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# PREVALENCE OF ORAL HABITS AMONG ORTHODONTIC PATIENTS ATTENDING DENTAL SCHOOL CLINICS IN BASRAH CITY/IRAQ

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## Abstract

**Objective:** Oral habits mean actions which cause a non-balanced force on dental tissues and result in malocclusion development. The study main objectives are the evaluation and analyses the prevalence of different oral habits in relation to age and sex among children seeking orthodontic treatment in orthopaedic department clinics of Basra city\ Iraq dental school.

**Materials and methods:** The study sample consist of 144 patients (74 males, 70 females) the average age between 5 to 15 years old, data were collected by asking the patients and guardian and examining the oral structure. Data analyses obtained by Chi-Square Test, Mann-Whitney U Test and Fisher's Exact Test.

**Results:** Mouth breathing was the most prevalent oral habit about 26.4% followed by 22.2% for thumb sucking, while the last prevalent habit was 1.4% for bruxisim, the study shows no statistically significant association between gender and oral habits. Lip biting and thumb sucking occur at young age children and decrease gradually with age.

**Conclusion:** This study illustrates a higher prevalence of thumb sucking and mouth breathing related to other oral habits, early preventive measures of these findings is mandatory to prevent future deleterious effects on the developing occlusion.

**Keywords :** Malocclusion, oral habits.

## Introduction

Oral habits are repetitive children behaviors in the oral cavity, which result in teeth structure lost, they include different habits like digit sucking, lip sucking, lip biting, bruxism, nail-biting,

pacifier sucking, self-injurious habits, mouth breathing, bruxism and tongue thrusting. The effect of these habits differ from child to another according to the onset, duration and nature of the habits [1].

Tongue thrusting and thumb sucking habits are considered normal at 3 or beyond 3 years old child, meanwhile if it persists above 3 years it will lead to harmful effect on dento skeletal structures [2].

The etiology of most oral habits in children is multifactorial and has been described to include many caused like parasomnias, emotional stress, neurologic disabilities, traumatic brain injury, and factors related to morphology like muscle recruitment and malocclusion [3, 4].

It has been established that absent of worries and affection might be associated with oral habits development [5], oral habits considered to be environmental factor result in malocclusion, and its severity related to the frequency, duration of habit and intensity [6,7, 8].

## Aim of the study

The main objective of the study was to illustrate the prevalence of bad oral habits among children attending dental school clinics at the college of dentistry, University of Basrah in relation to gender and age.

## Methodology

Study sample consisted of 74 males and 70 females with oral habits (total 144 children), their age range between 5 to15 years old, all of them attended to the Orthodontic clinics in the department of orthodontics, pedodontics and preventive dentistry at the dentistry college / Basrah university \ Iraq.

Records were used to collect a valuable information from the children parents or guardians regarding type of habit, child age, and frequency of the habits. Dental mirrors were used for the clinical oral examination under good illumination with patients seated in upright position in front of the dental examiner. All findings of this study were analyzed by using Chi-Square Test, Mann-Whitney U Test and Fisher's Exact Test. The analyses were performed using statistical software SPSS version 16.

## Results:

This study applied to demonstrate the oral habits prevalence in relation to age and gender, the sample of the study was nearly equally distributed.

Mouth breathing was the most frequent abnormal behavior (26.4%) followed by (22.2%) for thumb sucking, (11.1%) for nail biting, (8.3%) for both tongue thrust and lip biting, (4.2%) for lip sucking, (2.8%) for tongue biting and the least frequent behavior was (1.4%) for bruxism. (Table 2).

There was no statistically significant association between gender and habits. (Table 3).

Ten years old was the median age. The median number of habits was one habit, some children had up to 4 habits.

The median age differed statistically significant with the presence of lip biting and thumb sucking, children had lip biting and thumb sucking mostly at median age of (7.5 and 8.5) years

old respectively, but gradually as the child reach 10 years old these two habits seems to disappear.

The occurrence of multiple habits behavior that may reach up to 4 habits seen mostly in children with thumb sucking, tongue thrust, tongue biting, lip biting, nail biting, bruxism, and mouth breathing as compared to children with other habits and its statistically significantly. (Table 4).

**Table (1): Basic characteristics of the participant children**

| | **Frequency** | **Percent** |
|---|---|---|
| **Gender:** | | |
| Male | 74 | 51.4 |
| Female | 70 | 48.6 |
| | **Mean±SD** | **Median (Min.-Max.)** |
| **Age (year)** | 9.54±2.18 | 10 (5-15) |
| **Number of Habits** | 0.85±0.72 | 1 (0-4) |
| **Total** | 144 | 100.0 |

**Table (2): Frequency distribution (prevalence) of different types of behavior (habits)**

| **Behaviour*** | **Frequency** | **Percent** |
|---|---|---|
| Mouth breathing | 38 | 26.4 |
| Thumb sucking | 32 | 22.2 |
| Nail biting | 16 | 11.1 |
| Tongue thrust | 12 | 8.3 |
| Lip biting | 12 | 8.3 |
| Lip sucking | 6 | 4.2 |
| Tongue biting | 4 | 2.8 |
| Broxism | 2 | 1.4 |
| Object biting | 0 | 0.0 |

* A child may have one or more than one behavior

**Table (3): Association between gender and different types of behavior (habits)**

| **Behaviour** | **Gender** | | **Total** | **Sig.** |
|---|---|---|---|---|
| | **Male** | **Female** | | |
| **Thumb sucking:** | | | | |
| No | 61 | 51 | 112 | 0.167* |
| | 82.4% | 72.9% | 77.8% | |
| Yes | 13 | 19 | 32 | |
| | 17.6% | 27.1% | 22.2% | |
| **Tongue thrust:** | | | | |
| No | 65 | 67 | 132 | 0.087* |
| | 87.8% | 95.7% | 91.7% | |
| Yes | 9 | 3 | 12 | |
| | 12.2% | 4.3% | 8.3% | |

| | | | | |
|---|---|---|---|---|
| **Tongue biting:** | | | | |
| No | 73 | 67 | 140 | 0.356** |
| | 98.6% | 95.7% | 97.2% | |
| Yes | 1 | 3 | 4 | |
| | 1.4% | 4.3% | 2.8% | |
| **Lip sucking:** | | | | |
| No | 70 | 68 | 138 | 0.682** |
| | 94.6% | 97.1% | 95.8% | |
| Yes | 4 | 2 | 6 | |
| | 5.4% | 2.9% | 4.2% | |
| **Lip biting:** | | | | |
| No | 70 | 62 | 132 | 0.191* |
| | 94.6% | 88.6% | 91.7% | |
| Yes | 4 | 8 | 12 | |
| | 5.4% | 11.4% | 8.3% | |
| **Nail biting:** | | | | |
| No | 67 | 61 | 128 | 0.517* |
| | 90.5% | 87.1% | 88.9% | |
| Yes | 7 | 9 | 16 | |
| | 9.5% | 12.9% | 11.1% | |
| **Object biting:** | | | | |
| No | 74 | 70 | 144 | ---------- |
| | 100.0% | 100.0% | 100.0% | |
| **Broxism:** | | | | |
| No | 72 | 70 | 142 | 0.497** |
| | 97.3% | 100.0% | 98.6% | |
| Yes | 2 | 0 | 2 | |
| | 2.7% | 0.0% | 1.4% | |
| **Mouth breathing:** | | | | |
| No | 57 | 49 | 106 | 0.339* |
| | 77.0% | 70.0% | 73.6% | |
| Yes | 17 | 21 | 38 | |
| | 23.0% | 30.0% | 26.4% | |
| Total | 74 | 70 | 144 | |
| | 100.0% | 100.0% | 100.0% | |

* Chi-Square Test

** Fisher's Exact Test

**Table (4): Age and number of habits differences between children who have different types of behavior (habits) and those who do not**

| **Behaviour** | | **Age (Year)** | **Number of Habits** |
|---|---|---|---|
| **Thumb sucking:** | | | |
| No | Mean±SD | 9.75±1.86 | 0.71±0.70 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-4) |
| Yes | Mean±SD | 8.81±2.97 | 1.31±0.59 |
| | Median (Min.-Max.) | 8.50 (5-15) | 1.00 (1-3) |
| Sig.* | | 0.028 | 0.0001 |
| **Tongue thrust:** | | | |
| No | Mean±SD | 9.53±2.25 | 0.79±0.64 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-3) |
| Yes | Mean±SD | 9.67±1.30 | 1.50±1.17 |
| | Median (Min.-Max.) | 10.00 (7-11) | 1.00 (1-4) |
| Sig.* | | 0.650 | 0.018 |
| **Tongue biting:** | | | |
| No | Mean±SD | 9.59±2.19 | 0.83±0.72 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-4) |
| Yes | Mean±SD | 8.00±1.15 | 1.50±0.58 |
| | Median (Min.-Max.) | 8.00 (7-9) | 1.50 (1-2) |
| Sig.* | | 0.080 | 0.030 |
| **Lip sucking:** | | | |
| No | Mean±SD | 9.49±2.21 | 0.83±0.72 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-4) |
| | Mean±SD | 10.67±1.03 | 1.33±0.52 |
| | Median (Min.-Max.) | 10.00 (10-12) | 1.00 (1-2) |
| **Lip biting:** | | | |
| No | Mean±SD | 9.73±2.14 | 0.82±0.74 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-4) |
| Yes | Mean±SD | 7.50±1.57 | 1.17±0.39 |
| | Median (Min.-Max.) | 7.50 (5-10) | 1.00 (1-2) |
| Sig.* | | 0.0001 | 0.026 |
| **Nail biting:** | | | |
| No | Mean±SD | 9.50±2.24 | 0.75±0.59 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-2) |
| Yes | Mean±SD | 9.9±1.67 | 1.6±1.15 |
| | Median (Min.-Max.) | 10.00 (6-12) | 1.00 (1-4) |
| Sig.* | | 0.262 | 0.001 |
| **Object biting:** | | | |
| No | Mean±SD | 9.54±2.18 | 0.85±0.72 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-4) |
| **Broxism:** | | | |
| No | Mean±SD | 9.54±2.19 | 0.80±0.62 |

| | | | |
|---|---|---|---|
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-3) |
| Yes | Mean±SD | 10.00±0.00 | 4.00±0.00 |
| | Median (Min.-Max.) | 10.00 (10-10) | 4.00 (4-4) |
| Sig.* | | 0.703 | 0.005 |
| **Mouth breathing:** | | | |
| No | Mean±SD | 9.40±2.09 | 0.62±0.52 |
| | Median (Min.-Max.) | 10.00 (5-15) | 1.00 (0-2) |
| Yes | Mean±SD | 9.95±2.38 | 1.47±0.83 |
| | Median (Min.-Max.) | 10.00 (6-15) | 1.00 (1-4) |
| Sig.* | | 0.526 | 0.0001 |

* Mann-Whitney U Test

## Discussion

The high prevalence value of bad oral habits was mouth breathing (26.4%) and this agreed with Alawsi, et al,2021 findings in Erbil city[9] and disagreed with Murshid ZA et al, 2007 findings in Saudi Arabia[10], High incidence of mouth breathing among the study sample may be attributed to habitual breathing from mouth instead of breathing from nose or may be related to other causes like obstruction in the nose or skeletal bone abnormality including increased overjet, cross bite (anterior or posterior) and open bite[11].

The second most prevalent bad oral habit was thumb sucking (22.2%) this high value percentage require early dental intervention and management, because chronic thumb sucking lead to dentofacial development in both anterio-posterior, transverse and vertical directions[12]. Tongue thrust and thumb sucking are associated with bad sequel which include maxillary incisor protrusion, anterior open bite, lip incompetence and posterior crossbite[13]

This study illustrated that lip biting and thumb sucking seen more in younger aged children, there was significant probability that these two habit gradually decrease with age as child grow.

Children with tongue thrust, nail biting, bruxism and mouth breather had a wide range of other habits comparing with children that have lip sucking, thumb sucking, lip biting and tongue biting and this is significant statistically.

The least prevalence observed was bruxism (1.4%) and this agreed with M Zakirulla et al, 2020[14]. Bruxism which is involuntary grinding of upper and lower teeth and categorised as nocturnal bruxism and wakeful bruxism[15, 16, 17].

The distribution of oral habits prevalence varied in different countries[18, 19], and should be diagnosed as early as possible because it may end with complicated problems that necessitate surgical management including orthognathic surgery for jaw position correction[20]. Dentists should detect bad oral habits at early stage to prevent and intercept any dental problems and cooperation must be achieved between parents, child and dentist to reach the optimum results.

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