ISSN(O)-3107-7889 Volume:02 Issue 02, February-2026 01-04

JANA NEXUS: JOURNAL OF HEALTH AND MEDICINE

Article DOI: 10.21474/JNHM01/121
DOI URL: http://dx.doi.org/10.21474/JNHM01/121

RESEARCH ARTICLE

ASSOCIATION BETWEEN ORAL HABITS AND DENTAL OCCLUSION PATTERNS IN SCHOOL CHILDREN IN NORTH EASTERN MEXICO

Guillermo Cruz Palma[1], Eyra Elvyra Rangel Padilla[2], Marcela Alejandra Gloria Garza[3], Jesús Israel Rodríguez Pulido[4], Omar Elizondo Cantu[3] and Carlos Galindo Lartigue[5]

1. Doctor of Social Sciences specializing in sustainable development, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Monterrey, Nuevo Leon, Mexico.
2. Doctor of Education, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Monterrey, Nuevo Leon, Mexico.
3. Doctor of Science specializing in Microbiology, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Monterrey, Nuevo Leon, Mexico.
4. Doctor of Education, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Mexico.
5. Doctor of Dental Research Sciences, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Monterrey, Nuevo Leon, Mexico.

Manuscript Info

Manuscript History
Received: 2 December 2025
Accepted: 4 January 2026
Published: February 2026

Key words:-
Dentoalveolar Alterations, Oral Habits, School Children, Oral Health.

Abstract

Introduction: Dental malocclusion is a common alteration in childhood , influenced by genetic and environmental factors, among which non-functional oral habits stand out. When a habit persists beyond three or four years and after the appearance of permanent teeth, it causes an alteration to the harmony of the dental structure, as well as to the oral musculature and occlusal function.

Objective: To determine Association between Oral Habits and Dental Occlusion Patterns in Schoolchildren in Northeastern Mexico.

Material and methods: A cross-sectional study was conducted in 150 school-aged children. A validated questionnaire was applied to parents to identify oral habits and the molar class was clinically evaluate accord ing to Angle.

Results: Distribution of molar classes: Class I was the most prevalent (60–62%), followed by Class III (22–26%) and Class II (12–18%). Oral habits: Digital sucking: 36% of cases. Atypical swallowing: More frequent in Class III (12% in Class II, p = 0.085). Lip sucking: Low prevalence (16%). Age and gender: male (52%), 9 years (32%).

Conclusion: Molar Class I was the most common,a marginal,non signif icant trend toward association between atypical swallowing and Class III.These findings reinforce the importance of early detection and interd isciplinary management in pediatric patients with persistent oral habits, especially those with Class III molar or altered facial patterns.

"© 2026 by the Author(s). Published by IJAR under CC BY 4.0. Unrestricted use allowed with credit to the author."

Corresponding Author:- Guillermo Cruz Palma
Address:-Doctor of Social Sciences specializing in sustainable development, Research Professor at the Faculty of Dentistry, Autonomous University of Nuevo Leon, Monterrey, Nuevo Leon, Mexico.

Introduction:-

Dental malocclusion, i.e., the incorrect relationship between the upper and lower teeth, is a common condition in childhood that can affect both aesthetics and important functions such as chewing, breathing, and speech. This disorder is usually influenced by various factors, including oral habits. Bad habits such as thumb sucking, lip sucking, atypical swallowing, mouth breathing, and early loss of deciduous teeth play an important role in the development of malocclusion (1). When a habit persists beyond the age of three or four and after the appearance of permanent teeth, has been associated withan alteration in the harmony of the dental structure, as well as in the oral musculature and occlusal function (2).

Objective:-

To determine Association between Oral Habits and Dental Occlusion Patterns in Schoolchildren in Northeastern Mexico

Materials and Methods:-

Descriptive, observational, retrospective, and cross-sectional study. The population of our study was school-aged children aged 6 to 12 years. Sample: 150 patients. Data collection consisted of a questionnaire for parents about oral habits and their frequency, as well as a clinical examination of molar class (Angle). This study was conducted in accordance with the provisions of the general health law on health research in its second title, chapter l. The study was submitted for consideration by the bioethics committee of the Faculty of Dentistry, and the anonymity of the individuals and the reliability of their data were respected. To this end, written informed consent was obtained, and participants were given the option to refuse to participate and/or the freedom to withdraw the patient from the study.

Results:-

In our population, 48% were female. The most common age was 9 years old. The data shows that 64% of patients do not have the habit, 20% do so occasionally (less than 3 times a week), and 16% only do so once a week. Molar class I has a higher prevalence on both sides (62% right, 60% left). In these patients, thumb sucking is more common (16% with the habit less than 3 times a week). Molar classes II and III are less frequent (12-26% right, 18-22% left).Molar class II (right) shows a total absence of sucking in the category of less than 3 times per week, and molar class III (left) only occurred in 1 case (2%) with sucking less than 3 times per week. Most patients have Class I occlusion, regardless of sucking habit. The habit of thumb sucking was not significantly associated. Although there are trends (e.g., greater sucking in Class I), they are not statistically significant ($p > 0.05$). The results indicate that, although molar class I is the most common in patients with digital sucking (16-20%), there is no statistically significant association between molar occlusion and this habit ($p > 0.15$).

84% of patients do not have the habit, 12% do it less than 3 times a week, and only 2% have the habit once a week or do it every day. Molar class I is the most prevalent on both sides (62% on the right, 60% on the left). In these patients, lip sucking is minimal, with 6% doing it less than three times a week. In molar class II (right), 4% suck less than three times a week and only 2% do it every day. In molar class III, lip sucking is almost non-existent (only 2% on the right less than 3 times a week). Lip sucking was an infrequent habit in the sample (16% in total), with no statistically significant association with molar class ($p > 0.05$). However, a trend was observed in the left hemiarch ($p = 0.08$), where molar class II showed a higher prevalence of sucking (8% combined)(Table 1).

76% of patients do not exhibit atypical swallowing, 10% only do so once a week, 6% do so less than 3 times a week, and 8% do so every day. In molar class I, it predominates in 62% on the right and 60% on the left. In molar class II, there is a total absence of atypical swallowing, and in molar class III, there is a higher prevalence of atypical swallowing (10% combined right/left). Atypical swallowing was infrequent, with only 24% of patients exhibiting some degree of the habit. Molar class III shows a greater tendency, especially on the left side (12% with some degree vs. 0% in class II) (Table 2).

ISSN(O)-3107-7889 Volume:02 Issue 02, February-2026 01-04
JANA NEXUS: JOURNAL OF HEALTH AND MEDICINE

Table 1. Molar class and presence of lip sucking in patients								
	Class	No	First time	Less than 3	All	Total	X^2	p value
		%	%	%	%	%		
Rigth	I	54.00	2.00	6.00	0.00	62.00	11.53	0.973
	II	6.00	0.00	4.00	2.00	12.00		
	III	24.00	0.00	2.00	0.00	26.00		
Left	I	52.00	2.00	6.00	0.00	60.00	11.28	0.080
	II	10.00	0.00	6.00	2.00	18.00		
	III	22.00	0.00	0.00	0.00	22.00		
Total		84.00	2.00	12.00	2.00	100		

Table 2. Molar class and presence of atypical swallowing in patients								
	Class	No	First time	Less than 3	All	Total	X^2	p value
		%	%	%	%	%		
Right	I	48.00	6.00	2.00	6.00	62.00	5.05	0.536
	II	12.00	0.00	0.00	0.00	12.00		
	III	16.00	4.00	4.00	2.00	26.00		
Left	I	48.00	4.00	2.00	6.00	60.00	11.13	0.085
	II	18.00	0.00	0.00	0.00	18.00		
	III	10.00	6.00	4.00	2.00	22.00		
Total		76.00	10.00	6.00	8.00	100		

Discussion:-

The findings of this study reveal a particular distribution of molar classes in the Mexican school population analyzed, with a predominance of molar Class I at 62%, followed by molar Class III at 26% and finally Class II at 18%. The lower prevalence of molar Class II contrasts with European and North American data, where it is higher (3), but is consistent with studies that indicate that intensity and duration (>6 hours/day) are determinants of occlusal changes (4). From the age of 4 onwards, their bad occlusion habits improve, reducing their impact, in contrast to other studies (5).

The higher frequency of Class III could be explained by genetic and ethnic factors; mixed-race populations are more predisposed to Class III malocclusion due to greater anteroposterior mandibular growth, different craniofacial growth patterns, or the influence of genetic components (6). The tongue adopts low positions to facilitate lip sealing, perpetuating the habit (7). The absence in Class II could be due to the restrictive effect of deep overbite, as suggested by Aroucha (8). These data coincide with those reported in Latin American populations, where Class I ranges from 58 to 64%. However, the higher frequency of molar Class III in our sample compared to 15 to 20% in global studies could reflect ethnic factors, as suggested by mestizo populations having a greater predisposition to Class III skeletal patterns due to genetic influences on mandibular growth (9).

The total absence of the habit in molar class II suggests that molar occlusion could influence swallowing patterns, although studies with larger sample sizes are needed to confirm this association. No significant association was found ($p > 0.15$), although molar class I showed a higher frequency of the habit at 16%. A low prevalence of 16% was found, coinciding with post-pandemic data(10). The use of masks reduced the need for lip sucking due to anxiety. There was a tendency in left Class II with 8%, a compensatory mechanism to seal the lips in cases of increased overjet), sbbuggesting the need for studies with greater statistical power to explore this relationship.

Conclusion:-

Molar Class III presents was more frequently observed of atypical swallowing at 12% vs. 0% in Molar Class II, thus supporting the hypothesis that severe sagittal discrepancies favor abnormal functional adaptations, such as low tongue posture. Thumb sucking and lip sucking, although found to be common at 36% and 16%, respectively, did not show a significant impact on occlusion in this sample, possibly due to their short duration or low intensity. These findings reinforce the importance of early detection and interdisciplinary management in pediatric patients with persistent oral habits, especially those with Class III molar or altered facial patterns.

References:-

1. Vu DA, Vu HM, Nguyen QT, Vu HM. Malocclusion among children in Vietnam: Prevalence and associations with different habits. Journal of Oral Biology and Craniofacial Research. 2024;14(2):112-115.
2. Katib HS, Aljashash AA, Albishri AF, Alfaifi AH, Alduhyaman SF, Alotaibi MM, et al. Influence of Oral Habits on Pediatric Malocclusion: Etiology and Preventive Approaches. Cureus. 2024; 4;16(11).
3. Galán AF, Domínguez A, Cabrera ME. Influence of bad oral habits upon the development of posterior crossbite in a preschool population. BMC Oral Health, 2023; 923.
4. Thadchanamoorthy V, Dayasiri K. A Study on Digit Sucking Among Children Presented to a Tertiary Care Paediatric Clinic in Sri Lanka. Cureus. 2021;13(2).
5. NguyenThao P. Malocclusion and Deleterious Oral Habits in Vietnamese Children Between the Ages of 8 and 12 years: A Cross Sectional Study.Journal of International Society of Preventive & Community Dentistry. 2024; 14(5) 369-378.
6. Lone IM, Zohud O, Midlej K, Paddenberg E, Krohn S, Kirschneck C. Anterior open bite malocclusion: from clinical treatment strategies towards the dissection of the genetic bases of the disease using human and collaborative cross mice cohorts. Journal of personalized medicine. 2023;13(11),1617.
7. Lin L, Zhao T, Qin D, Hua F, He H.The impact of mouth breathing on dentofacial development: A concise review.Frontiers in public health. 2022; 10 (8).
8. Aroucha MC, Aguiar D, Paiva M. Prevalence of sleep-disordered breathing and associations with malocclusion in children. J Clin Sleep Med. 2020;16(7):1007–1012.
9. Hang Q, Dai J, Li L.Technical standards for the diagnosis and treatment of pediatric total facial management in Shenzhen. Lin Chuang Erh Pi Yen Hou Ko Tsa2023;37(8):605-617.
10. Kalla,CM.Morphological and functional abnormalities of the orofacial sphere associated with thumb sucking in children aged 3 to 10 years old in Yaounde, Cameroon.The Pan African medical journal. 2022; 42 107 (9).