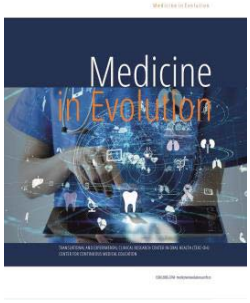
Parental awareness and attitudes towards children's bad oral habits in Oradea, Romania



Moca A. E.[1], Ţoca F. A.[2], Roşu S. N.[3], Vaida L. L.[1], Motoc G. V.[1], Vască E. M.[4]

[1]*Department of Dentistry, Faculty of Medicine and Pharmacy, University of Oradea, 410073 Oradea, Romania*
[2]*Zoradent Dental Clinic, 417035 Avram Iancu, Romania*
[3]*Department of Community and Oral Health, Grigore T. Popa University of Medicine and Pharmacy, 700115 Iaşi, Romania*
[4]*Department of Dentistry, Faculty of Dental Medicine, "Vasile Goldis" Western University of Arad, Romania*

Correspondence to:
Name: Roşu Sorana Nicoleta
Address: 16 Universităţii Street, 700115 Iaşi, Romania
Phone: +40 757070891
E-mail address: soranarosu@gmail.com

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Abstract

Aim and Objectives: This study aimed to investigate the knowledge and attitudes of parents in Oradea, Romania, regarding common bad oral habits among children, which are critical for dentofacial development. Material and Methods: A cross-sectional study was conducted using an online questionnaire distributed via Google Forms, comprising 20 items across three sections: socio-demographic data, presence of bad oral habits, and parental attitudes. The study included parents or guardians of children under 18. Results: Out of 121 respondents, 82.6% were female, and the majority were aged 18-30 years. Most parents (74%) were aware of the negative effects of bad oral habits, but uncertainties remained, particularly regarding habits like thumb sucking (36%) and nail biting (42%). Furthermore, 45% of all parents lacked knowledge about the appropriate age to intervene, and 52% were unsure about effective methods to discourage these habits. This indicates a need for targeted information and support strategies. Conclusions: The findings highlight the need for enhanced parental education on the impact of bad oral habits on children's dentofacial development. Targeted educational initiatives and early interventions are crucial.

Keywords: bad oral habits, parental knowledge, dentofacial development

INTRODUCTION

Malocclusions are defined as any irregular relationship between the dental arches, with or without accompanying changes at the dental level. They are regarded as developmental disorders and represent a significant oral public health issue [1]. Malocclusions can manifest in several ways: vertically (e.g., deep bite, open bite), transversely (e.g., crossbite), and sagittally (e.g., Class II and III malocclusions) [2]. Despite various classification systems, Angle's classification remains the most widely used [3]. This classification encompasses three categories: Class I, characterized by a neutral relationship of the permanent first molars; Class II, marked by distalization of the permanent first molars; and Class III, where the permanent first molars are mesialized [4]. Specialized treatment is essential for malocclusions [5], as untreated malocclusions can significantly impact the quality of life for children and their families [6].

The etiology of malocclusions is multifaceted and not fully understood. However, hereditary factors, unknown developmental causes, trauma, physical agents, bad oral habits, and various local or systemic diseases play crucial roles in their development [7]. Bad oral habits can adversely affect the development of the jawbones and teeth [8]. Common bad oral habits observed in children and adolescents include mouth breathing, thumb sucking, tongue thrusting, and nail biting [9].

Mouth breathing, which frequently results from upper airway obstruction, is highly prevalent among pediatric patients [10]. Thumb sucking, akin to pacifier use or sucking other fingers, serves as a source of stimulation and self-soothing [11]. Tongue thrusting refers to a swallowing pattern where the tongue is positioned on or between the teeth, with higher prevalence in early childhood and between 5% and 15% in adolescents and adults [12,13]. Nail biting, a habit exacerbated by nervousness, stress, hunger, boredom, or anxiety, can also contribute to the development of malocclusions [14]. If left untreated, these harmful habits can worsen or initiate malocclusions, leading to increased overjet, reduced overbite, posterior crossbite, and increased facial height, among other issues [10-14].

Early intervention is critical when dentofacial changes or adverse general effects begin to appear, or when there are indications that an oral habit may negatively impact the permanent dentition [15]. Treatment options may include myofunctional trainers, removable orthodontic appliances [15], and fixed orthodontic appliances [16]. In some cases, such as with mouth breathing, consultation with an otolaryngologist is recommended prior to starting myofunctional or orthodontic therapy [8]. Psychosocial interventions may also be beneficial for habits such as thumb sucking and nail biting [17].

Aim and objectives

In Romania, there is a paucity of studies examining parental knowledge and attitudes towards children's bad oral habits. Given the importance of early intervention for preventing adverse effects on dentofacial development, this study aims to investigate the knowledge and attitudes of parents in Oradea, Romania, regarding common bad oral habits among the pediatric population.

MATERIAL AND METHODS

The cross-sectional study employed an online questionnaire distributed via the Google Forms platform. The questionnaire consisted of 20 items, organized into three distinct sections.

Section 1 comprised the first 7 questions (items 1 to 7), which aimed to gather socio-demographic information from the respondents. The variables assessed included:

- Gender: Female, Male
- Age category: 18-30 years, 31-40 years, over 40 years
- Ethnicity: Romanian, Hungarian, Roma, Other
- Civil status: Single, Married, Divorced, Widowed
- Living environment: Urban, Rural
- Highest level of education completed: Gymnasium, High School, Faculty, Master's, Doctorate
- Number of children: 1, 2, 3, 4 or more.

Section 2 contained 7 questions (items 8 to 14) focused on identifying the presence of bad oral habits and parafunctions as reported by the parents. The response options for these questions were: "Yes," "No," and "I don't know."

Section 3 included 6 questions (items 15 to 20) that explored parents' attitudes towards specific bad oral habits in children. These questions utilized a Likert scale with the following response options: "Strongly agree," "Agree," "I don't know," "Disagree," and "Strongly disagree."

The questionnaire was accessible from April 19, 2022, to May 19, 2022. Prior to accessing the questionnaire, respondents were informed that participation was voluntary and anonymous. The respondents were parents or guardians of children and adolescents under the age of 18.

Descriptive statistics were performed using Microsoft Office Excel 2013 and Microsoft Office Word 2013 (Microsoft, Redmond, WA, USA). The specific questions included in the questionnaire are detailed in Table I.

Table I. Items

Socio-demographic aspects	1.	Gender
	2.	Age
	3.	Ethnicity
	4.	Marital status
	5.	Living environment
	6.	Level of education
	7.	Number of children
Bad oral habits in children and adolescents	8.	My child used to breathe/breathes only through their mouth.
	9.	My child used to sometimes breathe/breathes through their mouth, sometimes through their nose.
	10.	My child used to grind/grinds their teeth while sleeping.
	11.	My child used to place/places their tongue between their teeth when swallowing.
	12.	My child used to bite/bites their nails.
	13.	My child used to use/uses a pacifier.
	14.	My child used to suck/sucks their thumb.
The attitude of parents towards bad oral habits and parafunctions	15.	I believe that oral breathing can cause dental issues, as well as problems with the facial structure.
	16.	I believe that teeth grinding can cause dental issues, as well as problems with the facial structure.
	17.	I believe that swallowing with the tongue between the teeth can cause dental issues, as well as problems with the facial structure.
	18.	I believe that onychophagia (nail-biting) can cause dental issues, as well as problems with the facial structure.
	19.	I believe that using a pacifier can cause dental issues, as well as problems with the facial structure.
	20.	I believe that thumb sucking can cause dental issues, as well as problems with the facial structure.

The study was conducted in accordance with the Declaration of Helsinki (1964) and its subsequent amendments. All parents, guardians, and participants provided informed consent prior to their involvement in the study.

RESULTS

Socio-Demographic Characteristics

A total of 121 individuals completed the questionnaire. The majority of respondents were female (82.6%, n=100). The predominant age group was 18-30 years (40.5%, n=49). Most participants identified as Romanian (93.4%, n=113), were married (25.6%, n=81), and resided in an urban environment (76%, n=92). Additionally, 41.7% (n=51) of the respondents reported having completed higher education, and the majority had only one child (50.9%, n=62). Socio-demographic details of the study population are summarized in Table II.

Table II. Socio-demographic characteristics

Items	Answers	No.	Percentage
Gender	Female	100	82.6%
	Male	21	17.4%
Age	18-30 years	49	40.5%
	31-40 years	48	39.7%
	Over 40 years	24	19.8%
Ethnicity	Romanian	113	93.4%
	Hungarian	8	6.6%
	Roma	0	0%
Marital status	Married	81	66.9%
	Not married	31	25.6%
	Divorced	8	6.6%
	Widow	1	0.9%
Living environment	Urban	92	76%
	Rural	29	24%
Level of education	Gymnasium	1	0.5%
	High School	34	28.3%
	Faculty	51	41.7%
	Master's	31	25.8%
	Doctorate	4	3.7%
Number of children	1	62	50.9%
	2	53	43.8%
	3	5	4.3%
	4 or more	1	1%

Presence of bad oral habits

Items 8 and 9 of the questionnaire assessed the type of breathing in children. The majority of parents reported that their children did not exclusively breathe through the mouth (82.7%, *n*=100). However, a significant portion of parents observed that their children exhibited a mixed breathing pattern (66.1%, *n*=80) (Figures 1 and 2).

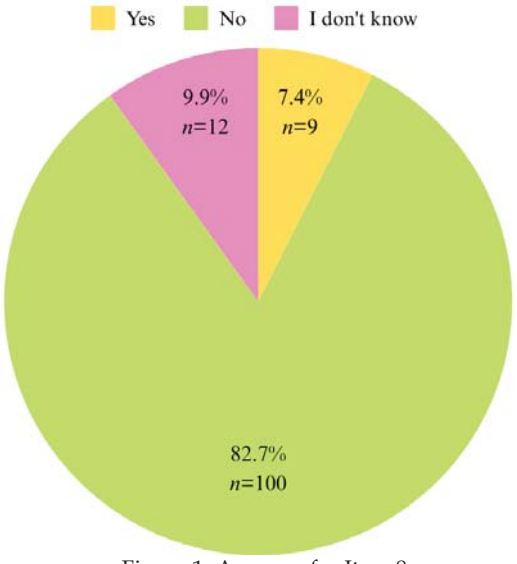

Figure 1. Answers for Item 8

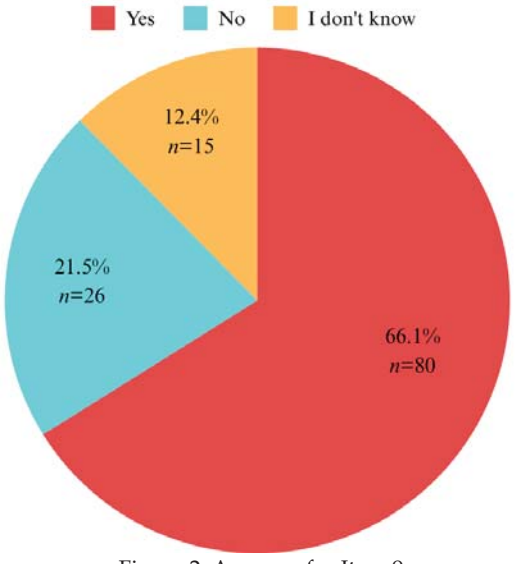

Figure 2. Answers for Item 9

Items 10, 11, and 12 of the questionnaire investigated the presence of bad oral habits such as teeth grinding, tongue thrusting, and nail biting. The data presented in Table III reveal that most children were not reported to grind their teeth during sleep (65.5%, *n*=79). However, nearly a quarter of the children (21.2%, *n*=26) were reported to exhibit this habit. With respect to tongue thrusting, while the majority of parents reported that their children did not place their tongue on or between their teeth during swallowing (61.4%, *n*=74), approximately one-third of parents were uncertain about recognizing this habit (30.7%, *n*=37). Concerning onychophagia, a quarter of the respondents (25.4%, *n*=31) identified this habit in their children.

Table III. Answers for Items 10,11 and 12

	Item 10		**Item 11**		**Item 12**	
Answers	No.	%	No.	%	No.	%
Yes	26	21.2%	10	7.9%	31	25.4%
No	79	65.5%	74	61.4%	85	70.2%
I don't know	16	13.3%	37	30.7%	5	4.4%

Items 13 and 14 investigated the use of pacifiers and the habit of thumb sucking. Figure 3 presents the responses regarding pacifier use (Item 13). Nearly a quarter of the respondents reported that their children currently use or have used a pacifier (24.8%, *n*=30). Additionally, Figure 3 illustrates the responses concerning thumb sucking (Item 14). The majority of respondents did not observe this habit in their children (81.6%, *n*=99).

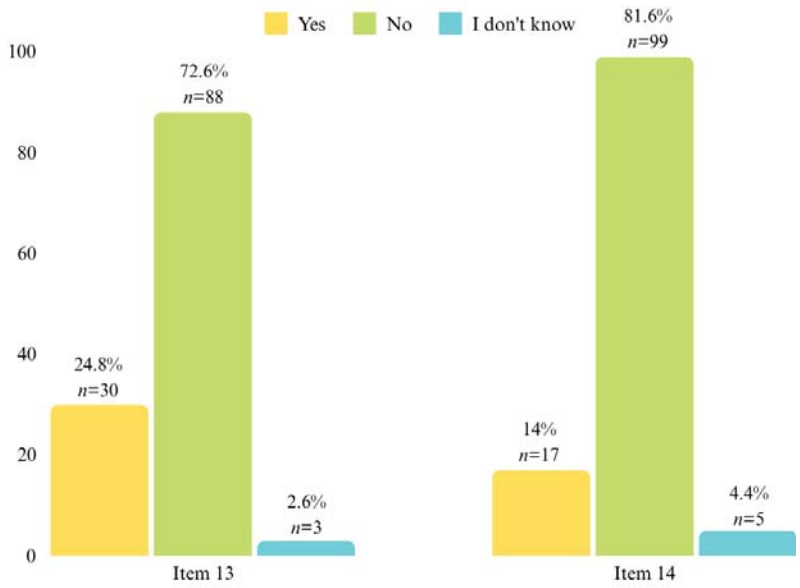

Figure 3. Answers for Items 13 and 14

Attitude of parents towards bad oral habits

Regarding the respondents' attitudes and knowledge about the impact of oral breathing on dentofacial development (Item 15), it was found that a significant portion of participants (37.8%, *n*=46) were unsure whether oral breathing could lead to changes in dental and facial structures. Conversely, a substantial number of respondents (30.3%, *n*=37) strongly agreed that this habit could indeed result in such changes (Figure 4).

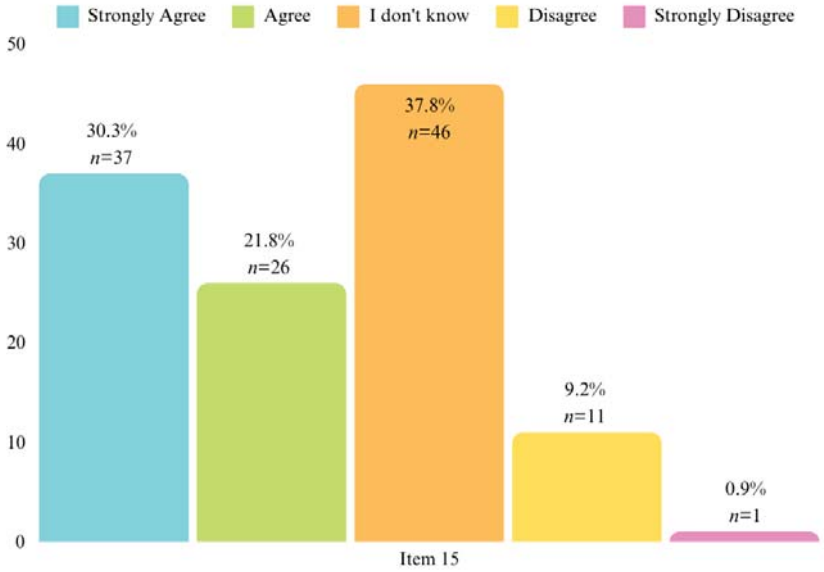

Figure 4. Answers for Item 15

According to Table IV, the majority of respondents (48.3%, *n*=58) agreed that teeth grinding can lead to changes in dental and facial structures. However, regarding the interposition of the tongue between the teeth during swallowing, most respondents (54.2%,

n=66) indicated uncertainty about its potential effects. For items 18 and 19, most participants agreed that onychophagia (34.5%, *n*=42) and pacifier use (42.5%, *n*=52) could cause alterations in the teeth and facial structures.

Table IV. Answers for Items 16,17,18 and 19

	Item 16		Item 17		Item 18		Item 19	
Answers	No.	%	No.	%	No.	%	No.	%
Strongly Agree	38	31.7%	27	22.5%	32	26.9%	38	31.7%
Agree	58	48.3%	24	20%	42	34.5%	52	42.5%
I don't know	19	15.8%	66	54.2%	34	27.7%	19	15.8%
Disagree	4	3%	4	3.7%	13	10.9%	12	10%
Strongly Disagree	2	1.2%	0	0%	0	0%	0	0%

Regarding thumb sucking, the majority of respondents either strongly agreed (31.7%, n=39) or agreed (45.8%, n=55) that this habit can negatively impact dentofacial development (see Figure 5).

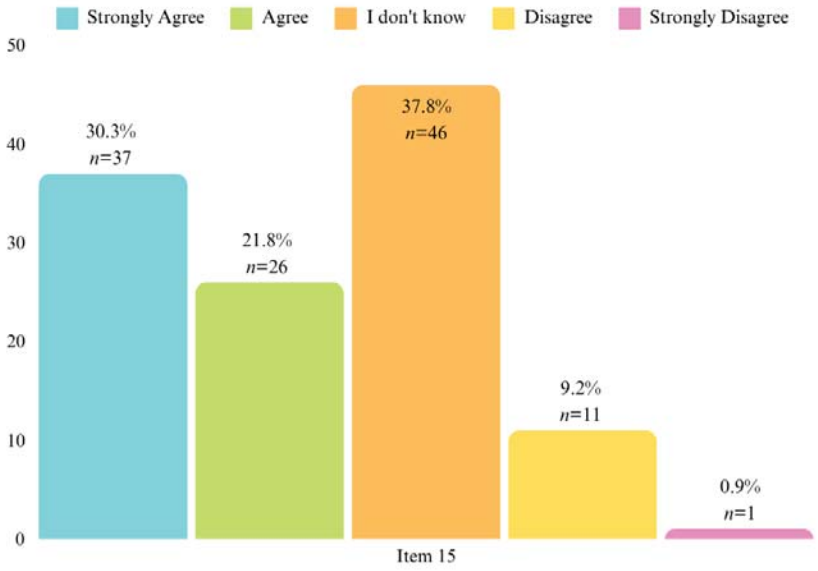

Figure 5. Answers for Item 20

DISCUSSIONS

The aim of this study was to identify bad oral habits in children and to assess parental attitudes and knowledge regarding the effects of these habits. The research was conducted using questionnaires, which are an effective method for data collection from participants [18]. Questionnaires can be administered online [19], in a combined online and paper format [20], or exclusively on paper [21]. We chose the online method to maximize respondent reach and data collection efficiency.

Malocclusions can significantly affect a child's psychological well-being, making their treatment and the elimination of factors contributing to the anomaly crucial. Damage to dento-facial aesthetics, self-perception, and social relationships are primary motivations for parents seeking orthodontic care for their children [22]. Enhancing facial aesthetics often encourages compliance with orthodontic treatment, which has been shown to benefit children and adolescents [23, 24].

Oral breathing, which can occur due to airway obstructions, varies in incidence from 5% to 75% according to some studies [25]. This condition can adversely affect craniofacial development, making early detection essential [26]. Despite the potential harm, 66.4% of respondents reported that their children's breathing is not exclusively nasal, but mixed. Furthermore, less than one-third of respondents were aware that mouth breathing can lead to structural changes.

Among the less frequently identified oral habits were onychophagia, pacifier use, and thumb sucking. Onychophagia, which affects 20-30% of the population regardless of age, can lead to psychosocial issues and adverse effects on oral health [27]. While pacifier use can have analgesic benefits and may reduce the risk of sudden infant death syndrome, prolonged use beyond two years can result in malocclusions [28]. Thumb sucking, if persistent beyond the age of four and during the eruption of permanent teeth, often causes significant dento-maxillary anomalies [29]. Most respondents acknowledged that onychophagia, pacifier use, and thumb sucking can negatively impact dento-maxillary structures.

Tongue thrusting is a common myofunctional issue in the pediatric population [30]. We aimed to assess parental awareness regarding this parafunctional habit. Most respondents were unsure whether tongue thrusting, which involves interposing the tongue between the teeth, could have detrimental effects on the dento-maxillary apparatus.

The responses highlight the need for increased parental education regarding bad oral habits and parafunctional behaviors. Emphasis should be placed on the importance of regular dental visits to facilitate the early detection and management of these issues. Early diagnosis is crucial for preventing the development of dento-maxillary anomalies.

This study faced several limitations that may impact the interpretation and generalizability of the findings. Firstly, the use of an online questionnaire may have introduced selection bias, excluding parents without internet access or those less familiar with digital technology, potentially affecting the diversity of the sample. Additionally, the varying levels of awareness and knowledge among parents about malocclusions and bad oral habits could have influenced the accuracy of their responses. The questionnaire itself, while structured to gather specific information, may not have fully captured the complexity and diversity of bad oral habits and their effects, and different interpretations of the questions by respondents might have affected the consistency of the data. Furthermore, although the study included a substantial number of respondents, it is unclear whether the sample is representative of the entire parent population in Oradea, Romania, which could limit the generalizability of the results. These limitations suggest that the results should be interpreted with caution and highlight the need for future research to address these issues for a more comprehensive understanding of parental awareness and attitudes regarding children's harmful habits.

CONCLUSIONS

In summary, this study highlights the need for improved parental education regarding the impact of bad oral habits on dentofacial development. While there is a general awareness of the negative effects of some habits, uncertainty remains about others. Addressing these knowledge gaps through targeted educational initiatives and early intervention strategies is crucial for preventing and managing dentofacial anomalies in children. Early diagnosis and informed management of bad oral habits can significantly enhance the effectiveness of orthodontic treatments and improve overall dental health outcomes.

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