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Rashika Verma April 10, 2018

Just what the doctor ordered? Exploring doctors' perspectives on food insecurity and health outcomes in an urban Georgia food desert

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Abstract

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By Rashika Verma

Food deserts are marked by high rates of chronic diseases such as obesity, hypertension, and diabetes.While several studies have explored the genetic, social, and racial factors that influence those high disease rates, there are little to no studies examining doctors' perspectives on food insecurity and health outcomes within those areas. Understanding doctors perspectives on food insecurity, which has important social and physiological impacts, is important to developing more complete narratives of urban American food insecurity and to understanding how people's healthcare experiences influence their health outcomes within food deserts. This study aimed to understand how doctors in an urban Georgia food desert perceive food insecurity among their patients, and how they interact with the larger healthcare and food infrastructure within that urban food desert. 20 physicians, recruited via snowball sampling, were interviewed to assess their perceptions and understandings. The results suggest that while physicians are aware of the realities of food insecurity and of food deserts, they are unable to take meaningful action to address those problems at their root cause. As such, some have developed alternative methods for helping food insecure patients cope with health issues related to food insecurity, while others are too restricted by their schedules or professional and personal demands to provide significant assistance to patients. The results also reveal the difference in the experiences of living in a food desert between doctors and their patients which manifests in the different health standards that doctors use themselves versus the ones they recommend to their patients. These findings indicate that a greater focus on nutrition and social determinants of health in medical school could help doctors connect better with their patients and be able to provide better advice on how to maintain a healthier lifestyle.

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

INTRODUCTION

MOTIVATION

"I think that if …the nursing community, the doctors, and everybody was on the same page, that would make a big difference, but everybody is not on the same page…one of the most prominent pediatricians in this area, his children [are] morbidly obese… [So] how can [I let him] treat my kids?"

While interviewing residents of Georgia's food deserts for another study, I spoke with respondents who shared concerns with the healthcare system, specifically the disconnect between the food desert residents and the doctors. Overall, there was a general feeling of mistrust toward doctors. The interviewees, like the one cited above, believed their doctors did not understand what it was like to live in a food desert because they were rich, while the majority of their patients were not (Verma, 2016). Or, the doctors would give advice on healthy diets and lifestyles, but would not follow that advice themselves.

This mistrust is a reflection of the larger state of healthcare in America. In a 2014 Gallup poll, only 23% of respondents reported feeling confident in the medical system, and overall, public confidence in doctors has declined from 73% in 1966 to just 34% in 2012 (Gallup, 2014; Blendon et. al., 2014). Further analyses of public opinion polls on healthcare have indicated that the decline is "probably attributable to broad cultural changes in the United States, as well as rising concerns about medical leaders' responses to major national problems affecting the U.S. healthcare system" (Blendon et. al., 2014). While this lack of trust is a damning reflection of the US healthcare system, it also has serious ramifications for patient care. One one study has shown that patient trust is an integral part of an effective healthcare system and is positively correlated

with higher treatment adherence, continuity of providers (i.e. staying with one provider for a long time), and higher patient satisfaction with care (Thom et. al., 2004).

There are a multitude of factors that can influence the trust that patients have in their providers. Older americans, men, and non-low-income families are all more likely to report being completely or very satisfied with their care compared to their younger, female, and low-income counterparts (ISSP Research Group, 2013). Differences in trust are also seen between racial groups, especially given the history of race relations in the United States. Non-hispanic black people are less likely to trust their physicians than their white counterparts, and also more likely to be concerned with their privacy and harmful experimentation in hospitals (Boulware, et. al., 2003). That fear of experimentation is not shocking when viewed in the context of the Tuskegee Syphilis Study (1932-1972) in which 399 African-Americans were systematically denied treatment for their syphilis in order to study the course of the disease. Though the US government has since apologized, the study "has come to symbolize racism in medicine, misconduct in human research, the arrogance of physicians, and government abuse of Black people" (Gamble, 1997). Foreign-born immigrants were also more likely to report discrimination in healthcare than their native born counterparts (Lauderdale et. al., 2006).

But the question still remains — is history enough to explain the huge decline in patient trust of their physicians? In modern America, doctors are expected to go through an intense program of study: 4 years of an undergraduate degree, 4 years of medical school, 3-7 years of residency, and optionally, 1-2 years of a fellowship. Furthermore, they are required to recertify their credentials periodically to ensure proficiency. The result of this process is to produce medical practitioners that are well versed in the physiology, pathophysiology, and pharmacology of their chosen specialty. But there is more than simple physiology at stake when we consider the

causes of a disease and the course it will take. A person's zip code has been shown to be a better predictor of health than income or race/ethnicity (Drewnowski et. al., 2007). Social medicine is a subfield of medicine that focuses on the social and economic factors that influence health, disease, treatment, and health care policy. In order to effectively treat people, doctors need to understand those other factors that impact health, otherwise it is as if they are trying to solve a problem with only half of the variables.

Food insecurity is one of those variables. Even with the best medications and therapies, a sick person will not get better if they are not able to eat the right types and amounts of food. But food insecurity is popularly thought to be a third world problem; a problem of hungry, stunted children and of poor farmers who cannot harvest enough food to feed their families (Grant, 2012). Indeed, that is what I thought before coming to college and getting involved in a study that assessed meaning making in Georgia's food deserts from the residents' perspective. And as I listened to the experiences of those subjects, I began to re-evaluate my ideas of food insecurity and placing them in the context of rural and urban America — of communities where the nearest supermarkets are miles away, fast-food chains dot every corner, children receive little to no education on nutrition in school, and where the healthcare system falls short of addressing its citizens' needs.

As an aspiring physician, it was shocking to hear that the perfect image of the doctor-patient interaction I had in my head was nothing like reality. My immediate question was if doctors realized that their patients felt this way, what they were doing to address it? The goal of this study is to broadly outline the perceptions that physicians working in a food desert have on food, food insecurity, and the healthcare system's relation to those factors.

NOTE ON SELF

Before continuing, I want to situate myself in the context of my study. In qualitative studies, "the researcher is a central figure who influences the collection, selection, and interpretation of the data. Our behavior will always affect participants' responses [such that]...[the] research is thus regarded as a joint product of the participants, the researcher, and their relationship: It is co-constituted" (Finlay, 2002, p. 531). Thus, my positionality is inherently present in this study. In her work, "Situating Feminist Dilemmas in Fieldwork", Diane L. Wolf discusses the idea of being an insider or outsider and the influence that has on fieldwork. This dynamic is at play during participant interviews, the method used in this study. An insider is someone who belongs to the group being studied, while an outsider is someone who does not, and studies have shown there to be both benefits and costs to each position (Wolf, 1996, p.1-55, y Virgil and Elsasser, 1978). As an undergraduate student, interested in pursuing a career in medicine, I am both an insider and outsider with regard to my participants. I have a foot in two worlds, one as an outsider because I am not yet a physician like my participants, and another as an insider because I have moved within the medical field for most of my life and intend to formally enter it within the next few years. This dichotomy has relative costs and benefits in terms of my ability to connect with my participants and encourage their openness and honesty, but it can also create an expectation to which the participants feel they have to meet.

Furthermore, growing up in an upper-middle class family, first in a wealthy suburb of Oregon and then of New Jersey, I have not really experienced the challenges of food deserts, particularly any distrust of my medical professionals, which, as mentioned earlier, is a reality of food deserts. Indeed, growing up, it was my absolute trust in their abilities that inspired me to pursue a career in medicine. Therefore, my own position as a medical researcher may have been

communicated socially to my participants in unanticipated ways that may have influenced their responses. The complex web of relationships between my participants and I, or the "mess", as anthropologists sometimes call it, may appear to have too many variables influencing the data, but the mess is where meaning is made (Law, 2004). It is precisely those messy and interwoven links that inform us about our position in the world, our relation to others in the environment, and the ways in which our connectivity (or lack thereof) has influenced our ideologies, values, and beliefs. Furthermore, while I am as much a part of the "mess" as my participants, I kept my experiences and opinions about food out of the interview conversations to encourage authenticity on the part of the participants.

BACKGROUND

Food Security

The definition of food security has shifted dramatically over the years to reflect new developments in food research and policy. When the term was coined in the mid-1970s it was defined as, "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (WFC, 1974). This definition was a reflection of the then economic focus on international and national trends on food volume and availability due to high inflation levels and Malthusian ideas of over-population causing worldwide food shortages (Malthus, 1888). But policy makers soon realized availability alone was not an adequate measure of food security. Thus, in 1983, a new definition was suggested; "[a state] that all people at all times have both physical and economic access to the basic food they need" (FAO, 1983). But even this definition was based on supply-

demand economics and left out most social considerations relating to food. In 1996, a more nuanced definition was proposed:

> Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996).

A more concise definition, and the one that will be used in this thesis, states that a household is considered to be food secure "if it can reliably gain access to food in sufficient quantity and quality for all household members to enjoy a healthy and active life" (Gillespie and Haddad, 2001). Beyond the definition, food security is also realized through four critical pillars — the physical *availability* of food, economic and physical *access* to that food, food *utilization*, and finally, the *stability* of the three factors over time (FAO, 2008). It is important to consider all four dimensions when assessing food security because on its own, each factor is insufficient to ensure food security.

Some trends emerge when looking at the development of food security's definition. First, there is the shift from the focus on availability of food to the access to food. This is important because even places with adequate food supplies and a healthy market experience famines and chronic hunger. The issue is not whether food is available; the issue is whether all members of a given society can equally access that food (Sen, 1981). For example, Yemen, which is reportedly on the brink of famine despite there being plenty of food in the nation. The reason? Conflict, in particular, a power struggle over a key port and central bank that is severely limiting access to food in Yemen (Goldberg, 2017). Furthermore, there is already enough food in the world today to feed ten billion people at least a grain-based diet with moderate protein supplementation (Strubenhoff, 2015). So the issue is not the availability of food, but the inequities in access to that food.

The other trend is the shift from focusing on the national level to focusing on the individual and household level. National data, and even state level data, usually provide little detail into the actual level of food security because it homogenizes the demographics. While the overall data may indicate that most households in an area are food secure (or insecure), there may be significant regional differences that need to be acknowledged. There may also be important household differences in food security, such as unequal distribution of food resources between parents and children, or between boys and girls (Leonard, 1991; Messer, 1997; Hadley et. al., 2008).

Food Deserts

Those regional differences can manifest in the form of food deserts. The USDA defines food deserts as "urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food" (USDA, 2017). The key word in that definition is access; food deserts are not determined by the availability of fresh, healthy, and affordable food, but rather by people's ability to access to those foods. But since the term "food desert" was first coined in the 1990s by a public housing sector resident in Scotland, there has been some debate about what actually constitutes one (Cummins and Macintyre, 2002). Some define them in regard to the number of grocery stores in an area, while others name high poverty rates as markers of food deserts (Cummins and Macintyre, 2002; Hendrickson et al., 2006). While food deserts may not have ready access to healthy and affordable food, most urban food deserts in America do have plenty of fast food options. The saturation of the food market with these convenience retailers has led to them being called "food swamps, which one study defines as places where "large relative amounts of energy-dense snack foods inundate healthy food options" (Rose et al., 2010). Thus while residents have access to *some* food, there is limited variety and customers have to pay a

premium for fresh foods at a convenience store, making it difficult to maintain a healthy diet (Blanchard and Lyson, n.d.)

There is much debate about how food deserts are created in the first place. Some argue that the creation of large chain supermarkets like Walmart have driven local grocery stores to close and thus, increased the distance residents have to travel to buy foods (Guy et al., 2004). The large chain supermarkets also tend to have longer hours, more variety, and plenty of parking options that incentivize people to come to them rather than small grocery stores (Alwitt and Donley, 1997; Guy et al., 2004). Another theory posits that urban food deserts were created by economic segregation in the 1970s and 1980s in the United States that led to the movement of affluent people to the suburbs, causing urban grocery stores to go out of business (Bianchi et al., 1982). This theory has led to to food deserts sometimes being referred to as "food apartheid" due to the racially charged and racially exclusionary history of food deserts in America (Bradley and Galt, 2014). Other theories point to the strict zoning laws and high property costs of urban retail space that discourage supermarkets from opening in cities despite the prime location and large potential customer base (Alwitt and Donley, 1997; Gittell and Thompson, 1999). What all these theories share is the idea that food deserts are marked by a lack of physical access, either due to competition creating "a void" in terms of food options or there being no competition at all (Furey et al, 2001).

Retail trends over the past 20 years have favored large chain supermarkets over traditional "mom and pop" or neighborhood grocery stores. In 2016, the 20 largest food retailers accounted for $515.3 billion, or 66.6% of all grocery sales in the United States, a dramatic increase from their 42.2% share in 1996. A major driver of this growth has been the spread of Walmart supercenters across the nation, whose 2016 sales totaled $136.2 billion (USDA, 2017).

Growth of non-traditional food retailers, such as mail order, home delivery, or direct from farm purchases, have also incentivized brick and mortar supermarkets to provide more services to their customers to draw them in. These include rewards programs and store owned gasoline pumps. The consumer trend toward organic and non-processed foods has also led major retailers to increase their offering of those foods in their stores (USDA, 2017). While on the surface, the idea of more major retailers across the country sounds like an excellent solution to food deserts, it is actually making the problem worse. The proliferation of large chain supermarkets is addressing the availability dimension of food security, but not everyone can access those food resources equally.

In 2011, Michelle Obama launched the Partnership for a Healthier America, in which Walmart, Walgreens, and SuperValu each pledged to open or expand 1,500 stores in food deserts to bring more food options to underserved populations. Not only have those retailers not met their pledges, with Walmart only opening or renovating 656 stores, they have also closed hundreds of others in low income communities (Love and Das, 2016). Large chain supermarkets lack ties to the community that would make them beneficial to residents, as they do not fully understand local preferences and often cannot provide the same level of personalized service (i.e. home delivery) as community-level businessowners (Corstjens and Lal, 2012). Greater access to supermarkets has been shown to be largely unrelated to the overall quality of a person's diet, while there was a significant correlation between proximity of fast food restaurants to people's homes and their diet quality (Boone-Heinonen et al., 2011). Additionally, food preferences tend to develop around age 2-3 and remain consistent up to young adulthood, where they can undergo some changes, but are still dependent on past food habits (Nicklaus et al., 2004). Therefore, supplanting fast food restaurants with supermarkets into an area is not likely to be successful in

encouraging people to eat healthier foods on its own, especially when the price of healthy foods tends to be higher than processed, or unhealthy food (National Research Council, 2009).

Race and socioeconomic status also play large roles in defining the realities of food deserts. Areas of predominantly black residents tend to have fewer supermarkets, six times more fast food restaurants, and overall fewer healthy food options compared to areas of predominantly white residents (Block and Kouba, 2006; Block et al., 2004; Lewis et al., 2005). And while predominantly black neighborhoods have about 52% of the supermarkets available in predominantly white neighborhoods, Hispanic neighborhoods have only 32% of the supermarkets available in non-Hispanic neighborhoods (Powell et al., 2007). Fast food density increases by 10% with a 3.7% increase of black residents in a neighborhood, and a 4.8% decrease in median household income (Block et al., 2004). This disparity has led to the creation of racial hierarchies and is in effect, reinforcing white supremacy by denying people of color equal access to healthy foods and reinforcing the food apartheid label on food deserts. The trend is similar for low-income neighborhoods — poor areas have fewer supermarkets and more convenience stores, and fewer fruit and vegetable markets, bakeries, and natural food stores compared to more affluent areas (Moore and Diez-Roux, 2006). Prices at large chain stores tend to be cheaper than small convenience stores, but most large chain stores are located outside areas of high poverty (Chung and Myers, 1999). Transportation is also a major issue for both low income and minority neighborhoods. Compared to the most impoverished white neighborhoods, poor black neighborhoods are, on average, 1.1 miles father from the nearest supermarket (Zenk et al., 2005). This makes it more difficult for those residents to access the food options available at the supermarkets, forcing them to rely on the nearby fast food restaurants or convenience stores for food.

Impacts of Food Deserts

One of the major effects of food deserts is that they shift residents' perceptions of the amounts and types of foods they should be consuming. People living in the same area tend to share similar ideas about food. One study that compared food-buying preferences of food desert residents compared to food oasis (the opposite of a food desert) residents found that while there were only a few differences between the two populations, food desert residents tended to focus significantly less on health consciousness, budget considerations, and special occasions (among some other factors) than residents of food oases (Block and Kawachi, 2012). People also tend to make food choices based on the options available in their immediate vicinity (Furey et al., 2001). This is an issue in food deserts as they tend to be saturated with fast food and other unhealthy food options.

There is also a significant correlation between health outcomes and food deserts. Body Mass Index (BMI) is the most commonly used metric to determine if a person is of normal or abnormal (underweight, overweight, or obese) weight. It is calculated using a person's height and weight, including weight from fat and muscle, which can lead some muscular individuals who are otherwise healthy to have high BMIs. A proposed solution to this issue is to measure waist circumference, which measures abdominal fat and can provide a more accurate measure for BMI designations (CDC, 2017). The highest rates of obesity are found among low-income populations, arguably because of the low cost of energy dense foods, high palatability of sugar and fats leading to higher consumption of those products, and lower intakes of fruits and vegetables among food insecure populations (Drewnowski, 2004; Drewnowski and Spector, 2004; Anderson and Hunt, 1993). Residents of food deserts also tend to have higher rates of diabetes, hypertension, heart disease, and stroke (Indiana University, 2013). However, it is

difficult to say that food options are the sole contributor to the higher prevalence of these diseases in food deserts as studies have shown that other factors, such as low levels of activity and higher television viewing times are more positively correlated with higher levels of chronic conditions like obesity (Janssen et. al., 2004). Food deserts are also linked to increased rates of childhood obesity, which can have detrimental health effects on those children later in life (Schafft et al., 2009). Food insecurity can also make it hard for people to adhere to medical advice or regimens because they cannot eat the right type or amount of food for the medicines to be effective, or they simply do not prioritize medicines when they have a hard time finding food (Young et al., 2015).

Food deserts have also been linked with negative social and psychologial effects, such as anxiety and depression (Campbell, 1991). Food insecure mothers and their children tend to have more mental health problems (i.e. anxiety, depression) than food secure mothers and children. This is especially relevant because in most families, the mothers are responsible for preparing food for their families, and thus bear the brunt of the stressors that come with not being able to obtain enough, or the desired type, of food (Whitaker et. al., 2006).

Studies have shown that people living in food deserts know that there is a lack of affordable, healthy food and are aware that that lack of availability is an issue (Hendrickson et al., 2006). However, most residents are not able to do anything about that fact. They do not have the resources to move to a different neighborhood with better availability and access to healthy foods or to travel farther distances to go to stores with better food options. And in some cases, food may not even be the highest priority for low-income individuals living with food insecurity. Studies have shown that people are willing to deal with hunger or eating less

preferred foods to avoid selling personal possessions or moving out of certain areas (Watts, 2013).

Solutions to Food Deserts

Most efforts to address food deserts favor locally based initiatives over standardized, national programs (Mares and Alkon, 2011). Community Supported Agriculture (CSA) programs, in which residents purchase a share of a local farm in return for a regular box of fresh produce, are gaining traction as a potential solution to food deserts. While they do make it easier for residents of food deserts to get access to fresh fruits and vegetables, the average CSA program had a $429 share fee, which has to be paid up front at the start of the season (Tegtmeier and Duffy, 2005). This hefty price tag is often too much for many low-income residents of food deserts and thus ends up benefiting wealthier residents, who due to their resources were not necessarily food insecure to begin. Furthermore, CSA programs have weekly drop-offs, prices, and produce amounts that are based on household size. For many residents of food deserts, they may not have a stable schedule or stable household size to be able to keep up with the CSA boxes (University of Chicago, 2017).

Community food security is another discourse within the food movement that is attempting to address the problems of food deserts. Community food security endorses local food production and consumption, but also connects that with "emergency food" programs (i.e. food banks and meal programs) to address consumption practices on the local and individual level (Mares and Alkon, 2011). This discourse aims to improve both access and availability of food goods within a community and involves entities like food banks, which have traditionally been excluded from the food movement due to the belief that they simply perpetuate societal inequities (Vitiello et. al., 2015). As a result, some food banks have begun to depart from being

simple canned and boxed "emergency food" distributors to entering the food farming and cultivation sector, incorporating local residents and volunteers in their efforts. The result of this has been a sharp increase in the nutritional quality and variety of the food that food banks distribute, as well as the strengthening of social network ties, life satisfaction, and improved financial safety nets within the community, which can ultimately help improve the mental and physical health of the food insecure (Vitiello et. al., 2015, Alaimo et. al., Blair et. al., 1991).

Other solutions involve policy implementations by local governments on behalf of their citizens. Cities such as New York, Boston, and Pittsburgh are addressing lack of access to supermarkets by developing partnerships with public and private sector organizations to bring supermarkets to underserved and previously overlooked areas of town (Pothukuchi, 2000; Nayga and Weinberg, 1999; Widdus et al. 2001). Other efforts have been aimed at encouraging local media campaigns to support fresh fruit and vegetable consumption and restricting food advertising aimed at young children while also providing more fresh produce for young children at school (Pollard et al., 2008).

Why Addressing Food Deserts is Important

There are many reasons why food deserts need to be addressed. As a whole, there is a moral argument to be made for addressing food deserts, especially as Article 25 of the United Nations Declaration of Human Rights states that all people have the right to food to a measure that is "adequate for the health and wellbeing of himself and his family" (UN General Assembly, 1948). Furthermore, given the strong connection between certain chronic disease and food deserts, and the United States' exorbitant annual healthcare expenditure, addressing the problems of food deserts would help reduce healthcare costs (Hagist and Kotlikoff, 2005).

Historical Context of Atlanta

As this study will spatially focus on Atlanta, Georgia, it is important to understand the larger social context and history of the area. British settlers, who wanted to use Georgia's strategic location between the South Carolina and the Spanish controlled Florida, first established Georgia as a colony in 1732. At its founding, Georgia was one of only two colonies in which slavery was banned. That ban, however, was lifted in 1751 and slavery grew to be a large part of the local economy and social hierarchy until it was abolished in 1865. When tensions rose during the American Civil War, Georgia was one of the leading voices for secession as it had established itself as the heart of the "Empire of the South" and had the largest population of slaves and slaveholders in the Deep South (it was second only to Virginia). After the Civil War, Georgia underwent a tumultuous Reconstruction period marked by political tensions, racial violence, and land ownership, along with the rise of white supremacy groups like the Ku Klux Klan (Cobb and Inscoe, 2009).

Atlanta was founded in 1837 at the end of the Western and Atlantic railroad lines, but did not play a significant role on the national stage until after Reconstruction was underway and Georgia was readmitted to the Union in 1868. In the "New South", as the period after Reconstruction came to be known, Georgia wanted to rebrand itself as a cultural and economic hub, centered on Atlanta. But the economic toll from losing a majority of its workforce (i.e. the slaves) was too severe and most of the state's citizens had to turn to the exploitative tenant crop farming system to survive. This hardship only worked to reinforce racial tensions in Georgia as many white citizens resented the outlawing of slavery. The next hundred years in Atlanta would be marked by "Jim Crow": institutional racism, lynchings, segregation, race riots, and many civil rights protests (Cobb and Inscoe, 2009).

Modern Atlanta as a Food Desert

The vestiges of this history can be seen in modern Atlanta in which wealthy areas like Buckhead are predominantly (75.4%) white, and the poorest areas like West End Station are predominantly black (80.7%) (Cedar Lake Ventures, 2015). This dichotomy is what has lead to Georgia having one of the highest rates of income inequality in the United States (Sommeiller et. al., 2016).

In terms of health, the South has the highest rate of obesity nationwide with 32% of adults self-reporting as obese. Furthermore, non-Hispanic white adults in Georgia have an obesity rate between 25-30%, while non-Hispanic black adults have an obesity rate greater than 35% (CDC, 2017). Georgia also ranks 17th in the nation for most deaths from heart disease, 10th for deaths from stroke, and 17th for deaths from diabetes (CDC, 2013).

Atlanta has many food options, but they are not all created equal, nor are they all distributed evenly across the city. Publix, Kroger, and Walmart are the top three large chain grocery stores in the area, respectively (Tobin-Ramos, 2012). But fresh food markets have also become large parts of the food scene in Atlanta, with stores like DeKalb Farmers Market and Buford Highway Farmers Market offering wide variety of fresh and packaged food at affordable prices. It is important to note that while the Dekalb and Buford Highway stores have farmers market in their name, they are not technically farmers markets as they do no direct sales.

Atlanta has also become a key player in the larger food movement to address inequities in food availability and access, as well as sustainability and local food promotion. Organizations like Wholesome Wave are trying to increase access to fresh, healthy, locally grown produce by doubling the value of food stamps spent at participating farmers markets and administer a fruit and vegetable prescription program for residents dealing with food insecurity and chronic illness

(Wholesome Wave, 2017). Other organizations like Global Growers provide land, seeds, and training for resettled refugees to grow produce that can be sold locally, while Truly Living Well is promoting locally sourced produce to create a sustainable food economy that can provide a fresh and steady food supply for all Atlanta residents (Global Growers, 2017; Truly Living Well, 2017).

Medical Education and Profession

A large volume of research has shown the connection between food deserts and health, as described in previous sections of this Introduction. And while not-for-profit groups and humanitarian organizations are trying to address the issue of food insecurity, the public expectation also drifts toward the healthcare community.

With the exception of the undergraduate degree that can be obtained in any field, medical education in the United States focuses primarily on basic science and clinical skills (Mowery, 2015). The rigorous medical school curriculum prepares students well for the intellectual demands of medicine, but leaves little room for education in social medicine and public health unless students pursue other degrees (i.e. MPH, PhD). While this trend has begun to shift in recent years with the introduction of "food as medicine" programs, which reinforce the large influence that diets have on health to medical students. These programs, sometimes also referred to as culinary medicine programs, are being implemented in medical schools like Tulane University and University of Southern California, and are challenging medical students to understand the effort that goes into preparing a balanced meal so they can be more informed as they have those conversations with patients in the future (Perroni, 2017; Gorn, 2017).

Another important aspect of the American healthcare system is high expenditures and high physician salaries. In 2015, the United States spent 20% of its GDP on healthcare

expenditures, which totals approximately 3.61 trillion USD. This significantly outpaces all other developed nations in the world (Bodenheimer and Grumbach, 2016). Doctors in the US are also on average, paid 78% more than doctors in other developed nations, though this is only for specialists. General practitioners tend to have more similar salaries across those same nations (Conover, 2013).

FILLING IN THE GAPS: The Doctor's Perspective

As evidenced by the research presented above, there have been many studies documenting the effects and realities of food deserts for residents, as well as public perceptions of healthcare. But in my search of the literature, there were no studies that attempted to qualitatively understand the patient-doctor relationship, either in general or in the context of food insecurity, from the doctor's perspective. As the primary patient interface in the US healthcare system, I believe there is a lot to be learned from studying the way doctors make meaning within the areas they live and work, particularly because for all its rules and procedures, medical treatment is still very open-ended. The accepted treatment for a given condition may be the same throughout the country, but the process of arriving at that diagnosis can vary greatly. And that process is largely dictated by the physician's temperament and perceptions of the patient. Thus, if we want to understand why there is such a high level of public distrust in physicians, or how to improve the healthcare infrastructure in food deserts, then it is imperative that we understand the strengths and weaknesses of the doctors.

But of course, it would not be beneficial to speak to only a few doctors. Every person, even within the same group, can have different perspectives on the same topic and each perspective can be a valuable source of information in understanding how that person moves within the world. Different perspectives also allow for the recognition of fringe ideologies

(relative to the community being studied) versus those that are widely accepted and practiced by members of the study population.

Therefore, in this paper, I report the spectrum of the responses from the 20 doctors in my study to outline the scope of those physicians' knowledge and practice of medicine with regard to food insecurity. By surveying across several specialties and subspecialties, I hope to be able to present a nuanced depiction of the ways in which doctors in Atlanta's urban food desert perceive their patients, the healthcare system, and food insecurity.

METHODS

In order to understand how doctors in Atlanta, GA understand and perceive food insecurity within their patients, a semi-structured interview was conducted among 20 licensed physicians practicing in the Atlanta area. The interview questions were developed to address three main areas— medical education, the healthcare experience, and the doctors' experiences and understandings of food. The semi-structured nature of the interview allowed for questions to be added or removed based on the pace and trajectory of the conversation, and for the flexibility to explore relevant tangents.

A qualitative approach was chosen, as the goal of this study is to understand how doctors understand and perceive food insecurity in their patients in order to develop actionable ideas on how to improve healthcare infrastructure in Atlanta. As Patricia Lundy writes, quantitative studies do have their merits, but they are impersonal and often lack insights on people's unique experiences and perceptions of the issue (Lundy, 1996). Therefore, beyond a few quantitative markers, all the results presented in this study are qualitative in nature. As such, all names and places have been changed to protect the identity of the subjects whose experiences and options are expressed herein. I used the random name generator, www.random-name-generator.info, to give me a list of 20 common names which I then used to replace the names of every participant. I hope that in the safety of anonymity, the doctors were able to openly and honestly share their opinions about their experiences within the food and healthcare infrastructure of Atlanta.

Sampling

In this study, I focused on recruiting Atlanta based physicians whose medical practice included some level of clinic time in which the provider could speak with the patient. For this

reason, no providers included in this study had significant surgical practices in which they spent extended time with their patients without speaking with them. This was done to ensure that there was a reasonable expectation of a reciprocal conversation between the doctor and patient for the entirely of the visit, giving the provider time to learn more about the patient's medical history and nutrition habits.

Subjects were recruited to the study by snowball sampling in which I used my network of professors, advisors, and friends to connect with practicing physicians in the Atlanta area. I also asked all of my participants after the interview if they had any colleagues who would be interested in participating and several were able to connect me with 1 or 2 colleagues with whom I could also have a conversation. I had originally planned to randomly reach out to providers in the Atlanta area by using the physician directories on Atlanta hospital websites but was advised that given doctors' busy schedules, most would ignore requests that were not sent by a trusted colleague. As such, snowball sampling was determined to be the method most appropriate and likely to succeed for recruiting subjects to this study.

The benefit of using snowball sampling was that it allowed me to gain access to a population that would otherwise have been difficult to do for an undergraduate student. However, the drawback of this method was that it likely skewed my participant pool to people who were interested in the topic or to people who enjoyed talking about the realities and implications of their clinical and personal actions. My participant pool, while covering practitioners from several different hospitals and clinics in the Atlanta area, was also likely not completely representative of the entire Atlanta physician population as it only included people connected to the professional network of myself and my participants.

Interviews

Semi-structured interviews were the primary mode of data collection used in this study. A semi-structured interview consists of a set of questions that were posed to every participant, but also allows unstructured questions to be asked based on the flow of conversation. This method "provides some data that are comparable for all respondents…and other data derived from questions tailored to the unique experiences and perspectives of each individual" (Gray, 2007, p.161). In a study such as this one, in which the majority of the data was collected from open-ended responses, it was important for me to choose a method that would give both me and the participants the time and comfortability to speak in as much detail as we wanted. I consciously did not want to use a structured interview method because it would have greatly limited my ability to ask about the personal experiences that influenced each participant's current perspectives and habits.

The danger of the semi-structured interview model is the potential for irrelevant digressions, emotionality, and overrapport (Gray, 2007). I tried to control for these factors by changing the pace or direction of the conversation if one line of questioning seemed to not lead anywhere productive or was causing the participant to become unresponsive. In order to prevent overrapport between the participant and myself, I tried to reserve any personal questions about myself (i.e. several participants asked about my educational background and future plans) for after the interview was over. However, there were certain interviews that flowed more comfortably than others, likely due to a shared familiarity that was established at the start of the conversation. And while I concede that that familiarity could have skewed the results, I also want to note that complete detachment from the participant was not my objective in this study, nor is complete objectivity a realistic goal with semi-structured interviews. My goal in each interview

was to create an atmosphere in which the participant felt comfortable voicing their thoughts and sharing anecdotes or opinions that may be controversial, but that nonetheless highlight an important aspect of Atlanta's healthcare and food environment. In order to induce the participants to share these details, I sometimes had to engage in a tangential conversation or pursue one line of questioning very deeply— a "negotiated conversation" (Hale et. al., 2007). The end result of these efforts is hopefully a set of responses that encapsulate the entirety of my participants' thoughts on the given matter.

Each interview began and ended the same way. After confirming oral consent, I began by asking a few baseline questions about the number of years the participant had been practicing medicine (including residency), type (MD or DO) and granting nation (USA or elsewhere) of their medical degree, specialty and board certifications, and finally if they had a substantial class on food or nutrition (with substantial being defined as lasting at least one semester/half of an academic year). I then asked about the participants' motivation and journey into the medical field, followed by various questions on their perceptions of food insecurity, food, and healthcare, (see Appendix B for a non-comprehensive list of questions). Each interview always ended with a question on if the participant felt the current healthcare infrastructure was adequate, and if not, what could be done to improve it, and whose responsibility they felt it was to carry out those changes. Overall, the interviews ranged in length from 35 to 90 minutes, depending on response length and availability.

Analysis

In order to document the range of experiences and thoughts expressed by the participants in this study, I am using the theoretical framework of phenomenology. Phenomenology "investigates the qualitatively different ways in which people experience or think about various

phenomena…[it] is concerned with the *relations* that exist between humans beings and the world around them" (Marton, 1986, p.31). I chose this framework because with this study, I want to document the different ways doctors living and working around Atlanta's food deserts understand food insecurity within their patients and also situate themselves in the context of that food desert. Phenomenology also leaves ample flexibility to address mistaken perceptions of reality (in the context of this study, not believing an empirically defined food desert as being one), as well as exploring categories of description introduced both by the researcher (me), and the study participants (Marton, 1986).

RESULTS

Study Population

On average, the participants in this study have been practicing medicine for 18.6 years, including residency, with an overall range of 1 year to 48 years. All 20 participants received an MD degree, but 19 attended medical school in the United States of America and 1 participant attended medical school in the United Kingdom. As shown in Table 1, the majority of the participants hold a board certification in either Emergency Medicine or Internal Medicine, with the Internal Medicine cohort including subspecialties in Nephrology (3 participants), Cardiovascular Disease (1 participant), and Infectious Disease (2 participants). The remaining 6 physicians with Internal Medicine certifications self identified as Primary Care Providers and thus, did not have any subspecialty certificates. The study group also included 1 participant with a certification in Obstetrics and Gynecology, and 1 participant with board certifications in both Internal Medicine and Pediatrics who self identified as primarily a Pediatrician, and thus, is listed as a separate specialty in Table 1.

Participants were also asked if they took a substantial course in food and/or nutrition while in medical school, with substantial being defined as at least one semester or half of an academic year (Figure 1). Only 4 participants reported taking such a course, but one reported that they could not recall the content of that course at the time of the interview. One of the four reported that the nutrition course was paired with a class on metabolism and metabolic disorders, another participant, Dr. Boyd, stated that in their nutrition class, “we had to do some projects that were food related and we had this computer program where we had to come up with certain diets that met certain calorie or vitamin or other specific goals...and the computer would keep track of what we were prescribing as a diet and if it was acceptable or not”. Dr. Allison reported that he

helped develop a semester-long senior seminar on food and nutrition during his fourth year of medical school that was taught by a rotating group of medical school faculty. He reported that he was unsure if the course was continued beyond the semester, though he did find it beneficial as a medical student. The other 16 participants reported little to no mention of food and nutrition in medical school beyond brief conversations about diets related to diseases and drug interaction warnings.

Table 1 Distribution of Participants' Specialties by Board Certification Designation

Specialty†	**Number of Physicians**
Emergency Medicine	6
Internal Medicine*	12
Obstetrics and Gynecology	1
Pediatrics	1**

†Specialty designations obtained from American Board of Subspecialties
*Includes subspecialties in Nephrology, Cardiovascular Disease, Infectious Disease
**Participant holds 2 Board Certifications in Internal Medicine and Pediatrics

Table 2 Distribution of Participant's Sex and Average Years Practiced

	Male	**Female**
Count	10 participants	10 participants
Average Years Practiced	22.8 years	14.4 years

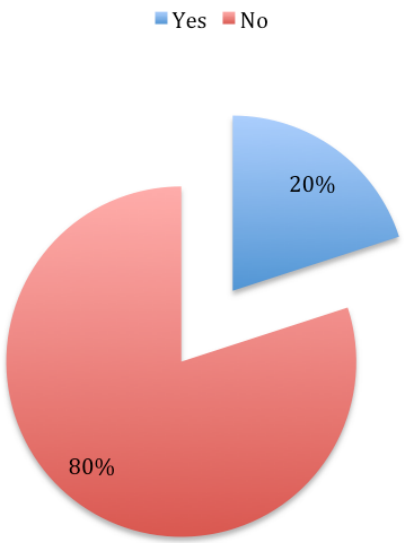

Figure 1 Percentage of participants who self reported taking a substantial course in food and/or nutrition in medical school

Part 1: Doctors' understandings of Food Insecurity

In the conversations with doctors on their understanding of food insecurity and the realities of food deserts, there was a wide spectrum of responses. Some doctors were personally very interested in nutrition and its relation to public health, and thus had a deep understanding of the problems facing residents of food deserts and recognition that their incomes and educations make their experiences in a food desert very different from that of normal citizens. However, others did not think about it much beyond acknowledging that some of their patients seemed to have a difficult time maintaining a healthy weight or obtaining certain foods. Despite this wide spectrum, all 20 of the participants agreed that food insecurity is a problem among their patient population in Atlanta and that it in some degree, is contributing to poor health outcomes of Atlanta's residents.

When I asked the participants in my study to define or describe food insecurity as they perceive it, I got a wide range of responses. Most responses were centered around lack of access and/or availability of food, but several participants also introduced other dimensions to their understanding of food insecurity. Dr. May stated that she thinks

> "about food insecurity in terms of people not having any access to food in general and then also the types of foods that they necessarily want to eat…[but] as a doctor, it's easier for me to think about whether or not people are hungry rather than food insecure".

The concept of being "hungry", of hunger in general, is complicated because it can be caused by so many different things, including (but not limited to) malnutrition, malabsorption of nutrients, and certainly, lack of availability of food or access to that food. And in the emergency room where Dr. May works, there often isn't enough time for her to go into the specifics of each patient's social condition, though she reports that,

> "if [hunger is] the primary problem or the primary contributor to a problem I definitely try to feed them while they're in the ER but I know that that's just a temporary fix."

While convenient for the emergency room, the practice of using hunger as a marker for food insecurity leaves out a large portion of people who are technically food insecure, but are not necessarily hungry. For example, a person may be able to eat 3 meals a day, but if those are 3 frozen meals because there are no stores selling fresh foods nearby, than that person would be food insecure, but not necessarily hungry.

Another common thread in the participants' understanding of food insecurity was the element of uncertainty that food insecure people face. Dr. Quinn stated that, food insecurity

> "may not just be not having food, but not necessarily knowing where your next meal is coming from or what kinds of foods you're going to have access to."

Dr. Nguyen echoed that sentiments when she said,

> "[Food Insecurity is] not knowing if you're going to have enough to eat for the day, or for the week, or the month for that matter."

Both Dr. Quinn and Dr. Nguyen consider uncertainty to be an important component of the experience of food insecurity, and indeed, some insecure individuals may not have the resources necessary to purchase any food at all. However, it is important to note that food insecurity is not just being unsure of where your next meal is coming from; it includes factors that limit one's ability to obtain healthy and nutritious foods such as fresh fruits and vegetables, such as grocery stores that are far away or lack of available transportation to food vendor locations.

Other participants did note the other factors that can affect food insecurity. Dr. Allison said,

> "[Food insecurity is] a lack of accessible nutritious food, probably due to socioeconomic conditions, but also due to this food deserts business, which are environments where transportation to stores with more healthy food sources is more complicated."

And Dr. Hamilton commented that,

> "I know about food deserts where [individuals] are living in an area that doesn't have a grocery store within a certain mile radius that [is] easily accessible to get fresh produce and fresh foods."

Thus, in my conversations with the participants, there were many approaches to how the doctors' understood and subsequently operationalized the definition of food insecurity in their practices. Some viewed it simply as hunger, others as a lack of access or opportunity, and others still as a complex phenomenon of multiple factors such as socioeconomics and location. But some participants had had experiences that informed their understanding of food insecurity on a deeper level, and one story in particular stood out for it's presentation of the realities of food deserts. While describing his transition from medical school to residency, Dr. Troy said,

> "When I was a resident, I moved directly from Oldtowne to Northrowe which is a very poor city and I didn't know where I was moving into, so I just got this sublet for a few months that I arranged over the internet, and it turned out to be in a hood in Northrowe and it was just impossible to get food. I could have had as much fried chicken as I wanted to eat, but getting a plate of vegetables together was nearly impossible to the point that I would actually get a huge rucksack and go to my aunt's place in Uppsland which is a considerable distance from Northrowe and buy vegetables and food there and go back to Northrowe because there was just nothing [in Northrowe]."

Dr. Troy's past experience of living in a food desert and of having to travel a couple hours from his home to his aunt's home in order to buy fresh food not only highlights a big issue within food deserts, but also helps inform his understanding of the reality that his patients are facing. But what I thought was most important during this exchange with Dr. Troy was that he did not use this experience to say he knew what his patients were going through— he continued on to say,

> "I live in a rarefied atmosphere. I'm an attending physician, I make great money. I also have some knowledge of what it is to eat well and exercise, and I have the money to make those things happen. So I don't know if I have the ability to say how hard or easy it is for one of my patients to eat well. I will say, from my experience in Northrowe as compared to the landscape of Atlanta, it seems very different. It seems like its a lot easier

> here to get food. In Northrowe, it was nearly impossible to find a head of lettuce, like it was crazy. At least in Atlanta, you can do that. You might have to get an extra bus, but it's there."

The understanding of the implicit divide between the doctors and (most of) the patients was something that most of the participants implied with their results when they said they realized their patients had a hard time obtaining fresh food in Atlanta, and then later in the interview said they themselves did not worry about finding fresh foods. However, Dr. Troy was the only one to explicitly discuss that division and to use his positionality as an attending physician to state that his reality in Atlanta's food desert is very different from that of the average person.

Part 2: Understanding the connection between food and health

Another important component from the literature that forms a relevant backbone in the discussion on doctors' perspectives on food insecurity is the connection between health outcomes and food deserts. As previously discussed, past research has shown food deserts to be linked with poorer health outcomes (Indiana University, 2013). And as Dr. Newton mentioned in his interview, "food is affecting your health, whether it's good food or bad food." In order to understand the physicians' perceptions of the realities of food deserts, I asked them if they felt food insecurity is a problem among their patient population and to discuss some of the conversations around food and health that they have with their patients. All of them agreed that food insecurity is a problem, but they eat saw it in varying degrees. Dr. Flores said of his practice,

> "With my population, I would say [food insecurity is not a big issue]. At this time, I am off of all insurance, my patients are not on Medicaid and I don't think I have anyone that cannot afford to eat a nourishing diet."

On the other hand, Dr. Myers observed the opposite,

> "In my field, there's a lot of emphasis on healthy diets and making good food choices and often times patients don't have access to foods that can enable them to make those choices, they don't have the resources to avoid making those [unhealthy] choices."

With the exception of Dr. Flores, most of the participants stated that they believed at least a portion of their patient population was food insecure. When asked how they did or did not know this, most of the doctors said they assumed based on the patients' socioeconomic status or overall health. Sometimes, the physicians reported, their patients would tell them that they had trouble buying food or that they would not be able to eat more fresh foods due to a lack of resources, but these were a rarity. Most participants said that there simply was not enough time in the patient care session to delve deeper into the causes of the patients' ill health, though occasionally, a patient might offer up details anway.

I also asked the participants what conditions they frequently treated or noticed in their patients, and they all shared that they often saw patients with diabetes, obesity, hypertension, and heart disease, with a handful noting other chronic conditions such as chronic obstructive pulmonary disease (COPD), kidney disease, sleep apnea, and arthritis. Once again, when probed about the connection between patients' diets and the occurrence of these conditions, there was a spectrum of responses that ranged between believing a slight connection to a strong connection. Dr. May said,

> "I think [obesity] is a product of poverty and lack of access to healthcare. So I think food is a contributor [to obesity], but I don't think it's a contributor in isolation."

Dr. Gail believed that there is a more straightforward connection between people's diets and their poor health outcomes in food deserts:

> "My perception at least, is that these unhealthy diets are contributing to the obesity rates and the chronic disease that they have, and I don't think [the patients] know anything otherwise."

These differing perspectives once again highlight the variance in physicians' understandings of nutrition and perhaps reveal the need for a standard to be taught in medical school.

Part 3: How the doctors approach and address food insecurity

While understanding an issue is important, the actions taken to address it are also crucial. From my conversations with participants, there was a general consensus of uncertainty about how to approach conversations regarding diets and nutrition. Dr. Troy talked about how it is easy for him to have conversations with patients about illicit drugs and alcohol abuse because there are plenty of resources on structuring the conversation. But conversations about food are harder, he said:

> "I feel empowered to have those conversations with alcohol and drugs... Maybe if there was some kind of evidence based briefing convention [on diets and nutrition] that I could educate myself on and deliver quickly, with some sense of structure and purpose, that would be a good thing. But I don't really have that. Also... I could tell them to lose weight, but I have no idea where to point them to... I think having something solid to give [patients] would be helpful too."

Dr. Gail echoed a similar sentiment when she shared,

> "[There] are really basic things that I do feel equipped to discuss with our patients. Do I think there's a slew of nutrition information out there that I don't know and should learn?, yes."

It can be seen from these quotes that there is some level of interest on the part of the physicians to provide more holistic medical advice, but their admitted lack of knowledge in the area prevents them from really being able to take action. However, that lack of knowledge does not stop them from trying to help their patients all together. When the doctors find out about their patients' inability to carry out their medical advice, some try to step up and offer creative solutions. Dr. Santos shared,

> ‘You have to be non-judgemental, a lot of times they’ll say, “I can’t afford the fresh vegetables” and things like that. And then you come back with maybe, “you can drain the salt out of the canned foods and cook them in water”, or “let’s try frozen foods.” So a lot of the times if they have limited incomes, you have to compromise in some ways [with] the overall point be trying to help them out.’

Dr. Flores discussed how in his practice, many of his patients travel for work, either by airplane or automobile, and have a hard time maintaining a healthy diet when they are not at home. He mentioned,

> “I have some patients that are truck drivers- most truck drivers already have a cooler in the backseat, so having a carrots and broccoli and other chewy vegetables, [which] are not necessarily in the cooler, so having them in the cooler.”

Dr. Gail also tries to work with her patients’ circumstances to develop a health plan that is both beneficial and doable. She shared,

> ‘I try to ask, “where do you think you could improve?”, and if they're struggling, then I'll offer up suggestions. And I'll try to give them at least one or two options for how they could achieve it and then ask them what they think they can do.’

These three comments highlight the need for personalized solutions for patients to address the issues of food insecurity, such as unhealthy diet or lack of access. But for some doctors, there simply isn’t time to ask these kinds of questions, either due to the nature of their practice (i.e. emergency room doctors generally can’t sit down and talk to patients at length) or due to the high volume of patients they have to see on a daily basis. Dr. Winston shared her concerns about feeling rushed during her patient visits and stated that she would like to have at least 15 more minutes per patient throughout the day to really be able to tailor care to the patient. But she adds,

> “especially with medication compliance, a lot of the time we’re just try to help them get on the thing that's going to prevent that heart attack or that stroke. So we really hit the medications hard, and then hope that their primary care doctor, if they have one- sometimes we are their primary care doctor- but we hope that their primary care doctor is really hitting home the modifications in their exercise and diet.”

Dr. Winston's testimony not only highlights the limitation of her speciality (emergency medicine) to spend an extended period of time with patients, but it also addresses the question of how people are getting their medical care. Dr. Winston's comment that she and her partners primarily push medicine and hope that the patient's' primary care doctors are the ones having meaningful conversations about healthy lifestyles, even though most of those patients can't afford a primary care doctor, shows a critical failing in the healthcare delivery system. Those patients are stuck in a vicious cycle of getting quick, impersonal care in the emergency department because emergency doctors don't have the time and hope that other primary care doctors are giving patients that time, but in reality, the patients are not getting the attention they truly need.

But some doctors have implemented strategies to make up for the short appointment times. Dr. Myers shared,

> "at my level I sort of broadly talk about food, things that they should be thinking about when they get food. And then we have a heart failure educator who can provide more detail, information that they could be handed as well."

And in Dr. Boyd's practice, dietitians and social workers form mandatory parts of the patient care chain:

> "Our specialty is somewhat unique in that we work pretty closely with dieticians and social workers. So a lot of these things are social issues, sometimes the dieticians also have the resources in terms of telling [the patient] what foods are nutritious, available…[because] I think people don't always know what resources they have and [need] the social workers to come in and point stuff out to them."

As a nephrologist, Dr. Boyd's use of dieticians is especially important because the patient's survival depends on the maintenence of a strict diet that is low in potassium, phosphorus, and often low in protein (Dr. Boyd). Thus, a nutrition expert is a key piece in the patient care chain. The supplementation of the doctors' advice with information from educators, dieticians, and

social workers helps to address the problem that Dr. Winston outlined with the lack of patient care time. But it goes beyond that as well. These extra resources allow patients to receive more personalized attention and advice based on their situation. It also allows for the patients to receive better advice. Dr. Troy mentioned in an earlier quote of how, even if he did have the time and expertise to have meaningful conversations around nutrition with his patients, he wouldn't know to which community resources he should point his patients. But with the additional link of dieticians and social workers in the healthcare chain, patients can get information about local opportunities from staff that are familiar with the area and can give them specific options.

Despite these efforts, some participants still reported feeling demoralized by the enormity of the health problems in the area and feeling that anything they're doing in the clinic is not really helping. Dr. Newton discusses how he feels he isn't doing anything meaningful to address food insecurity in the clinic,

> "With all my patients that come in, I ask them, "are you hungry right now", and literally almost 80% are like "yes, can you please give me some food?... I have patients who come in who are like, "Doctor, I really have nothing going on, I just want some food." … I'll give them a couple sandwiches, whatever we have…[but] I don't think we really [address the problem]."

Dr. Troy shared similar sentiments about his outlook on giving patients nutritional advice,

> "I don't think [of] general advice I give to people when I say, "Oh you look like you're carry[ing] too much weight, maybe I should advise you on our diet.". Partly, I don't know if that's me feeling that it might be pointless, because it's so difficult to lose weight that any brief intervention I could provide may not provide any good. Maybe it's a kind of disillusion with the magnitude of the obesity problem where I kind of just give in unless there's an acute medical issue I can deal with like a worn out knee or diabetes."

And Dr. Boyd also mentioned that same feeling of trying to tackle an overwhelming issue,

> "I don't give lectures because there's just so many overweight people. I can encourage some weight loss, but it's very difficult for people to lose weight so you have to be really realistic about that."

The modulating of medical advice that Dr. Troy and Dr. Boyd are describing above arguably represents a troubling trend in the healthcare landscape of Atlanta. If the doctors feel that their medical advice is not being heeded, or that other factors are preventing patients from being able to follow that advice, then what is the point of giving it in the first place? Dr. Bell said, "health is in a broad domain", referring to the many aspects of a society that influence a person's overall well-being. Indeed, doctors and hospitals represent only one chain of that domain, and if the other areas are not being addressed, than simply giving medical advice will not have a big impact on the patient's overall health. Another important detail is the difficulty of maintaining a healthy weight and lifestyle. As Dr. Troy and Dr. Boyd state, losing weight is not something that can happen overnight and requires a great deal of time and resource investment on the part of the patient. For someone who is already food insecure or unable to purchase fresh foods due to their circumstances, that investment is probably not possible.

Part 4: Potential Solutions

While I did not originally set out to discover solutions for Atlanta's food deserts in this study, the first few participants offered up their ideas and I decided to pursue the matter in more detail by asking what the physicians felt could be done in Atlanta to address the problems they observed in their practices. Just as with the other findings, there was a wide spectrum in the solutions that the participants proposed, but they can be broadly grouped into three categories; systemic changes, education, and increasing patient-provider interaction times. The first category, systemic changes, was the most common response that the physicians shared when they were asked how they thought food insecurity should be addressed. Three of the participants mentioned the lack of universal healthcare as a major contributor to poor health outcomes in America, citing over-prescription and unnecessary procedures as wasteful practices whose

spending could be better used to improve medical access. Dr. Vasquez also mentioned the benefits of government funded health plans like Medicaid as a sign that America needs to move toward a centralized system of healthcare. She said,

> "We need universal healthcare in this country. People need to have access to care, access to proper, equal care. I'm not going to say it's the panacea and [address] all the problems, but I think that [in] the South [and] in a state that hasn't expanded Medicaid, I think the problems that we see, [like] my patients [not having] access to care…there have been significant improvements in other states that have expanded Medicaid, so I think at the end of the day, we need an overall improvement to our national system."

But as for a plan to help move policy makers toward a universal healthcare system, none of the three participants offered any suggestions. Another large scale suggestion made by several participants was to "eradicate poverty". But that phrase is nebulous; what does eradiating poverty look like? How can it be achieved on a city wide scale that is also sustainable? Many participants conceded that it would be extremely difficult to completely eradicate poverty, but still held firm in their belief that it would be the answer to food insecurity within their patients. Finally, Dr. Santos suggested levying a tax on soda products, like some other cities had done;

> "One thing I can think of, in Philadelphia, where they're putting a tax on high calorie drinks which I think can be done, but I don't think Atlanta, being the home of Coca Cola, is going to go that way."

Dr. Santos' comment about the unlikelihood of Atlanta employing a soda tax raises important questions about needing to tailor solutions to the communities in which they are implemented. He is probably correct in assuming that with the political and financial influence of Coca Cola in Atlanta, any measure to decrease consumption of Coke would not be supported (not to mention the fact that one of Atlanta's largest healthcare systems, Emory, has close ties to Coca Cola). Dr. Greene also advocated for community based solutions that start in the hospital room. She stated,

> "I feel like, at the very minimum, we should be having a systematic way to screen for food insecurity, and then referring [patients] to community based resources."

The fact that the hospital at which Dr. Greene works, which is one of Atlanta's largest hospitals, does not have a way to measure food insecurity and whose doctors don't know the resources toward which they can point patients is alarming, and points to the need for a more robust post-grad education system for doctors to learn about the areas in which they live and work.

Increasing education opportunities for both doctors and patients was also a suggestion shared by several participants. Dr. Allison shared,

> "medical students do not receive adequate nutrition training. I think it's better now [than it used to be], but I've been involved with various activities…to facilitate [more] nutrition training at [the medical school where I work]."

But doctors are not the only ones who need to be better educated about the influence of nutrition on health and how to have fruitful conversations with patients; patients also need to be educated on how to make better health decisions within their means. Dr. Myers discussed the need for more opportunities for people to learn about food earlier in life. He stated,

> "Focusing on education and healthy practices at an earlier stage, healthy lifestyles, such as preventing obesity, tobacco abuse, certain things that contribute to other chronic conditions in the future- those could be attacked and they help to prevent the developing of other conditions later."

Therefore, education, at least in the eyes of my participants, was seen as a poweful vehicle for addressing food insecurity, and a measure that would have to be implmented both in the medical classroom and the community. Dr. Gail also shared similar sentiments, but added in the higher socio-economic status of people who are more educated, when she said,

> "I think the more education you have, the more likely you're to have higher paying jobs, and then the more likely that your basic needs are met so you can actually focus on [the idea that] I need to improve my health."

Indeed, educating doctors on how to better address food insecurity in the clinic would not be helpful if patients were not then able to understand that advice. And furthermore, it would not be helpful for citizens to be taught proper nutrition, and then never have a conversation about their diets in the context of their health with their doctors.

While most participants did not directly say that appointment times should be increased, many talked about not having enough time to go into details of diets with their patients, especially emergency room physicians whose specialty, as Dr. Winston described,

> "[is] so hard to have full, detailed discussions about their [food habits]. I think a lot of the time,… by the time they get to me, [the prevention] ship has sailed, they're already experiencing some serious outcomes…like a heart attack because of a horrible blood pressure [that's been] out of control"

Dr. Winston goes back to the point about doctors becoming disillusioned by the magnitude of the health problems in food deserts, more so in a specialty like emergency medicine where patients are coming in with acute conditions that could have been mitigated with preventative care. In addition, Dr. Winston noted that most of the time, the emergency room is the primary care for many food insecure individuals, so those patients never receive proper advice on how to control their diseases or prevent them in the first place. She notes that in those scenarios, it would be helpful to have "at least 15 more minutes per patient" so she can discuss diets, but is prevented from doing so by her other demands as an attending physician in a busy emergency room.

Overall, the participants had good ideas about the things that need to be changed in order to address food insecurity in the clinical setting, however, methods for achieving those solutions were difficult to delineate.

Part 5: Other important findings

As I spoke with the 20 participants in this study, I also noticed some patterns that also potentially represent an important finding from this study. While talking about the participants' experiences in medical school and residency, most participants said that residency, not medical school, played a more significant role in shaping how they treat and perceive their patients. Dr. Boyd, for example, shared,

> "I think a lot of stuff you learn later...I guess when you get into your specialty, that's when you learn the important things."

The compartmentalization of medical education between medical school and residency, and the idea that "the important things" are reserved for residency devalues medical school in a way, because it encourages students to just focus on the motions of passing tests in medical school so that they can make it into residency, where they will really learn the material. It also creates an environment in which future physicians are learning by doing and observing their attending physicians, which has it's benefits, but can also cause misconceptions to be retained over actual facts. Often, it is not even the attendings from whom residents are learning habits and knowledge but other residents.

Another finding was the division that doctors place between themselves and their patients. Dr. Newton brought up the inherent divide that exists between himself and the food insecure;

> "What [you and I] think of luxury, which is sitting and watching TV or eating food, like that's a luxury to us, it's a job for them. Finding food is a job on [a] daily basis for [the food insecure]."

The role that finding and eating food takes in a person's life does indeed have a significant impact on the time and energy that they have available to do other tasks. Per Dr. Newton's

comment, if finding food is a job for the food insecure, then they can't really spend a great deal of time considering the quality of the food or devoting time to other healthy lifestyle choices such as exercise. On the contrary, doctors, with the privilege they are afforded by their status, can devote time to thinking about the quality of their food as they do not have to worry about obtaining it in the first place. Dr. Allison shared the things he and his partner look for while shopping,

> "We eat low-fat dairy, whole grain. We don't eat a ton of red meat, probably a little too much...We don't eat a lot of processed foods, things that are canned [because] they're relatively high in salt."

Several other participants outlined similar, if not more detailed, processes for how they purchase foods for themselves and their families, and Dr. Long admitted that, as doctors, both he and his wife's "health literacy is off the charts" and that they are both "particularly health conscious" as a result. The knowledge of the best foods to buy for one's health and the resources to be able to carry it out are then things that the doctors are able to easily do, while the food insecure are not.

During the interview, I also asked if the participants followed the same general dietary advice they shared with their patients. While most of them said that with the exception of patients who had to be on severely restricted diets for their chronic diseases, they tried to live by the same rules. However, one point that they diverged on was on food buying habits. When asked about the qualities she looks for in the food she buys, Dr. Gail shared,

> "I mean I tend to buy organic and grass-fed for myself. But I caution my patients because most of my patients can't afford that, so I just suggest to them starting out with just eating fresh fruits and vegetables or frozen."

Dr. Nguyen also shared a similar interaction at her practice,

> "I think it's unreasonable for me to recommend [organic, grass fed, etc.] foods to most of my patients. That expense is unrealistic. They can't even get the basics... I do [look at those labels when purchasing food for myself and my family]. Not always, but in certain

> things like poultry and dairy and eggs, and things like that, I try to do majority organic... I think there is a nutritional [benefit], I think in some ways, there's a highly processed food versus making your own, like mashed potatoes [instead of] a box of dried potatoes might be healthier. Also, the avoidance of pesticides and hormones, exposure to antibiotics."

While their reasoning for not recommending foods that they think are better make sense in light of their patient's financial struggles, the fact remains that the food these doctors prefer for themselves are different from the ones they tell their patients to purchase. And while some doctors, like Dr. Long, don't care for those labels,

> "I think all those labels, [antibiotic free, grass-fed, organic] are bogus...I think that there's such a lack of transparency on how those foods are really farmed, and it's tough to know what that label really means",

there is a moral and ethical question that arises when doctors are eating food that is potentially of better quality than their patients who are food insecure. It adds another level of inequity within a community, one that could mean doctors are potentially living healthier lives because of the foods they are eating while their patients are not necessarily afforded that same opportunity. In addition, Dr. Newton mentioned,

> "[you] can't expect the food insecure to be conscientious of the environment or antibiotics."

For people who are food insecure, the priority is finding food, and questions of food quality are not given as much attention as they are by physicians who have the time and money to craft their diets more carefully. Dr. Gail noticed a similar pattern at her practice;

> "I think there's a lot, specifically through the CDC and other places that show, that if your basic needs are not met, or your social determinants of health are not addressed, then it is very unlikely that you're going to be able to reach that higher tier of just focusing on your health and well-being… a lot of our patients, even our employee patients, some of them are not in the highest paying job even with employment at [my hospital], and so they really struggle with paying the bills and making sure their basic needs are met. So it's hard to shift gears and focus on that higher-level [health] stuff."

Dr. Vasquez also brought up the importance of compliance in medical treatment. She shared,

> "food and nutrition only come up [in my conversations with patients] after medicine compliance is established."

Medication compliance is especially important in Dr. Vasquez's practice as she works with many HIV positive patients who need to maintain a regular medication schedule in order to improve their blood cell counts, and then lifestyle changes can be implemented.

Finally, there were also some comments about how the food insecure are denied the cultural and social ties to food. Dr. Johnson, while talking about how he perceives food insecurity, shared,

> "We need some recognition [that] some people don't have the resources to get the food, much less the chance to sit at a clean table and enjoy something that is pleasurable...and fulfilling. That has a lot to do with the [food] security too."

Being potentially denied those social and cultural elements of food is another mode by which doctors have an inherently different relationship with food and by extension, their health

DISCUSSION

This study sought to identify the perceptions and behaviors that influence doctors' interactions with food insecure patients in Atlanta's urban food desert based on a responses from a semi-structured interview. The study not only investigated the doctors' interactions with food insecure patients, but also gauged their understanding of food insecurity, of proper dietary measures, and of Atlanta's medical and food infrastructure.

Doctors' understanding of food, food deserts, and food insecurity

Earlier in this thesis, food security was defined as, "[a household that] can reliably gain access to food in sufficient quantity and quality for all household members to enjoy a healthy and active life" (Gillespie and Haddad, 2001). The key phrase in this definition is the "access to food", which is severely diminished in food deserts. 14 of the 20 participants mentioned lack of access in their definitions of food insecurity, with others focusing more on lack of availability of food or lack of education/knowledge about food as being the driving factors of food insecurity. Thus, a majority of the participants' definition of food insecurity was in agreement with the literature.

The connection between diets and health, however, was not as clearly outlined in the interviews, which is a reflection of the mixed findings reported in scientific literature. One study found that there were no clear correlations between dietary intake and rates of obesity in adolescents (Janssen et. al., 2004). However, other studies have shown that poor quality dietary intakes as a result of food insecurity does contribute to increased cardiovascular disease risk (Seligman et. al., 2009). There is also weak evidence for the the role of fruits and vegetables in preventing chronic diseases, but higher fiber intakes have been epidemiologically supported to

lower cardiovascular disease risk and be potentially linked to lower rates of obesity (Slavin and Lloyd, 2012).

As a whole, the obestiy epidemic in America has a multitude of contributing factors. Rising consumption of refined carbohydrates, along with higher average caloric intakes without a corresponding increase in physical activity have been linked to America's rapidly rising rates of obestiy and Type II Diabetes. While overall grain consumption has not dramatically changed over the past several decades, most Americans are consuming more and more refined grains and less whole grains, which tend to be more nutritious and make people "feel full" longer so they do not have to eat as much food (Putnam, Allshouse, and Kantor, 2002). In addition to poorer health outcomes for individuals, the obesity epidemic is financially taxing on the healthcare system. The CDC reports that, "the estimated annual cost of obesity in the US was $147 billion in 2008 U.S. dollars; the medical costs for people who are obese were $1,429 higher than those of normal weight" (CDC, 2018). And while measures like New York City's tobacco control program, which raised taxes on tobacco and introduced smoke-free air legislation, were successful in lowering the number of smokers, it is much harder to implement fast food bans in the same manner. This is in part due to the harm that such bans would do to small businesses like hot dog stands and pizzerias which rely on convenience food sales, and the extremely poor who rely on cheap foods to stay alive (Boualaoui, 2015).

The physicians' observations of unequal distribution of more grocery stores in wealthier neighborhoods and more fast food chains in low-income neighborhoods is also supported by the literature, and studies have shown that areas in which residents have better access to supermarkets with fresh produce have residents with healthier overall diets, lower levels of obesity, and on average, longer life spans (Larson et. al., 2009).

Lifespace Theory

Lifespace Theory, first introduced by Kurt Lewin, proposes that people and their environments are constantly co-produced rather than individual and autonomous entities. Within every environment, people strive to make sense of its various elements and either alter it (consciously and subconsciously) to fit their views, or have their views altered by the environment in a dynamic process (Lewin, 1947). In this study, the doctors were engaged in an ongoing process of meaning making with their environment (Atlanta) and the people within it as they interacting with patients in clinic and as they thought about and purchased food in stores and restaurants. Their perceptions were shaped by the things they observed happening around them, and some even admitted to having skewed perceptions of normality because they saw so many patients who were chronically hungry or who were obese, that it required extra effort to recognize that those should not be the default health state for people in society.

Dramaturgical Theory

On several occasions in this study, participants would begin with "I don't know" or "I don't remember", but would follow those statements with a lengthy response. Therefore, even though they admitted to not knowing any information about a particular topic, they still felt compelled to provide a response. This phenomenon is in concordance with Goffman's Dramaturgical model, which outlines how the presentation of one's self is the result of careful construction between one's back stage self (our behavior in private) and front stage self (our behavior in public). Impression management is Goffman's term for a social actor's desire to manipulate others' impressions of them on the front stage, and the words and images an actor chooses to use to represent themselves are intended to reflect the idealized version of their self to others around them (Goffman, 1959). The participants' desire to provide a response for every

question, even when they admitted to not knowing it, was likely a result of them engaging in impression management and wanting to appear knowledgeable. Their comments could have also been driven by what Goffman calls "Self Enhancement" in which an actor attempts to falsely present themselves in a better light to others (Goffman, 1959). By providing a response for questions they did not know the answer to, the participants could have been trying to present themselves in a favorable light to me out of a desire to be perceived as good doctors.

Food as a divisive tool between patient and provider

While only one participant explicitly touched on the cultural value of food in a society, several participants mentioned engaging with food in a social setting like parties and potlucks, with transmission of food knowledge through childhood diets and family recipes, and with sharing (or not sharing) food advice with family and friends. When having discussions about food then, it is not enough to simply understand food's nutritional purpose, but also to understand "the role that…[food] play[s] in supporting individual and community health, as a social substrate, as tradition and place, even as material culture" (Fazzino and Loring, 2009). Dr. Johnson's comment that the food insecure tend to be denied the opportunity to culturally and socially engage with food may be true in the sense that they may not have the time and resources to devote to social gatherings around food or share recipes with family and friends. But a person is not required to actively engage with food through just those means and individuals who are food insecure may form other social and cultural relationships with food based on their own experiences.

Overall, the important detail from this interpretation is the difference in experience that the study participants perceive between themselves and their food insecure patients. Whether or not that difference exists would need to be explored in a future study, but that perception in and

of itself creates a divide between the physician and the patient. That divide could be used to explain why public trust in doctors is so low if patients feel that their doctors don't understand the particular circumstances that are contributing to their health.

Personal investment in nutrition is reflected in patient care interactions

Within the study sample, those participants who were more knowledgeable or personally interested in nutrition and/or food insecurity were more likely to address nutritional habits and general health unprompted (i.e. not asked for it by the patient) in the clinical setting. Several doctors mentioned being comfortable speaking with patients about the dangers of drugs, alcohol, and smoking (the latter of which remains the leading contributor to preventable morbidity and mortality) because they had been taught how to have those conversations (Samet, 2013). However, while all of the participants had heard of food insecurity at some point in their educational or professional careers, only those who had either experienced food insecurity at some point in their lives or who were invested in addressing health disparities tended to perceive more markers of food insecurity and subsequently offer up more advice on the matter. This idea concurs with a recent study that found that doctors who have previously experienced illness tend to be more compassionate in their patient care practices (Roberts et. al., 2011). This phenomenon also runs along the lines of consumption capital theory, which predicts that prior exposure to a particular good (or in this case, the phenomenon of food insecurity) increases the utility that one derives from that phenomenon (Stigler and Becker, 1977; Opitz and Hofmann, 2016). Thus, prior interactions with food insecurity increased the value that those physicians placed on awareness of food insecurity and encouraged them to engage in conversation with it more actively in the clinic.

Influence of Age and Sex

As show in Table 2, there were equal numbers of male and female doctors surveyed in this study. However, the male doctors were, on average, almost a decade older than their female counterparts, as evidenced by the 8.4 year difference in the length of their medical careers. These statistics are important because they introduce an angle to the data, specifically the potential confound of gender roles in society. Almost all of the male participants reported that their partners did the food shopping (the only exceptions were men who were single) , and all of the females reported that they did most of the food shopping and preparation. As such, the women tended to think much more about the types of food they bought for their families than the men. While the men would only speak about the types of foods they liked to eat, the women tended to actually comment on the shopping process and the way they would move around a supermarket to buy the items they wanted. Several female participants noted that they tended to avoid the aisles in supermarkets and would stick to the perimeter, a practice endorsed by several organizations as stores tend to stock fresh foods along the perimeter (Commonwealth of Massachusettes, 2018). Studies have also shown that women fulfill "communal" roles within society (i.e. they are nurturing, kind, sympathetic, caring), while men are seen as fulfilling "agentic" roles (i.e. assertive, aggressive, ambitious, independent) (Eagly and Karau, 2002; Heilman, 2001). As such, the women, much more than the men, tended to be involved in extra activities outside their medical practices related to improving patient's health outcomes. These activities included being a part of a taskforce for homelessness, sexual assault awareness and training, or simply volunteering at local organizations. That is not to say that the men did not care for their patients, but they were not as engaged in the conversation around nutrition or other social determinants of health as their female counterparts. The difference in years of experience

may also imply a differencein status, possibility of a burnout, and differing standards of medical education at the time of graduation. This study does not conclusively reveal that gender expectations are the reason for the disparity in women being more involved in food preparation and patient health advocacy, but it does fit into the societal roles that men and women are seen to hold in western societies.

Medical specialties as a lens for good health

Many participants noted that when giving nutritional or dietary advice to patients, they focused primarily on the foods that were beneficial or detrimental to the organ system within their specialty. For example, the nephrologists and cardiologists often advised against high sodium diets as those have been linked with kidney disease and heart disease, respectively, via increased hypertension (Grobbee and Hofman, 1986; Cutler et. al., 1997; Hooper et. al., 2002). Those physicians also went out of their way to avoid high sodium foods in their own diets. This reductionist tendency of viewing general health through the narrow lens of a physician's specialty would be ideal if diseases were entirely deterministic. But disease and health involve a great deal of stochasticity and both are reflective of complex interactions between various body systems and between different biological processes. Simply prescribing a diet based on one body system fails to consider the effects that diet may have on other systems or on the patient's other health conditions. In the case of salt intake, some recent studies have shown that sodium reduction correlates with increased mortality of diabetes patients (Thomas et. al., 2011; Ekinci et. al., 2011).

Paternalism in Medicine

Paternalism is defined as, “the interference with a person’s liberty of action, justified by reasons referring exclusively to the welfare, good, happiness, needs, interests or values of the person being coerced” (Dworkin, 1972). In the context of medicine, it often appears in the form of a doctor overexaggerating the consequences of not following medical advice or withholding information because they believe it is in the best interests of the patient (McKinstry, 1992). In this study, several physicians reported that they modulated their medical advice based on perceived limitations that they felt their patients had in terms of food access and preparation. They also mentioned the “lectures” they sometimes gave patients on unhealthy habits such as smoking, drugs, and alcohol abuse. These paternalistic practices, while done with seemingly good intentions, raise questions about patient autonomy and the right that people have, whether or not they choose to listen and comply, to know all of the information when it comes to making decisions about their health. While some scholars have conceeded that in certain instances, the doctor should have the right to make decisions on the patients behalf, especially when there is a great disparity in knowledge, this still does not give doctors the right to dictate the lives of their patients (Komrad, 1983). In the context of this study, the paternalism reveals that there needs to be a critical re-evaluation of the realities of the Atlanta food scene and why there are such significant disparities between the quality of food that doctors are eating and that food insecure patients are eating. While it seems logical for doctors to not recommend organic foods to patients who can barely afford regular fresh foods, morally, there shouldn’t be a system in the first place that creates a heirarchy in food quality.

Limitations

The conclusions from this study are limited by the size and breath of the study participants. Of the 20 participants who were interviewed, only 2 participants held board certifications in specialties other than emergency medicine or internal medicine. Furthermore, all 20 participants held MD degrees. The average years of practice among this set of participants was 18.6 years, meaning that at least half of them went to medical school in the late 1980s and early 1990s, which was before most modern studies on food deserts and the consequences of food insecurity on health. A larger sample that includes more specialties, physicians with DO degrees (especially as DO doctors are taught a more holistic approach to medicine in their medical schools), and more recent medical school matriculation could reduce any potential biases and provide a wider range of perspectives on food insecurity.

Recommendations for Practice

Overall, the results of this study highlight the importance of clinician awareness of the challenges of food insecurity. In both physicians who were deeply aware of the challenges of food insecurity and those were only superficially aware, their understandings played a large role in the quality of patient care they delivered to patients. This is best achieved by educating medical students and encouraging them to critically think about the social realities within communities that can determine health outcomes.

Furthermore, doctors have drastically different realities within food deserts than their patients in terms of their knowledge, purchasing power, and socioeconomic status. By encouraging more education in nutrition and social determinants of health, doctors can gain a better understanding of how their patients move within a food desert community and thus, be

able to provide more nuanced care in their practices. This goes along with addressing the short appointment times, which many participants mentioned as a hindrance to their ability to understand their patients' unique situations. Longer appointment times could also help address the low level of trust that most Americans have with their doctors by giving people more time to interact, and ask questions of, their doctors. And while the issue of scheduling is wrapped up in larger discussions of America's healthcare infrastructure, this study highlights the need for longer appointment times to be a priority in those discussions.

Finally, food insecurity is ultimately a community wide problem and needs to be addressed at the community level by local leaders and policy makers. But that does not mean doctors should be completely removed from that process of change. As the medical care interface, doctors have the unique opportunity to be an advocate for their patients and bring attention to the problems they see in clinic that could be improved by community-wide changes. These policy changes are also important because without them, physicians could give the best advice on health and nutrition, but if the community and its resources don't align with that advice, then there will be no meaningful positive change in the overall health of the population.

Community food security, which seeks to combine the public and private resources of the community, would be an excellent model through which those community wide changes could be addressed (Mares and Alkon, 2011). Doctors using their influence and working in tandem with local food oriented non-profit organizations and community leaders could help bring attention to problems that they encounter in their clinics and help direct change on that small scale. Indeed, one study found that "small, not system-shifting" changes accumulated over time would result in more robust and sustainable social change (Hinrichs and Kangas, 2003). Community food security offers that opportunity to cause change on a local level, rather than

seeking to alter a nation wide system, such as establishing universal healthcare, which is mired by political debates and likely will not be widely implemented in the United States for some time. Locally based programs also offer commuities the flexibility to address problems specific to the area and invest resources only in the necessary sectors. In the case of Atlanta, an improved public transportation system would likely be a good investment, but other cities may already have a sufficient public transportation system and would not need to address that issue.

Suggestions for future research

This study identified broad themes and patterns in doctors' perceptions, thoughts, and actions regarding food insecurity within their patients. However, from the 30-90 minute conversations that I shared with these physicians, it is apparent that there are many more facets of the healthcare experience and of clinical knowledge that can be explored to try to form a better picture of the medical care that is available to residents of food deserts.

One avenue for a future project could involve looking into the effectiveness of other resources, like social workers and dieticians mentioned by the study participants, at getting patients access to information and community resources that are actually helpful. From the few participants whose practices used dieticians, social workers, etc., they believed that the extra resources were beneficial to the patients, but it would be worthwhile to speak to patients, and also the dieticians and social workers themselves, to see if they feel the same way.

Further investigation into medical education in medical school and residency programs across the country (as most of the doctors in this study were educated outside Atlanta) could also provide valuable insight into the discrepancies between learning and practice that doctors experience once they begin practicing. Several participants mentioned wishing they would have learned certain details in medical school rather than having to pick them up in their clinical

practices or through medical journals. Therefore, understanding and documenting that mismatch between medical education and medical application could yield actionable suggestions for improvement of the medical curriculum.

The age and sex disparities within the respondents also hints at a larger conversation on how gender influences the practice of medicine. Further studies into how expectations drive personal and medical decisions of doctors could provide another perspective on the larger issue of healthcare delivery and patient trust in their providers in America.

CONCLUSION

This study illustrates the diversity in the perceptions of food insecurity among doctors practicing in Atlanta's urban food desert. The large variation in the participants' responses highlights the lack of standardization in the medical field with regard to social and community determinants of health, such as food insecurity. The results show that for most of the interviewed physicians, nutrition and food were not emphasized in medical school and thus, they had to learn that information on their own through trial and error in the clinic or through self administered readings and seminars. As a result, this knowledge of nutrition was usually limited to the boundaries of the physician's medical specialty.

Doctors' perspectives on food insecurity in their patients then, do not just depend on the present, but are also reflective of the skills they were taught in medical school and residency, the stresses of those training years, and of other past experiences. In the present, their ability to address patients' food insecurity is hindered by large patient loads, short appointment times, and a lack of awareness of resources to which they can direcct patients. Thus, any efforts to alter or expand those perspectives would need to be implemented both at the student level and the practitioner level to address the different learning periods.

Hippocrates, who is considered the Father of Modern Medicine, once said, "let food be thy medicine and medicine be thy food." His words, while also poetic, emphasize the importance of food in the overall conversation around health and well-being. Leaving food and nutrition discussions outside of the doctor's office is not only doing a disservice to patients, but also ignoring a central daily activity that exerts a great deal of influence on the course of a person's life.

APPENDIX

A. Oral Consent Script

Introduction and Study Overview

Thank you for your interest in our anthropological research study. We would like to tell you everything you need to think about before you decide whether or not to join the study. It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study.

1) The purpose of this study is to investigate the perception of food insecurity within doctors who have patients living in a food desert.
2) The study is sponsored by the Emory College Honors Program.
3) This study will take about 45-60 minutes to complete, and will not exceed 90 minutes.
4) If you join, you will be asked to participate in a semi-structured interview about your perceptions of food, food insecurity, and healthcare. The interview will be recorded and the responses analyzed through a senior honors thesis.
5) There are always some risks around feelings of discomfort as one talks about lived experiences in interviews. Since this study focuses on healthcare as an object of study, this could include conversations that bring up uncomfortable memories or encounters. There is also a possibility with any interview of someone being identified in the research as a result of their responses and, depending on their responses, could possibly result in a loss of social standing or some other discomfort as a result of being identified. All recordings and data will be secured via password or physical lock, thus the likelihood of identification is low.
6) This study is not intended to benefit you directly, but we hope this research will benefit people in the future
7) Your privacy is very important to us.
8) Your health information that identifies you is your "protected health information" (PHI).
9) This study will not collect any of your PHI.
10) Your participation in this study is completely voluntary. You may revoke your authorization at any time letting me know, or by calling me (Rashika Verma) at 201-208-1873 or emailing at rashika.verma@emory.edu.
11) We do not intend to share any personal information with other groups. Let me know if you have questions about this.

Consent

Do you have any questions about anything I just said? Were there any parts that seemed unclear?

Do you agree to partcipate in the study?

B. Interview Guide

Below is a list of potential questions for the semi-structured interview. Questions may be added/removed depending on the flow of the conversation in the interview.

1. Why did you choose medicine?
2. What did you study in your undergraduate career?
3. How was your medical school educated structured?
4. Why did you choose [X] specialty?
5. In medical school, how was nutrition integrated into your medical training?
6. How would you describe or define food insecurity?
7. Do you think this is a problem among your patient population and can you explain?
8. In medical school, did you learn about food insecurity/food access?
9. What foods would you define as healthy/unhealthy?
10. In your household, who does the food shopping?
11. What kinds of foods do you/they get?
12. Do you feel like you are able to afford all the foods you would like to eat?
13. Do you pack your lunch for work or order food?
14. When patients ask for nutritional advice, how do you respond?
15. Do you offer nutritional advice to patients you feel need it?
16. How can you tell if a patient is eating well or not?
17. What are your thoughts on obesity?
    a. How do you classify obesity?
    b. How would you change your nutritional advice based on if a patient is obese or not obese?
18. Do your patients listen to your nutritional advice?
19. Do you give the same nutrition advice to every patient?
    a. Yes- Do you think that your advice is applicable/doable with everyone?
    b. No- How do you judge which advice to give to which patient?
20. What do you think of the food options in this area?
21. Do you recommend certain brands or types of products, like organic, grass-fed, etc.?
22. What is junk food?

23. Do you follow the same advice you share with your patients?
24. Do you share your nutritional advice with your family and friends?
25. Do you cook most of your food or order/buy it pre-made?
26. Do you see any health related problems among your patients frequently?
27. What can hospitals do? Is it their responsibility?
28. What can the city do?
29. How is a typical clinical visit structured at your clinic/practice/hospital?

C. Introduction Email

Greetings.

My name is Rashika Verma and I am conducting an honors thesis in Anthropology at Emory University. I am researching doctors' perspectives on food insecurity. I am emailing to ask if you would like to participate in a 45-60 minute interview for this research project. Participation is completely voluntary and your answers will remain anonymous. If you join, you will be asked to participate in a semi-structured interview about your perceptions of food, food insecurity, and healthcare. The interview will be recorded and responses analyzed for my senior honors thesis. There are always some risks around feelings of discomfort as one talks about lived experiences in interviews. Since this study focuses on healthcare as an object of study, this could include conversations that bring up uncomfortable memories or encounters. There is also a possibility with any interview of someone being identified in the research as a result of their responses, and could possibly result in a loss of social standing or some other discomfort. All recordings and data will be secured via password or physical lock, thus the likelihood of identification is low. No Protected Health Information will be collected in the course of this study. If you are interested, please contact me at rashika.verma@emory.edu and we can find a time to conduct the interview. If you have any questions, please do not hesitate to contact me. Thank you for your time.

Best Regards,

Rashika Verma
Emory University Class of 2018
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