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Haiti, Factor 11

Haiti: Correction and Prevention of Iron Deficiency Through the Usage of Iron Cookware

With an area of 27,750 kilometers and slightly smaller than the state of Maryland, Haiti lies next to the popular tourist destination Dominican Republic in the beautiful Caribbean Sea. Haiti is the poorest country in the Western Hemisphere with a population of just under 10 million (CNN). Haiti boasts a very tolerable climate with averages ranging from a low in the winter of 73°F to a high of 95°F in the heat of the summer. This island is considered tropical in nature with bouts of drought and its climate is suitable for crop production however its terrain compromises this. Haiti is made up of very rough terrain and mountains with only 28.3 percent of the land being arable and 11.61 percent being permanent crops, thus posing a problem for the country to sustain itself. Haiti, being located in the Caribbean is subject to devastating hurricanes, earthquakes and suffers from deforestation. Deforestation is a massive problem and has been since the mid-1700s, due to the exportation of wood, coffee, sugar cane production, and the demand for wood burned charcoal to power their electric needs (CIA). The Earth Day Network stated, "Let's forget about carbon for one day and focus on a simple fact: trees are life. Over a billion people living in extreme poverty rely on forests to survive. They need trees to provide food, shelter, fuel, and to preserve the very fabric of their culture."

The Haitian people consist of 33.28 percent of people being between the ages of 0-14, 21.64 percent between the ages of 15-24, 35.78 percent between the ages of 25-54 and 9.29 percent over the age of 55 years (WFP). This third world countries population growth rate is 1.17 percent as compared to a developed country such as the United States which is 3.07 percent. Although 56.8 percent of the population lives in urban developments such as the Nation's Capital Port-Au-Prince, 42.3 percent of the population does not have access to improved water supply and 72.4 percent of the population does not have access to sanitation facilities (USAID). A typical Haitian family is normally made up of one head of household male, one female (common law wife at the time) and four- six children. Most families also care for their elderly relatives. In both rural and urban areas men monopolize the job markets from doctors, teachers, lawyers, jewelers and pastors. Women are not looked upon as workers only domestic work and may sometimes venture into the medical care field, however this is seldom. Women are expected to care for the home, children, securing food and water for homestead, firewood, harvesting and planting of crops and are thought by many outsiders as being severely oppressed (PIH). Children, which are born into a family, are done so to help support the family itself. By age seven or eight children whom do not excel in school are full-time workers on the family farm and are often beaten if not working properly or up to par. Some children are often given to other families to help with the daily chores in the household and farm (PIH).

The diet of a Haitian consist mostly of self-supplied sources of food such as corn, beans, sweet potatoes, cassava, tomatoes and green leafy vegetables. If available pineapple, bananas, and citrus fruits are consumed along with home raised meats such a goat, chicken, and creole pigs (CNN). Fifty-four percent of farmers raise creole pigs, however; consumption of meat is very little due to the bartering or selling of them to cover food shortage and gaining more "starch-based" food sources. The average daily calorie intake is 1300 calories per person, which is 700 calories shy of what is recommended daily (UNICEFF). Haitians normally eat two meals per day, one small meal in the morning normally consisting of coffee and bread, and a large afternoon meal which is mainly dominated by a carbohydrate such as beans accompanied by a small portion of chicken, fish or goat. This is very different than in the United States where most people eat a heavy breakfast to sustain themselves and jump start their metabolism.

According to Dr. Melissa Toalson, a nutritionist at Northeast Baptist Hospital, “To jump start ones metabolism and your brain you should have a heavy breakfast consuming 2/5 of the daily allotted caloric intake.” Many feel the reasoning for the misappropriation of caloric intake in Haiti is mainly due to poverty and lack of education (Toalson).

Education in Haiti is self-paid, meaning Haitian children do not get the opportunity to go to a government funded school. However, most parents do send their children to school when they are young, starting at the age of three. If one such child in a family excels in schooling, the rest of the siblings will stay at home and work to pay the tuition for one child to remain in school. School tuition is normally between \$127 and \$180 per year, with 90 percent of the schools being privately run by religious organizations, for-profit organizations or other non-governmental organizations (CNN). The total literacy rate for the country is 60.7 percent of which even those who do migrate to the United States still struggle with literacy (CIA). Higher education in Haiti is also uncommon, with the country having only two universities; one private and one state university. Both of these have less than 1,000 students enrolled. Most students wishing to pursue higher education travel to other countries such as the United States, Mexico City, Montreal and the Dominica Republic.

Haitians are not only undereducated, they also lack medical healthcare opportunities. HIV is as high as 11 percent in ages 24-44 years and among prostitutes in the capital of Port-Au-Prince the percentage is upwards of 80 percent (Ref). There is less than one doctor per 8,000 people, which may account for the lack of healthcare and preventative care. Medical facilities are poorly funded by the government and are considerably understaffed. Life expectancy is under 51 years of age. Diseases such as Malaria, typhoid, tuberculosis, intestinal parasites and sexually transmitted diseases take a toll on the population’s health (ENCY). With the lack of availability of modern medicine, the majority of the population has taken to indigenous healers, herbal supplements and spiritual healers. People have a tremendous faith in informal healing procedures.

While 58.6 percent of the population lives in urban development in Haiti, the access to nutritional food stuffs, healthcare and education are just as equal to those who reside in rural areas (ENCY). The unemployment rate in 2010 was 40.6 percent and estimated to be greater than that today. Average income per year is \$350-\$400 American dollars. Most urban dwellers still work on farms for a meniscal wage of \$.35 per hour (CNN). Most people in the city go to the local market downtown for food, however; theft and lack of extra food stuffs makes the demand greater than the supply. Very little is grown urbanely to support the urban dweller.

The other 42.4 percent of the population lives in rural development. Most live along mountainside in a single-room home with no running water or sanitation facility (UNICEFF). Today an average Haitian farm is 2.5 acres. Of these two acres, crops such as beans, green leafy vegetables, sweet potatoes, tomatoes and coffee are grown. Most the crops grown are used to sustain the family, however; if crops are abundant than the crops are sold to farmers markets. Livestock that is raised is normally raised for family sustainment and if the family is struggling to supply its own food or in need of other items the livestock is sold or bartered for such items needed. Livestock raised include: creole hogs, chickens, goats and sparingly cattle. Agricultural practices vary between farm to farm, much of the farmers are undereducated and do not have access to educational materials on agricultural practices (Bonnett). Irrigation is non-existent and most farm labor comes from within the family itself. The majority of farmers only farm for family sustainment and therefore do not have up to date practices.

The Haitian family has major barriers they face every day. Lack of education, lack of employment, access to properly supported healthcare systems and lack of sustainable food stuffs are some of the many barriers they face. All of the major barriers can be attributed to being the poorest country in the Western Hemisphere. Barriers for the lack of increase in agricultural production tends to be the terrain of the

country and lack of education on proper growth and sustainment of production. Having a very low gross domestic product, at a rate of \$18.38 billion, being susceptible to violent, life threatening weather, is all the reason why the economy is unable to support itself (CNN). Haitians are open to listening and learning about how to improve their agriculture productivity it is the sustainment and the money it takes to gain up to date technology, irrigation systems and implementing new processes that is a challenge. Since Haitians have a hard time trying to sustain themselves, a flourishing food market will never be an option. Since having an almost nonexistent food market, adequate nutrition falls to the wayside with most Haitians consuming only 1,300 calories today (UNICEFF).

Factor 11: Malnutrition, more specifically iron deficiency, is a common problem amongst Haitians. Iron deficiency is the number one attribute to anemia, it effects an average household in Haiti by targeting children and mothers with a mortality rate of 350/100,000 livebirths (World Fact book). One in five children remain stunted, and more than 65 percent of all children and almost half of all women of reproductive age are anemic. Only 30 percent of women are meeting the recommended intake for iron. Lack of iron intake contributes to anemia and complications for mother and baby. Stunting is inversely related to maternal education level, with 34 percent of children whose mothers have no formal education stunted compared to 12 percent of children whose mothers have secondary or higher education (USAID). According to Scientific American Magazine, “The world’s leading nutritional problem is iron deficiency.” Iron-deficiency anemia is a condition in which the body does not have enough healthy red blood cells. The most common symptom of all types of anemia is fatigue. Fatigue occurs because your body does not have enough red blood cells to carry oxygen to its many parts. Also, the red blood cells your body makes have less hemoglobin than normal. Hemoglobin is an iron-rich protein in red blood cells. It helps red blood cells carry oxygen from the lungs to the rest of the body. Anemia can also cause shortness of breath, dizziness, headache, coldness in hands and feet, pale skin, chest pain and weakness. If humans do not have enough hemoglobin-carrying red blood cells, their heart has to work harder to move oxygen-rich blood through their body. In infants and young children, signs of anemia include poor appetite, slowed growth and development and behavioral problems. Iron-deficiency anemia symptoms may include:

- Extreme fatigue
- Pale skin
- Weakness
- Shortness of breath
- Chest pain
- Frequent infections
- Headache
- Dizziness or lightheadedness
- Cold hands and feet
- Inflammation or soreness of your tongue
- Brittle nails
- Fast heartbeat
- Unusual cravings for non-nutritive substances such as ice, dirt or starch
- Poor appetite, especially in infants and children with iron-deficiency anemia
- An uncomfortable tingling or crawling feeling in your legs (restless leg syndrome)

In 2006, in children between the ages of 6-59 months, 61percent were anemic, whereas in the same age group in 2012 that number rose to 65 percent (USAID). Even with other countries, such as the United States supplying supplemental food, this number increased by 4 percent in 6 years.(Wellman)

Since the diet of almost all Haitian is primarily plant based, the lack of agriculture productivity standards has depleted the soil of its nutrients, thus leaving less and less nutrients to be utilized by the plants themselves, making them less nutritious in nature. Since only 28.3 percent of the land is actually arable, solving the soil deficits would be an option however a timely and costly one. However improving this

micronutrient deficiency by properly supplementing then the prevalence of anemia would decrease specifically in women and children. This would lessen the dependence of quantity of food and help increase the quality of food. Also, the infant and maternal mortality rates would decrease. Pressure would be relieved from mothers to provide nutrition. To a further extent, it is always possible that children would be able to stay in school longer due to a more productive agriculture crop. As the population of Haiti increase at 1.17 percent per year resources are becoming scarce forcing the access to proper nutrition to plummet. There is not enough land or a stable enough economy to allow everyone the opportunity to not be effected by this malnutrition.

To properly treat iron deficiency, it really needs to be a twofold combat. However this is not realistic. According to a study conducted by Jordan Rayburg and Hannah Wellman, who attended my local high school, food stuffs such as chicken and tomatoes, commonly cooked in Haiti, when cooked in a cast iron skillet actually added iron to the food stuffs. Thus on average increasing the bioavailable iron in food by 32 percent. It is also noted that foods that are higher in acid such as tomatoes cooked in cast iron cookware increased the bioavailable iron within the food stuffs to 41 percent (Wellman). Chicken cooked in cast iron drastically increased iron content by 23 percent. Consequently the more acidic the food stuff is cooked in cast iron the more bioavailable iron will be taken up in the food stuff. A company who is profiting from iron deficiencies around the world is a company called Lucky Fish (HELP). This company is a certified BCorporation and for \$25 you can purchase a small cast iron fish that can be placed into any cookware to increase iron content. For an additional \$35 they will send five small cast iron fish to families in need. In Cambodia, the Lucky Fish Corporation has seen amazing results. After just nine months of using the Lucky Iron Fish every day, there was a 50 percent decrease in the incidence of clinical iron deficiency anemia, and an increase in users' iron levels (HELP).

In 2012, the Ministry of Health and Population formulated a Nutrition Strategic Plan for 2013-2018 focused on prevention and treatment of malnutrition, nutrition protection in emergencies, improving information systems for nutrition, inter- and intra-ministerial and inter-sectoral coordination for nutrition, and applied research and training in nutrition. In June of 2012, Haiti joined Scaling Up Nutrition (SUN), a global movement that unites national leaders, civil society, bilateral and multilateral organizations, donors, businesses and researchers in a collective effort to improve nutrition, however; to this date no specific donor has been paired with Haiti. The Haitian Red Cross, in conjunction with Feed the Future Partnership North and West, have helped combat the educational problems within the country to increase agriculture productivity. The Nutrition Service Program aims to improve the nutritional status of children and pregnant and lactating women in Feed the Future's three geographic focus corridors through a 5 percent reduction of the prevalence of underweight among children under 5 years of age (USAID). The project relies on a holistic community health, nutrition and livelihoods approach that works through local NGOs to develop health and nutrition care groups and engages and integrates assistance activities within the existing government health and nutrition systems. A simple approach, while speaking with families about nutrition and improving nutrition, would be to supply each family with a cast iron skillet to cook in. This could potentially increase their daily uptake of iron in their foods by 41 percent (Wellman). Every family could implement this small but life-defining change to their everyday routine by simply cooking their food in a cast iron skillet or use the Lucky Fish.

In conclusion, I pose the question, could the organizations SUN or Feed the Future Partnership North and West, scale up their educational efforts to include handing out one of these Lucky Fish or better yet giving each family a cast iron skillet to cook in? In a country where iron deficiency kills thousands of women and children every year, this issue should be of great concern for the Haitian Government. However the Haitian government struggles daily to sustain itself and while doing such, the betterment of the health of its citizens is placed on the back burner therefore implementation of either handing out iron cookware or the Lucky Fish would have to be supplied by other religious groups, countries and organizations. If in fact these practices would be employed alongside the various other education and

agricultural production based practices, the combating of iron deficiency in Haiti could be a problem that is quickly resolved, resulting in lives saved.

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