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Disclosure

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Despite digitally induced social isolation, volunteerism is on the rise in many places around the world. While U.S. volunteer rates wax and wane - about one in four adults volunteer for an organization at least once a year – pockets of improvement abound. Demographic trends point to even more volunteering.

Survey of International Volunteer Activities of U.S. Dentists

Qualtrics Online Survey

May, 2018

19,679 Potential respondents contacted by e-mail
1,295 Total responses (6.6%)
Q: Your age is

79.2% age 51+
Q: Have you participated in volunteer dental activities outside of the U.S.?

- Never: 41.9%
Q: Have you participated in volunteer dental activities outside of the U.S.?

58.1%
Q: Are you interested in performing volunteer
dental activities outside of the U.S.?
Q: Why might you be interested in performing volunteer dental activities outside of the U.S.?
Q: Have you participated in volunteer dental activities outside of the U.S.?

41.9%
Q: Has/have your international volunteer experience(s) been positive or negative?
Q: Would you recommend this activity to other dentists?
Q: Have you volunteered with a religiously-affiliated organization?
Q: When did you first participate in a volunteer dental activity outside of the U.S.?
Q: What was your initial motivation to participate in a volunteer dental activity outside of the U.S.?
Q: What is your current motivation to participate in a volunteer dental activity outside of the U.S.?
Q: Have you been involved in international dental activities as:
Q: Where have you primarily volunteered?
While Millennials’ social engagement has been well documented, their juniors in Generation Z are proving prolific caregivers. The generation that includes people born from the mid-'90s to the early 2000s (and comprising more than a quarter of the U.S. population) are more interested in being actively engaged in the humanitarian causes they support than just providing a donation - a bright omen for the future of volunteerism.

A National Survey of U.S. Dental Students' Experiences with International Service Trips

R. Frederick Lambert, MA; Chloe A. Wong, BA; Karl F. Woodmansey, DDS, MA; Brianna Rowland, MBA; Steven O. Horne, MBA; Brittany Seymour, DDS, MPH

A 12-question web-based survey was distributed in May, 2017, to 22,930 students enrolled in U.S. dental schools. A total of 1,555 students responded, for a response rate of 7%. Respondents were evenly distributed across the four academic years. Approximately 22% (n=342) of the respondents had already participated in a service trip experience. 83% reported interest in a service trip while in school. 92% were interested after graduation. Reported motivations for international trips included the desire to care for the underserved and to obtain a more global view of health and disease.

Does your dental school offer international dental services trips?

- Yes: 72%
- No: 16%
- Don't know: 12%
How many times have you participated in an international dental services trip?

- Once: 66%
- 2-3 times: 26%
- More than 3: 8%
Top 10 countries for reported service trips

1. Cambodia - 4%
2. United States - 4%
3. Peru - 4%
4. Nicaragua - 4%
5. Ecuador - 6%
6. Haiti - 7%
7. Honduras - 9%
8. Mexico - 12%
9. Guatemala - 13%
10. Dominican Republic - 16%
Are you interested in participating in a future international dental services trip while in school?

- Yes: 83%
- No: 8%
- Don't Know: 9%
Do you plan to participate in an international dental services trip after dental school?

- Yes: 92%
- No: 47%
- Don't Know: 41%

Students’ participation in international service trips, by percentage of respondents to each question (N=1,555)
WHY DO THEY VOLUNTEER?

- I want to help the underserved
- I am interested in a global view of health, care, and disease
- I want to expose myself to new things
- It will improve my clinical skills
- I am exploring my career goals and options
- It will help me get into a residency program
- It is glamorous and exciting
- My peers and colleagues are doing it

- No, but I am interested
- Yes I have participated in a trip
• Web-based surveys were conducted in 2009 and 2016 via invitations emailed to the deans of all U.S. dental schools.
• In 2009, 81% of dental school deans responded to the survey. In 2016, 75% of dental school deans responded.
• From 2009 to 2016, the number of schools reporting dental student international experiences increased from 25 to 31 (11.5%) increase.
• In 2016, 65% of responding schools offered dental student international experiences.
• The number of deans reporting their students’ participation in international opportunities not officially sanctioned by the school decreased from 41 to 34.

Table 4. Number of international trips organized yearly at responding schools

<table>
<thead>
<tr>
<th>Number</th>
<th>2009</th>
<th></th>
<th>2016</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>1-2</td>
<td>12</td>
<td>50%</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>3-5</td>
<td>7</td>
<td>29%</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>More than 5</td>
<td>5</td>
<td>21%</td>
<td>7</td>
<td>28%</td>
</tr>
<tr>
<td>Total*</td>
<td>24</td>
<td>100%</td>
<td>25</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Not all schools responded to this question
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Total N</th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are dental students offered educational/clinical credits for participation after volunteering?</td>
<td>15 (60%)</td>
<td>10 (40%)</td>
<td>25</td>
<td>7 (27%)</td>
<td>19 (73%)</td>
<td>26</td>
</tr>
<tr>
<td>Are students in your school’s volunteer programs supervised on-site in the foreign countries by a faculty member?</td>
<td>23 (92%)</td>
<td>2 (8%)</td>
<td>25</td>
<td>25 (96%)</td>
<td>1 (4%)</td>
<td>26</td>
</tr>
<tr>
<td>Is there a language requirement for students to participate in any of your school’s volunteer trips?</td>
<td>0 (100%)</td>
<td>25</td>
<td>25</td>
<td>24 (92%)</td>
<td>2 (8%)</td>
<td>26</td>
</tr>
<tr>
<td>Are students provided accommodations on the volunteer trips?</td>
<td>20 (80%)</td>
<td>5 (20%)</td>
<td>25</td>
<td>23 (88%)</td>
<td>3 (12%)</td>
<td>26</td>
</tr>
<tr>
<td>Are there any combined courses taught simultaneously via the web or distance learning programs between your school and the partner institution?</td>
<td>1 (4%)</td>
<td>23</td>
<td>24</td>
<td>1 (13%)</td>
<td>7 (87%)</td>
<td>8</td>
</tr>
<tr>
<td>Are any of your international volunteer programs open to students from other dental schools?</td>
<td>8 (33%)</td>
<td>16</td>
<td>24</td>
<td>8 (25%)</td>
<td>24 (75%)</td>
<td>32</td>
</tr>
<tr>
<td>Does your school partner with other organizations or institutions to manage the international volunteer programs?</td>
<td>17 (71%)</td>
<td>8</td>
<td>24</td>
<td>22 (67%)</td>
<td>11 (33%)</td>
<td>33</td>
</tr>
</tbody>
</table>
Summary of the Data:

• 42% of U.S. dentists have participated in international dental activities.

• 22% of U.S. dental students have participated in international dental activities.

• 65% of U.S. dental schools offer international dental experiences for their dental students (an 11.5% increase since 2009)
Health Volunteers Overseas (HVO)

https://hvouusa.org/get-involved/programs/oral-health/

Haiti / Nepal / Laos / Peru / Tanzania
Dar es Salaam, Tanzania – Muhimbili University
Tanzania

Case Report
Upon visual examination, a hard, calcified mass was obvious in the anterior floor of the mouth. The mass fully covered the mandibular incisor teeth, prevented full closure of the lips at repose, dislocated the tongue from its natural rest position and interfered with speech. The curved shape of the mass resembled a butterflied shrimp. The thinner portion covered the mandibular anterior teeth, with the bulk of the specimen lying in the anterior floor of the mouth lingual to the mandibular anterior teeth.
Giant Calculus: Review and Report of a Case

Abstract
Dental calculus is a common oral finding. The term giant calculus is used to describe unusually large deposits of dental calculus. Several extreme cases have been reported in the dental literature. The specific etiology of these cases remains uncertain.

Case Report
A 53-year-old male presented to the Muhimbili School of Dentistry in Dar Es Salaam, Tanzania, with a chief complaint of a hard growth inside his mouth for the past 3 years. At the screening examination, an osseous tumor was suspected and the patient was referred to the Department of Periodontology for further evaluation.

The patient had no reported medical conditions and was not receiving any medications. He reported having been to a dentist only once previously, to have his teeth cleaned. Regarding his personal oral hygiene practices, he reported brushing his teeth twice daily with a plastic toothbrush. His initial plaque score was 97.9%; gingival bleeding score was 91.7%; calculus score of maxillary teeth was 98.7%; calculus score of mandibular teeth was 91.7%. Periodontally, the lower incisors had probings of more than 3 mm, with Class 3 mobility.
Giant Calculus: Review and Report of a Case

Treatment:
After examination, the possibility of an osseous tumor was discounted and the mass was diagnosed as a giant calculus. With careful manipulation, the mass was removed *in toto*. The mucosa underlying the calculus was erythematous and inflamed. After removal of the calculus, a panoramic radiograph was obtained. Radiographically, the mandibular incisors appeared to have significant external apical root resorption, especially in the central incisors.
Treatment:
After drying, the specimen weighed 12.5 grams. Macroscopically, the giant calculus specimen measured 4.5 cm long and 3.25 cm wide with a thickness of approximately 1 cm. The dried specimen was fragile and chalky in consistency, with obvious porosities and a pale yellow color. A radiograph of the removed specimen did not reveal any unusual inclusions and suggests the incremental layering of dental calculus deposition.
Treatment:
After drying, the specimen weighed 12.5 grams. Macroscopically, the giant calculus specimen measured 4.5 cm long and 3.25 cm wide with a thickness of approximately 1 cm. The dried specimen was fragile and chalky in consistency, with obvious porosities and a pale yellow color. A radiograph of the removed specimen did not reveal any unusual inclusions and suggests the incremental layering of dental calculus deposition.
Giant Calculus: Review and Report of a Case

Treatment:
The patient received complete debridement of all dental calculus, was counseled regarding personal oral hygiene practices, and recovered uneventfully. At the re-evaluation appointment, the plaque score was reduced to 15.5% and the gingival bleeding score was 13.3%.
Discussion

Deposits of dental calculus are common intraoral findings. However, calculus deposits rarely accumulate to extreme dimensions. Thirteen cases of calculus of varying extreme dimensions have been reported in the dental literature. The specific etiologies of these cases remain uncertain.

Minoru et al first used the term *giant calculus* in 2004 to describe an unusually large deposit of dental calculus. In 1726, Pierre Fauchard may have published the first case report of a giant calculus in *Le Chirurgien Dentiste on Traite des Dents*. He described a mandibular molar completely encased in calculus. The mass of calculus was approximately 20 times the size of the tooth itself.

The case presented here shares similarities with several previously reported cases, in that a single localized massive calculus was removed intact. Other authors have reported cases with generalized heavy calculus deposition covering many teeth. In both this case and several other reported cases of giant calculus, the calculus was initially suspected of being of neoplastic origin. Additionally, in both this and other reported cases, the calculus was of a size and position sufficient to impair normal oral functioning.

In the case reported by Chuong & Starns, a radiograph of the specimen showed a mandibular lateral incisor completely embedded in the calculus. Other reported cases had giant calculi with periodontally diseased teeth covered with such a great amount of calculus that the removal of the calculus resulted in removal of the teeth. With this case, the natural dentition was preserved, despite the mobility and external apical root resorption.

This patient was a 53-year-old male. Other reported cases have included 9 females ranging in age from 50 to 82, and 3 males ranging in age from 26 to 67. Our patient reported no medical conditions and took no medications. Patients in other reported cases were of similar good health. However, the patients of some reported cases had comorbidities, including carcinoma, diabetes, hypertension, anemia, polyserositis, malnutrition, congestive heart failure, and angina.

It was not determined whether the calculus played any causative role in the external apical resorption of the teeth to which it was attached. It seems plausible, however, that the torqueing forces of the giant calculus might have contributed to the resorption. It is surprising that the giant calculus did not break off by itself, with or without the attached incisors, or that the patient didn’t break it free himself. Although the patient self-reported brushing his teeth twice daily, this claim may be exaggerated, considering the size of the calculus.
The use of CBCT in endodontics should be limited to the assessment and treatment of complex endodontic conditions such as:

- Localization and delineation of infected root canal system or involved dental structures than other conditions, and the determination of appropriate treatment and prognosis.
- Periapical area planning to determine the extent location of root canal system and to evaluate the proximity of adjacent anatomic structures.
Life is a daring adventure, or nothing.

- Helen Keller