

Funded R25 International Practicum

Honduras

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Learning Objectives

Obtaining hands-on international experience in dentistry aligns with my future professional goal of becoming involved in international health organizations. Having this opportunity to provide free dental care to Hondurans further increased my understanding of working as a dentist in an international health setting. In addition, I learned how to establish and operate a dental clinic in a foreign country as well as how to implement prevention and education programs in schools.

Some cultural factors play a significant role in oral health status. Unlike patients seen in the States, the majority of Honduran patients did not understand how important it is to keep their natural teeth. As a group of six dental students, we performed approximately 800 procedures including restorations, root canal treatments, extractions, and prophylaxis. Of those 800 procedures, 50 percent was extractions and the other 50 percent was restorations. We put emphasis on restoring damaged natural teeth in order to preserve the functionality and longevity of oral health. In addition, uncommon carious patterns were found among Honduran patients. The majority of Honduran patients exhibited dental caries on anterior teeth because Pepsi and Coke have become major substitutes for water.

In order to provide high quality of dental care for patients, every dentist requires to perform with some degree of speed and accuracy consistent with patients' comfort. I was able to improve my clinical skills since anterior teeth restorations require meticulous clinical approach to achieve esthetically pleasing outcomes. I also gained some speed while restoring several carious lesions for each patient. Furthermore, I was able to improve my communication skills in Spanish. Through interactions with Honduran

interpreters, I learned how to put some dental terminologies into layman's terms.

Oral Health Status in Honduras

Dental caries are an indicator of overall health (Bratthall, Petersen, Stjernsward & Brown, 2006). Inadequate oral health can have impact on other health issues like heart diseases (Bratthall, Petersen, Stjernsward & Brown, 2006). Unlike other diseases, common oral health problems such as dental caries and periodontal problems are easier to be preventable and curable than other health conditions such as cancer, HIV and AIDS (Brattall, Petersen, Stjernsward & Brown, 2006).

According to Bonecker and Cleaton-Jones (2003), the incidence of dental caries in children with primary dentition (ages 5-6 years) and permanent dentition (ages 11-13 years) has continued to decline over the past 30 years in Latin America and the Caribbean. Although the prevalence of dental caries decreased over a period of time, Boneker and Cleaton-Jones (2003) indicated that it did not meet the World Health Organization (WHO) goal for the year 2000.

The reduction in dental caries incidence may have been the result of fluoridation. The Pan American Health Organization (PAHO) initiated both water and salt fluoridation to prevent dental caries among school aged children in 1994 (Estupinan-Day, 2004). The prevalence of dental caries was assessed and compared between pre- and post-fluoridation phases by using Decayed/Missing/Filled Teeth (DMFT) index among 12-year-old children in Latin America and the Caribbean (Estupinan-Day, 2004). For example, the DMFT for Hondurans was 4.00 in comparison to a neighboring country, El Salvador that was 1.36 (Estupinan-Day, 2004). The cost-benefit analysis was completed for some selected countries including Honduras. It turned out that Honduran government

could save \$122 on dental treatments for every dollar spent on fluoridation (Estupinan-Day, 2004). Fluoridation made significant improvements in the dental caries incidence over a period of time. Honduras was categorized as an emergent group (DMFT>5) until 1996, but it moved down to a growth group (DMFT 3-5) in 2004 (Estupinan-Day, 2004). The data showed that fluoridation in Honduras was not only cost effective but also successful in dental caries prevention (Estupinan-Day, 2004).

To understand the prevalence of dental caries better, the Significant Caries Index (SiC index) was proposed in 2000 (Nishi, Stjernsward, Carlsson & Bratthall, 2002). SiC index is the average DMFT of the 30 percent of population with highest caries (Nishi, Stjernsward, Carlsson & Bratthall, 2002). SiC index and DMFT could be used together to design better-focused public health programs targeting high dental caries risk groups (Nishi, Stjernsward, Carlsson & Bratthall, 2002). The SiC index value for Honduras in 1997 was 7.5 in comparison to other countries ranging from 2.8 to 5.7 (Nishi, Stjernsward, Carlsson & Bratthall, 2002). In spite of seeing a reduction in dental caries during the past 30 years, there is still more to be done to improve the oral health status of Hondurans.

Health Service Delivery Model

The Shoulder-to-Shoulder organizational model has been successful in utilizing volunteers and implementing sustainable programs in Honduras (Heck, Bazemore & Diller, 2007). The Shoulder-to-Shoulder organization was established in 1990. Since 1990, the community clinics were built in Western Intibuca. Honduran staff works at the clinics all year round, so when U.S. professional volunteers visit, they get to work with Honduran staff. By implementing various programs in partnership with local

communities, the organization has devoted its financial resources and manpower to improve several health related issues including nutrition, water, oral health, primary care, Honduran health professional training and so forth (Heck, Bazemore & Diller, 2007). Unlike other traditional NGOs, the Shoulder to Shoulder encourages volunteers to continue to come back for a short period time and serve the Honduran community. The organization model accommodates both Hondurans and volunteers' needs and has been successful in benefiting both entities. Their 20-year service and partnership with local communities show that the Shoulder-to-Shoulder model can be applied to any other NGO efforts.

References

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Personal Experiences

The Shoulder-to-Shoulder organization has two medical clinic sites in Intibucá, Honduras. Two clinics were one and a half hour away from each other. I was assigned to provide dental services in Concepcion during my first week of the trip and in Santa Lucia during my second week. Both clinic sites include a consultation room, a birthing room, a laboratory, a surgery room, an x-ray room, a pharmacy, and a fully equipped dental clinic. Especially, the dental clinic contains four operatories and an x-ray machine, which are equipped to provide full dental services for patients such as amalgam/composite restorations, extractions, root canal treatments, and minor surgeries (e.g. alveoloplasty, 3rd molar extractions, etc.). Surprisingly, the dental clinics were designed very similar to the College of Dentistry at the Ohio State University. I appreciated them even more by knowing that my preceptor, Dr. Tepe started these dental practices from scratch in Honduras.

A Honduran dentist operates each dental clinic all year round. Minimal fees are charged for dental services performed, but no patients are denied for services if they cannot afford any services. During my two weeks of stay, dental services were provided for free of charge. As a dental brigade, I was responsible for:

- Diagnosing and completing treatment plans for patients.
- Providing patients with several necessary treatments including restorations, extractions, and prophylaxis.
- Completing oral examinations and providing Fluoride varnish for children in K – 6th grade.

Before our arrival to Honduras, Honduran health promoters handed out appointment

cards to people living in surrounding areas. On daily basis, there were 28-35 patients scheduled for free dental treatments, but on the last day of our service, 60 Hondurans showed up in the clinic and waited to be seen since six in the morning. Each of us was assigned with a Honduran interpreter who assisted us with translating and suctioning. Having an interpreter was definitely helpful for me to communicate clearly with patients even though I speak Spanish. In addition, it was a good learning opportunity for me to practice four-handed dentistry. In the end, I believe all Honduran patients received the same standard of dental care as patients did at the Ohio State University.

As part of the prevention and education program, a Honduran health promoter had an education session about good oral hygiene technique and its importance while patients were waiting outside of the clinic. Additional prevention and education activity was to visit two schools in order to give oral hygiene instructions, assess oral health status and provide Fluoride varnish for the entire school children. Interacting with Honduran children was my favorite part of the trip. However, it was heartbreaking for me to see how many children neglect taking care of their oral health.

Traveling Tips

Language: Speaking Spanish is not required, but helpful. All Honduran interpreters lived in the States for at least 2 years, so none of us experienced any difficulties with communicating with patients.

Money: The exchange rate was 18.1 Lempiras to 1 U.S. dollar. I brought a total of \$100 including \$40 that was required for an airport tax. I only used money to buy bottled water and some souvenirs.

Safety: There were no safety concerns in both Santa Lucia and Concepcion. There were

no nightlife activities in both areas.

Living conditions: be prepared for cold showers with no water pressure. Be sure to bring a mosquito net for a bed. Be aware that there are lots of bugs and lizards present everywhere.

Foods and water: The major foods are rice, beans and plantains. Be sure to bring snacks if you are used to eat in the States. Drink bottled water and never drink tap water even for brushing teeth.

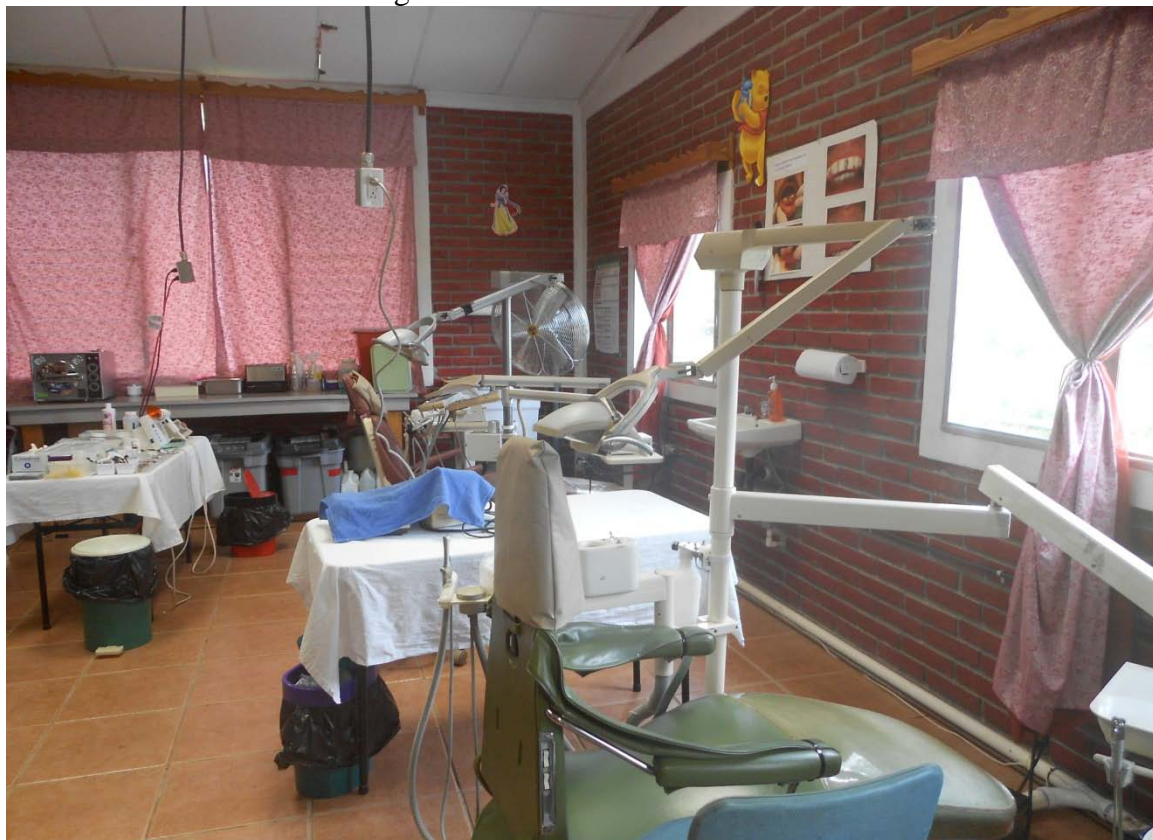
Photos



OSU Dental Students & Preceptors (Dr. Tepe (Right) & Dr. Burns (Left))



Patients waiting to be seen at the Santa Lucia dental clinic



Dental clinic at Concepcion



Dental clinic at Concepcion



Oral health education at Concepcion waiting area



Women dormitory at Santa Lucia



Dining area at Santa Lucia



Family style dinner



Oral health screening at K-6th grade school



Taken with children after oral health screening



Santa Lucia