

What's up Doc?



In this new article series, *Periospectives* will highlight the work of members outside of their everyday periodontal practices.

Bridges to better oral health: New York-based AAP periodontists oversee dental health program at Kenyan school for girls

Just above the equator, about 15 miles north of Nanyuki, Kenya, is Daraja Academy, a secondary boarding school for academically gifted girls whose impoverished families do not have the means to educate them beyond the eighth grade. Each student receives uniforms, books, room and board, and a full scholarship; she “pays” her tuition in 120 hours of community service. Daraja—which means “bridge” in Swahili—brings these girls closer to their dreams of one day becoming teachers, bankers, accountants, and dentists.

The girls dance, they sing, they study. They play sports and write for the campus newspaper. They volunteer in hospitals and lead workshops on women’s empowerment and HIV prevention. They revel in their access and opportunity. But for years, despite their exuberance, they’ve covered their smiles.

Forty-one percent of Kenya’s populace relies on ponds, wells, and boreholes

for its water supply. Water from these sources is rife with fluoride, which has an average concentration of 4.14 milligrams per liter in the country’s surface and ground water. The World Health Organization sets a safe concentration for fluoride in drinking water at 1.5 milligrams per liter.

Coupled with no access to dental care, exposure to high concentrations of fluoride during their formative years had left many of Daraja’s girls with large caries, gum inflammation, and severe dental fluorosis.

AAP member Yvonne Buischi, DDS, PhD, is inspired to help the students smile with confidence.

After attending a screening of the “Girls of Daraja” documentary in 2013, Dr. Buischi, clinical associate professor of Periodontology and Implant Dentistry at the New York University (NYU) College of Dentistry, wanted to develop a comprehensive oral health promotion project at Daraja. She enlisted the help of colleague Peter Loomer, BSc, DDS, PhD, chair of Periodontology and Implant Dentistry at NYU and director of Global Health for Oral Health Sciences at the university’s Global Institute for Public Health. Dr. Loomer, also an AAP member, has dedicated much of his career to closing the access-to-care gap in developing nations. In February

2014, with funding from NYU, the two travelled 7,300 miles to Daraja to explore the creation of an oral health program on campus.

The project officially launched in September 2017. During a six-day visit, alongside research collaborator Kimathi Mwangera, BDS, MPH, of Kenya Methodist University, Drs. Buischi and Loomer examined each Daraja student and provided her with individualized training on proper oral hygiene. The team also conducted seminars for students, staff, and administrators on preventing oral disease and on the value of overall health and wellness. Materials and equipment were donated by Henry Schein Cares, and Colgate-Palmolive supplied toothpaste, toothbrushes, and floss for each girl. Financial support was also provided by Do A Little, a fund of The San Francisco Foundation. Do A Little’s founder, Deborah Santana, served as executive producer of the “Girls of Daraja” film.

Most of the project’s 85 students had never seen a dentist before this. “The average number of caries per girl was almost six,” Dr. Buischi says, noting that a care provider at the nearby Huruma Dental Clinic treated each girl with fillings. The 2017 Economic Survey from the Kenya National Bureau of Statistics found that of the nation’s 45.4 million

residents, 1,149 were registered dentists; that's one dentist for about every 39,500 people. "Even if there were dentists," Dr. Buischi adds, "The girls' families couldn't afford them."

After all project participants underwent a one-month follow up with Daraja's clinical officer, 10 girls were deputized to check in with their peers on the care and keeping of their smiles. "Every Sunday, the leaders get together with their small groups. Each girl uses disclosing solution, and the leader checks to see where they have remaining plaque bacteria in their mouths, and asks if they need additional help with flossing or brushing," Dr. Buischi says.

Four months after the project kicked off, the team observed significant results: Where 75 percent of the students presented with gingivitis in September, fewer than 10 percent had bleeding gums during the doctors' follow-up visit in January 2018. Dr. Buischi also discovered that most of the girls shared what they learned about oral hygiene with their families during a four-week break in December.

"We asked them, 'Did you have a chance to talk to anybody in your village, in your community, in your families about what you learned with us?' They shared with friends, with people in their villages, and with other girls," she says. "They were happy about the opportunity to learn more, and they were happy to share with others."

And the students are looking to spread the knowledge to younger kids not too far from Daraja's 60-acre campus. "In a [neighboring] village, there's a school for children between five and 10 years old. The girls said, 'We want to train them as well as you trained us. Can you train us to be advocates of good oral health so we can go there and help them?'" Dr. Buischi says. "Dr. Loomer and I are going back at the end of March to deliver the training for them. This is our next step." The team has a third 2018 visit scheduled for September, and their long-term goal is to expand the project to include other schools in the East African nation.

The program's success has made a big impact on Dr. Buischi, who says that with every visit, she's "a little better... more fulfilled and happier with what I do." And for the girls of Daraja Academy, there will be an impact felt for many years to come. As one student wrote in an email to Dr. Buischi: "I am not changing my mind about being a dentist. I really want to do this so that I become great—just [like] you and Dr. Loomer." ■



Pictured left to right: Dr. Buischi, Daraja's Clinical Health Officer Gachu-cha Frances, and Dr. Loomer in Kenya.



Dr. Buischi shows a Daraja student how to properly floss.



Dr. Loomer and Dr. Buischi posed for a photo with Daraja students.