

Expanding and Evaluating an Oral Health Awareness Initiative Utilizing a Non-Dental Professional Workforce in Resource Challenged Communities in Rwanda

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University of Rwanda

Rwanda Village Concept Project

Program/Project Purpose:

Most people in rural villages in Rwanda do not have access to dental professionals and when they do it is typically limited to extractions at local hospitals. This scarcity of oral health care providers creates an opportunity to build a workforce to promote and expand oral health education for the people of Rwanda. In the rural village of Rukira, Huye District, smooth surface caries were evident on the anterior teeth of many children – a classic sign of preventable, poor oral health which is evident without doing a clinical exam. Though no studies have been conducted, many health professionals note that diets are rapidly changing in Rwanda as access and affordability of processed foods like soda are becoming more available. To improve oral health literacy in rural Rwanda in the face of these challenges, a work plan was developed for the Rwanda Village Concept Project (RVCP) a health sciences university student-led organization which works in rural villages.

Through this oral health awareness initiative, it is expected to:

- 1) Increase the oral health knowledge among RVCP members, the majority of which are not dental health care professionals;
- 2) Establish a sustainable interprofessional program using a train-the-trainer model; and
- 3) Increase the oral health knowledge and outcomes in rural villages in the Southern Province of Rwanda.



Figure 1. Limited access to dental professionals in rural villages. This community outside of Butare, Rwanda is one in which RVCP volunteers.

Structure/Method/Design:

NIH and ADA guidelines for oral health education were used as a reference in designing and adapting the lessons in the Oral Health Awareness Initiative. The plan was reviewed by the student members of RVCP, and revised to incorporate traditional and cultural values as well as interactive elements like song. RVCP leadership suggested that primary school children should be targeted in this initiative as they are still forming their hygiene habits and are likely to share with family members what they learned at school. The structure of the Awareness Initiative included surveys, two sessions, and a toothbrush/paste distribution. Session 1:

- Oral Anatomy and Function: What is in our mouths? What do we use our mouths for? Why is a healthy mouth important?

Session 2:

- Oral Hygiene: How do we keep our mouth healthy?
- Caries pathogenesis/Nutrition Information
- Chewstick history lesson (Fig. 2A)
- Oral hygiene instruction/demonstration (Fig. 2B)

Two primary schools (approx. 400 students) were visited during the train-the-trainer phase with the University of Maryland students. RVCP volunteers have visited 8 schools independently through the Oral Health Awareness Initiative (approx. 1500 students – 1900 total).

Structure/Method/Design: (cont'd)

Figure 2. Oral Health Work plan.

A. In Session 1, students learn about the use of chew sticks in Rwanda. Adapting curriculum resources to include local culture.



"Chew Stick Usage," <http://www.theexotique.com/did-u-know-1/>

B. In Session 2 elementary students demonstrate what they have learned about brushing their teeth and the students discuss what they did well and could improve.



Outcome & Evaluation:



Figure 3. Survey data collection. RVCP collect survey data with students to evaluate baseline knowledge, current oral hygiene habits, and disease burden. These surveys are done in Kinyarwanda and were overseen by RVCP volunteers.

Is the following food bad for your teeth?

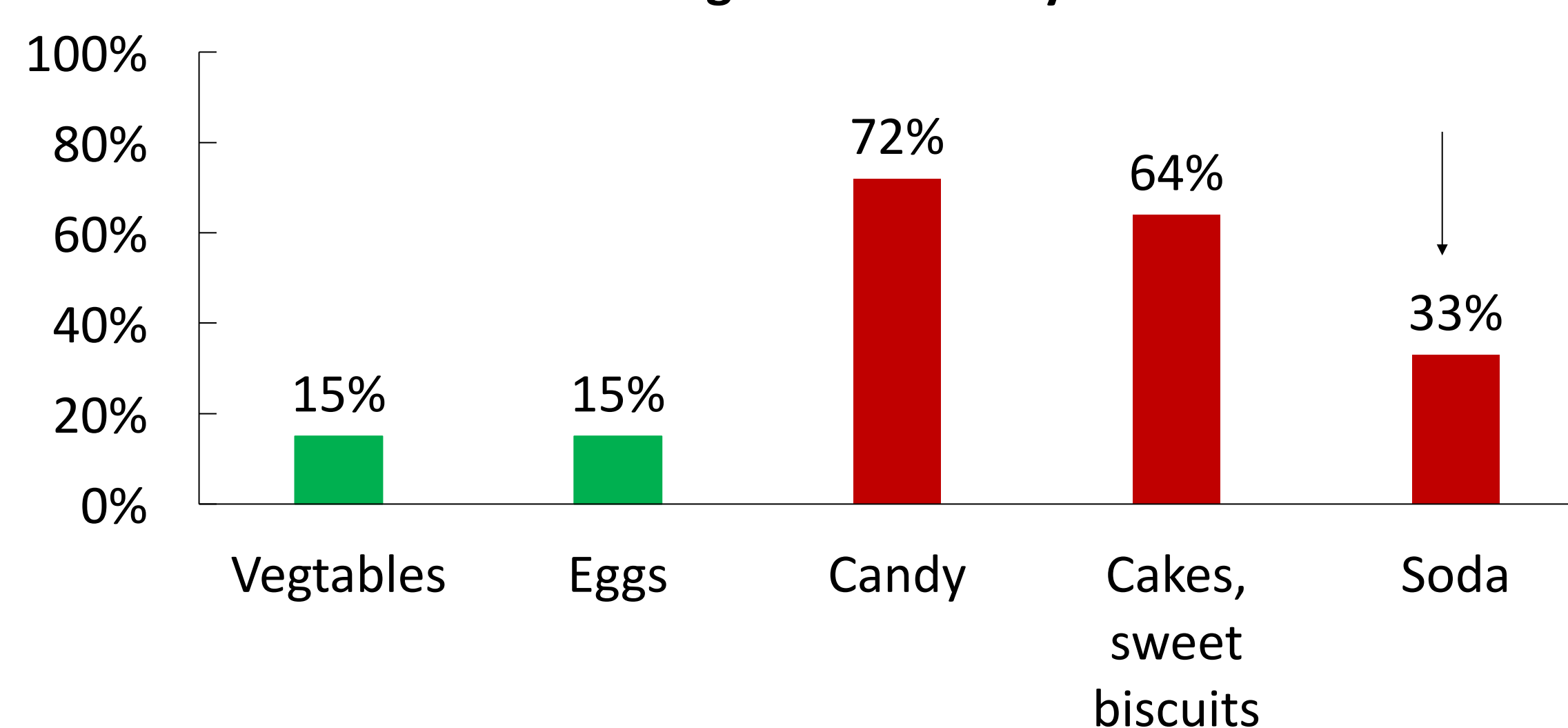


Figure 4. Perceived nutritional value of common foods n=42. Students were asked if vegetables, eggs, candy, cakes, and soda were bad for their teeth. Most students knew vegetables and eggs were not bad for their teeth (85%) and most students knew candy and cakes were bad for teeth (72%, 64% respectively) but few students knew soda was bad for their teeth (33%). After collecting this data in a baseline survey, University of Maryland students emphasized the importance of educating students on nutrition to counter the soft drink advertising conducted in the country.

Outcome & Evaluation: (cont'd)

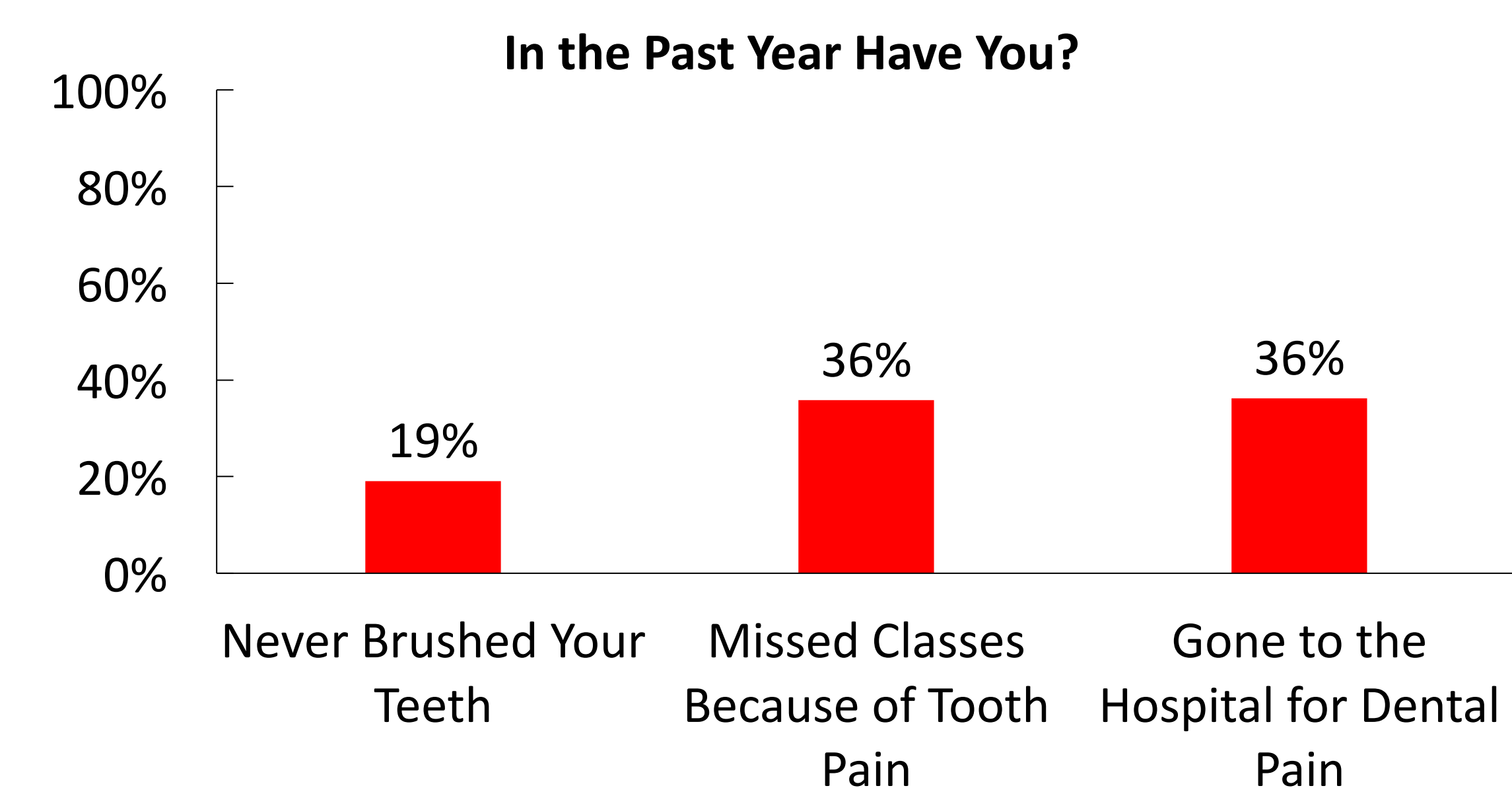


Figure 5. Oral hygiene habits and oral disease experience n=204. Other questions in the survey asked whether students brush their teeth, and if they have missed school or gone to the hospital due to dental pain. This data shows a need for oral hygiene education in the children surveyed.

Going Forward:

Community partnerships are integrated into every part of this project and are crucial to its overall success. Because there are so few oral health professionals in Rwanda, educating non-dental health professionals as well as community leaders is essential. Teaching non-dental professionals about prevention and basic hygiene concepts is expected to have a much more profound and lasting impact than relying on foreign oral health care professionals going to Rwanda to provide care. For these reasons, maintaining relationships across continents is vital to the success of this projects. Leveraging social media allows for the maintenance and growth of the relationship as well as continuous communication, feedback and charity support. Progress and challenges will be tracked using surveys as RVCP continues the Oral Health Awareness Initiative.

Figure 6. Establishing a sustainable, interprofessional program.

A. Students from the University of Maryland and University of Rwanda in August 2016 during the train-the-trainer phase of the project.
B. RVCP members implementing the Oral Health Awareness Initiative at one of several villages during 2017.



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