Reflections on an Eye-Opening Rural Health Experience of a Second Year Medical Student

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Introduction

Idyllic perceptions of American Samoa are quickly dispelled when one considers the health of its inhabitants. Samoa is one of the most obese nations in the world, with 93.5% of the population being overweight (body mass index [BMI] of 25 to 29), and 74.6% being obese (BMI of 30 or greater).[1] In comparison, 73.6% of the United States' population is overweight, while about one-third is obese.[2]

In addition, the World Health Organization reports that 47% of adults in American Samoa have diabetes[3] and there are high rates of hypertension, hyperlipidemia, coronary artery disease, congestive heart failure, stroke, peripheral vascular disease, chronic kidney disease, venous stasis, cholelithiasis, amputations, degenerative joint and disk disease, and gastroesphageal reflux disease, all conditions associated with obesity. In what follows, the causes of and potential solutions for this epidemic will be explored from a physician's perspective, through the eyes of a visiting medical student.

Dr. Fred Uhrle, the local attending for the rotation, was born and raised in American Samoa, came to the United States for college and medical school, worked in private practice for about 20 years, then returned to Samoa four years ago to pursue a federal job with the US Department of Veteran's Affairs (VA). Shadowing him in the VA clinic and evaluating patients during their examinations brought to light the severity of the obesity problem in Samoa.

The first patient was a 59-year-old obese man with uncontrolled diabetes, hypertension, and sleep apnea, currently taking six prescription medications. Despite being on several medications to control his diabetes, his hemoglobin A1c was 8% and his feet were swollen. His nuclear stress test was not completely reliable because his weight decreased the clarity of the images given by the machine. He wanted to get bariatric surgery to help control his weight, yet he needed to lose 5% of his weight in order to be eligible, and had not managed to lose any pounds over the previous six months. Dr. Uhrle advised him accordingly and continued his regime.

Next, a 57-year-old obese woman with hypertension, gastric esophageal reflux disease, chronic low back pain, and diabetes came in for a checkup. The third patient, a 52-year-old obese man, also had diabetes, hypertension, and sleep apnea. He was on four medications. It was impossible to tell if his legs were swollen, due to his large size. The fourth and fifth patients with similar profiles were also on numerous medications and still had multiple uncontrolled health problems.

It was difficult to imagine all Samoans as having such severe health problems. The attending explained that Samoa is a different place now than it was 40 years ago. When he was a child "most [people] were active, working on family plantations and fishing. Very few were obese. Lawns and fields were cleared with machetes." Today, Samoans "have become very sedentary. Few work on plantations and even fewer fish. It used to be that driving the coast in the evenings, you would see folks out on their canoes or in small wood rafts fishing – reflections of lanterns on the water. Not today, and very few even during the day. Villagers used to go out together and shared the catch with everyone."[4]

This decrease in physical activity has been compounded by Americanization of the Samoan diet, particularly with food high in fat, processed carbohydrates, sugar, salt, and foods low in fiber, vitamins, and minerals. Portion sizes have increased greatly. Patients at the VA clinic commented that it was rather common to eat three or more eggs, several thick slices of Spam, a few scoops of rice and toast for breakfast, four to five sandwiches for lunch, and meat and rice for dinner, in addition to snacks such as Bongo chips and Saimin throughout the day. It is distressingly common to see children eating bags of chips with sodas and popsicles on their way to school in the morning. Furthermore, people tended to report going to one of the five fast food restaurants at least once a week, most often to McDonald's. When visiting McDonald's, people often order a burger (250-900 calories), a 16 oz soda (150 calories), and a large fries (500 calories),[5] even at 10am in the morning. The amount of calories people were eating for one meal was nearly as much as healthy individuals eat in an entire day! Thus, it came as no surprise that the McDonald's in Samoa is one of the most lucrative in the world.

It has also long been a Samoan cultural custom to center family gatherings around food. However, "Samoan culture has taken on a Western flavor and the food that is offered generally consists of kegs of high fat beef [known locally as *pisupo*]. Food served is supplemented with salty side orders, white rice, soda and dessert, and each person served on 1 or 2 large aluminum foil trays." Asking patients about their views on how this affects their weight, some responded by saying that they "know the foods are no good but can't stop eating them because they taste good." They did not have fast foods, frozen, or canned foods when they were younger. They ate foods from their land, not wasting things or having as many leftovers, because there weren't ways to save the food. Today, people can package foods into containers and store them in refrigerators, allowing them to have constant access to leftover unhealthy foods.

The attending remembers that there was only one overweight child in his class until 8th grade, and very few overweight students in his high school. Yet today he feels that "now it is the norm. It is acceptable that people are overweight. No one thinks much of it anymore." When he carefully reminds a patient that he or she is obese or overweight, "many just smile or nod that

they realize they are obese, but since they don't feel ill they do not see it as a problem." He feels that it doesn't mean much to patients when he tells them they are obese. Moreover, he believes that "to some it is somewhat a sign that you can afford a lot. [Samoans] have not yet associated it with poor health." Compounding the problem is the misconception locals have as to the prevalence of obesity in their communities: patients commonly believe that obesity affects only 40%-60% of the population, and are shocked to learn the number is closer to 75%. However, they do acknowledge the fact that things are getting worse, as children are getting bigger and having more significant health problems.

Potential Solutions to Combat Obesity in Samoa

So what can be done in a society that has completely changed its ways over a few decades? Can Samoa return to its traditional ways of living? How can Samoa overcome obesity? "Education" seemed to be the most common answer, when asking people these questions. Dr. Uhrle feels that constant reminders in the office and through the media can provide relevant information to Samoans to promote physical health. "We have to teach our kids and not wait until they are obese adults," he suggests.

Some people in Samoa are starting to try to combat the obesity problem. Local churches and other organizations have begun programs like "The Biggest Loser" to encourage weight loss and physical fitness. However, people compete to lose weight for a monetary reward and the weight loss is not sustained. People starve themselves to get prize money without learning to change their eating habits or lifestyles, and they gain the weight back over time. Radio stations are beginning to encourage proper nutrition, weight management, and exercise as well. They are also advising people to seek help from diabetes educators. Yet there is only one such individual in the entire South Pacific. Other sources of education come from people like football star Troy Polamalu, known as the "Samoan Headhunter," who returns to Samoa in the summers to organize and administer football camps for the youth. According to locals, he encourages healthy eating and exercise and is a positive role model for the younger generations, motivating them to live healthy lifestyles.

Dr. Uhrle continues to explain the risks of being obese, to motivate patients to lose weight. Just telling them, however, doesn't help. He also encourages daily exercise and changes in eating habits, advising people to cut down on processed foods, rice, soda, juice, noodles, salt, and fatty foods. He tries to push for diets high in vegetables and lean meats. Since many of his patients are diabetic as well, he counsels them on ways to maintain healthy blood glucose levels, including checking their levels daily and following up with him every few months. However, even though he educates patients about how to lose weight and control their sugar, it is hard to gain compliance. He finds that although people have the knowledge and tools necessary to lose weight, they lack the motivation to change.

Conclusion

Of the 61 patients encountered over the 4 week time period, 43 were obese based on their BMI scores, and most others were overweight. Many of these patients would tend to apologize to Dr. Uhrle when he commented that they hadn't lost weight and needed to start changing their lifestyle before their health worsened. He would respond by telling them not to be apologetic, but to be aware that they were putting themselves at a higher risk of health complications, due to obesity and its associated difficult-to-control medical problems. When asked about how they felt when Dr. Uhrle spoke about their obesity, most patients reported liking how straightforward he was. It was helpful for them to be fully aware of their health and the problems they would face if they didn't take control over their weight. Although the obesity problem in Samoa may be alleviated by educating the people, especially the children, about healthy diets, lifestyles, and weight management, it is apparent that this will be a difficult uphill battle. A battle that this medical student is drawn to help solve after this excellent clinical experience.

Conflict of Interest

The author identifies no conflict of interest.

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List of Abbreviations	
EHR	Electronic Health Record
AAFP	American Academy of Family Physicians
AAMC	Association of American Medical Colleges
AAMS	American Board of Medical Specialties
AAPMR	American Academy of Physical Medicine & Rehibilitation
ACGME	Accreditation Council for Graduate Medicine
AHEC	Area Health Education Center
AIU	Adopt, Impliment or Upgrade
AMA	American Medical Association
APRN	Advance practice registered nurse
ARRA	American Recovery & reimbursment Act
BMI	Body Mass Index
C N A	Certified Nurse Aid
CAQH	Council for Affordable Quality Healthcare
CME	Continuing Medical Education
COGME	Council on Graduate Medical Education
CORE	Committee on Operating Rules for Information Exchange
CPOE	Computerized Physicain Order Entry
DCCA	Department of Commerce & Consumer Affairs
DHHS	US Department of Health & Human Services
DHS-MQD	Hawaii Department of Human Services , Med-QUEST Division
EPs	Eligible Professionals
EHRS	Electronic Health Record
ESRI	Enviornmental Systems Research Institute
FMEC	Future of Medical Education in Canada
GIS	Geographical Information Systems
GME	Graduate Medical Education
HASC	Healthcare Administrative Simplification Coalition
HBME	Hawaii Board of Medical Examiners
HCA	Health Claims Ackowledgement
HHIE	Hawaii Health Information Exchange
HHS	Health & Human Services
HIE	Health Information Exchange
HIPAA	Health Insurance & Portability and Accountability Act
HiPWRT	Hawaii Physician Workforce Research Team
HIT	Health Information Technology
HITECH	Health Information Technology for Economic & Clinical Health
HJMPH	Hawaii Journal of Medicine & Public Health
HMA	Hawaii Medical Association
HOME	Homeless Outreach & Medical Education
HPREC	Hawaii Pacific Regional Extension Center
HPSAS	Health Professional Shortage Areas
HRSA	Health Resources and Service Administration
HSRHA	Hawaii State Rural Health Association
JABSOM	John A. Burns Schhol of Medicine
JMC	Jefferson Medical College
LCC	Leward Community College
LCME	Liaison Committee on Medical Education
LMI	Labor Market Information
MCCP	Medical Claims Conciliation Panel
MUA/P	Medically Underserved Area or Population
NCRC	National Career Readiness Credential
NH	Native Hawaiian
NHCOE	Native Hawaiian Center of Excellence
NHOPI	Native Hawaiians & Other Pacific Inslanders
ONC	Office of National Coordinator for Health Information Technology
PCMH	Patient Centered Medical Home
PCPs	Primary Care Physicians
PM&R	Physical Medicine & rehibilitation
PPCP	Priority Primary Care Providers
PSAP	Physician Shortage Area Program
RFP	Request for Proposal
RN	Registered Nurse
SDE	State Designated Entity
SHCWD	State Health Care Workforce Development
SMHP	State Medicaid Health Info Technology Plan
UCERA	University Clinical, Education & Research Associates
UH	University of Hawaii
UH SONDH	University of Hawaii School of Nursing & Dental Hygiene
UPD	Universal Provider Datasource
USAPI	US Affiliated Pacific Island
VA	Veteran's Affairs
WCC	Windward Community College
WDC	Workforce Development Council
WIA	Workforce Investment Act