

# Characterization of deforming oral habits in third-grade students

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### **ABSTRACT**

Introduction: deforming oral habits act as obstacles in the growth and development process of the structures of the stomatognathic apparatus and as a consequence can cause abnormalities in oral morphophysiology. Objective: to characterize the deforming oral habits in third grade schoolchildren of the "Bernardo Arias Castillo" Primary School, in the municipality of Sancti Spíritus, in the period from January 2019 to January 2020. Method: an observational, descriptive study was carried out. cross-sectional in the period from January 2019 to January 2020, at the "Bernardo Arias Castillo" Primary School in the Sancti Spíritus municipality. The universe was made up of 61 third-grade schoolchildren with deforming oral habits, who showed the willingness, together with their tutors, to participate in the study. It worked with the entire universe. The variables were studied: age, sex, deforming oral habits, knowledge about deforming oral habits and frequency with which they do the habit. Descriptive statistics were used. Results: the age of eight years (91.8%) and the female sex (65.6%) predominated. The most frequent habits were finger sucking and bottle use (28.7%). Knowledge about deforming oral habits was evaluated as bad and 70.4% sometimes practiced the habit. Conclusions: deforming habits of finger sucking and bottle use predominated. Knowledge was badly evaluated and the majority sometimes practiced deforming habits.

Keywords: Health Knowledge, Attitudes, Practice; Risk factor's; Habits; Malocclusion.

The types of diet, deforming oral habits, proximal caries, defective fillings, premature tooth extractions, as well as diseases that affect the evolutionary process of mixed and permanent dentitions can affect dental occlusion. Knowing the specific causes of dental malocclusion is important because it will make it possible to prevent them, even if they only represent a small part of all the causes.

There are beneficial or functional habits such as chewing, swallowing and normal breathing, and



**OPEN ACCESS** 

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Published: January 05th, 2022

Received: October 01st, 2021; Accepted: November 24th, 2021

#### Cite as:

De Castro-Yero JL, Yero-Mier IM, Torrecilla-Venegas R, Castro-Gutiérrez I, Álvarez-Morgado A, Gómez-Hernández IE. Caracterización de hábitos bucales deformantes en escolares de tercer grado.16 de Abril [Internet]. 2022 [citado: fecha de acceso]; 61(283):e1531.Disponible en: <a href="http://www.rev16deabril.sld.cu/index.php/16\_04/article/view/1531">http://www.rev16deabril.sld.cu/index.php/16\_04/article/view/1531</a>

#### Conflict of interest

The authors declare no conflict of interest.

incorrect or deforming ones, such as mouth breathing, cheilophagia, onychophagia, tongue thrust, chewing of objects, thumb or finger sucking (digital sucking) and the use of pacifiers or bottles after three years, because before this age, the latter are considered normal. They bring as a consequence, alterations of the occlusion if they are maintained for long periods of time. Another negative effect may be language disorders and also disorders related to the child's physical and emotional development<sup>3</sup>.

The deleterious effect of deforming habits and the need to eliminate them from an early age has raised on many occasions, however, to pursue this, the cooperation of patients and family members is essential; and with respect to child population, care acquires special importance. Educational programs aimed at increasing knowledge about oral health and promoting adequate oral habits, make it possible to control or limit the appearance of dentomaxillofacial anomalies<sup>4</sup>.

When deforming oral habits persist in children three years of age or older, they require professional attention, either from comprehensive general stomatologists or orthodontic specialists, as they are a frequent cause of malocclusions<sup>5</sup>.

Due to their prevalence and incidence, malocclusions occupy the third place among the most frequent oral



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diseases and are considered by the World Health Organization (WHO) as a health problem, since more than 70 % of children and young people older than six years have them<sup>6</sup>.

In the current scientific literature, important prevalence values have been reported on an international and national scale, once again consolidating its implication in oral health. Studies carried out in Chile<sup>7</sup> and Ecuador<sup>8</sup> have reported values of 96,2 % and 95,7 % respectively. Moreno-Barrial et al.<sup>9</sup> in their research, they allege that in Cuba values of 73,5 % and 60,7 % are reported in Las Tunas and Santiago de Cuba respectively.

The Stomatology care model aims to achieve a higher level of health in the individual and in the community, with the optimal use of available resources and with the active participation of communities, organized in activities aimed at promoting health and disease prevention<sup>10,11</sup>.

During school age, at school or at home, educational and health education work must have a close interrelation with the institution, family and the social environment of the child's community; only with the joint effort of all will the desired objectives be achieved<sup>12</sup>.

For all the above, it is necessary to carry out a study of this population group to identify the types of habits, the state of practices and the level of knowledge of schoolchildren in relation to deforming oral habits. Consequently, the present research aims to characterize deforming oral habits in third-grade schoolchildren at the "Bernardo Arias Castillo" Elementary School, in the municipality of Sancti Spíritus in the period from January 2019 to January 2020.

## **METHOD**

**Type of study:** an observational, descriptive, crosssectional study was carried out in a series of third grade schoolchildren from the "Bernardo Arias Castillo" Elementary School of the Sancti Spíritus municipality, in the period of January 2019 to January 2020.

**Universe and sample:** The universe was made up of 61 third-grade schoolchildren with deforming oral habits, who showed their willingness, together with their guardians, to participate in the study. The entire universe was studied.

**Variables and data collection:** the studied variables were: age, sex, deforming oral habits digital suction, lingual protraction, mouth breathing, use of baby bottles, onychophagia, cheilophagia, postural habits), knowledge about deforming oral habits (conceptualization of deforming oral habits, consequences of practicing deforming oral habits in teeth, how to eliminate these habits, possible causes of the appearance of habits), frequency with which they perform the habit (sometimes, always, few times).

A form was made to collect the data, which was filled out in each case from the information provided by the schoolchildren and their parents or legal guardians. This instrument was prepared by the authors of the research and approved by the Scientific Council of the Provincial Teaching Stomatological Clinic "Justo Ortelio Pestana Lorenzo", to which the educational institution belongs and was applied as a structured interview guide.

In addition, the clinical examination was performed by observing the oral cavity and by making an exhaustive questioning, guided by the questionnaire on the knowledge survey of the National Program for Comprehensive Stomatological Attention to the Population<sup>13</sup>. For the oral cavity examination, the classification set consisting of a mouth mirror, an explorer and a cotton forceps was used.

The conceptualization of deforming oral habits was evaluated as "good" when the child is able to explain that it is a repeated action that causes damage to his mouth; as "regular" when the child recognizes that he has a damaged mouth, but not that it is due to the repetition of an action; as "bad" when the child does not recognize the presence of a damaged mouth due to repeated actions.

The consequences of the practice of deforming oral habits on their teeth were evaluated as "good" when the child mentions with his words up to three possible anomalies derived from the practice of the deforming habit; of "regular" when it mentions two or one and of "bad" when it does not mention any.

Regarding how to eliminate habits, it was rated as "good" when the child explains that he knows about the practice of exercises or the use of orthodontic appliances; as "regular" when the child knows that the habit can be eliminated but does not know how; as "bad" when the child does not know about the practice of exercises or the use of orthodontic appliances.

Regarding the possible causes of the appearance of habits, a good evaluation was made when the child explains that he knows about the causes of the habit practice and mentions them; as "regular" when the child knows the causes of the habit practice but does not mention them correctly and as "bad" when the child does not know the causes.

Regarding the frequency of the habit practice, it was evaluated as "always": when the habit is practiced more than five times a day; as "sometimes" when the habit is practiced up to three times; and as "rarely", when it is practiced less than three times.

**Statistical processing:** for the processing and analysis of the information, a database was created in the statistical package SPSS version 23.0, which allowed to obtain the corresponding descriptive indicators: absolute and relative percentage frequencies.

**Ethical standards:** the research was approved by the Ethics Committee of the institution and the Scientific Council of the University. The parents or legal guardians of the schoolchildren were instructed to sign an informed consent, to whom the study objective, their voluntary desire to participate, and the confidentiality of the information were explained. The ethical principles established in the II Declaration of Helsinki were respected.

#### **RESULTS**

Female sex predominated (65,6 %) and the age of eight years old with a 91,8 %. The most frequent habits were digital sucking and the use of baby bottles, which accounted for 28,7 % (Table 1).

Table 1. Distribution of deforming oral habits according to the age of the schoolchildren. "Bernardo Árias Castillo" Elementary School. Sancti Spíritus, 2019-2020

Deforming oral habits*		Ag	Total			
	7 years old				8 years old	
	No.	%	No.	%	No.	%
Digital suction	2	1,9	31	28,7	33	30,6
Lingual protraction	3	2,8	21	19,4	24	22,2
Mouth breathing	1	0,9	0	0	1	0,9
Baby bottle use	2	1,9	31	28,7	33	30,6
Onychophagia	1	0,9	11	10,2	12	11,1
Cheilophagia	0	0	3	2,8	3	2,8
Postural Habits	0	0	2	1,9	2	1,9
Total	9	8,3	99	91,7	108	100

<sup>\*</sup>Several schoolchildren presented more than one deforming oral habit (n = 108).

Source: structured interview; clinical examination.

In relation to sex, finger sucking and the use of baby bottles occurred with similar frequency (21,3 % and 23,1 %) in females (Table 2).

Table 2. Distribution of deforming oral habits according to the schoolchildren's sex Sex Total Deforming oral Female Male habits \* % No. % Nο Nο % Digital suction 21,3 10 9,3 33 30,6 23 Lingual protraction 17 15.7 7 6.5 24 22.2 Mouth breathing 0,9 1 0,9 0 0 1 Baby bottle use 25 23,1 8 7,4 33 30,6 Onychophagia 6 5,6 6 5,6 12 11,1 3 2,8 Cheilophagia 2 1,9 1 0,9 Postural Habits 0,9 0,9 2 1,9 Total 75 694 33 30.6 108 100 \*Varios escolares presentaron más de un hábito bucal deformante

Eighty five point two percent of the schoolchildren were evaluated as "bad" regarding the conceptualiza-

tion of deforming oral habits, as well as 50,8 % and 54,1 % on how to eliminate them and their possible causes of appearance respectively (Table 3).

Table 3. Knowledge about deforming oral habits										
	Rating scale									
Thematic	Good		Regular		Bad					
	No.	%	No.	%	No.	%				
Conceptualization of deforming oral habits	2	3,3	7	11,5	52	85,2				
Consequences of practicing deforming oral habits on teeth	7	11,5	27	44,3	27	44,3				
How to eliminate habits	5	8,2	25	41	31	50,8				
Possible causes	3	4,9	25	41	33	54,1				

Seventy point four percent of the students practice these habits sometimes, while 11,4 % and 18 % practice them always and rarely respectively.

## **DISCUSIÓN**

Due to the fact that dentomaxillofacial anomalies constitute a health problem in the population and due to the close relationship between them and the persistence of deforming oral habits, it is necessary for the stomatologist to act as an educator to motivate and achieve changes in the behavior of the patient, as well as creating healthy habits that improve their oral condition and prevent the appearance of possible diseases<sup>11</sup>.

In the present research, female sex predominated, a similar result to those obtained by Moreno-Barrial et al.<sup>9</sup>, who described a majority of women (50,8 %) like Gil et al.<sup>14</sup> in Colombia.

The largest number of children with deforming lies in eight-year-olds, which does not coincide with what was reported by Crespo<sup>15</sup>, in whose study the age of 11 to 12 years old prevailed. However, this difference may be due to the fact that the studied population in the present study was limited to third-grade students and therefore only included the 7 and 8-year-old age groups.

Finger sucking and the use of baby bottles habits were the predominant ones, in accordance with the research carried out at the "Máximo Gómez" Polyclinic of the Holguín municipality by Mesa-Rodríguez et al.<sup>5</sup>, where the most frequent deforming oral habit was nipple and baby bottle sucking (69,7 %). The use of the bottle also predominated in the study by Arocha-Arzuaga et al.<sup>1</sup> with 41,1 %. Regarding the authors' opinion, the prevalence of these habits may be related to the growing use of technology by children and the abandonment of traditional play, which leads to their alienation and leads them to suck their thumbs.

The prevalence of finger sucking and tongue pro-

(n=108)

traction habits in females was similar to the study carried out by Méndez-de-Varona et al.2 where females predominated with 9,6 % and 33 % respectively. The results differ with those presented by Crespo<sup>15</sup>, in whose study male sex obtained supremacy in all the studied habits.

The knowledge of schoolchildren on deforming oral habits, about their conceptualization, consequence of practice, how to eliminate them and their possible causes of appearance were evaluated as "bad"; equivalent result to those achieved by Lee-Garcés et al. 16 and Gálvez et al. 6. The authors believe that these results are due to the lack of health promotion aimed at children, parents and teachers, related to healthy practices to prevent inappropriate habits and reinforce knowledge.

The frequency of habits was rated as a "few times" in almost all schoolchildren, which coincided with what was obtained by Mora-Pérez et al.<sup>17</sup>, Vinardell et al.<sup>12</sup> and Lee-Garcés et al. 16 in their research. Most of the students practice them with great periodicity and it is precisely this that is worrying about these habits, the frequency and repetition with which they are practiced, which brings with it alterations in the development of the stomatognathic system.

In the authors' opinion, these results are attributable to the reduced educational work carried out in schools, because, despite the fact that care for children under 19 years old is a prioritized program in the

country, encouragement and education actions are still insufficient for health.

#### CONCLUSIONS

Deforming oral habits such as finger sucking and the use of baby bottles predominated, mainly in female sex. Knowledge on the subject was evaluated as "bad" and the majority practiced the deforming habit sometimes.

## **AUTHORSHIP**

Jorge Luis de Castro-Yero: conceptualization, formal analysis, research, methodology, validation-verification, writing-original draft, writing-review and editina.

Ileana Maria Yero-Mier, Rolando Torrecilla-Venegas, Irma Castro-Gutiérrez: formal analysis, project management, research, resources, writing-original draft, writing-review and editing.

Alexis Álvarez-Morgado, Ivis Eliany Gómez-Hernández: supervision, visualization, research, writing-original draft, writing-review and editing.

### **FUNDING**

The authors did not receive funding for this article.

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# Caracterización de hábitos bucales deformantes en escolares de tercer grado

# **RESUMEN**

Introducción: los hábitos bucales deformantes actúan como obstáculos en el proceso de crecimiento y desarrollo de las estructuras del aparato estomatognático y como consecuencia pueden ocasionar anomalías en la morfofisiología bucal. Objetivo: caracterizar los hábitos bucales deformantes en escolares de tercer grado de la Escuela Primaria "Bernardo Arias Castillo", del municipio de Sancti Spíritus, en el período de enero de 2019 a enero de 2020. Método: se realizó un estudio observacional, descriptivo, de corte transversal en el período de enero de 2019 a enero de 2020, en la Escuela Primaria "Bernardo Arias Castillo" del municipio Sancti Spíritus. El universo estuvo constituido por 61 escolares de tercer grado con hábitos bucales deformantes, que mostraron la disposición, en conjunto con sus tutores, de participar en el estudio. Se trabajó con la totalidad del universo. Fueron estudiadas las variables: edad, sexo, hábitos bucales deformantes, conocimientos sobre hábitos bucales deformantes y frecuencia con la que realiza el hábito. Se empleó estadística descriptiva. Resultados: predominó la edad de ocho años (91,8%) y el sexo femenino (65,6%). Los hábitos más frecuentes fueron la succión digital y el uso del biberón (28,7%). Los conocimientos sobre hábitos bucales deformantes fueron evaluados de mal y el 70,4% de los educacndos algunas veces practicaba el hábito. Conclusiones: predominaron los hábitos deformantes de succión digital y uso del biberón. Los conocimientos fueron evaluados de mal y la mayoría practicaba algunas veces los hábitos deformantes.

Palabras Clave: Conocimientos, Actitudes y Práctica en Salud; Factores de riesgo; Hábitos; Maloclusión.



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