

Preliminary Study of the Prevalence of Atypical Swallowing and Oral Breath in Albanian Children

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Abstract

Introduction: There are a lot of oral habits where is included even non-nutritional habits. These habits have an impact in development of malocclusion in transversal, sagittal, and vertical plane. Appearance of this malocclusion can be explained by equilibrium theory. Aim of this study is to analyze demographic profiles of patients with atypical swallowing and oral breath. **Material and methods:** The type of study that is done on this focus is "literature review". In this study are used sources like: scientific journals, books and online studies in PubMed, MEDLINE, Google Scholar, SciELO. Chosen studies included a group target of children until age 15 with no other selective criteria. **Results:** In our country patient with atypical swallowing resulted in 7.6% while oral breath resulted in 19.58% of cases making this the second most frequent habit after thumb sucking. Similar results were nearly found in these types of studies in neighboring countries. The data were analyzed according to gender. **Conclusions:** Oral breath and atypical swallowing are present in a high frequency in the age group that is taken in study. Study results are similar with the results of the same type of studies in other places. Only a few significant changes were found. It aims to develop preventive strategies to reduce these type of habits. Also it is needed the cooperation between specialists to do early diagnose and to early treat malocclusions.

Keywords: Prevalence;oral habit; atypical swallowing; gender; malocclusion.

1. Introduction

Habit is an action that is done unconsciously and rapidly. The habit is as the visible part of an iceberg, while the consequence, the major part, is under water. The consequence of this habit consists of the manifestation of malocclusion. Malocclusion is defined as abnormal positions of teeth or a non-correct proportion of jaws [19]. These malocclusions can be classified according to the transversal, sagittal and vertical plan. The manifestation of this malocclusion from the implication of oral habit is explained by the equilibrium theory.

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Oral habits are known as factors that may cause malocclusion in a very early age, so many authors started to make studies on them [1]. Oral habits are type of learned behavior of muscles whose contractions are very complicated [2]. There are a lot of types of oral habits with different etiology and clinical sings [20]. Different habits like, thumb sucking, atypical swallowing, lip biting or lip sucking, bruxism, oral breath can produce destructive effects in dent alveolar structures [3]. To replace this non correct habits with the right ones it is needed a holistic approach, which consists the patient and the parents, techniques of behavior modification, the use of appliances to keep habit under control [21,4]. Prevention and interception of these harmful habits in an early stage is very important of a good oral health of children's [5]. Atypical swallowing is determined as a functional anomaly [21]. Some authors states that this habits start as a compensation mechanism of premature maladaptation (especially in case of an open bite), others schools states that it has a tendency to worse the malocclusions [6]. It is proved that also a non-physiological movement of tongue can negative influence in orthodontic therapeutic process. An early diagnoses and an early intervention have a significantly positive effect in the final results [7]. Between age 3 and 5 years old, prevalence may decrease from 55% to 35%, and dominance between 5% and 15% reported to grown children and adults [10]. If atypical swallowing is evident at grown children and adults, it is often relates to breastfeeding for a prolonged time, pacifying usage for a long time, short lingual frenulum, habits of thumb sucking, adenoids and hypertrophic tonsils, oral habit, allergic rhinitis and not normal lower jaw or tongue behavior [8,9,11]. Persistence over the age of 5 years old, of this habit, accompanied with an atypical swallowing for children of 6-9 years old [12]. Oral breath is defined as normal breath that is done through the mouth instead of nose, (or combined) that is prolonged for more than 6 months [13]. Oral breath is a habit that can be developed for different reasons with multifactorial origin. It is a substitute type of breath and consists in an incorrect breathing. This is accompanied with serious consequences, an early diagnose is

2. Aim.

The main purpose of this study is to analyse demographic profiles of patients with atypical swallowing and oral breath in our place and comparing it with other places. Objectives of this study are to record the prevalence of atypical swallowing, to record the prevalence of oral breath, to analyse the prevalence these habits in Albania and compare them with similar studies in neighboring countries, to evaluate the relation between malocclusions and these habits (atypical swallowing and oral breath) and to evaluate if there are significative changes between these studies.

3. Material and methods.

To prepare this study, we took a collection of literature of articles published in scientific indexed journals identified from LILACS, PubMed, MEDLINE dhe SciELO datas. Chosen studies include those with a group target of children until age 15 with no other selective criteria.

The data are divided in two main groups: oral breath and atypical swallowing, organised based on age and gender so that we can compare results of these studies. Data were processed in statistical software such as SPSS 19.00 and Excel 13.00. The links that were reached were considered significant if the $p\text{-value} \leq 0.05$ and proved

by test Hi-square. The results were presented in tables and were also compared with articles with the same focus, found in PubMed.

4. Results

Our study is a Preliminary study descriptive in prosperity type and lasted for 20 months. There were included children of age 6-15 that were appeared randomly. Table 1

Table 1: Total of sample taken in study and rapport male-female.

TOTAL OF SAMPLE	M(n)	F(n)	M(%)	F(%)
194	83	111	43.1%	56.9%

There were examined 194 subjects 83 male (43.1%) and 111 female (56.9%) of age 6 to 15 years old.

In table 1 is shown the prevalence of atypical swallowing and oral breath in the group of people taken in study.

Table 2: Prevalence of atypical swallowing and oral breath in this sample.

ORAL HABITS	PEVALENCE			PERCENTAGE		
	*YES	NO	TOTAL	*YES	NO	TOTAL
Atypical swallowing	15	179	194	7.6%	92%	100%
Oral breath	38	156	194	19.58%	92.4%	100%

According to study data in table 2, it resulted that 7.6% of patient taken in this study had atypical swallowing while 19.58% of them had oral breath present.

Table 3: Distribution of oral habits, oral breath and atypical swallowing in the ration male-female.

ORAL HABITS	M		F	
	(n)	(%)	TOTA (n)	(%)
Atypical swallowing	6	7.00%	9	8.10%
Oral breath	14	9.60%	24	12.20%

Oral breath is seen to be present in 38 subjects (19.58% of total sample) 14 male (9.6%) and 24 female (12.20%). Atypical swallowing was present in 15 subjects (7.6% of total sample), 6 male (7.0%) and 9 female (8.1%).

Table 4: Correlations between these habits, oral breath and atypical swallowing and malocclusions.

	LCC	RCC	LMC	RMC	Over jet	Anterior open bite
Oral breath	.001	.021	.011	.011	.010	.004
Atypical swallowing	.001	.004	.023	.023	.016	156

LCC= Left canine class RCC= Right canine class LMC= Left molar class RMC=Right molar class

It resulted to have a significant correlation between atypical swallowing and anterior open bite in table 4.

Table 5: Oral breath and nasal breath, its ratio with gingival condition.

Gingival condition				
Type of breath	Normal (N)	Normal (%)	Pathogenic (N)	Pathogenic(%)
Oral breath	14	36.84%	24	63.15%
Nasal breath	140	89.74%	16	10.25%

In table 5, 63.15% of patient that had oral breath resulted with hypertrophic gingival compared to 10.25% of those who had nasal breath.

5. Discussion

In our study 15 patient out of 194 patients taken in total sample resulted to have atypical swallowing, so it was 7.6% of a total, a similar result with other studies. Also there were studies with a lower prevalence like 5% of patients had atypical swallowing [2]. Meanwhile there were also other studies such as Rix.et. al, in whose study with a sample of 93 patients, 61 % had atypical swallowing or 30.4% from study of Werlich, who studied oral habits in a group target of children between 6 to 12 years old [15, 17]. Rogers compared a group of children that were under an orthodontic treatment and another group of children in public schools, some of them with orthodontic problems. In both groups was evident a very high result of 56.9% and 62.8% [18]. In developed and industrialized places, always is evident a high result in prevalence of this problem because of this behavior such as: usage of pacifier for a very long time, or artificial feeding, this type of behavior in less developed countries is less present. From these studies result that in undeveloped places incidence of malocclusion is nearly zero,

while in developed ones it may reach 80% [1]. This means that artificial breastfeeding is often the pathogenic factor of some dent- skeletal malocclusions. In our place oral breath is considered as one of the most prevalent habit, after thumb sucking. Such conclusions are similar to other studies where atypical swallowing is more prevalent at female patient. In Rix study 61.36% of patient with atypical swallowing had malocclusions [15]. Werlich at his positive resulted sample, 50.7% had class 2 subdivision 1 and 98.5% had open bite [17]. At older group age it was evident a positive correlation with posterior cross bite. In Rogers study over 90% had open bite [18]. Meanwhile according to Jalal, over jet was significant while other variables were no [16]. During analyze of data from questionnaires we found another important correlation between type of swallowing and open bite, in accordance with the latest rapports. From sample resulted that 4 out of 15 had open bite and atypical swallowing. Anterior marginal gingivitis at a child is a typical sign of oral breath. This claim is supported from the results taken from questionnaires. It resulted that 63.15% of them had hypertrophic gingiva in relation of 10.25% patient that had nasal breath.

5. Conclusions

Oral breath and atypical swallowing are found in a high frequency in the group age taken in this study. The study results were nearly similar to the same studies taken in other places. Only a few changes were found. It is aimed to develop preventive strategies to avoid their occurrence. Also it is needed a cooperation between specialists to do a early diagnose of this problems and to treat it and malocclusion in time. This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex. These data can provide the basis for planning preventive strategies to eradicate oral habits and reduce the chance of malocclusions, furthermore contributing to an increase in the national level of oral health. Dentists, along with other health professionals, should educate parents. The latter should make sure that there is no need to worry if their child has an addiction to school age, time to try to encourage the child to stop the habit in order to reduce the potential harmful effects on the occlusion. However, we believe that these kinds of problems require close cooperation between the various specialists (pediatrician, allergist, orthodontist and speech therapist) and early orthodontic visit and treatment, when needed in children with bad habits, allergic rhinitis and / or adeno-tonsillar hypertrophy. This will allow for early detection and timely treatment of dysfunctions to avoid the deterioration of already occurring malocclusions. The method to reduce the number of individuals with habits may include the use of provisional devices that reduce the active child's habits and subsequently the use of devices to correct malocclusions.

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