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Dietary Diseases

American Samoa: High Rates of Obesity and Type II Diabetes

“Health is a human right” (Michels, 2015). This short, but powerful message was given by Shirley Chisholm, the first African-American woman in the United States Congress. It argues the message that every human deserves a healthy life: a life without illness and injury in both the physical and mental states. Health is emphasized in many developed countries and many precautions are taken to ensure that their citizens live healthy lifestyles. Examples of this include anti-smoking campaigns in the United States and public healthcare in Norway. However, while many developed countries possess adequate resources to establish strong health and health education throughout their countries, many developing countries and territories do not have that luxury, an example being American Samoa. The once incredibly healthy territory has suffered from public health issues relating to dietary diseases in the past couple of decades due to an influx of processed foods and the arrival of a sedentary lifestyle. Although some weak concerns have been raised by the government and activists, the lack of knowledge is causing dietary illnesses to grow and plague the citizens of American Samoa.

American Samoa is a U.S. territory in the Pacific Ocean. It consists of five volcanic islands (Tutuila, Aunu'u, Ofu, Olosega, and Ta'u) and two coral atolls (Rose and Swains) (World Bank, 2019). The overall population of American Samoa is 55,641 and 90% live on the largest and main island, Tutuila. Around 10% of American Samoans live in rural areas and 90% live in urban areas (World Trade Press, 2019). American Samoa works as an unincorporated and unorganized U.S. territory; every four years, the citizens elect a new governor within that framework. However, local politics and legislature are controlled by the traditional chief system *Fa'amatai* and the cultural norms of *Fa'asamoa* (particularly concerning the allocation of communal lands) (World Trade Press, 2019). *Fa'asamoa* is the traditional Samoan political, village, and family system. Currently, 24.5% of the land is cultivated and used for agriculture. Major exports of American Samoa include tuna, automotive components, coconut products, oil, and meat (World Bank, 2019). American Samoa has a tropical climate and the temperature averages 84 degrees to 86 degrees Fahrenheit all year round (American Samoa Visitors Bureau, 2019). Rainfall varies annually from 120 to 200 inches (World Trade Press, 2019). The climate is hot and humid, causing rapid erosion and biodegradation (World Trade Press, 2019).

In American Samoa, the average family size is 2.5 people (United Nations, 2019). Most of these families live in Australian-style houses in the cities. Some families still live in traditional Samoan fales, which are oval or circular in shape, and have domed, thatched roofs held up by wooden poles (Beautiful Samoa, 2020). Fales often have no permanent walls, but instead have roll-down blinds called pola; most fales exist outside of the urban areas. A typical family diet consists of imported, processed, and extremely

calorific foods, such as canned corned beef, turkey tails, and frozen lamb (Singh, 2016). In addition to typical foods, common drinks consumed with meals are sodas and artificial juices high in sugar, replacing natural liquids such as water and milk. A majority of citizens buy their food from local grocery stores or inexpensive fast food places. Home cooking is a large part of Samoan culture and popular forms include frying foods or cooking in high-fat vegetable oil (Singh, 2016). Almost a third of jobs in American Samoa are concentrated in the Tuna Industry, which is Samoa's biggest industry producing \$445 million worth of tuna for export to the U.S (World Trade Press, 2019). Outside of the tuna industry, many people work sedentary jobs in banking, transportation, communications, and education. However, the introduction of

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the minimum wage at \$7.25 hurt jobs in the Tuna business and caused one of the two major companies, COS Samoa Packing Company, to relocate to Asia, which resulted in jobs decreasing in the island, and also contributed to an increased rate of unemployment, as nearly 25% of the population is currently unemployed (World Trade Press, 2019). The rate in the territory is much more elevated when compared to the average international unemployment rate, which is 4.9% (World Bank, 2020). Accessibility to education is adequate, with 97% of the population being literate (Macrotrends, 2020). Local villages supply elementary school buildings, but the territorial government pays the teachers' salaries and builds secondary school buildings (World Trade Press, 2019). Currently, there are 26 elementary schools, one middle school, and six high schools, and a two-year college named American Samoa Community College. Both English and Samoan are taught in the curriculum because the territory's roots are Samoan but it is the U.S. Territory. Most citizens have access to good roads; the country has three major highways and about 100 miles of paved roads and 125 miles of unpaved road in less urban areas (World Trade Press, 2019). Currently, most American Samoans have access to necessities such as toilets, telephones, and clean water. In 2009, a magnitude 8.0 earthquake and subsequent tsunami hit the country, severely hurting the country's electrical infrastructure. After 11 years, much of that has been rebuilt and solar panel investments have caused the primary source of energy to be solar (World Trade Press, 2019). Affordability is not an issue with locally made and grown items, such as clothes or food, as much of it has a low manufacturing cost. However, many of the goods in the country are imported, causing high prices for many items. One of the biggest challenges a family faces in earning a living is a lack of jobs. As previously mentioned, one of the biggest tuna employers left the territory, resulting in a decrease in jobs. The departure of the company could explain why a fourth of the population is unemployed. Besides unemployment, there are other larger issues in the territory, one being dietary diseases.

To say that dietary diseases are a problem in American Samoa would be an understatement. According to Yale Medicine, 93% of adults are obese (Blair, 2018). Obesity is a disorder that involves excessive body fat, and it often increases the chances of many other diseases, such as heart disease, hypertension, and depression. It is often caused by the combination of consuming an excess of food and a sedentary lifestyle. Not managing obesity can result in death through a heart attack or stroke (Blair, 2018). Obesity is affecting children too; 45% of children are obese in the country. Infants are suffering from the consequences of the adults' obesity, as reflecting on the fact that 1 in 5 American Samoa babies have an

excessive birth weight (CBS News, 2013). Excessive birth weight is often caused when a mother is obese. Above-average birth weight can cause several issues for infants such as low blood sugar, metabolic syndrome, and increased chance of childhood obesity (Mayo Clinic, 2020). In addition, by 15 months, 39% of males and 30% of female babies are dangerously overweight (CBS News, 2013). A third of adults suffer from another dietary disease: Type II Diabetes (Blair, 2018). Type II Diabetes is a chronic condition that affects the way the body processes glucose (Mayo Clinic, 2020). If left untreated, diabetes could cause a need for amputation of limbs such as feet. Pregnant women with diabetes also put their children at risk for excessive birth weight and increased risk for childhood obesity. Trends have been worsening over the years for dietary diseases among the population.

Based on the statistics for obesity and Type II Diabetes, it is surprising to learn that the traditional American Samoan diet is incredibly healthy. The traditional diet included taro, breadfruit, bananas, papaya, and seafood, such as octopus and fish (World Trade Press, 2019). Most food would be grown through subsistence agriculture and would be nutritiously valuable. Daily exercise used to be prevalent in Samoan culture with activities such as traditional dances, working in the fields, and fishing. After the 1950s, more sedentary jobs started flooding the country, as did more processed foods due to globalization. A direct correlation was found between the increase in processed foods in American Samoa to the increase in dietary diseases in a study published by the American Journal of Human Biology (Seiden et al,

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2012). American turkey companies also started dumping turkey tails in the American Samoan islands because the sales in the United States were low. Turkey tails are high in fat and very unhealthy, but they soared in popularity in the country. Soon, turkey tail was a favorite dish in many households and at one point the average Samoan was eating 44 pounds of turkey tails per year (The Patriot Act, 2019). Along with turkey tails, fatty cuts of lamb from New Zealand also started being imported to the country, and are still being consumed in rather large amounts by citizens, even though they are used as dog food in New Zealand as they are deemed too unhealthy for human consumption (Unreported World, 2017). The wide acceptance and usage of such low-quality foods in American Samoa can be traced back to the Samoan love of imported foods and the respect for American culture. Slowly, the fondness for imported processed foods took over the entirety of diets in American Samoa and most Samoans left their traditional diet and exercise regime. Soon obesity and Type II diabetes were widespread. The effects of the high fat and low exercise lifestyle took hold in the territory rather quickly due to the small size of the population.

Nonetheless, the small size of the population also means that the positive effects of a healthy lifestyle will take hold quickly as well. The solution to the issue of dietary diseases in American Samoa is the same method that was used to decrease smoking rates in America: education. In 1960, 42% of American adults were smoking (PRB, 2011). In 2018, that number was reduced to 13.7% of adults smoking (U.S Department of Health and Human Services, 2020). The credit for the decrease in the percentage of adults who smoke goes widely to anti-smoking education programs, especially programs that were targeted toward the youth, as instilling healthy choices in youth can promote a healthy lifestyle throughout their

lives (Jensson, 2018). Nicola Hawley, Ph.D., an assistant professor in the Department of Chronic Disease Epidemiology at Yale Medicine articulated that “The situation in terms of chronic disease in the adult population in Samoa has gotten so bad now that there needs to be some kind of generational shift—public health interventions targeting children—in order to have the most effect,” (Blair, 2018). The most effective “public health intervention” to target children is an education program. The education program needed in American Samoa will be similar in structure to the anti-smoking education used by the United States. A goal of the educational program would be to erase the cultural notion that imported foods are better and persuade citizens that by returning to nutritional foods, they will benefit their health. It will include educational advertisements on Samoan television that will educate the public on the severity of the obesity and Type II Diabetes rates in their country and the negative effects of the diseases. Advertisements will also focus on how to prevent those dietary diseases and how to seek help if one is diagnosed with them. The second aspect of the educational program will include teaching students throughout the territory about dietary diseases and the need for reform in the area. The program will include an emphasis on the traditional aspects of Samoan culture, such as healthier foods and dance, as they were once the reason why American Samoa was very healthy. Children from grades kindergarten through 12th grade will have to learn about dietary diseases, healthy diets, and healthy cooking methods in a mandatory health class. Exercise programs will also be included in the students’ curriculum to promote a life-long love of being active. For example, multiple, or extended, recesses could be implemented throughout the school day to encourage kids to be healthier while also having fun. The mandatory recess periods could incorporate cultural aspects, such as traditional dances and games. Children could also be taught how to grow vegetables and fruits in their own gardens during the recesses to ignite a respect for healthier foods. Since American Samoa is a highly religious territory with most of the population going to church every Sunday, educational programs could also reach out to churches, to target a larger number of adults and teach them the same curriculum as the students. This will allow families to incorporate what the children are learning in schools into their daily lives and allow for a bigger impact, as adults are often the people in charge of buying groceries and making meals. The estimated funding needed for the educational program is \$20, 000, considering that it will be mainly volunteer and community-led. The funding will mainly go towards the cost of supplies needed for the

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program. One possible option for the funding of this program could be to fundraise in the United States and American Samoa at various locations, such as at universities or high schools. However, since American Samoa is a U.S territory, money could also be requested from the United States federal government as it would be used to address a widespread issue in the area and benefit all of the citizens. The government has also given larger grants in terms of money for projects in the past, so receiving \$20, 000 is very achievable. The only limitation is that most projects in American Samoa have been funded by the territory itself or outside companies, and not the United States, so if this project were to be funded by the U.S, it would be one of the first. The project needs to be managed by volunteers who are experts on diet and dietary diseases because they will be educating others. An option for people who could manage the project are students and professors who are specializing in diet management/dietary diseases or have a strong background relating to those topics because they will already have a strong background in

understanding dietary diseases and their roots. Since much of the curriculum also depends on an emphasis on traditional aspects of Samoan culture, it is important to ensure that the management has accurate Samoan representation. Because of this, the students and professors must communicate with and have cultural experts on their teams to make sure that the education that children and adults receive is culturally appropriate. Cultural experts could include elders in the community, American Samoa traditionalists, and previous chiefs. The positive impact of the program can be measured by the hospitals and other healthcare services. The government of American Samoa will have to give permission to implement the program. A limitation of this solution appears to be that a lot of the positive effects depend on the people of American Samoa and their willingness to learn and comply. However, educational programs have worked with nations in the past in solving health issues, such as the United States, and through teamwork within the community, the program will help decrease the great percentage of American Samoans suffering from dietary diseases.

In addition to the dietary educational program, building two parks on the main island of Tutuila would also be a solution in helping the overall issues regarding obesity and Type II Diabetes. Areas around the world have seen a decline in obesity when investments were made in recreational parks, as they attract citizens to be social and active. According to Mick Cornett, Oklahoma City's former mayor, investing in parks helped decrease obesity in the city (Cornett, 2014). Oklahoma City was once one of the top ten fattest cities in the United States. After investments in recreational parks and activities, it became one of the fittest cities in the country. The plan of action for this solution would be that a park would be built in the west end of the island and a park would be built in the east end. The park would include a playground consisting of three slides, six swings, and a jungle gym for the children. For the adults, it would have a short walking trail. The funding needed for this project is relatively low, as the suggested park design would cost approximately \$15, 000 to construct, or \$30, 000 for both parks. While the numbers may seem high, they can be achieved by fundraising throughout the United States and American Samoa at various locations, such as universities. Money could also be requested from the United States federal government because, as previously mentioned, they have given larger grants before for the betterment of public health. The construction of the parks could also give jobs to many Samoans that are unemployed, thus decreasing the high unemployment rate in the territory. The government of American Samoa will have to give permission and land to implement the solution. Considering how successful investing in parks proved to be in Oklahoma City, this solution will help manage the dietary diseases in American Samoa and promise a healthier future for its citizens.

Nelson Mandela, Nobel Peace Prize winner and anti-apartheid revolutionary, once stated, "Education is the most powerful weapon which you can use to change the world," (Borgen Project, 2020). Education has indeed eradicated many public health issues across the globe, such as the previously mentioned example of smoking in the United States. Therefore the issue of dietary diseases in American Samoa can

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be solved through an education program that educates the citizens on sustainable healthy living. The

addition of recreational parks will attract citizens to get active without realizing it, hence adding to the benefits of the education program while also encouraging citizens to improve their health through a sociable and fun avenue. Through education and recreational investments in parks, American Samoa can return to being the healthy country that it once was and unlock a prosperous, healthy future free from obesity and Type II Diabetes.

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