<table>
<thead>
<tr>
<th>Award</th>
<th>Recipient</th>
<th>From</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vincent De Angelis Award</td>
<td>Joseph G. Ghafari</td>
<td>Harvard Society for the Advancement of Orthodontics</td>
<td>2002</td>
</tr>
<tr>
<td>Habib Rihan Award*</td>
<td>Anthony T. Macari, Joseph G. Ghafari</td>
<td>Lebanese Dental Association</td>
<td>2004</td>
</tr>
<tr>
<td>Habib Rihan Award*</td>
<td>Anthony T. Macari, Joseph G. Ghafari</td>
<td>Lebanese Dental Association</td>
<td>2005</td>
</tr>
<tr>
<td>Habib Rihan Award*</td>
<td>Antoine Geagea, Joseph G. Ghafari</td>
<td>Lebanese Dental Association</td>
<td>2007</td>
</tr>
<tr>
<td>Best Poster Presentation- 1st Prize</td>
<td>Eduard El Asmar, Jana BouChabke, Joseph G. Ghafari, Joseph Semaan</td>
<td>Lebanese Dental Association</td>
<td>2008</td>
</tr>
<tr>
<td>Best Poster Presentation- 2nd Prize</td>
<td>Cynthia El Kahi, Abdo Jurjus</td>
<td>Lebanese Dental Association</td>
<td>2008</td>
</tr>
<tr>
<td>Best Poster Presentation</td>
<td>Anthony T. Macari, Hala Aoun, Ammar Kassab, Kim Smith Abouchacra</td>
<td>Lebanese University Congress</td>
<td>2009</td>
</tr>
<tr>
<td>Habib Rihan Award*</td>
<td>Joseph G. Ghafari, Myriam Bou Hanna, Anthony T. Macari, Ramzi V. Haddad</td>
<td>Lebanese Dental Association</td>
<td>2009</td>
</tr>
<tr>
<td>Aesthetic Dentistry MENA Awards (Middle East North Africa)</td>
<td>Anthony T. Macari (co-worker: Najib Abou Chebel)</td>
<td>CAPP Centre for Advanced Professional Practices &amp; EMA Emirates Medical Association Dental Society</td>
<td>2011</td>
</tr>
<tr>
<td>Aesthetic Dentistry MENA Awards (Middle East North Africa)</td>
<td>Ramzi V. Haddad (co-workers: Joseph Ghafari, Najib Abou Chebel)</td>
<td>CAPP Centre for Advanced Professional Practices &amp; EMA Emirates Medical Association Dental Society</td>
<td>2011</td>
</tr>
<tr>
<td>Delta Omega</td>
<td>Maria Saadeh</td>
<td>Honorary society of public health inductee by the Faculty of Health Sciences for scholarly achievements</td>
<td>2012</td>
</tr>
<tr>
<td>Best Poster Presentation</td>
<td>Antoine Hanna, Celine Moukarzel, Ramzi V. Haddad, Miran Jaffar, Monique Chaya, Joseph G. Ghafari</td>
<td>AUB Biomedical Research Day</td>
<td>2013</td>
</tr>
</tbody>
</table>

*Note: All Habib Rihan awarded (only 4) since its inception by the LDA have been captured by the AUB Division of Orthodontics/DFO
**Assessment of oral health in elementary school children in Beirut: a comparison between private and public schools**

Antoine E. Hanna1, Celine M. Moukarzel1, Ramzi V. Haddad1, Monique Chaaya2, Miran Jaffa2, Joseph G. Ghafari1

1. Division of Orthodontics and Dentofacial Orthopedics, Department of Otolaryngology-Head and Neck Surgery, Faculty of Medicine/AUBMC
2. Department of Epidemiology and Population Health, Faculty of Health Sciences, American University of Beirut

---

**ABSTRACT**

Oral health encompassing dental decays, oral hygiene and malocclusion (bite problems) varies with socioeconomic and educational backgrounds. **Aims:** 1. Compare indices of various components of oral health between children in private (PV) and public (PB) schools in Lebanon. 2. Investigate associated demographic socioeconomic and behavioral factors. **Methods:** Malocclusion, DMFT, PI (Decayed, Missing, Filled Teeth) and plaque hygiene (gauze) indices were measured in 655 elementary school children (6-11 years) in PB (n=325: 153 girls, 172 boys) and PV (n=330, 177 girls, 153 boys) in Beirut. Calculated dentists recorded: 1. occlusal parameters (overjet (OJ), overbite (OB), posterior crossbite (PCB), malocclusion (NHIHES III)). 2. DMFT score and 3. PI index. Following standardized procedures. Socio-demographic and behavioral data regarding children and parents were collected through a questionnaire completed by the parents. **Results:** The mean DMFT score was significantly higher (7.03±3.98) in PB compared to PV (3.50±2.41). The mean plaque index was also greater in PB (1.30±0.20) compared to PV (1.20±0.15) (p<0.001). A higher DMFT score was associated with poor oral health, perception, breathing and Public school. Plaque index was associated with the oral health perception. Malocclusion in its major components (OJ, anterior X, and occlusal relations) was statistically significantly more severe in PB versus PV. Age was positively associated with OB, PCB and PCB. Increased sucking habit duration was associated with a shallower OB and PCB. Crowding was more severe among males and associated with an increase in the DMFT score. Completed orthodontic treatment needs revealed that nearly 25% of the children are in urgent need of treatment. **Conclusion:** DMFT and malocclusion severity scores were higher in public than private schools, and were higher than similar data in the USA and European countries. Accordingly, more prevention strategies are needed in Lebanon with more attention to children in public schools.

---

**INTRODUCTION**

Oral health is a standard of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being (WHO, 1982).

**Aims:** 1. Compare the prevalence of DMFT and plaque indices, 2. to observe malocclusion attending private and public schools, 3. Investigate the association of dental conditions and personal/behavioral conditions (age, gender, grade, socioeconomic status, education, occupation and annual income of the parents, smoking, maternal smoking during pregnancy, nutrition/habits) 4. To build up a cohort for subsequent follow-up on oral health and oral health surveys.

---

**METHODS**

**Clinical examination**

- DMFT score
- Plaque index
- Malocclusion (NHIHES III)
  - Crowding
  - Medial diastema
  - Posterior crossbite
  - Overjet
  - Overbite
  - Diastema
  - Molars/Canine occlusal

**Frequency analysis**

Frequency of teeth brushing was performed using standardized procedures. Socio-demographic and behavioral data regarding children and parents were collected through a questionnaire completed by the parents.

---

**RESULTS**

**Multivariate analysis**

Performed on the final model that includes the significant variables at the bivariate level (P<0.2). DMFT and plaque indices were analyzed using the linear regression. Malocclusion components were analyzed using the multiple logistic regression.

1. DMFT score tends to:
   - Increase in children with bad oral health perception compared to those with good oral health perception (β=2.80; P<0.001)
   - Increase in brushing compared to breast-feeding (β=-0.78; P<0.001)

2. PI index tends to increase in a bad PI index associated with a good one (β=0.02; P<0.001)

3. OJ, OB and Xbite increase with (OR=1.20; 1.21; 1.17 respectively, P<0.05)

4. Increased sucking habit duration associated with shallower OB (OR=0.96; P<0.001) and posterior crossbite (OR=1.01; P<0.001)

5. Crowding is more prevalent among males (OR=1.62; P=0.01) and is associated with higher level of dental decay (OR=1.64; P<0.001)

---

**CONCLUSION**

1. Severity scores of oral health components (DMFT, PI and malocclusion) are higher in public than in private schools.

2. Lebanese children have more severe DMFT and malocclusion components than children in Western countries.

3. Dental health caries are associated with specific behavioral factors of both parents and children.

---

**RECOMMENDATIONS**

1. Education campaigns for parents should emphasize the importance of primary intervention, early screening, prevention and timely treatment.

2. Orthodontic screening should be integrated with other medical/dental screenings on an annual basis.

3. Mouth breathing and sucking habits should be evaluated by physicians and parents.

4. Further research is required to study:
   - Feasibility of creating affordable preventive/interventive orthodontic care centers
   - Cost effective insurance plan(s)

5. Long-term follow-up on the screened subjects to build up a Cohort.