

Global Health Internship Report
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Introduction

In Spring 2023, I had the opportunity to serve as the Global Health Intern for San Juan, Puerto Rico, as part of the Global Health Internship program created by International Medical Outreach (IMO) in collaboration with the Department of Anthropology. This unique initiative aims to equip undergraduate students with invaluable research and field experience in the realm of global health, while conducting an anthropological assessment at the Internship site in order to improve IMO's work. Since its inception, interns have completed their internships in countries such as Haiti, Columbia, Brazil, and Peru, all working towards furthering the shared mission of IMO, which "surrounds the importance of international medical altruism, sustainability, cross-cultural integration, and preventative healthcare in underserved communities" (IMO 2023).

I was initially selected for the intern position in Callao, Peru, following a successful application and interview process for the Fall 2022 term. However, due to significant political and social unrest prevalent at that time, the trip was rescheduled to Spring 2023, and the destination was subsequently changed to San Juan, Puerto Rico.

During the Internship and in preparation for the trip, I conducted in-depth readings under the supervision of IMO's faculty advisor, Dr. Joanna Mishtal. This work helped me to understand the health landscape of Puerto Rico, the impact of culture and history on healthcare systems and health outcomes, and develop research ideas based on existing scholarship. Furthermore, I participated in weekly IMO meetings and health training sessions. These opportunities allowed me to establish connections within the IMO community while also acquiring knowledge on medical and public health concepts. Specifically, I learned crucial skills such as taking vitals and

understanding social determinants of health. Additionally, I gained valuable insights into trip safety, as well as the historical, cultural, and linguistic aspects related to Puerto Rico.

I also conferred with IMO president, Lucas Vieira, to discuss expectations and define my role as the intern. Since this was IMO's first trip to Puerto Rico, I developed the following statement to guide my work in spearheading IMO's work in Puerto Rico:

My goal as the Global Health Intern is to understand the needs of the San Juan, Puerto Rico community through volunteerism and research, to help develop a sustainable project that IMO can use on future trips that will encourage long term self-sufficiency.

Before the trip, I sought out the perspective of two Puerto Ricans colleagues who had spent the majority of their lives in Puerto Rico before migrating to the U.S. This allowed me to gain valuable insights into the strengths and challenges of the U.S. territory¹ and provided guidance for my research endeavors.

The culmination of all my preparations was a week-long trip to San Juan, the capital of Puerto Rico, alongside 12 fellow IMO members. Throughout the trip, we actively volunteered at both the San Jorge Hospital and the Ronald McDonald House, making a positive impact in the community. We contributed our efforts to a diverse range of tasks, including painting buildings, sorting and organizing toys and the pantry, sweeping and mopping, tending to the garden, presenting toys to children, disposing of scrap metals, and clearing out the fourth floor of the hospital. In addition, I conducted anthropological fieldwork to collect data that may be valuable in IMO's future work in Puerto Rico.

¹ For the purposes of this paper, I will refer to Puerto Rico as a U.S. territory. I understand there is great contention regarding this designation, however, I will follow the United Nations' designation of Puerto Rico.

Developing the Research Idea

My extensive readings and secondary research have revealed critical health problems afflicting Puerto Ricans and the healthcare system, particularly in the area of noncommunicable diseases (NCDs). Noncommunicable diseases, also referred to as chronic illnesses, differ from their counterpart communicable diseases in terms of their prolonged duration over time. Unlike acute illnesses, noncommunicable diseases develop and persist over extended periods. Furthermore, noncommunicable diseases are predominantly caused by factors other than acute infections, while communicable diseases are characterized by their ability to spread from person to person (Pan American Health Organization 2023).

Notably, data from the Institute for Health Metrics and Evaluation in 2019 indicated that NCDs accounted for nine out of 10 (90%) of the leading causes of death in Puerto Rico. Among these, diabetes stood as the second leading cause of mortality, surpassed only by ischemic heart disease. Furthermore, alarming statistics from 2021 indicate that approximately 13.3% of Puerto Rican adults between the ages of 20 and 79—equivalent to over 400,000 individuals, a population roughly half the size of Delaware—were diagnosed with diabetes (World Bank, 2023). Out of 42 countries in the Latin America and Caribbean region, Puerto Rico has the fifth highest rate of Type II Diabetes (after Mexico, St. Kitts & Nevis, Belize, and Barbados) (World Bank 2023). Moreover, diabetes is one of the four major NCDs, which contributes to 74% of all deaths worldwide (WHO 2023).

It is crucial to note, however, that the burden of NCDs is not evenly distributed globally. The World Health Organization highlights that over 75% of NCD-related deaths occur in low- and middle-income countries. While Puerto Rico is officially recognized as a territory of the

United States, an affluent nation, it unfortunately grapples with alarmingly high levels of poverty. Furthermore, despite a slight decrease in poverty rates from 44.4% to 43.1% between 2017 and 2018, Puerto Rico's figures far exceed the national poverty rate of 13.1% in the United States (Glassman 2019). In fact, according to the United States Census Bureau, it surpasses even the poverty rate of 19.7% in Mississippi, which had among the highest state poverty rates in 2018 (Glassman 2019).

These statistics underscore the profound significance of noncommunicable diseases as a pressing global health concern that warrants special attention. To mitigate this disparity and alleviate the burden of disease, it is of utmost importance to discern the underlying risk factors that contribute to the advancement of conditions like diabetes. A comprehensive understanding of the risk factors contributing to the diagnosis and progression of diabetes, particularly those that can be modified, holds significant potential for public health and healthcare professionals. Armed with this knowledge, they can provide patients with tailored recommendations aimed at preventing the onset and/or minimizing the impact of the disease and achieving remission.

Additional data from the Institute for Health Metrics and Evaluation reveals that in Puerto Rico in 2019, 6 of the top 10 risk factors that drive the most death and disability combined are related to diet. These include high-fasting plasma glucose (also known as high blood sugar), high body-mass index, high blood pressure, dietary risks² (includes diets low in fruits, vegetables, legumes, and high in sodium, red and processed meat) high LDL (low-density lipoprotein)—also known as the "bad cholesterol" according to the Centers for Disease Control and

² Dietary risk is an “aggregate risk factor for all Global Burden of Disease dietary risks: diet low in whole grains, fruit, fiber, legumes, nuts and seeds, omega-3 fatty acids, PUFA, vegetables, milk, and calcium; and diet high in sodium, trans fats, red or processed meat, and sugar-sweetened beverages” (Institute for Health Metrics and Evaluation 2019).

Prevention—and malnutrition. The staggering role of diet in mortality and disability rates in Puerto Rico captivated my attention, prompting me to delve into its significance further. Furthermore, considering the undeniable connection between diet and exercise, coupled with the fact that physical activity ranked as the 9th leading risk factor contributing to death and disability, I felt compelled to explore the role of physical activity as well.

As a result, my research addresses 7 of the 10 risk factors that drive the most death and disability combined in Puerto Rico. Therefore, I focused on investigating the relationship between diet and physical activity among Puerto Ricans.

Methodology

To explore my research question, I employed two distinct methodologies: ethnographic observation and semi-structured interviews. Ethnographic observation, an exclusive methodology within the field of anthropology, operates along a dynamic spectrum. This approach enabled me to immerse myself in the research setting, actively observe and interact, and thus gain a comprehensive understanding of the group's culture and dynamics. Complementing this, I utilized semi-structured interviews, which provided me with the flexibility to pose follow-up questions as needed. This method proved particularly invaluable as I ventured into a novel environment. Prior to traveling to Puerto Rico, I developed an interview guide using existing literature to help investigate my research question. The interview guide included questions for parents/guardians and healthcare professionals. Moreover, questions and word choice were carefully selected and reviewed. Additionally, culture and context were considered to ensure ease of comprehension.

Despite my intentions to conduct interviews with parents/guardians and healthcare professionals, I encountered a setback when it came to interviewing parents or guardians. Unfortunately, the volunteer coordinator, who acted as a mediator, was unable to connect me with any willing participants. However, I conducted interviews with a diverse range of healthcare professionals; these included: a nurse from the Pediatric Intensive Care Unit, a registered nurse specializing in adult care, and a medical student at San Jorge Hospital. Although both nurses were proficient in English, there were instances where they required clarification regarding certain terms or resorted to speaking in Spanish to convey their thoughts. During those moments, I leveraged my intermediate level of Spanish proficiency to provide the necessary clarification. In contrast, the interview with the medical student took place in a blend of Spanish and English, commonly known as Spanglish. While he had a good grasp of English, he found it most comfortable to express himself in Spanish. These interviews were transcribed verbatim for later analysis.

In addition, I conducted multiple informal interviews, including with two skilled handymen working at the hospital and two staff members from Ronald McDonald House Charities. Furthermore, I immersed myself in anthropological observations across diverse locations, including San Jorge Hospital, the Ronald McDonald House, Costco Wholesale, and within the surrounding community. Throughout these observations, I diligently documented events, interactions, and my personal reflections through detailed field notes. These insightful interviews, combined with the rich data captured through my ethnographic field notes, served as the foundation for generating meaningful findings.

Finding and Ethnographic Observations

For the purpose of presenting my findings, I have structured them into three distinct sections: Food and Nutrition, Physical Activity and Sedentary Living, and the Healthcare System. Within each section, I delve into essential findings that have significantly contributed to the development of my subsequent recommendations.

Food and Nutrition

Culture and Food Choice

Current Puerto Rican food culture is significantly impacted by the availability, accessibility, and affordability of healthy foods. The food culture, good or bad, is perpetuated by several factors including corporate advertising, promotion of larger portions, and parental influence. Typical Puerto Rican cuisine includes rice, beans, fried plantain dishes like mofongo, tostones and amarillos, chicken, lechon asado (pork), among others. These foods in their infinite combinations and flavor are celebrated and representative of Puerto Rico and are an integral part of Puerto Rican culture. Without them, it just is not Puerto Rican. This diet, however, does not customarily meet nutritional recommendations for healthy living, as it is high in fats, carbohydrates, and starch. This diet lacks the variety and balance recommended by MyPlate under the Dietary Guidelines for Americans (MyPlate 2023). MyPlate recommends that Americans eat a variety of fruits, vegetables, whole grains, proteins, and dairy from different food sources.

Acknowledging a growing type 2 diabetes epidemic in Puerto Rico, one of the nurses I interviewed attributed diet as a major contributing factor to the growing prevalence of the disease. She stated,

“The food. Trash food. Yeah, fast food, high fats because we eat pork, we eat chicken, we eat a lot of stuff that have high amounts of fats, so carbohydrates, because we eat a lot of rice and beans” (Interview with Nurse #2)

The nurse underscores the imbalance of the Puerto Rican diet and even draws a parallel between the diet and fast food consumption. Given the pervasive presence of fast-food establishments throughout Puerto Rico, as I will delve into further detail shortly, this comparison carries undeniable significance and brings attention to a concerning reality.

In Puerto Rico, availability of healthy and affordable foods is limited and the lack of income often leads to the consumption of fast food. One nurse explained this relationship as follows,

“And, right here in Puerto Rico, the healthy foods is so expensive. So, the parents is gonna prefer to buy something a little bit low [in price] because they don’t have the income. So that’s a major problem in this country because people don’t have the resources to buy healthy foods” (Interview with Nurse #2)

The prevailing market dynamics concerning pricing present a significant obstacle to maintaining a healthy lifestyle. Families with limited financial resources face challenges in making nutritious food choices due to the higher costs associated with healthy options, while fast food remains a more affordable alternative. In addition to fast-food being inexpensive, fast food corporations exert a strong influence on consumers through an overwhelming presence of billboards promoting enticing deals. During my time in Puerto Rico, I observed a multitude of distinctive billboard advertisements, prominently featuring global fast-food chains such as Burger King,

McDonald's, Church's Chicken, Subway, Popeyes, and many others. The saturation of fast-food advertising throughout San Juan undoubtedly influences food choice.

Furthermore, the rising incidence of diabetes among Puerto Ricans is a predictable outcome when considering the combination of factors at play: the financial challenges associated with accessing healthy food options, limited income, and the pervasive influence of fast-food advertising. It is common knowledge that high and frequent consumption of fast-food – typically high in sugars, salts, fats, and calories – in combination with lack of proper exercise, contributes to obesity and being overweight, which is the leading risk factor to type 2 diabetes (Barnes 2011). Supporting this correlation, a study conducted by the Harvard T.H. Chan School of Public Health presents compelling evidence linking the consumption of sugar-sweetened beverages such as soda drinks to the development of diabetes. The study reveals that individuals who regularly consume sugary drinks, particularly at a rate of 1 to 2 cans or more per day, face a 26% higher risk of developing type 2 diabetes compared to those who consume such drinks infrequently (Harvard T.H. Chan School of Public Health 2023), and this association between sugary sodas and diabetes was independent of body fat (Imamura 2015).

Fast-food corporations have mastered the art and science of attracting and retaining a thriving base of active consumers. Nicholas Freudenberg, in *Lethal But Legal* (2014), reveals that these companies employ psychologists who meticulously analyze how food impacts the human brain, leveraging optimal combinations to stimulate cravings and foster a desire for more, a practice known as neuromarketing. Extensive research has unveiled that foods rich in sugar, salt, and fats have a profound effect on consumer behavior, intensifying the desire for further consumption and triggering “conditioned overeating” (Freudenberg 2014, 4). In essence, fast-food is addicting.

Though a main culprit, fast-food alone cannot shoulder the blame for the diabetes epidemic. Wholesalers, such as Costco – a staple in Puerto Rico – contribute to the issue by selling food in large quantities, which often leads to excessive purchasing beyond what is truly necessary. This practice, in turn, contributes to a culture of larger portion sizes, promoting overeating, which is a direct link to obesity (Centers for Disease Control and Prevention 2006). Consequently, families become accustomed to consuming larger portions, and when they turn to fast food, they require even more to satisfy their appetites. My field observation from our visit to Costco in Puerto Rico showed that we found ourselves forced to buy larger quantities than required due to the smallest available sizes surpassing the needs of our group.

While many of the risk factors linked to diabetes are modifiable, including diet, weight, physical activity, blood pressure, cholesterol levels, among other, familial influence is crucial in breaking the culture of food choice during childhood. As one nurse highlights, child nutrition is dependent on the family in that children eat the food that is offered to them:

“Mostly, 6 years to 13 years. So, and that’s gonna depend on the family, the nutrition that the family give the patient. So we receive a lot of patient overweight here.” (Interview with Nurse #2)

A study published in *Nutrients* by Scaglioni et. al (2018), firmly established that the family environment in which a child is raised exerts a profound influence on their eating behaviors, shaping patterns that can endure throughout their lifetime. Consequently, to initiate a transformation in the food culture of the future generation of Puerto Ricans, addressing the core issue of family culture around the quantity and type of foods is imperative.

The Subtle Perpetuation of Fast Food Consumption in the Hospital

Within the premises of San Jorge Hospital, there is an implicit acceptance or tolerance and perpetuation of the prevailing food culture that exists beyond its walls. This phenomenon can be attributed to several factors.

Firstly, the absence of a dedicated cafeteria within the hospital premises leaves limited options for healthier food choices for hospital staff and patients alike. As one nurse, highlights,

“So, right here, we don’t have any cafeteria. The father [of a patient] have to go outside and buy the food and if the children have regular [rather than restricted by doctors] diet, they bring whatever they want to the children because the hospital doesn’t have any cafeteria.” (Interview with Nurse #2)

While the hospital provides meals for patients, if they find the provided food unappetizing, they are left with limited options: either resorting to nearby vendors or relying on their families to bring them either home-cooked meals or their favorite meals bought outside. In my observations, the surrounding vendors predominantly consist of food trucks or fast-food establishments, reflecting the prevalence of such options.

Although the nutritional quality of a typical hospital cafeteria food may not always be optimal, the absence of a dedicated cafeteria at San Jorge Hospital puts patients at risk of consuming food that could potentially worsen their condition, particularly for those with illnesses like diabetes. Fortunately, diabetic patients are required to eat food provided by the hospital to regulate their condition. However, for individuals who are undiagnosed diabetics or in a pre-diabetic state, there exists a certain degree of flexibility in their dietary choices, allowing them to consume alternatives if they are dissatisfied with the hospital food.

Additionally, the immediate exposure to fast-food delivery advertisements upon entering the San Jorge Hospital building reinforces the influence of unhealthy eating habits. Encountering a Domino's delivery banner stand immediately upon entering the hospital left a profound and indelible impression (Photo 1). Witnessing such an overt endorsement of fast-food consumption

within a hospital setting was a striking and unprecedented experience for me. It was a paradoxical occurrence, as hospitals are traditionally regarded as places where the unwell seek healing and recovery.

Prior to this encounter, the only fast-food chain I had witnessed within a hospital was Subway, however it was not blatantly advertised or apparent and only regular patients and employees would know of its existence. However, Subway has set itself apart from other fast-food chains by offering meals that are generally lower in sugar and contain adequate amounts of protein and fiber. In fact, Subway's healthiest options have met the recommended nutritional requirements established by the American Heart Association, earning them the prestigious Heart Check Certification (Healthline, 2023). Nevertheless, it is important to note that Subway being classified as "healthy" is not an absolute guarantee. Furthermore, the mere availability of healthier choices does not automatically ensure their selection by customers. It is widely acknowledged that consumers often gravitate towards food options that are higher in sugars, salts, and fats (Freudenberg 2014).

Photo 1: *Upon entering the Emergency Room, one's attention is immediately drawn to the prominent display of a Domino's delivery banner, as shown on the right. This advertisement prominently features a convenient QR code, enticing individuals to place fast food orders, effectively promoting fast food consumption within a healthcare facility.*



For families who lack transportation or prefer to stay in proximity to their loved ones, the convenience of ordering from fast-food establishments for their relatives admitted at the hospital, including Domino's, becomes an alluring option.

Furthermore, the notable presence of icons such as Ronald McDonald further reinforces that fast food consumption is normal and welcomed. Another observation throughout the hospital



was elements of the clown, Ronald McDonald. For instance, clown footprints could be seen throughout guiding patients and families to the pharmacy and the laboratory (Photo 2).

Photo 2: *Scattered across the facility, playful clown footprints serve as delightful navigational markers, directing patients and their guardians towards the pharmacy or laboratory.*

Additionally, each elevator had posters of women dressed in clown-makeup smiling from ear to ear, with the words, *Sonrie* (smile) adjacent (Photo 3).

Photo 3: *Woman dressed up as a clown, further contributing to the fast-food franchise's presence.*

Finally, there were several life-sized clowns inside and outside of the hospital, one comfortably seated on a bench, as pictured in photo 4.



Encountering elements associated with McDonald's, the largest fast-food chain in the world, in a healthcare setting is subtle advertising and endorsement of the corporation. In this environment, families may inadvertently develop the perception that consuming food from establishments like Domino's or McDonald's is acceptable.



Photo 4: *Ronald McDonald can be observed comfortably seated, deliberately leaving ample space for patients, guardians, and visitors to capture memorable moments through photographs alongside mascots.*

Despite the diligent efforts of nurses and doctors to educate patients and their families about the significance of healthy habits and behaviors, such as maintaining a balanced diet and engaging in regular physical activity, they encounter obstacles from both internal and external sources. Internally, limited resources result in the absence of a dedicated cafeteria, which hampers the provision of nutritious food options. Externally, the infiltration of fast-food corporate advertising into the healthcare system poses additional challenges, influencing the perception and availability of unhealthy food choices.

Moreover, healthcare professionals face the added hurdle of addressing the prevailing food culture and sedentary lifestyle that are deeply ingrained in the lives of many Puerto Ricans. As I will further elaborate, these factors significantly contribute to the existing obstacles that must be surmounted to foster healthier habits and behaviors within the population.

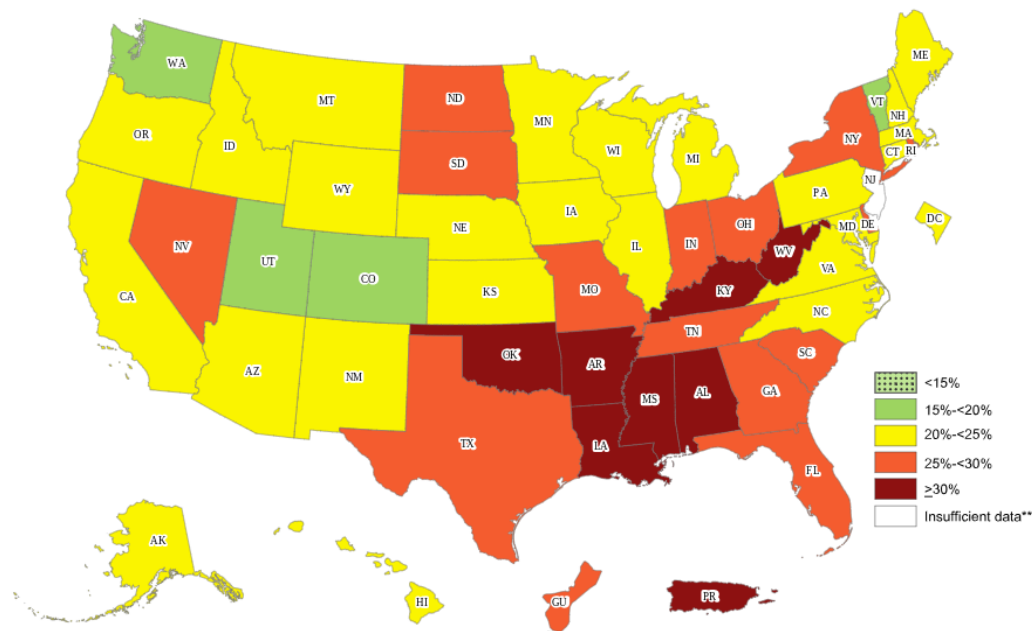
Physical Activity and Sedentary Living

Physical activity plays a pivotal role in promoting overall health and well-being, particularly for individuals living with type 2 diabetes. According to the Centers for Disease Control and Prevention, engaging in various forms of regular physical activity, such as brisk walking, dancing, lawn mowing, or participating in sports, enhances the body's sensitivity to insulin (Centers for Disease Control Prevention 2022). This increased sensitivity enables the

body to effectively utilize blood sugar for energy, thereby facilitating better management of diabetes. Physical activity offers a multitude of benefits that extend beyond its impact on diabetes management. Engaging in regular physical activity contributes to a reduced risk of heart disease, as well as it offers the potential to lower LDL "bad" cholesterol levels and increase HDL "good" cholesterol levels (Centers for Disease Control and Prevention 2023). Furthermore, incorporating physical activity into one's routine plays a vital role in maintaining a healthy weight. These collective benefits highlight the importance of regular physical activity as a cornerstone of a healthy lifestyle.

According to the data from the Behavioral Risk Factor Surveillance System (Centers for Disease Control and Prevention 2022), nearly 50% of Puerto Ricans self-reported they were physically inactive. This is the highest prevalence rate out of 49 states, the District of Columbia, Guam, and Puerto Rico combined.

Prevalence of Self-Reported Physical Inactivity* Among US Adults by State and Territory, BRFSS, 2017–2020



Source: [Behavioral Risk Factor Surveillance System](#)

* Respondents were classified as physically inactive if they responded "no" to the following question: "During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?"

** Sample size <50, the relative standard error (dividing the standard error by the prevalence) ≥30%, or no data in at least 1 year.

A similar trend of physical inactivity emerged during my interviews. One of the nurses highlights the sedentary norm in Puerto Rico:

“... the children mostly came to play game, PlayStation, they don’t have activities at home, they don’t practice any sports because they prefer to sit in the bed, see TV, do some play stuff, so they don’t do any exercise at all. So that’s a major problem and challenge...Parents can’t control them, [the kids], most of the time. So, that’s a major problem.” (Interview with Nurse #1)

The nurse emphasizes the observation that children increasingly choose to stay at home and engage in sedentary activities like watching TV or playing PlayStation rather than participating in sports. This concerning trend is partially attributed to the lack of promotion of physical activity within the home environment. Research points to an additional influence on physical inactivity in the family, which the nurse alludes to. A study by Gable and Lutz found that physical inactivity was related to parenting style and expectations. For instance, “parents who reported greater control of child eating and less appropriate expectations of child health also indicated that their children watched more television and were engaged in fewer extracurricular activities” (Gable and Lutz 2000, 298). Furthermore, this study revealed a noteworthy correlation between the amount of time spent watching TV and the consumption of high-sugar and junk foods. These findings align with the expected patterns that are typically observed at movie theaters. One point emphasized by the nurse in her interview is that there seems to be an underlying issue where parents lack control over their children, allowing them to behave as they please without clear expectations regarding nutrition or physical activity.

Another nurse observed a concerning trend among her patients, linking the increasing sedentary lifestyle, smoking, and frequent fast-food consumption to increased incidence of early-onset type 2 diabetes in her pediatric patients.

“We have a big issue in Puerto Rico right now. We are the second country in the world with the largest diabetes population, the second in the world...Because most of the population don’t do exercise, you see that they eat fast-food every time, they don’t eat health... and the smoke, and smoke increases the risk of heart disease. Additional, they are sedentary, watching TV, PlayStation game, or in the computer. That starts diabetes in pediatric population that I have never seen before. That is why because they are more sedentary” (Interview with Nurse #2)

This situation is indeed cause for alarm, as clinicians traditionally do not expect to encounter cases of type 2 diabetes in patients below the age of 45, and such diagnosis is associated with a significant increase in heart attacks, depression and other morbidities, poorer quality of life, and premature death (Wilmot and Idris 2014). Additionally, due to a multitude of contributing factors, there is a growing number of children and teenagers being diagnosed with this condition. While this situation may appear daunting and complex, it is important to remember that there are actionable steps that individuals can take to reduce their risk and improve their overall health in relation to type 2 diabetes. One nurse emphasizes the criticality of instilling healthy habits, such as regular exercise, from a young age:

“And the family does not promote the importance of exercise during the develop stage of the children. The exercise you have to promote from the beginning, eat healthy from the beginning, if you promote that you have a healthy family. But, if you don’t promote that from the beginning, at the end, you can find a lot of health problem.” (Interview with Nurse #1)

Given the prevailing patterns, advocating for the consumption of nutritious and well-balanced meals, along with encouraging regular physical activity both within and beyond the home, emerges as crucial strategies for primary prevention to counter fast-food corporation influence and the normalcy of sedentary living.

The Healthcare System

The Brain Drain and Limited Staff

My research in Puerto Rico shows that healthcare professionals encounter both internal and external barriers that hinder their work and influence. One significant internal challenge is the phenomenon known as "brain drain." The term "brain drain" describes the significant emigration of highly educated individuals or human capital to countries offering greater opportunities, higher salaries, and improved standards of living (National Institutes of Health 2005). This phenomenon represents a loss of intellectual and professional resources from the home country, which can have far-reaching consequences in various sectors, including healthcare.

The recent COVID-19 pandemic has further exacerbated the vulnerabilities and weaknesses of healthcare systems worldwide, including Puerto Rico. The unprecedented challenges posed by the pandemic have shed light on the vulnerabilities and gaps that exist, prompting a critical examination of healthcare infrastructure, preparedness, and response capabilities. The brain drain has emerged as a significant vulnerability within the Puerto Rican healthcare system. The nurse's interview account highlights the impact of this brain drain, with fewer healthcare professionals available to manage patient care in the hospital:

“...we are very limited because the reality right now after the COVID, we have a lot of physicians that move to the United States or other country and nurses too. And in the hospital, we work with the complete unit with patients, with little assistance of nurses and physicians. And that has a big problem that we have right now.” (Interview with Nurse #1)

This phenomenon has resulted in a substantial exodus of physicians from Puerto Rico in search of better income prospects. As one nurse underscores regarding their salary, “the salary is the minimum” (Interview with Nurse #1). Consequently, the diminished number of doctors and nurses available to cater to the same or even growing patient population has created a strain on the healthcare workforce and resources. This situation further compounds the challenges faced by the healthcare system in providing adequate care and addressing the healthcare needs of the population.

Additionally, the maintenance and upkeep of the hospital pose significant challenges, as I discovered during my conversation with the two dedicated handymen responsible for these tasks. It became apparent that they are facing substantial difficulties in keeping up with the maintenance demands. Compounding the issue is the fact that these hardworking individuals lack the necessary equipment to carry out their work efficiently. They are left with no choice but to rely on their personal tools brought from home such as hammers and screwdrivers, further adding to their burden. The inadequate resources and limited manpower dedicated to maintenance highlight the pressing need for improved support and investment in this crucial aspect of hospital operations. Moreover, this places an additional threat to patient safety, as the hospital is not adequately staffed and being maintained.

During my volunteer and fieldwork experience at the hospital, we encountered several power outages. Unfortunately, the hospital did not have a generator in place to provide backup power during these incidents. As a result, the hospital operations were disrupted, and patient care was compromised during these power outages. The lack of a generator represents a critical infrastructure gap that needs to be addressed, as it directly impacts the hospital's ability to provide uninterrupted care and maintain essential medical equipment and services.

Another critical area that faces challenges within the hospital is the availability of nutritionists on staff. As one nurse highlights, “we don’t have a lot of staff, we only have two nutrition here for the entire hospital.” (Interview with Nurse #2) Regrettably, there is a significant shortage of nutritionists, with just two professionals responsible for the entire hospital. Their workload includes meeting with diabetic patients and providing essential dietary recommendations to support their health and management of the condition. This shortage raises concerns about the ability to provide comprehensive nutrition support to a diverse patient population in need. Addressing this staffing inadequacy and expanding the nutritionist team would greatly enhance the hospital's capacity to deliver personalized and effective nutritional guidance, ultimately improving patient outcomes and well-being.

Despite these many challenges with the Puerto Rican healthcare systems, the healthcare professionals, continue to strive for the best possible care and outcome for their patients:

“Yeah, because we don’t have too much staffing here, we only a few nurse and a few doctors, so it’s a little bit hard to do the activity, but we do, we try. We try to do our best.” (Interview with Nurse #2)

Financial Resources

The financial challenges faced by San Jorge Hospital are evident in its historical evolution. Initially established as a General Hospital, the institution's growth and specialization as a dedicated Children's Hospital were made possible by increased financial support. However, as funding sources diminished over time, the hospital gradually reverted back to its original status as a General Hospital. As one nurse states, “General, yeah, right now, it's like a General

Hospital. Yeah” (Interview with Nurse # 1). This pattern of fluctuating financial support highlights the ongoing struggle to maintain adequate resources and sustain specialized services. The lack of consistent financial backing poses significant obstacles to the hospital's ability to meet the evolving healthcare needs of the community and provide specialized care for specific patient populations.

In an effort to adapt and generate additional revenue, San Jorge Hospital implemented a Plastic and Reconstructive Surgery Center, which has become a significant income generator for the institution. This specialized center offers a range of procedures that cater to both cosmetic and critical needs, attracting a diverse clientele. By providing comprehensive services that address both aesthetic and medical concerns, the center has successfully expanded its client base and contributed substantially to the hospital's financial sustainability. The integration of this center demonstrates the hospital's proactive approach in diversifying its services and leveraging its expertise to meet the demands of the healthcare market while simultaneously ensuring the availability of critical procedures for those in need.

Conclusions & Recommendations

Puerto Rico is faced with a myriad of challenges encompassing food culture, sedentary lifestyles, and limitations within the healthcare system, all of which contribute to the alarming rise of diabetes among both the young and adult population. However, amid these daunting obstacles, there remains a ray of hope in mitigating the devastating consequences of diabetes on mortality and disability rates. Targeted interventions can be initiated within the confines of the

home, empowering parents to assume a proactive role in making healthier choices, despite the limited options available, and actively promoting increased physical activity in the family to combat obesity and prevent the onset of diabetes. It is essential to recognize that addressing obesity and fostering regular physical activity significantly reduces the risk of developing diabetes (National Institutes of Health 2010).

By embracing these lifestyle modifications and fostering a culture of prevention, Puerto Rico has the potential to alleviate the burden of diabetes and pave the way for improved health outcomes. Furthermore, it is crucial to emphasize that once diabetes manifests, it is not necessarily irreversible. Recent research developments highlight that intensive lifestyle interventions in diet and physical activity at home or in the workplace can play a pivotal role in inducing partial or complete remission of type 2 diabetes (Reid-Larsen et al. 2019; Varady et al. 2022). These findings underscore the importance of early intervention and the potential for significant positive outcomes in managing and reversing diabetes.

Trip's Success and IMO in the Community

Although this was IMO's first trip to Puerto Rico, we have established a strong presence at San Jorge Hospital, the Ronald McDonald House, and the community. To illustrate this, for example, San Jorge Hospital dedicated a Facebook post (Photo 5) to highlight our community engagement and volunteering for the week of March 13-17th.

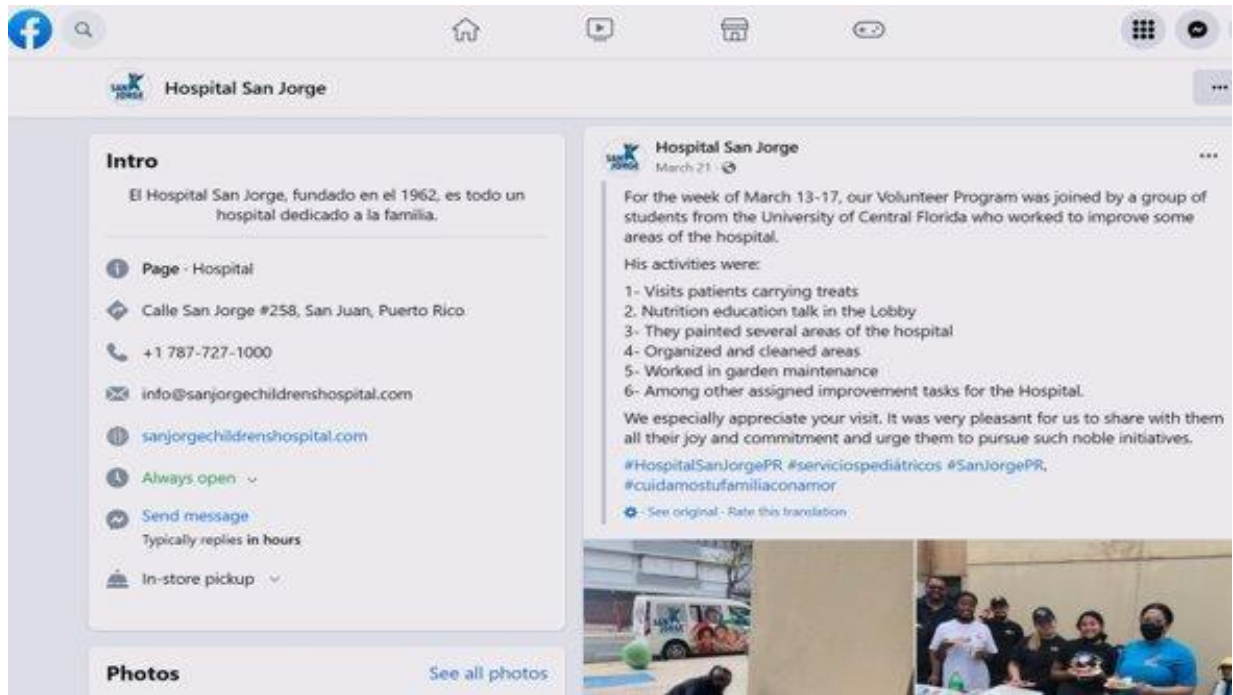


Photo 5: Facebook post by San Jorge Hospital highlighting the work IMO members did during the week of March 13-17, 2023.

Numerous local volunteers established connections with IMO members, either through social media platforms or by exchanging phone numbers, with the shared objective of reconnecting and collaborating in the future. Undeniably, this trip served as a pivotal milestone for IMO, laying the foundation for their ongoing efforts within the community.

The structure of this trip received high praise from many IMO members, who appreciated its emphasis on direct community impact rather than primarily shadowing healthcare professionals. Members regarded this trip as the most fulfilling among all the other domestic and international trips precisely because of this approach. By actively engaging with the community and making a tangible difference, IMO members felt a stronger sense of purpose and accomplishment. Without a doubt, the collective assistance our team provided had a profound impact on the community. The aid we delivered within a span of just one week was equivalent to

several months' worth of support. The concentrated efforts and dedication of our team enabled us to make a significant and meaningful difference in a relatively short period of time. The community benefited immensely from our contributions, and the positive outcomes of our assistance will continue to reverberate for months to come.

Recommendations for Future IMO Initiatives in Puerto Rico

Through my research, I have identified numerous obstacles and challenges that currently hinder Puerto Ricans and their healthcare system, impeding their ability to achieve improved health outcomes. As a non-profit organization, IMO recognizes the need to be strategic in selecting the areas where it can intervene effectively to generate a profound and lasting impact. By carefully evaluating the existing landscape and understanding the specific needs and priorities of the community, it can direct its resources, expertise, and efforts towards initiatives that will yield the greatest benefits and create meaningful change.

Many of the challenges and disparities faced by Puerto Ricans stem from deep-rooted systemic issues. While addressing these systemic root causes of health disparities is undoubtedly the ideal approach, it is currently not feasible to undertake such a monumental task. However, IMO can focus on the major risk factors that contribute to disease, to still make a significant impact on improving health outcomes. Through targeted primary interventions, IMO has the opportunity to bring about transformative effects and create meaningful change within the existing constraints. My recommendation is for IMO to consider specific interventions that may be delivered during future trips to address these modifiable risk factors head-on IMO can effectively empower individuals and communities to take control of their health and reduce the burden of preventable diseases:

1. promoting a healthy diet,
2. increasing information about how to access healthy and affordable foods, and
3. enhancing health and physical activity education.

Future Recommended Workshops & Initiatives:

Specifically, health education through workshops and other educational modalities in the community represents the pinnacle of excellence in public health and may be implemented by IMO. It serves as a pivotal social determinant of health, capable of revolutionizing health behavior and yielding positive outcomes when implemented effectively. As underscored earlier, the influential role of parents and the home environment in shaping children's behavior cannot be overstated. Therefore, it would be immensely advantageous for IMO to organize a parent workshop centered around parental choices concerning nutrition and physical activity, with a specific focus on their impact on child obesity. To ensure optimal results, I am eager to collaborate closely with the Special Projects team in researching highly effective workshop strategies. Furthermore, conducting an evaluation of the past nutrition workshop and seeking feedback from the audience would greatly aid IMO in refining and honing the most effective workshop strategies for future implementations.

Moreover, fostering connections with local schools of all levels would yield substantial benefits in educating the youth in schools about the importance of healthy eating and physical activity. Furthermore, when it comes to educating Puerto Rican youth about food choices, it is of utmost importance for IMO to offer alternative options that address the existing food choices in a manner that is accessible, affordable, and culturally-informed. By doing so, IMO can effectively

promote positive dietary practices that resonate with their cultural background while ensuring practicality and affordability.

In instances where schools are lacking sports teams or adequate playground facilities, IMO should explore the possibility of collaborating with school authorities to establish sports activities or offer assistance in their development through the contribution of labor and time. Conversely, if school sports teams and playgrounds are already in place, IMO can make a valuable contribution by donating sports balls or dedicating time and labor to ensure that these clubs provide an inviting and nurturing environment for the children. Evaluating the effectiveness of an already implemented program would prove highly advantageous for the community, particularly if conducted by future interns. It is possible that the Puerto Rican community is already taking proactive measures to improve health outcomes through programming.

Furthermore, IMO has the opportunity to enhance patient safety within the hospital by establishing proactive communication with the handymen. By comprehensively understanding their tool requirements and taking into account availability and resources, IMO can consider donating those tools to the Hospital. This proactive approach will contribute significantly to maintaining a safe and secure environment for patients.

Additionally, IMO can explore the possibility of assisting schools in establishing community gardens or collaborating with local farmers to facilitate the availability of fresh and affordable produce in schools and the surrounding community. This approach not only allows children to learn about healthy eating but also enables them to bring home a portion of the fresh produce. Just as parents play a pivotal role, children also have the power to educate their parents and potentially catalyze positive changes in the family's culture.

Lastly, considering the absence of a generator at the hospital, IMO can initiate fundraising efforts to procure a generator within the next few years. Given the unpredictable nature of climate patterns and environmental shifts, having a generator in place would prove immensely advantageous when facing future public health crises.

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