sexo. **Material y Métodos:** Se llevó a cabo un estudio descriptivo, transversal, prolectivo en una muestra por conveniencia conformada por 200 pacientes entre 3 y 14 años, de ambos sexos atendidos en la clínica de odontopediatría de la Facultad de Odontología, de la Universidad Autónoma de Tlaxcala. Se estandarizó a una cirujana dentista a través del método directo ($k=0,998$, $p=0,0001$). **Resultados:** La mordida cruzada y borde a borde fueron las que se presentaron con mayor frecuencia (18% y 17% respectivamente), en ningún caso las alteraciones en el sextante anterior se relacionaron con el sexo, no así, el resalte alterado que se asoció con la edad y con el tipo de dentición (Razón de verosimilitudes=18.169, $p=0.0001$, $X^2=18.820$, $p=0.0001$). **Conclusión:** El comportamiento observado permite reconocer la importancia del diagnóstico de las alteraciones en la oclusión del sextante anterior en ambas denticiones, con el propósito de actuar anticipadamente para evitar secuelas mayores.

Palabra Clave: Maloclusión; niño; adolescente; estudios transversales; sobremordida; odontología pediátrica.

Cite as:

Murrieta-Pruneda J, Dulce Varela-Ramírez D, Rojano-Santillán A, Adriano-Anaya M & Caudillo-Joya T.

Dental malocclusions in the anterior sextant, in a group of Mexican patients between 3 and 14 years old.

J Oral Res 2020; 9(4):293-299.

Doi:10.17126/joralres.2020.070

INTRODUCTION.

Occlusion refers to the relationships that are established when the teeth are in contact, both in centric occlusion (CO), as well as in protrusion and in lateral movements. At present it is conceived as a system formed by functional units such as the teeth, the temporomandibular joint and the muscles of the head and neck, which are dynamically related, a quality that allows it to adapt to the changes that are generated during body development.

When this balance is disrupted, there appear dental alterations that are characterized by any deviation from the ideal occlusion.¹⁻³

The upper incisors usually cover one third of the crown of the lower teeth, since they are in a labial position between 12 and 28 degrees in relation to their lower counterparts, if a vertical line is considered as a reference. This relationship may show different variations that occur as a result of the balance exerted by the lingual, labial and perioral muscles, as well as by mandibular growth.⁴⁻⁶

The characteristics of the relationship between the anterior teeth become relevant because this relationship serves as a guide in the function of the masticatory system. Among the most frequent alterations in the anterior sextant are: overjet (horizontal overbite), in which the maxillary anterior teeth protrude and horizontally overlap the the mandibular teeth; vertical overbite, when the lingual surfaces of the upper incisors, when occluding on the buccal surface of the lower incisors, exceed the overlap in a vertical direction by more than 2mm; crossbite, either bilateral or unilateral, characterized by the inverted position, due to the fact that the lower anterior teeth are in front of their upper counterparts; open bite in which no contact is observed between the teeth of the upper anterior sextant with the lower ones; and edge-to-edge bite, defined as a type of malocclusion in the vertical and sagittal direction in which the overjet and overbite are zero, that is, the upper and lower incisors make contact on their incisal portion.^{1-4,7-10}

The epidemiological profile of this event refers to the variable frequency with which the different alterations in the types of bite occur in the anterior sextant. This is because there are different factors that influence the establishment and development of dental occlusion from subject to subject, as reported by Espinal *et al.*,⁸ Bauman *et al.*,⁹ and Fontaine *et al.*,¹¹ among others. Its prevalence has shown a proportion that ranges from

44.7% in Cubans¹² to 84.6% in Saudis.¹³ A clear trend has not been reported in relation to which type of alteration is more frequent.

In the case of anterior open bite, Díaz *et al.*,¹² reported that 6.3% presented this condition, while Mendoza *et al.*,¹⁴ reported 35.1%. A similar prevalence has been observed in anterior crossbite. Zhou *et al.*,¹⁵ reported this alteration in 6.8% of Chinese children with primary dentition, while Segura *et al.*,¹⁶ in 38.5% of a group of Cuban children. Regarding the alterations in the horizontal and vertical bite, there is no specific trend between them.¹⁷⁻¹⁹

However, in both cases the frequency of alterations in overjet and overbite is relatively high, with altered overjet ranges of 8.8% in Chilean schoolchildren⁶ up to 33.7% in Indians,¹³ and overbite ranging between 19.5% in Colombians²⁰ to 46.9% in Nepalese.²¹

The reports suggest that these alterations have been observed more frequently in females; however, in none of the cases there is evidence of an association with this variable.^{3-4,8,13,21-22}

MATERIALS AND METHODS.

Study design and participants

A descriptive cross-sectional study was carried out. The study involved a convenience sample consisting of 200 patients between 3 and 14 years old, of both sexes, treated in the spring of 2019, at the pediatric dentistry clinic of the School of Dentistry at the Universidad Autónoma de Tlaxcala, Mexico. Seventeen patients were excluded from the study because their parents did not sign the informed consent, were not present on the day of the epidemiological survey or refused to be examined.

Ethical and legal considerations of the study

The study was approved by the Bioethics and Biosafety Committee of the Dental Occlusion Research unit (LIFESZ-230506), of the Zaragoza School of Higher Studies, at Universidad Nacional Autónoma de México. Parents or guardians were asked to provide informed consent in writing for their child to be included in the study. The technical standards established by the Ministry of Health of Mexico (NOM013-SSA2-200635) regarding the prevention of infection transmission were applied during the calibration of the examiner and the epidemiological survey.

Examiner Calibration

The calibration of a dental surgeon as an examiner was carried out through the direct method, a process in which the Cohen's kappa coefficient *p*-value was

calculated in order to guarantee that said concordances were not due to chance (crossbite $k=0.998$, $p=0.0001$, open bite $k=0.997$, $p=0.001$, edge-to-edge bite $k=0.991$, $p=0.001$, malocclusion $k=0.993$, $p=0.003$, overjet $k=0.998$, $p=0.0001$, overbite $k=0.979$, $p=0.002$).

The relevance of the epidemiological record for the registration of the clinical assessment data was designed and evaluated through a pilot test of the instrument.

Variables and clinical assessment

The study variables were: age, gender, crossbite, open bite, edge-to-edge bite, malocclusion, overjet, overbite and their distribution by age, gender, and type of dentition. For the oral examination, after explaining the purpose of the study and requesting their consent for their inclusion, the patient was asked to enter the clinic accompanied by their parent or guardian. The oral examination of the patients was carried out in a dental chair, using disposable gloves, a Hu-Friedy® flat dental mirror #5, without magnification, and a Obi® steel ruler with standard 25mm graduation, model 281509.

For the intraoral examination, the patient was asked to lie down on the dental chair and open and close their mouth until the patient was in centric occlusion; lips were separated, and the position of the jaw was verified to assess the type of bite in the anterior sextant. This procedure was carried out in groups of 30, until all patients were examined.

The diagnostic criteria considered the presence of an open, crossed, edge-to-edge bite and the presence of an altered overjet and overbite.

Statistical methods

For statistical analysis, the SPSS v.20.0 statistical package for MacOS (IBM, USA) was used. To measure the presence of alterations in the anterior sextant, frequencies and proportions were calculated. To determine the association between the presence of each alteration in the anterior sextant with gender, the Mantel and Haenszel Chi square p -value was calculated because the variables were nominally measured and the data presented in tables; except for the analysis of the association between the type of alteration in the anterior occlusion with age and the type of dentition, since in these cases the Pearson Chi-square value was calculated. Likewise, when the value observed in any of the cells was equal to or less than five, the likelihood ratio value was calculated. In all cases a confidence level of 95% was considered. The tables were designed using Microsoft® Excel v.365.

RESULTS.

The study sample consisted of 200 children with ages ranging between 3 and 14 years old, with a mean age of 8.01 ± 2.09 years, proportionally distributed by age and gender in three groups (Table 1).

Regarding the presence of malocclusion in the anterior sextant, nine out of ten patients showed some alteration in the occlusion. Crossbite was observed in 18% of the patients, and open bite in 1.5%; this was the alteration that occurred less frequently in comparison to the other alterations. Edge-to-edge bite was observed in 17%, overjet in 23%, and overbite in 4.5% of the examined patients (Table 2).

In relation to the distribution of cases of anterior sextant alterations according to gender, crossbite was more frequent in females than in males, a phenomenon that turned out to be similar in terms of the presence of edge-to-edge bite cases, since females showed this clinical condition more frequently. In the case of open bite, males showed a slightly higher frequency.

In relation to the presence of altered overbite and overjet, the latter was more frequent in females, while overbite was more frequent in males. In none of the cases there was evidence of any relationship between each of the alterations with gender: cross bite ($X^2MH=0.132$, $p=0.716$), open bite ($X^2MH=0.061$, $p=0.806$), edge-to-edge bite ($X^2MH=0.180$, $p=0.671$), overjet ($X^2MH=0.188$, $p=0.665$), overbite ($X^2MH=1.134$, $p=0.287$) (Table3).

Regarding the distribution by age, crossbite was observed more frequently in the age group of 6 to 9, with no evidence of any relationship between these variables (likelihood ratio=0.684, $p=0.693$). The presence of open bite cases was almost nil, being more frequent in the age group of 6 to 9 years; however, these differences were not statistically significant (likelihood ratio=0.284, $p=0.442$).

This was similarly observed regarding presence of edge-to-edge bite, with the age group of 3 to 5 years presenting a greater number of cases; however, its distribution did not show statistical relevance with respect to age (likelihood ratio=0.542, $p=0.536$).

In relation to overjet, it was more frequent in patients between 10 and 14 years, with an increase in cases at an older age, in a highly significant manner (likelihood ratio=18.169, $p=0.0001$).

On the other hand, overbite was more frequent in children between 3 and 5 years old; however, these

Table 1. Composition of the study sample according to age and sex.

Age	Male		Female		Total	
	n	%	n	%	n	%
3 - 5 years	25	12.5	31	15.5	56	28.0
6 - 9 years	35	17.5	43	21.5	78	39.0
10 - 14 years	26	13.0	40	20.0	66	33.0
Total	86	43.0	114	57.0	200	100.0

Table 2. Percentage distribution of alterations in the dental relationship in the study sample.

		Frequency	Percentage
Cross bite	Present	036	18.0
	Absent	164	82.0
Open bite	Present	003	01.5
	Absent	197	98.5
Edge-to-edge bite	Present	034	17.0
	Absent	166	83.0
Overjet	Normal	154	77.0
	Altered	046	23.0
Overbite	Normal	168	84.0
	Altered	032	16.0
Malocclusion	Present	134	67.0
	Absent	066	33.0
Total		200	100.0

Table 3. Frequency and percentage distribution of alterations in dental relationship by gender.

		Absent		Present		p-value
		Frequency	Percentage	Frequency	Percentage	
Cross bite	Male	72	36.0	14	7.0	0.716
	Female	92	46.0	22	11.0	
	Both	164	82.0	36	18.0	
Open bite	Male	84	42.0	2	1.0	0.806
	Female	113	56.5	1	0.5	
	Both	197	98.5	3	1.5	
Edge-to-edge bite	Male	73	36.5	13	6.5	0.671
	Female	93	46.5	21	10.5	
	Both	166	83.0	34	17.0	
Malocclusion	Male	31	15.5	55	27.5	0.521
	Female	35	17.5	79	39.5	
	Both	66	33.0	134	67.0	
Overjet	Male	68	34.0	18	9.0	0.665
	Female	86	43.0	28	14.0	
	Both	154	77.0	46	23.0	
Overbite	Male	69	34.5	17	8.5	0.287
	Female	99	49.5	15	7.5	
	Both	168	84.0	32	16.0	

Table 4. Frequency and percentage distribution of alterations in the dental relationship by age.

		Absent		Present		p-value
		Frequency	Percentage	Frequency	Percentage	
Cross bite	3 - 5	48	24.0	8	4.0	0.693
	6 - 9	63	31.5	15	7.5	
	10 - 14	53	26.5	13	6.5	
Open bite	3 - 5	55	27.5	1	0.5	0.284
	6 - 9	76	38.0	2	1.0	
	10 - 14	66	33.0	0	0.0	
Edge-to-edge bite	3 - 5	44	22.0	12	6.0	0.536
	6 - 9	67	33.5	11	5.5	
	10 - 14	55	27.5	11	5.5	
Malocclusion	3 - 5	24	12.0	32	16.0	0.131
	6 - 9	25	12.5	53	26.5	
	10 - 14	17	8.5	49	24.5	
Overjet	3 - 5	53	26.5	3	1.5	0.0001
	6 - 9	58	29.0	20	10.0	
	10 - 14	43	21.5	23	11.5	
Overbite	3 - 5	45	22.5	11	5.5	0.654
	6 - 9	66	33.0	12	6.0	
	10 - 14	57	28.5	9	4.5	

variables were not statistically related (likelihood ratio=0.654, $p=0.660$). In relation to the presence of malocclusions, the behavior was variable, which was not statistically relevant either ($X^2=4.058$, $p=0.131$) (Table 4).

Regarding the type of dentition, results were also variable. Crossbite was more frequent in the primary dentition; however, the differences observed were not significant ($X^2=0.211$, $p=0.900$). Open bite was only observed in children with primary dentition, which is why the behavior did not show any statistical relevance (likelihood ratio=5.124, $p=0.077$).

Edge-to-edge bite was also observed more frequently in patients with primary dentition without statistically significance ($X^2=2.060$, $p=0.357$).

Overjet appeared more frequently in patients with mixed dentition, resulting in a high association between this condition and the type of dentition ($X^2=18.820$, $p=0.0001$). Overbite was more frequent in patients with primary dentition without showing evidence of any relationship between both variables ($X^2=2.744$, $p=0.254$).

Malocclusion in the anterior sextant was more

frequent in children with primary dentition; however, its distribution by type of dentition did not show any relationship between these variables ($X^2=1.957$, $p=0.376$) (Table 5).

DISCUSSION.

The frequency of occlusion alterations in the anterior sextant in the study population was similar to that reported by Dimberg *et al.*,³ and Burgos,¹⁸ who observed a high prevalence of malocclusions and tooth discrepancies in different study populations. On the contrary, Diaz *et al.*,¹² reported a lower percentage than that observed in this study.

The latter reveals the variability of this epidemiological event that can probably be influenced by multifactorial etiological conditions in the development of any alteration in the occlusion of the anterior sextant. There may be some genetic and exogenous factors, such as the presence of some harmful parafunctional oral habit or some systemic disease, among others.¹⁻³ The main variation observed in the relationship of the anterior sextant teeth was the altered overjet, whose frequency was higher than that reported by Pincheira *et al.*,⁶ and

Peña *et al.*,²⁰ but similar to the findings of Bauman *et al.*,⁹ and Kumari *et al.*¹³

This may be due to the tooth replacement process during body development, hence the importance of making a timely diagnosis of the position of the teeth in order to preserve an adequate bite for optimal chewing and correct aesthetic appearance.

Open bite was the alteration that occurred less frequently in the study population in agreement with Díaz *et al.*,¹² and Zhou *et al.*¹⁵ In fact, open bite has been described as one of the malocclusions with a moderate frequency, caused by a series of habits that take place in childhood.

Regarding age, the group of 6 to 9 years presented the highest number of alterations in the anterior sextant, in agreement with that reported by Mendoza *et al.*,¹⁴ Segura *et al.*,¹⁶ and Burgos.¹⁸ This is probably due to the fact that children at this stage of life are in a transition period based on dental replacement, a process in which the contact between the anterior teeth is slightly lost until their complete eruption. In relation to gender, its frequency was slightly higher in females compared to males; however, it was not significant, and the risk of presenting any type of dental alteration in the anterior sextant was similar between both genders.

The latter coincides with most of the reports that studied the distribution of this type of alterations according to the gender of the subjects examined. Results regarding the type of dentition were also variable, cross-, open- and edge-to-edge bites were more frequent in the primary dentition compared to the secondary, similar to the findings of Bhayya *et al.*,² Espinal *et al.*,⁸ Zhou *et al.*,¹⁵ and Gálvez *et al.*,¹⁹ who reported considerably high frequencies of this type of alterations in populations with primary dentition.

The latter suggests the relevance of the development of any type of harmful oral habit and its influence on the appearance of any alteration in the dental relationship in the anterior sextant. Overjet occurred more frequently in patients with mixed dentition, probably due to the dental eruption process, as when there is a delay in tooth eruption, there is the risk that the occlusion may be altered, particularly in the anterior sextant due to the lack of space in the dental arch, which can lead to disharmony in the contact between the teeth.

CONCLUSION.

No association was observed between the frequency of malocclusions in the anterior sextant with the type of dentition, age and gender, except in the case of altered overjet and age.

No theoretical model was found that could explain such an association, since this condition was more likely to be observed at an older age.

Conflict of interests: None.

Ethics approval: Project approved by the Bioethics and Biosafety Committee of the Dental Occlusion Research Line (LIFESZ-230506), of. LIOD-2019-063.

Funding: No funding

Authors' contributions: All the authors have worked in the elaboration of this work.

Acknowledgements: To the Dental Occlusion Research Line (LIFESZ-230506) Faculty of Higher Studies Zaragoza, of the National Autonomous University of Mexico, to the C.D. Nelyda Romano Carro and Dr. Elvia Ortiz Ortiz, Coordinator of the Division of Biological and Health Sciences of the Autonomous University of Tlaxcala for the logistical support received for the execution of the project.

REFERENCES.

1. Urrego P, Jiménez L, Londoño M, Zapata M, Botero P. Perfil epidemiológico de la oclusión dental en escolares de Envigado, Colombia. *Rev Salud Pública*. 2011; 13(6): 1010-1021.
2. Bhayya D, Shyagali T, Dixit U, Shivaprakash. Study of occlusal characteristics of primary dentition and the prevalence of malocclusion in 4 to 6 years old children in India. *Rev Dental Research Journal*. 2012; 9(5): 619-623.
3. Dimberg L, Lennartsson B, Arnrup K, Bondemark L. Prevalence and change of malocclusions from primary to early permanent dentition: a longitudinal study. *The Angle Orthodontist* (2015); 85(5): 728-734.
4. Contreras I, Contreras E, Araneda P, Solís B. Oral health status in 12 to 17-year-old school children from Valle Nonguén, Concepción, 2013. *Journal of Oral Research*, 2013; 2(3): 109-113.
5. Alvarado E, Santiesteban F, Gutiérrez J, Rojas A, Frecuencia de Maloclusiones dentales en la clínica de la Especialidad de Ortodoncia. *Ortodoncia Actual*. 2015; 11(46):30-33.
6. Pincheira C, Thiers S, Bravo E, Olave H. Prevalencia de maloclusiones en escolares de 6 y 12 Años de Choshuenco-Neltume, Chile. *Int. J. Med. Surg*. 2016; 3(2):829-837.
7. Eslamipour F, Afshari Z, Najimi A. Prevalence of Malocclusion in Permanent Dentition of Iranian. *Iran J Public Health*. 2018; 47(2): 178-187.
8. Espinal G, Muñoz A, Flores L, Ponce M, Nava J, González J. Frecuencia de maloclusión en las clínicas de odontopediátricas de la Universidad de Antioquia, Colombia, y de la Universidad Autónoma de San Luis Potosí, México. *Revista Nacional de Odontología*. 2016; 12 (22): 61-68.
9. Bauman JM, Souza J, Bauman C, Flório F. Epidemiological pattern of malocclusion in Brazilian preschoolers. *Rev CienSaude Colet*. 2018; 23(11):3861-3868.
10. Meneses-Gómez EJ, Vivares-Builes A, Rodríguez M. Perfil epidemiológico de la oclusión estática y hábitos orales en un grupo de escolares de la ciudad de Medellín. *Revista Nacional de Odontología*. 2016; 12(22), 67-77.
11. Fontaine S, Roy A, Ritzkallah J, Dabbagh B, Ferraz B. Prevalence of malocclusion in Canadian children with autism spectrum disorder. *Rev Am j OrthodDentofacialOrthop*. 2017;152(1):38-41.
12. Díaz H, Ochoa B, Quiñones L, Casanova K, Coca Y. Prevalencia de maloclusiones en niños de la escuela Carlos Cuquejo del municipio Puerto Padre, Las Tunas. *RevMedisur*. 2015; 13(4):494-499.
13. Kumari R, Jeseem M, Anupam T, Prevalence of Malocclusion among 10-12 years old Schoolchildren in Kozhikode District, Kerala: An Epidemiological Study. *Int J ClinPedDent*. 2016;9(1):50-55.
14. Mendoza L, Meléndez A, Ortiz R, Fernández A, Prevalencia de las maloclusiones asociada con hábitos bucales nocivos en una muestra de mexicanos. *Rev. Mexicana de Ortodoncia*. 2014;2 (4): 220-227.
15. Zhou Z, Liu F, Shen S, Shang L, Wang X. Prevalence of and factors affecting malocclusion in primary dentition among children in Xi'an, China. *BMC Oral Health*. 2016; 16(91): 43-49.
16. Segura N, Medrano J, Moreira F, Segura N, Terán S. Prevalencia de mordida cruzada en pacientes de la Clínica Estomatológica Artemio Mastrapa. *CorrCientMed Holguín*. 2017; 21(2): 468-478.
17. Giraldo-Vélez N., Olarte-Sossa M, Ossa-Ramírez J, Parra-Isaza M, Tobón-Arango F, Agudelo-Suárez A. Características de la oclusión en respiradores bucales de 6 a 12 años de la Clínica del Niño en la Facultad de Odontología de la Universidad de Antioquia. *Revista Nacional de Odontología*. 2015; 11(20): 21-29.
18. Burgos D. Prevalencia de maloclusiones en niños y adolescentes de 6 a 15 años de Frutillar, Chile *RevInt J Odontostomat*. 2014;8(1):13-19.
19. Gálvez A, Velázquez J. Frecuencia de maloclusiones en pacientes con dentición mixta de la clínica de la Especialidad en Odontopediatría de la Universidad Autónoma de Sinaloa. *RevTamé*. 2016; 5(14):482-484.
20. Peña M, Rojas M, Tirado A, Benavides B, Hurtado M, Ruíz A. Prevalencia de la maloclusión en tres planos del espacio en pacientes diagnosticados con defectos del habla en las clínicas de la especialización de ortopedia funcional y ortodoncia de la Universidad Cooperativa de Colombia. *Revestomatol*. 2014; 22(1):26-32.
21. Parajuli U, Tuladhar S, Bajracharya M, Pandey M. Prevalence of Malocclusion and Evaluation of Orthodontic Treatment Need amongst Patients in Pokhara, Nepal. *Rev. Orthodontic Journal of Nepal*, 2018; 8(1):7-10.
22. Mishra P, Mote N, Mishra S, Mishra R, Rajbhar J, Neil O, Prevalence of different types of malocclusion in young adults, in Ahmednagar District, Maharashtra (According to Angle's classification). *Pravara Med Rev* 2018; 10(1): 4-9.