Implementation of Hypertension and Diabetes Chronic Disease Management in an Adult Group in Les Bours, Haiti

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Abstract

Background
Due to extreme poverty and lack of health services, most Haitians have never received primary healthcare or evaluation for common chronic diseases.

Method
Leininger’s Culture Care Theory was used to design, implement, and evaluate a hypertension and diabetes management program for a non-governmental organization’s Haitian staff members. During three trips (October 2013 through March 2014), 48 participants were evaluated, treated, and given culturally appropriate health education to enhance understanding and compliance. Pre and post hypertension and blood glucose measurements were recorded. Short interviews solicited participant feedback.

Results
Only 19% of participants were diagnosed with hypertension and none with diabetes. Paired t-tests showed a statistically significant reduction in blood pressure following treatment. Participant interviews identified barriers to medication access and compliance.

Conclusions and Clinical Implications
The project produced recommendations for establishing primary care or disease management programs in developing countries: secure local clinical staff, develop local program funds, work with local suppliers, form intra-organization partnerships, and design culturally appropriate education.

Keywords
Haiti, research, hypertension, diabetes, culture

Haiti is recognized by the United Nations (UN), the World Health Organization (WHO), and the Pan American Health Organization (PAHO), as the most impoverished nation in the...
Western Hemisphere (PAHO 2006, 2007; WHO, 2012a). Because of the extreme poverty and lack of social/health service infrastructure, most of the 10 million residents have never received ongoing primary healthcare evaluation and/or treatment for common chronic diseases such as hypertension (HTN), type 2 diabetes mellitus (T2D), (PAHO, 2006, 2007). It is estimated that 30% of Haitians have HTN and 10% have T2D (WHO, 2012a).

A Midwest based, private non-profit organization (hereafter referred to as the organization) operates an orphanage in Port-au-Prince and a school and medical clinic in the Sibert / Les Bours area outside the city. While the 250 children at the school and orphanage receive regular well child and acute care from visiting American medical teams, none of the organization’s 48 adult employees receive ongoing primary care or have been screened or treated for HTN or T2D. To address this need, the organization’s leadership wanted to develop and implement a sustainable primary healthcare program for their staff that they would eventually expand to staff families and residents of surrounding communities. The program’s long-term objective is to improve employees’ health and productivity while reducing morbidity and mortality. This program’s core is a disease management component that provides initial and ongoing assessment and management of HTN and T2D. This paper describes the research project that designed, implemented, and evaluated this disease management program.

**Literature Review**

A literature review uncovered information about Haiti’s population and current healthcare system as well as other disease management and health promotion efforts.

**Educational Factors**

Haiti has a very low literacy rate, with approximately 47% of the urban and 80% of the rural population unable to read (WHO, 2010). About half of school-aged children do not attend school (UNICEF, 2012; USAID, 2013; WHO, 2010). Of the educated population, 72% have had only primary school education, often from inadequately staffed and equipped facilities. The design of any health promotion or disease management programs must take into account the target population’s education level.

**Healthcare Considerations**

Haitian medical care was inadequate even before the devastating 2010 earthquake. Physicians and nurses, both before and after the disaster, earned minimal salaries and frequently were unpaid for months (DeGennaro, DeGenarro, & Ginzburg, 2011; DeGenarro, 2011; Garfield & Berryman, 2010). Prior to the earthquake, only 30% of healthcare facilities were public, with most located in the main cities (WHO, 2010). Since most public facilities require cash payment, few residents can afford basic or emergency care.

More than 70% of Haiti’s healthcare services are provided by international volunteer organizations and non-government organizations (NGOs). Even with this assistance, only about 40% of the population, primarily those in urban areas, has access to healthcare services (Brown, 2010; WHO, 2010). Non-Haitian and outsider efforts to help rebuild healthcare facilities and educate Haitian healthcare workers will need to continue for many years (DeGennaro et al., 2011; DeGenarro, 2011; Garfield & Berryman, 2010; Secor, 2011; USAID, 2013). While Haiti’s healthcare crisis is pervasive and persistent, efforts that provide ongoing, sustainable primary and disease management care are most likely to have a lasting impact.

**Disease Management**

Wolber and Ward (2010) discussed the implementation of a nurse-provided T2D case management program in a primary care clinic. Robertson (2012) presented an extensive literature review of the nurse practitioner’s role in
T2D management. Olivier and Jamero (2012) described a clinic’s role in blood pressure management in a low-income population. Sloand and Groves (2005) reviewed a community-oriented, primary care nursing model used by nurse practitioners to provide primary care in an international setting. Niska and Sloand (2010) study of ambulatory medical care in rural Haiti found that 52% of women and 37% of men aged 50 and above had HTN.

In a randomized controlled study conducted in impoverished, low literacy communities around Karachi, Pakistan, researchers found they could increase maternal compliance with routine infant immunization by offering direct, in-home, or small-group neighborhood education using simplified health education and low literacy pictorial teaching aids. (Owais, Hanif, Siddiqui, Agha, & Zaidi, 2011). Mothers who received such education exhibited better compliance and retained more knowledge than mothers who received the standard government health promotion teachings.

**Health Promotion**

Pender's Health Promotion Model emphasized using personal strengths, resources, and attributes to promote healthy lifestyle changes (Pender, Murdaugh, & Parsons, 2002). Research has shown that both individual and community health can be improved by emphasizing self-efficacy, and defining benefits and barriers that influence health (e.g., cultural, environmental, social, financial, and/or educational factors) (Pender et al., 2002; Sakraida, 2010). Pender stressed the importance of sensitivity to the client’s cultural heritage for promoting and maintaining positive behavioral changes.

Several factors cause Haitians to have little knowledge about health promotion: a struggling government, a lack of a formal public education system, widespread functional illiteracy, abject poverty, and subsistence-level living (PAHO, 2006, 2007). In most of the developed Western world, general health promotion is taught routinely in schools, through government public health programs, and via NGO media campaigns. Websites from several governmental agencies and NGOs provide extensive information on T2D, HTN, and cardiovascular health (Table 1) and these resources were used in this project’s development.

**Theoretical Framework**

Leininger was one of the first nursing theorists to focus on culturally congruent care relationships. One of the key aspects of Leininger’s Culture Care Theory (CCT) is the need for the researcher to develop relationships with the people group to understand their beliefs, norms, environment, and ideals (McFarland & Wehbe-Alamah, 2015; Wehbe-Alamah & McFarland, 2015). This project involved English speaking, American healthcare professionals working in a developing nation where Haitian Creole is spoken and cultural norms and standards differ significantly from their own. Because the CCT was developed for use in such transcultural contexts, it was chosen to guide this project’s implementation and evaluation.

Another important aspect of Leininger’s theory is the differentiation between *emic* and *etic* knowledge. *Emic* knowledge is the generic knowledge and practice learned and transmitted within a people group. In this project, the *emic* knowledge is the Haitians’ understanding, experiences, traditions, cultural practices, and health practices (McFarland & Wehbe-Alamah, 2015). In contrast, *etic* knowledge is the professional, learned knowledge that outsiders have. Leininger coined the term *culturally congruent care* to refer to “culturally based care knowledge, acts, and decisions used in sensitive and knowledgeable ways to appropriately and meaningfully fit the cultural values, beliefs, and lifeways of clients for their health and wellbeing, or to prevent illness, [or face] disabilities, or death” (McFarland & Wehbe-Alamah, 2015, p. 14). To provide such care, American healthcare providers with etic knowledge need to understand and
be sensitive to the Haitian culture and their patients’ *emic* knowledge. In this project, political, economic, educational, religious, ethnohistorical, social, and cultural factors affecting participants’ health practices were considered within the context of the Haitian worldview.

### Methods

The purpose of this translational research project was to determine if, in an area with no primary healthcare, a sustainable HTN and T2D identification and treatment program could maintain blood pressure (BP) below 140/90 and T2D hemoglobin A1c levels below 7.5% among an NGO’s Haitian employees during a five-month period. In addition, qualitative interviews were conducted to discover the participants’ views and beliefs about the project.

### Setting and Participants

The participants were a convenience sample of 48 adult Haitian employees of an American relief organization that for eight years has operated a primary school, orphanage, women’s job training program, and community clinic outside of Port-au-Prince, Haiti. Each year, dozens of American teams provide short-term medical care, construction, staff training, educational

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**Table 1. Health Promotion and Medical Guideline Resources**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Resources</th>
<th>Internet Address</th>
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</thead>
<tbody>
<tr>
<td>American Heart Association (AHA)</td>
<td>Guidelines, education, and health promotion strategies related to cardiovascular health, hypertension, and stroke prevention (AHA, 2014)</td>
<td><a href="http://www.heart.org/HEARTORG/">http://www.heart.org/HEARTORG/</a></td>
</tr>
<tr>
<td>U.S. Preventative Services Task Force (USPSTF)</td>
<td>Type 2 Diabetes Mellitus guidelines (USPSTF, 2008)</td>
<td><a href="http://www.uspreventiveservicestaskforce.org/uspsft/uspsdiab.htm">http://www.uspreventiveservicestaskforce.org/uspsft/uspsdiab.htm</a></td>
</tr>
</tbody>
</table>
support, and childcare assistance. American donors fund all of the staff salaries and operating expenses.

The organization’s employees work as teachers, childcare workers, laundry women, cooks, groundkeepers, nurses, and security staff. During the five-month study, new employees hired by the organization were subsequently incorporated in the study. Although the schoolteachers and two clinic nurses have had some formal training, many of the staff have had minimal formal education, and several are functionally illiterate. While these employees have received acute healthcare from the American volunteer medical teams that visit every three months, they have never been assessed or treated for chronic health conditions.

Institutional Review Board

The University of Michigan–Flint Institutional Review Board (IRB) deemed the project “Not regulated by IRB” under the Medical Practice and Standard Public Health Surveillance or Preventive Activities designations. In addition, the project was approved by the organization’s Founder/Executive Director and Medical Coordinator. Since some staff were unable to print their names, a basic oral consent was read to each person prior to testing. All staff were told that participation was voluntary and no coercion was used to force participation. Staff also were informed they could withdraw at any time, and some subsequently chose not to have their BP or BS tested.

Implementation and Data Collection

This study’s Principal Investigator (PI) has taken 14 volunteer medical trips to Haiti over the past six years. During these trips, he has become familiar with the staff, local culture, and many of the ethnographic factors affecting life in Haiti, although he does not speak Creole. The other two investigators, who are experts in the culture care theory and qualitative data analysis, played a key role in the study’s design and evaluation.

Using the organization’s bilingual Haitian translators, the PI discussed the project with two Haitian staff nurses. These nurses agreed to help maintain the HTN and T2D program at the study’s conclusion. The translators also helped convert the educational materials into the native language. Colorful laminated posters—which included pictures of Haitians getting their blood pressure and blood sugar tested and stressed the importance of controlling these readings—were developed (Figure 1) and displayed around the clinic.

All the organization’s Haitian staff were evaluated at least twice during the study. While most had been employed there for at least a year, an increase in the number of children at the orphanage resulted in the hiring of seven new childcare workers between the October and January visits, and these were incorporated into the study. Additionally, sickness, absence, or family issues caused several staff members to miss an evaluation. In total, 48 different Haitian staff were evaluated for blood pressure (BP) and random blood glucose (RBG) over the course of the five-month study, with 37 participants in October 2013, 44 participants in January 2014, and 41 participants in March 2014. Brief interviews were conducted with six of the treated HTN participants in March 2014 to ascertain their thoughts and recommendations regarding the project. Analysis of qualitative findings yielded valuable program feedback with some participants noting reductions in fatigue, headaches, or other adverse physical symptoms as a result of participating in this study.

Haitian staff employee participants were invited to have well-patient visits with appropriate testing and all chose to participate. The translator facilitated communication between the PI and participants. Each participant’s assessment dates, concerns, weight, height, blood pressure, random blood sugar readings, diagnoses, and prescribed medications were recorded in a simple healthcare chart. To insure con-
sistency, the PI personally conducted all tests using the same battery powered digital sphygmomanometer (blood pressure cuff) and digital finger stick glucometer. A digital bathroom scale and tape measure were used to measure patient weight and height and calculate Body Mass Index (BMI). Individuals with elevated blood pressure and blood glucose readings were diagnosed and treated by the PI according to conventional standards (Table 1) and given enough medication to last until the next medical team visit. Participants also were individually educated by the PI at the time of diagnosis.

**Hypertension Care Management**

In accordance with conventional standards (AHA, 2014; USPSTF, 2007), HTN was diagnosed with a blood pressure reading higher than 140/90. These patients were prescribed medications available from a local pharmaceutical supplier: hydrochlorothiazide 25 mg, lisinopril 10 mg or 20 mg, and/or metoprolol 50 mg.

**Diabetes Care Management**

Patients with random blood glucose above 200 mg/dL after two hours since last food were diagnosed with hyperglycemia and tested for hemoglobin A1C level using a digital Bayer A1cNow® hemoglobin test. Readings greater than 6.5% indicated a T2D diagnosis (ADA, 2014; USPSTF, 2008; WHO, 2011).

Bayer A1cNow® tests, a relatively inexpensive means of diagnosing T2D and monitoring
diabetes control, were trialed in the U.S. Once in Haiti, however, the tests produced error messages. Communication with Bayer customer service uncovered a temperature issue. While the ambient temperature at outdoor clinics was around 95°F (35°C), the test was designed to work between 64–82°F (18–28°C). Since no climate-controlled space was available, an insulated fabric cooler, reusable freezer packs (stored in the organization’s freezer), and a thermometer were used to create a controlled test environment that allow the tests to be used successfully.

Patients requiring T2D treatment were prescribed metformin (500 or 1,000 mg BID) or glipizide (10mg QD or BID). Insulin was not used because it is expensive and impractical in Haiti as it rapidly degrades in excessive heat and most inhabitants lack refrigerated storage. In addition, without public trash containers or collection, disposing of syringes would be a health hazard.

### Nutrition Education Intervention

Haiti is a mountainous, tropical Caribbean island with a hot, humid climate that allows many fruits and vegetables to be grown year round and sold by street vendors. Outside the cities, most Haitians practice subsistence farming. Despite the availability of fresh produce, most residents eat starchy bulk foods such as rice, beans, and spaghetti seasoned with readily available high sodium flavorings such as Maggie® bouillon (Babaria, 2013). Vegetables usually are consumed as part of a seasoned stew or added to a sauce served over rice. Many people chew sugar cane stalks to alleviate hunger. Residents often use their limited funds to purchase small packages of crackers or cookies. Many of the poorest Haitians consume mud cookies made of salt, oil and dirt to help alleviate hunger (Chatterjee, 2008; ProQuest, 2013).

Conventional American etic teachings about nutrition were adjusted for Haitian daily life. Because the Haitian nurse could teach participants in a culturally sensitive way, the PI educated her about nutrition. Colorful posters were hung in the clinic, employee washroom, and kitchen and encouraged staff to eat more fruits and vegetables (Figure 1). At the staff clinics, the Haitian nurse gave several 15-minute presentations to the staff and family members using a 12-page Haitian Creole nutrition picture booklet (Miller, 2014). The nurse gave examples of desirable and undesirable seasonings and suggestions for reducing the use of salty seasonings. Participants were encouraged to limit soda consumption and drink more bottled water. This was an example of repatterning or restructuring of actions or behavior (McFarland & Wehbe-Alamah, 2015). To increase participation, large plastic bowls of fresh fruits and vegetables were given as door prizes.

### Study Results

#### Statistical Analysis

The participants’ descriptive statistics are shown in Table 2. The overall study group was 66.7% female (n = 32) and 33.3% male (n = 16), and ranged in age from 18 to 59 years (mean 35.4 yrs, SD 9.9). BMI values ranged from 17.2 to 41.3 kg/m², with a group mean BMI of 24.0 (SD 4.9), which was within the “normal” BMI range of 18.0 to 25.0.

**Blood pressure results.** In October 2013, systolic blood pressures ranged from 94 to 189 mm Hg, with a mean of 127.5 (SD 21.85). Diastolic readings ranged from 54 to 112, with a mean of 81.7 (SD 13.48). In the October 2013 staff group, nine of the 37 participants (24.3%) exhibited HTN readings above 140/90. These participants were given enough antihypertensive medication to last until the January 2014 visit. All staff were re-evaluated in January 2014, with seven of 44 (15.9%) exhibiting HTN. The number of participants was higher because new staff had joined the organization since October 2013. Several participants had run out of or misplaced their HTN medication, and one experienced adverse symptoms shortly after starting the medication and discontinued it. In March 2014, 41 staff were evaluated and only five exhibit-
<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>32</td>
<td></td>
<td></td>
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<tr>
<td>Height (in)</td>
<td>42</td>
<td>57.0</td>
<td>73.0</td>
<td>64.5</td>
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</tr>
<tr>
<td>Weight (lbs)</td>
<td>42</td>
<td>95.0</td>
<td>280.0</td>
<td>142.3</td>
<td>33.00</td>
</tr>
<tr>
<td>BMI</td>
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<td>17.2</td>
<td>41.3</td>
<td>24.0</td>
<td>4.86</td>
</tr>
<tr>
<td>Age (years)</td>
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<td>18</td>
<td>59</td>
<td>35.4</td>
<td>9.86</td>
</tr>
<tr>
<td>Oct. 2013 Systolic BP (in Hg)</td>
<td>37</td>
<td>94</td>
<td>189</td>
<td>127.5</td>
<td>21.85</td>
</tr>
<tr>
<td>Oct. 2013 Diastolic BP (in Hg)</td>
<td>37</td>
<td>54</td>
<td>112</td>
<td>81.7</td>
<td>13.48</td>
</tr>
<tr>
<td>Oct. 2013 Staff Dx with BP &gt; 140/90 (%)</td>
<td>9 / 37</td>
<td></td>
<td></td>
<td>24.3%</td>
<td></td>
</tr>
<tr>
<td>Oct. 2013 Random Blood Glucose (mg/dL)</td>
<td>36</td>
<td>77</td>
<td>145</td>
<td>108.6</td>
<td>20.08</td>
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<tr>
<td>Oct. 2013 Hrs since eating (hrs)</td>
<td>35</td>
<td>1</td>
<td>10</td>
<td>3.0</td>
<td>1.79</td>
</tr>
<tr>
<td>Jan. 2014 Systolic BP</td>
<td>44</td>
<td>96</td>
<td>187</td>
<td>128.0</td>
<td>20.60</td>
</tr>
<tr>
<td>Jan. 2014 Diastolic BP</td>
<td>44</td>
<td>61</td>
<td>119</td>
<td>84.8</td>
<td>11.52</td>
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<tr>
<td>Jan. 2014 Staff Dx with BP &gt; 140/90 (%)</td>
<td>7 / 44</td>
<td></td>
<td></td>
<td>15.9%</td>
<td></td>
</tr>
<tr>
<td>Jan. 2014 Random Blood Glucose (mg/dL)</td>
<td>40</td>
<td>78</td>
<td>159</td>
<td>107.9</td>
<td>20.28</td>
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<tr>
<td>Jan. 2014 Hrs. since eating (hrs)</td>
<td>41</td>
<td>1</td>
<td>10</td>
<td>3.2</td>
<td>1.85</td>
</tr>
<tr>
<td>Mar. 2014 Systolic BP</td>
<td>41</td>
<td>87</td>
<td>163</td>
<td>122.5</td>
<td>17.72</td>
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<tr>
<td>Mar. 2014 Diastolic BP</td>
<td>41</td>
<td>58</td>
<td>111</td>
<td>78.7</td>
<td>12.39</td>
</tr>
<tr>
<td>Mar. 2014 Staff Dx with BP &gt; 140/90 (%)</td>
<td>5 / 41</td>
<td></td>
<td></td>
<td>12.2%</td>
<td></td>
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<tr>
<td>Mar. 2014 Random Blood Glucose (mg/dL)</td>
<td>37</td>
<td>68</td>
<td>151</td>
<td>97.0</td>
<td>19.23</td>
</tr>
<tr>
<td>Mar. 2014 Hrs. since eating (hrs)</td>
<td>36</td>
<td>1</td>
<td>8</td>
<td>3.0</td>
<td>1.56</td>
</tr>
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</table>
ed HTN (12.2%), a significant reduction from the two previous evaluations. Over the course of the study, 48 different staff were evaluated. Seven of the initial nine participants diagnosed with HTN were evaluated at all three intervals, with the other two HTN participants only evaluated at two intervals. The overall percentage of staff with HTN (BP > 140/90) at each of the three intervals is shown in Figure 2. While the majority of staff participants did not exhibit HTN, those who were diagnosed and subsequently controlled with medications are reflected in the graph, as the composite mean systolic BP showed reduction over the measurement intervals. As the number of staff evaluated varied at the three intervals, this figure is noted on the graph.

Paired samples t-tests of the October 2013 and the March 2014 systolic blood pressure readings of all staff participants evaluated at both intervals demonstrated a statistically significant 7.09 mean reduction (ρ ≤ 0.05). Similarly, the paired October versus March diastolic blood pressure readings demonstrated a statistically significant 5.62 mean reduction (ρ ≤ 0.01).

Blood glucose results. None of the 37 participants’ whose random blood glucose (RBG) was tested in October had levels above 200 mg/dL. These RBG values ranged from 77 to 145 mg/dL. Similarly, during the January and March evaluations, no staff exhibited RBG values close to 200. In fact, the highest RBG tested was 159 mg/dL. While there were no diagnoses of hyperglycemia and no clinical indication to evaluate hemoglobin A1C, several of the participants with RBG in the 150 range were evaluated with resulting A1C < 6.0%.

Paired sample T-testing was used to evaluate RBG levels. The mean random RBG was 111.8 (n = 28, SD 19.7) in October 2013 and 98.5 (n = 32, SD 20.4) in March 2014, a statistically significant reduction (ρ ≤ 0.05) (Figure 2). While
both values were considered normal, the overall reduction happened without medication and may have been diet related.

**Qualitative Interview Analysis**

On the final trip, six HTN treated staff participants agreed to be interviewed during one scheduled staff clinic. The translator facilitated communication between the PI and the participants. Verbal consent was obtained prior to each interview and all respondents were asked the same questions. The interviews and immediate translations were recorded on a small digital recorder. Several participants were uncomfortable being interviewed and unfamiliar with the concept of being recorded. Due to distractions of the crowded, noisy clinic environment where interviews occurred, interviews lasted only five to eight minutes. Recordings were subsequently transcribed by the PI. All researchers analyzed the descriptors (quotations from participants) in the transcribed interview data to identify common and diverse patterns, which then were abstracted into two themes (Wehbe-Alamah & McFarland, 2015).

**Theme 1: While these individuals lack disease knowledge, they are willing to learn healthy lifestyle habits and help others be healthy**

*Pattern 1: General lack of health knowledge and healthcare.* The participants interviewed, hereafter referred to as informants, indicated that most Haitians knew that HTN and T2D were adverse health issues, but did not understand what caused them or how they were controlled. One informant reported health education came from radio broadcasts or vehicles announcing from loudspeakers, while another indicated that some Haitians are educated by the local newspaper. Two of the six informants reported that people learn about diseases only after becoming sick and being diagnosed in a hospital or by a doctor or NGO. One said, “They [other Haitians] know because when [their] blood pressure goes high and they fall on the ground, some of them end up dying.” One individual said that even when people learn they have a sickness, not everyone could get medication “because they cannot afford it.”

*Pattern 2: A desire to learn how to improve their health and willingness to teach others.* Most of the staff enjoyed the nutrition education session and had positive interactions with the nurse. The interviewed staff were asked how to expand the healthcare program to a broader community. Several indicated that health clinics and group teaching were effective. One nanny said, if “[I] know what to do, then I can advise someone else what to do.”

**Theme 2: Despite living with healthcare and support shortages, these individuals want to understand chronic disease management**

*Pattern 1: Improvement in physical health with medication use.* The male informant with the most elevated initial BP, who’s BP was well controlled at the time of the interview, stated, “when I don’t take the blood pressure medication, my neck is always hurting, like it’s going to break, but … ever since I’ve been on the blood pressure medication, I’ve been feeling nothing.” One nanny shared, “before the medicine I got dizzy, but after taking the medicine I feel just fine.” Another informant indicated she had found relief from headaches after taking the blood pressure medication. All those taking medication indicated a willingness to continue the regimen.

*Pattern 2: A desire for healthcare provider presence.* One informant stopped taking her medication between the initial and subsequent visit, as she “didn’t know how high or low (her BP) was.” Because she worked at the orphanage during the night shift when the nurse was not available, she was not seen or monitored. Two informants ran out of or misplaced the medication and waited until the next team arrived instead of requesting medication from the staff nurse.
Discussion

Forty-eight adult staff members were evaluated for HTN and T2D during three medical visits spanning a five-month period. Although nine participants (18.8%) were found to have HTN, none exhibited hyperglycemia or were diagnosed with T2D. These results were surprising, as the WHO has reported that 30% of Haitians have HTN and 10% have T2D (WHO, 2012a). Niska and Sloand (2010) also found a high incidence of HTN (>45%) in older (>50 yrs old) men and women in rural Haiti with about 17% of younger adults (15-49 years old) also exhibiting HTN. Since the staff receive acute healthcare from visiting American teams, earn higher wages, eat healthier foods, live in better housing, and drink cleaner water than do other Haitians, it is likely that they are in better overall health. Furthermore, the sample’s relatively young age (mean 35.4 years, SD 9.86) and low BMIs (mean 24.0, SD 4.86) likely contributed to their lower prevalence of HTN and T2D. Moreover, all of the staff walk significant distances, which enhances their health and helps reduce morbidities. It is desirable to preserve or maintain the cultural tradition of walking, which contributes to the relatively thin stature of most Haitians.

Participants were educated about healthy nutrition in a culturally sensitive manner by a Haitian nurse. Well-meaning American volunteers often teach inhabitants based on their etic standards and norms. Such efforts may be ineffective, as relatively affluent Westerners do not understand the country’s culture, lifestyle, economic constraints, housing conditions, and food availability/affordability (Devieux et al., 2004; Sakraida, 2010; Wehbe-Alamah & McFarland, 2015). Having Haitian nurses teach participants helped reduce the appearance of American or employer paternalism, possibly increasing the training’s effectiveness, as supported by the study’s quantitative results. The culture care decision/action mode of negotiation/accommodation (McFarland & Wehbe-Alamah, 2015) was used to stress salt and sugar reduction and increased consumption of vegetables and fruits. Simple teachings accompanied by continual reinforcement and encouragement fit within the cultural, educational, and environmental contexts as discussed by Leininger (McFarland & Wehbe-Alamah, 2015; Wehbe-Alamah & McFarland, 2015).

Even when patients are given sufficient medications, without continual reinforcement and ongoing care, they may not take them as prescribed. One participant noted the importance of having an accessible care provider as she had adverse side effects but the Haitian nurse was not available during her night shift. Two other participants ran out of or misplaced their BP medications and waited instead until the next American team visit to get replacement pills. The importance of enabling the two Haitian nurses to provide ongoing patient care was noted.

Clinical Implications for Culturally Congruent Care Provision

This study’s findings resulted in several recommendations for preserving, establishing or expanding primary care or disease management programs in economically disadvantaged countries.

Secure local clinical staff. The most effective clinic care is provided in a culturally congruent and sensitive way, ideally by providers who speak the language and understand the local culture. Securing local providers who can offer consistent, accessible, ongoing care during regular hours, including continued monitoring and medication management, is crucial to program success and longevity. Unfortunately, this form of culture care repatterning is perhaps the most difficult and expensive to obtain.

Develop local program funds. Funding is an ongoing concern for these programs. While residents of impoverished developing nations cannot fully fund their medical care, organizations should consider asking them to pay a nominal
fee to help defray costs and give them ownership in their healthcare. Gradual implementation of partial self-pay program fits with a need for culture care repatterning and/or restructuring.

**Work with local suppliers.** The supply of medications and other healthcare resources needs to be consistent and sustainable, and ideally not fully dependent on donations. While medications can be provided more cheaply by visiting medical teams, program sustainability may be enhanced by obtaining them from local suppliers. Efforts to achieve government ministry of health or WHO approval or authorization for subsidized pharmaceuticals are desired.

**Form intra-organization partnerships.** NGOs provide healthcare to a large number of patients during periodic visits with relatively few organizations maintaining a continual presence in the country. Such work supports the efforts of local governments and organizations. In addition, visiting practitioners have the opportunity to provide mentoring and continuing education for local healthcare providers. In their development of nurse-based community health centers in Haiti, Sloand and Groves (2005) emphasized the importance of organizational partnerships and cooperation. As many smaller NGOs operate independently or autonomously, this would require a significant organizational cultural change and restructuring.

**Design culturally appropriate education.** Educational materials and programs created for uneducated populations are more effective when they use pictures, simple diagrams, and continual reinforcement of main points. Such efforts can help educate residents about healthy lifestyle choices and disease management and treatment (Miller, 2014; Owais et al., 2011).

**Preserve strong community and family bonds.** Most Haitians exhibit strong family and community connectedness, as noted by the desire to help each other and teach each other newly learned information. Continue group education as well as one-on-one education, and encourage patients to share their health knowledge with family and friends.

**Maintain healthy lifestyle choices and modify unhealthy patterns.** Many Haitians walk extensively as their main mode of transportation. This promotes cardiovascular health, maintains normal BMI and develops physical fitness, which should be maintained. Greater consumption of fresh fruits and vegetables and hydration with clean water can be stressed, while use of high salt seasonings in cooking should be negotiated or discouraged.

**Conclusion**

A primary healthcare project that involved assessing, diagnosing, and treating hypertension and type 2 diabetes in an adult group of Haitian employees of a NGO has resulted in quantitative and qualitative improvements in health and wellness. Culturally congruent education was used to implement culture care decisions and actions. The findings of this study offer direction and insight into the transcultural considerations, cultural competence requirements, and organizational constraints of providing primary healthcare in a developing nation. The findings of this study, guided by Culture Care Theory, can help guide the development of expanded culturally congruent and competent care for Haitians and populations in other cultural contexts.
References


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