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ORIGINAL

Deforming oral habits in children with intellectual disabilities from the "Constancio C. Vigil" center, Buenos Aires

Hábitos bucales deformantes en niños con discapacidad intelectual del centro "Constancio C. Vigil, Buenos Aires

Patricia Lucia Silisqui Flores[1], Gustavo Zunini[1], Atilio Vela Ferreira[1], Virginia Jewtuchowicz[1], María Isabel Brusca[1]

[1]Universidad Abierta Interamericana. Facultad de Medicina y Ciencias de la Salud, Carrera de Odontología. Buenos Aires, Argentina.

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ABSTRACT

Introduction: deforming oral habits have a multi-causal origin, are based on neuromuscular factors, and are the result of voluntary or involuntary activities. They can also be harmful or beneficial to the dental health of the infant depending on the type and age; however, their impact is negative in most cases.
Method: a descriptive cross-sectional study was conducted in 29 children with intellectual disabilities selected in a non-random manner from April to October 2022. The variables analyzed were sex, age, present intellectual disability, dental habits, and stomach system disorders. Data were obtained from the medical history and by physical examination.
Results: 12 years was the most frequent age (20,7 %), males predominated (62,1 %), the most frequent habit was mouth breathing (44,8 %), followed by onychophagia (37,9 %) and digital sucking (10,3 %). The presence of malocclusion was higher in children with TDI (57,9 %), followed by patients with Down syndrome (31,6 %) and ASD (10,5 %). Among the sample that presented mouth breathing, the most frequent age was 11 years (23,1 %), there was a concentration of cases between the ages of 9 to 14 years mainly with only one case at 6 years.
Conclusions: the deforming oral habits mainly found in children with intellectual disabilities were digital sucking, onychophagia, mouth breathing and bruxism, with the presence of dental malocclusion in more than half of the sample.

Keywords: Habits; Alterations; Malocclusions; Neurodevelopmental Disorders; Dentomaxillofacial Anomalies.

RESUMEN

Introducción: los hábitos bucales deformantes tienen origen multicausal, su basee es neuromuscular, y son resultado de actividades voluntarias o involuntarias. A su vez, pueden ser perjudiciales o beneficiosos para la salud estomatológica del infante según el tipo y la edad, sin embargo, su repercusión es negativa en la mayoría de los casos.
Método: se realizó un estudio descriptivo de corte transversal, en 29 niños con discapacidad intelectual seleccionados de forma no aleatorizada, de abril a octubre del 2022. Las variables analizadas fueron el sexo, la edad, la discapacidad intelectual presente, los hábitos dentales, las alteraciones del aparato estomacal. Los datos fueron onbtenidos de la historia clínica y mediante examen físico.
Resultados: 12 años fue la edad más frecuente (20,7 %), predominó el sexo masculino (62,1 %), el hábito más frecuente fue la respiración bucal (44,8%), seguido de la onicofagia (37,9 %) y la succión digital (10,3 %). La presencia de malocusión fue mayor en niños con TDI (57,9 %), seguido de los pacientes con S. Down (31,6 %) y TEA (10,5 %). Entre la muestra que presentó respiración bucal, la edad más frecuente fueron los 11 años (23,1 %), hubo una concentración de los casos entre las edades de 9 a 14 años principalmente con solo un caso a los 6 años.
Conclsuiones: los hábitos bucales deformantes principalmente encontrados en los niños con discapacidad intelectual fueron succión digital, onicofagia, respiración bucal y bruxismo, destaca la presencia de malocusión dental en más de la mitad de la muestra.

Palabras claves: Hábitos; Alteraciones; Maloclusiones; Trastornos Del Neurodesarrollo; Anomalías Dentomaxilofaciales.

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INTRODUCTION

Children should be guided to reach adulthood free of dental disease.[1] One of the main objectives when treating children is to prevent disease and maintain the stomatognathic system in good health.[2,3,4]

The scientific literature defines a habit as a custom or practice acquired through the frequent repetition of the same act that generates satisfaction.[5,6] All habits originate in the neuromuscular system as reflexes of muscle contraction of a complex nature, which are learned; initially, it is a voluntary or conscious act, which becomes involuntary or unconscious when it takes root.[7,8,9,10] Oral habits are psychodynamic phenomena capable of producing behavioral modifications in children.[11,12]

Deforming oral habits (DHH) are a frequent health problem in the child population. Their multicausal origin, as well as their maintenance or appearance at an early age, determine the need for preventive programs based on different measures and procedures to reduce their incidence.[1]

In 1915, Ceroy introduced the psychological and biological considerations of habits and their origins. Since the 19th century, BDH has been considered one of the etiological factors of malocclusions. The epidemiological profile of deforming oral habits is variable, as their frequency has been reported to range from 23 % to 90,7 % in Spanish-American countries and from 56 % to 75 % worldwide.[11]

Certain habits stimulate the normal growth of the jaws, but others interfere with the regular facial growth pattern. The former are called beneficial or functional, for example, normal chewing, swallowing, and breathing. And the second, harmful or deleterious, results from the perversion of a normal function, acquired through the repeated practice of an act that is not functional or necessary, such as mouth breathing, finger sucking, bottle and teat sucking, atypical swallowing, nail-biting, and cheilophagi.[1,5,11]

The habit of finger sucking is one of the most frequent deforming oral habits in children; thumb sucking is the most common form, although there are cases of sucking other fingers and in a wide range of positions.[1,5]

Mouth breathing is a syndrome that obstructive causes, such as anatomy, can etiologically diagnose. Those who breathe out of habit maintain that form of breathing, even if the obstacle has been eliminated, becoming functional mouth breathers.[1,9]

Onychophagia is the habit of biting one's nails with the teeth, which affects the soft tissue surrounding them, such as the cuticle and skin of the fingers. It is common in children and young adults. However, it is observed with low frequency before the age of four since most cases occur between the ages of four and six. It can cause the misalignment of one or more teeth, localized tooth wear, and localized damage to periodontal tissue.[1,5]

If these deforming habits are maintained for long periods of time, they can alter the occlusion.[13] If other factors that could influence the oral health of children are considered, the result is a risk group that demands special stomatological attention.

Malocclusions, or dental-skeletal deformations, are the third most common dental disorders after caries and periodontal disease. They can alter the normal development of the stomatognathic system, leading to bone deformation that will have a greater or lesser impact depending on the age at which the habit is initiated.[5]

In this sense, despite the high figures for neurodevelopmental disorders worldwide, the studies carried out in relation to dental problems in this special group of children are insufficient.[14] Specialized care for this population group is crucial to achieving an adequate development of the patients' stomatological apparatus and contributing to a better quality of life.

In view of the above, the present research aims to characterize the presence of deforming oral habits in children with intellectual disabilities.

METHOD

A descriptive, cross-sectional study was conducted from April to October 2022 on children at the special school for children with intellectual disabilities No. 14 DE3 "Constancio C. Vigil" in Buenos Aires. The universe consisted of all the children at the school, of whom 29 patients with stomach disorders were selected in a non-randomized way.

On the day of the visit, children between 6 and 15 years of age whose parents agreed to their participation in the research were included. The variables analyzed were sex, age, presence of intellectual disability, dental habits, and stomach alterations.

The following disorders were included in the selected sample:

- Intellectual Developmental Disorder (IDD)
- Down's syndrome (DS)
- Autism spectrum disorder (ASD)

The data were obtained from medical records, interviews with parents, and physical stomatological examinations of the patients. Informed consent was requested; the data included in the present investigation do not allow the identification of any participants.

RESULTS

Table 1 shows that most of the children were 12 years old at the time of the research (20,7 %), and the male sex predominated with 62,1 % of the total number of participants, of whom 17,2 % were 12 years old.

The most frequent habit was mouth breathing (44,8 %), followed by nail-biting (37,9 %) and finger-sucking (10,3 %). Among infants with Down syndrome, the frequency of nail-biting and mouth breathing was 10,3 %, respectively. In the case of IDD, mouth breathing stands out at 31 %, while in children with ASD, only one case was found with mouth breathing and another with bruxism, respectively (table 2).

Table 1. Distribution of the sample according to age and sex

Age	Feminine		Masculine		Total	
	No	%	No	%	No	%
6	0	0	2	6,9	2	6,9
7	0	0	0	0	0	0
8	1	3,4	1	3,4	2	6,9
9	2	6,9	1	3,4	3	10,3
10	0	0	1	3,4	1	3,4
11	3	10,3	2	6,9	5	17,2
12	1	3,4	5	17,2	6	20,7
13	2	6,9	2	6,9	4	13,8
14	2	6,9	3	10,3	5	17,2
15	0	0	1	3,4	1	3,4
Total	11	37,9	18	62,1	29	100

Table 2. Distribution of the sample according to habits and neurodevelopmental disorder.

Habit	S. Down		TDI		TEA		Total	
	No	%	No	%	No	%	No	%
Digital suction	1	3,4	2	6,9	0	0	3	10,3
Onychophagy	3	10,3	8	27,6	0	0	11	37,9
Mouth breathing	3	10,3	9	31	1	3,4	13	44,8
Bruxism	1	3,4	0	0	1	3,4	2	6,9
Total	8	27,6	19	65,5	2	6,9	29	100

Table 3 shows that the presence of malocclusion was higher in children with IDD, at 57,9 % of the total, followed by patients with Down syndrome (31,6 %) and ASD (10,5 %).

Table 3. Distribution of the sample according to the presence of malocclusion by neurodevelopmental disorder.

Disorder	No	%
S. Down	6	31,6
TDI	11	57,9
TEA	2	10,5
Total	19	100

Table 4 shows that among the sample that presented mouth breathing, the most frequent age was 11 years (23,1 %), with a concentration of cases between the ages of 9 and 14, mainly with only one case at 6 years of age.

Table 4. Distribution of the sample according to age and presence of mouth breathing.

Age	No.	%
6	1	7,7
7	0	0
8	0	0
9	2	15,4
10	1	7,7
11	3	23,1
12	2	15,4
13	2	15,4
14	2	15,4
15	0	0,0
Total	13	100

DISCUSSION

During childhood, all the risk factors involved in oral diseases can be modified through education, promotion, and periodic check-ups, as they have a significant impact, depending on lifestyles, as well as social factors, including specific behaviors, among which are the acquisition and reinforcement of certain habits.[15]

Some studies, such as León Ramírez,[11] found that most of the children interviewed had some deforming oral habit (77,1 %).

The same study reported a predominance of females at 60,4 %. Castro Yero,[6] agreed with the predominance of females at 65,6 %. For González Caballero, 1, there was a predominance of males over females, 54,9 %. This coincides with the results obtained in the present study.

The most frequent age for González Caballero[1] was eight years, 91,8 %. In the case of León Ramírez,[11] there was a predominance of five-year-olds (93,7 %)

The early school life stage, which begins between the ages of 6 or 7 and up to almost 11 years old, marks a radical change in the child's life due to all the characteristics of the new social situation, in which the development of their personality will take place, which explains the high frequency of deforming habits detected at these ages.[8]

Parents' educational level, knowledge, and attitude toward oral health greatly influence the child's oral health. 10 This is nothing more than the result of the tutelage of adults in the environment in which the child develops, such as family members, educators, and neighbors.

The literature presents a wide variation in the frequency of habits reported by the study, depending mainly on the characteristics of the studies and their population groups. Some of the most frequent habits reported were thumb sucking and bottle use, which accounted for 28,7 %;[6,15] for nail biting, accounting for 30,5 %, and for mouth breathing.[1]

Thumb sucking from birth until two and a half to three years of age is considered normal; with the appearance of temporary teeth, it is gradually replaced by chewing, so it becomes a harmful habit when it continues after the age above.[9,16] The deformation caused by the bad habit will depend fundamentally on three factors: the age at which it starts, the time (minutes or hours) that the bad habit lasts, and the frequency of the habit, that is, the number of times a day it is performed.[2]

A study on DHB in children with ASD shows that the habits found most frequently in the children evaluated were mouth breathing (60 %) and biting on foreign objects (60 %), followed by bruxism (43,3 %) and tongue thrusting (36,7 %). Bruxism is also one of the oral habits most frequently found in children with ASD.[14]

Studies comparing the presence/absence of harmful oral habits in autistic and non-autistic children show that in the latter group, the habit most frequently acquired is finger sucking, followed by mouth breathing and tongue thrusting. However, in children with ASD, the habits acquired in the highest proportion are bruxism, mouth breathing, and tongue thrusting.[14]

Despite the results found and reported in the literature, there is no accurate data on the etiology that an oral habit could have in patients with intellectual problems, despite the tendency to mannerisms and repetitive attitudes that determine the very causes of these neurodevelopmental problems.

The oral changes caused by HBD are numerous, including the palate's transverse narrowing, the upper arch's protrusion, and the anterosuperior inclination of the palatal plane. There may be mandibular retrognathism or rotation downwards and backward, with increased hyperdivergency, triangular upper arch, and low tongue position.[9]

Dento-maxillofacial anomalies can make people shy, withdrawn, and fearful; they can cause social unease, create complexes in schoolchildren and later on in their future occupation, their income and social status.[1] The social and psychological impact of malocclusions is very negative due to the aesthetic deformity they cause and the rejection, teasing and complexes experienced by children who suffer from them; feeling out of social context, children manifest academic problems, rejection of school and, sometimes, bad social behavior.[9]

If we consider that the main objective of treatment and therapy for these patients is to help them lead as usual life as possible and also assess the negative impact on mental health and social acceptance of people with dental-maxillofacial anomalies, patients with intellectual problems emerge as a group demanding permanent stomatological care.

Researchers recognize oral health education as an excellent intervention to raise the level of knowledge of all those who make up the child's environment, much more so if group activities are used to correct both the process and the product of learning.[7,11,17,18]

Prevention work is aimed at training in brushing techniques, oral hygiene, nutritional education, and habit correction.[1,7] During school age, at school or home, educational work and health education must have a close interrelationship between the institution, the family, and the social environment of the child's community; only with the joint effort of all will the desired objectives be achieved.[6,13]

Among the main limitations of the present research are that it was carried out with a small sample of the universe, that no analysis of the association between variables was carried out, and that the study was observational.

CONCLUSIONS

The deforming oral habits mainly found in children with intellectual disabilities were thumb sucking, nail biting, mouth breathing, and bruxism, more frequent among patients with intellectual developmental disorder; in addition, dental malocclusion was found in more than half of the sample.

FINANCING

None.

CONFLICT OF INTEREST

None.

CONTRIBUTION OF AUTHORSHIP

Conceptualization: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.

Data curation: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira.
Formal analysis: Patricia Lucia Silisqui Flores, Gustavo Zunini.
Research: Patricia Lucia Silisqui Flores, Virginia Jewtuchowicz, Maria Isabel Brusca.
Methodology: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.
Project administration: Patricia Lucia Silisqui Flores.
Resources: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.
Software: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira.
Supervision: Patricia Lucia Silisqui Flores.
Validation: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.
Visualization: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.
Writing – original draft: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.
Writing – review and editing: Patricia Lucia Silisqui Flores, Gustavo Zunini, Atilio Vela Ferreira, Virginia Jewtuchowicz, Maria Isabel Brusca.

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