Scissors Bite: A Retrospective Study of 1000 Libyan Patients

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Abstract
The aim of this study was to assess the prevalence of scissors bite among Libyan population, which is one of the most challenging malocclusion to correct. A random sample of 1000 Libyan adults, aged 18-30 years was selected randomly from Libyan adult patients of whom were; 265 males (26.5%) and 735 females (73.5%). Out of this sample, 29 subjects (2.7%) had scissors bite; 25 subjects had buccoversion scissors bite representing 2.4% of the study sample; were 22 unilateral and 3 bilateral cases scissors bite was found in subjects aged <18 years old followed by subjects aged 19-24 years old and no cases were found in >25 years old. The outcome of our study does not necessitate any special considerations for scissors bite cases since the quality and number found lies in the normal range of other studies.

Introduction
Scissors bite is a rare form of malocclusion that is often accompanied by varying degrees of facial asymmetry and transverse discrepancies in adults. It is a condition where the lower posterior teeth, i.e., molars, are positioned more inward compared to the position of their maxillary counterparts. Scissors bite can arise from different reasons, e.g., congenitally narrow lower arch or broader upper arch, which leads to the upper posterior teeth completely encompassing the lower ones. When present, they are very difficult to treat especially in cases that also exhibit vertical overlapping of posterior teeth [1]. The aim of our present study is to determine the current status of malocclusion cases in Libya in terms of suffering from this difficult aspect of orthodontic problems.

Subjects & Methods
A random sample of Libyan adult patients, aged 18-30 years (average 24 years) was selected randomly from patients who had orthodontic treatment at the department of Orthodontics/Faculty of Dentistry in Benghazi city, between 2008-2015 years. The study was conducted on 1000 randomly selected individuals according to their availability from different aspects of malocclusion on the population sample (265 males and 735 females).

All subjects recruited gave their verbal consent to participate in the study. All the selected subjects in the study were Libyans in whom: all permanent teeth in both jaws were totally erupted (excluding the 3rd molars); no history of extraction or congenitally missing teeth; no serious disease or anomalies in the craniofacial region; no previous trauma or operation in the craniofacial region that could affect serious disease or anomalies in the craniofacial region; no previous orthodontic treatment at the department of Orthodontics/Faculty of Dentistry in Benghazi city, between 2008-2015 years. The study was conducted on 1000 randomly selected individuals according to their availability from different aspects of malocclusion on the population sample (265 males and 735 females).

Evaluation of Scissors Bite
Posterior scissors bite was evaluated assessing transversal relationship of the upper and lower premolars and molars. The normal transverse relationship was considered when the tips of the buccal cusps of the lower teeth occluded with the central fossae of the opposing upper premolars and molars. Scissors bite was considered when the tip of the palatal cusp of one or more upper molar or premolar occluded in the central fossae or buccal of the lower molar or premolar. All the statistical tests were done using Microsoft Excel 2013 (Microsoft Cor.)

Results
Demographic data
The present study was conducted on 1000 randomly selected individuals in accordance to their availability within the age range of (18-30); 265 males (26.5%) and 735 females (73.5%).

Distribution of scissors bite
Out of the sample 29 subjects (2.7%) had scissors bite; 25 subjects (2.4%) had buccoversion scissors bite (Table 1).

Scissors bite distribution according to sex
There was no statistically significant difference between prevalence of scissors bite in males and females.

Buccoversion scissors bite, there was no statistically significant difference between males and females (Table 2, Table 3, Figure 1, Figure 2).

Buccoversion scissors bite, there was a statistically significant difference between different age categories. The highest prevalence of unilateral buccoversion scissors bite was found in subjects aged <18 years old followed by subjects aged 19 – 24 years old and no cases were found >25 years old (Table 4) (Figure 3).

Discussion
The present study was performed to assess the prevalence of scissors bite among Libyan population, which is one of the most challenging malocclusion to correct. A random sample of 1000 Libyan adults, aged 18-30 years was selected randomly from Libyan adult patients of whom were; 265 males (26.5%) and 735 females (73.5%). Out of this sample, 29 subjects (2.7%) had scissors bite; 25 subjects had buccoversion scissors bite representing 2.4% of the study sample; were 22 unilateral and 3 bilateral cases scissors bite was found in subjects aged <18 years old followed by subjects aged 19-24 years old and no cases were found in >25 years old. The outcome of our study does not necessitate any special considerations for scissors bite cases since the quality and number found lies in the normal range of other studies.

Table 1: Distribution of buccoversion scissors bite.

<table>
<thead>
<tr>
<th>Buccoversion scissors bite</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unilateral</td>
<td>22</td>
<td>88</td>
</tr>
<tr>
<td>Bilateral</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

*Significant at P ≤ 0.05

Table 2: Frequencies (n), percentages (%) and results of Chi-square test for comparison between prevalence of scissors bite in males and females.

<table>
<thead>
<tr>
<th>Scissors bite</th>
<th>Males</th>
<th>Females</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Scissors bite</td>
<td>6</td>
<td>2.1</td>
<td>23</td>
</tr>
<tr>
<td>No scissors bite</td>
<td>259</td>
<td>97.9</td>
<td>712</td>
</tr>
<tr>
<td>Total</td>
<td>265</td>
<td>100</td>
<td>735</td>
</tr>
</tbody>
</table>

*Significant at P ≤ 0.05

Table 3: Frequencies (n), percentages (%) and results of Fisher’s exact test for comparison between buccoversion scissors bite in males and females.

<table>
<thead>
<tr>
<th>Buccoversion scissors bite</th>
<th>Males</th>
<th>Females</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Unilateral</td>
<td>5</td>
<td>100</td>
<td>17</td>
</tr>
<tr>
<td>Bilateral</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100</td>
<td>20</td>
</tr>
</tbody>
</table>

*Significant at P ≤ 0.05

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There are studies whose results exceed ours significantly, confirming the variability in the occurrence of this type of malocclusion. For instance, Soh et Sandham have reported 13% of their sample to have scissors bite [13], while Mtaya et al. have found their whole sample to have 14.3% scissors [14].

To conclude, the prevalence of scissors bite in the Libyan population is considered to be among the normal range compared with other populations, and the resultant figure does not raise any urgent need for more screening programs or treatment provision than currently available.

References
