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Daniel Ashat, Nicole Tepper, Caroline Pawlow

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Daniel Ashat, Nicole Tepper, Caroline Pawlow

Department of Human Science, Georgetown University, Washington, D.C.
E-mail: dma90@georgetown.edu
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Abstract

Having proper access to food is crucial to the growth and well-being of all individuals; however, not everyone has access to proper nutrition. Nutritious foods may be hard to come by in D.C., especially when considering factors like affordability, and access to grocery stores. D.C. has a series of food deserts, more prominent in the southeast side of the district. Inaccessibility to food within these deserts could be traced to factors beyond grocery stores proximity, including, but not limited to, household income, education, and race. Combating the complexity of food insecurity for residents of Washington, D.C. in this sense requires addressing topics beyond why food deserts arise in the first place. In this way, assessing the way individuals approach preparing and acquiring food as well as the broader economic and cultural factors surrounding which items they consume is rudimental to remediating systemic food insecurity. Efforts need to be made to address the prevalence of food deserts, namely in identifying the extent of the problem, learning to manage interventions and resources efficiently, and implementing novel community-based interventions such as the proposed mobile food pantry and medical clinic model.

Keywords: Food deserts, Health inequity, Social determinants, Nutrition

1. Introduction

In 2019, 10.5% of households were food insecure.[1] In D.C. alone, 1 out of 10 people are food insecure.[2] A food desert is defined as, "a large proportion of households with low incomes, inadequate access to transportation, and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices".[3] According to the D.C. Policy Center, 11% of D.C. is in a food desert with 51% located in ward 8 and 31% in ward 7.[4] Proximity to grocery stores is a key risk factor for food insecurity. Grocery stores may not have as large of a selling space (and thus diversity of product) as other supermarkets in wealthier areas, making the issue one not just of quantity, but also quality.[5] D.C. Wards 7 and 8 only have 4 grocery stores in their entire 17.1 square mile area.[6,7] Household income is also relatively low in Wards 7 and 8.[4] Individuals living in such wards are predominantly below the poverty line, and thus they cannot afford to purchase healthy foods. Living at the poverty line essentially forces them to settle for unhealthy food/meal options; thus, a vital linkage exists between one's economic standing and their nutritional/dietary choices. Dilemmas like these that affect those living in Washington's most impoverished wards can have negative long-term effects on health and may predispose individuals to preventable diseases.[8]

According to the 28th session of the United Nations, those experiencing food insecurity have elevated risks of chronic diseases like HIV/AIDS

and diabetes.[9] Food insecurity can lead to an increased number of Americans with type 2 diabetes (mellitus), cardiovascular disease, and mood disorders.[10,11] Beyond these factors, a greater distance to grocery stores (the focal parameter defining food insecurity) is associated with higher obesity rates in such commuities.[5,12,13] Speirs et al. found that 27% of children from households with food insecurity were overweight.[8] Ensuring proper nutrition to the residents of D.C. is crucial to promoting total well-being.

1.1 Understanding the Problem in the D.C. Community

Food inaccessibility involves issues beyond access to grocery stores; it is exacerbated by factors including household income, education, and race. Combating the complexity of food insecurity for residents of Wards 7 and 8 requires addressing not only grocery store locations, but also the systemic problems that contribute to the food insecurity therein.

Food deserts are defined by the "absence of supermarkets" within them, with low-income and minority families being more likely to live within one.[14] Low-income communities have fewer chain supermarkets with quality produce than middle and upper-class neighborhoods. Ward 3 of D.C. has zero food deserts, and has a median household income of over $145,000, but Wards 7 and 8 have median household incomes at $40,963 and $36,397, respectively.[15] Non-chain grocers—independent stores with markedly lower variety and quality of foods—are more prevalent in low-income neighborhoods.[16] Such data indicates a significant correlation between food desert location and the socioeconomic status of neighborhoods. Residents of impoverished wards do not have the financial means to shop at healthier locations, nor the means to generate a sustainable basis for bringing such businesses into the community. This cyclic effect of families not having the capital to sustain healthful grocery shopping discourages stores with healthier products from opening in low-income areas, reducing access even further.

Race is another contributing factor to health-food scarcity. Lower quality food options are disproportionately present in minority communities given their reduced costs. For example, South Los Angeles neighborhoods with a higher proportion of African American residents contain fewer chain supermarkets and quality food options.[17] Also, the obesity epidemic in New Orleans demonstrates how increased fast-food restaurant density is "correlated with median household income and percent of black residents."[18] In D.C., the most food-insecure wards house the greatest proportion of African American residents, with a majority of 92%, as well as the lowest median household incomes.[15]

Education is also correlated to food insecure locations, as over half of Ward 7 and 8 residents' highest educational attainment is a high school diploma.[15] Lower education in minority communities leads to less economic mobility and capital to shop at chain supermarkets. Residents must rely on lower-quality foods, as these are the only foods their economic status has provided them experience with, effectively increasing concern regarding the total population's health. In fact, education, race, and income are also interrelated and have historical roots in systemic racism/discrimination. Ultimately, combating food insecurity in D.C. depends on creating efficient resources, namely those tailored towards the individual needs of minority communities.

2. D.C. Specific Resources, Programs, and Policies available to address Food Insecurity & Public Health Concerns

The Washington D.C. government has taken steps to increase food access among vulnerable populations. However, these efforts have fallen short. The FEED (Food, Environment, and Economic Development) D.C. Act was a

governmental motion passed in 2010 aimed at leveling the number of healthy grocery stores across wards.[19] The act has three goals: improve access to healthy foods in low-income areas, advance sustainable technology in food stores, and create jobs in regions with high unemployment. Creating economic incentives in the form of tax breaks allows full-service grocery stores to open in food-scarce neighborhoods. It also provides funding for the Healthy Food Retail Program, allowing small grocery marts to sell fresh produce and healthy merchandise.[19] The FEED D.C. Act provides a strong setlist of goals, but insufficiencies in the program's implementation and structure have limited the impact of its economic incentives. As stated in the D.C. Hunger website, "Only two grocery stores have received [tax] exemptions in the program in Ward 8, and no grocery store has received an exemption in Ward 7."[19]

The Healthy Schools Act (2010), aims to help students and families eat healthily, stay active, and create "healthy school communities."[19] The legislation delegates action items including, but not limited to, establishing free breakfast for all students, allowing breakfast in the classroom when appropriate, and eliminating co-payments for school lunches for low-income students. HSA increased the percentage of schools meeting its nutritional requirements from 90 percent in 2010 to 99.5 percent in 2015.[20] However, HSA fails in its lack of prioritization for increased healthy practices such as exercise among students. Physical education time in participating schools often do not reach the HSA requirements.[20] Research demonstrates there to be "a relationship between sedentary lifestyle, obesity, and cognitive deficits beginning in childhood."[20]

2.1 Gaps in D.C. Policy

While the FEED D.C. Act and Healthy Schools Act are steps taken in the right direction, there is still work to be done. Sustainable D.C., an environmentally conscious project, encourages an increase in community gardens via leasing public land to District residents.[21] Community and school gardens introduce self-sustainable food sources for lower-income families. The current infrastructure for implementing such gardens, however, is lacking. It is recognized that "demand now outstrips the supply" for public space, and "residents wait years to get off the waitlist for their neighborhood garden."[21]

Initiatives and bills address the issues surrounding food deserts: the need for better food accessibility, healthier foods at a lower cost, and positive health practices. Preventative measures to avoid the advent of food deserts, however, are less understood. Current legislation does not provide economic stimulus to families in need of affordable food. They also fail to educate on proper dietary practices and the effect of educational background on diet-related health outcomes. These are just two examples in which policies have fallen short in combating a growing issue not only in D.C. but across the country. Cross analysis of the efforts other cities have taken to alleviate hunger can better contextualize the gaps in D.C.'s policies.

3. Lessons Learned from other Jurisdictions

By analyzing the strengths of other programs, reform in Washington D.C. can be tailored to promote better food access. The Boston REACH program, founded in 2010 by the Boston Public Health Commission, is funded by the Center for Disease and Control Prevention.[22] REACH has helped over 2.9 million people get better access to food through increasing healthy food production in establishing community gardens and providing guidance to public health practitioners in creating partnerships within the food retail space.[23] Further goals of the REACH program include implementing extracurricular exercise programs in schools within food insecure areas as well as pediatric weight management programs in lower-

income localities where obesity is known to be proportionally higher.

"We Feed the Homeless Philly" is a Philadelphia-based grassroots project that prepares and distributes meals and care packages to the homeless and those in need.[25] Additionally, the website, "Philly Food Finder," maps out the locations of food pantries, shelters, and organizations categorized by type and target population. Residents can locate low-cost food markets using filters on the site's map.[26]

Another program that ensures sustained food access is the Supplemental Nutrition Assistance Program (also known as "SNAP"). The main goal of SNAP is to promote healthy eating by providing benefits to supplement the food budget of lower-income families. SNAP assists over 40 million low-income Americans every month, with nearly half of them being children.[27] Participants receive assistance through the Electronic Benefit Transfer (or "EBT") system to purchase groceries at over 240,000 locations. By restricting the purchase of certain goods and adding taxes to unhealthy foods, SNAP has improved the health status of its participants. The program also addresses how policy framing can effectively reduce the stigma surrounding governmental assistance. SNAP has been successful in reducing food insecurity, as it is estimated to have reduced the probability of residents being food insecure by 30%. In 2017 SNAP allowed 3.4 million people to move above the poverty line.[28] Organizations have found ways to improve circumstances for food-insecure families, and D.C. can implement similar or new ideas to do the same.

3.1 Recommendations to the D.C. Community

Recommendations to address food insecurity in Wards 7 and 8 should be considered: 1) Implementing more food pantries in minority communities, 2) Incorporating mobile pantries into mobile clinics, and 3) Providing instructions on the preparation and use of food. Food pantries can serve as a focal point to improve the diet and health of vulnerable populations.[29] Evidence on food pantry-based interventions shows improvements in nutrition and health literacy, food security, healthy food intake, diabetes control, and access to community resources.[29] By introducing food pantries in minority community centers where people regularly gather—such as faith-based spaces, libraries, or recreational centers—food can be distributed more easily. Moreover, food pantries allow for consistent distribution, effectively removing some of the anxiety and uncertainty surrounding food inaccessibility.

Communities may have barriers that make receiving food more difficult. For instance, seniors and rural residents that have limited mobility and transportation options may be unable to pick up food that is being offered. A solution to this problem involves our second recommendation; a mobile pantry. At a mobile pantry, truckloads of pre-boxed foods are distributed to different locations or presented on tables similar to farmer's markets.[30] Mobile pantry programs increase total food distribution by three times the normal amount in underserved areas.[31] Particularly with produce that expires quickly, such programs can distribute the items in a timely, flexible, and cost-effective manner. Even higher equity levels can be achieved by a collaborative effort between pre-established mobile clinics and mobile pantries. If mobile clinics could incorporate food-distribution into their work, they could reach patients that are already familiar with the staff or process. It is easy to recognize how this may be a large task to ask of healthcare workers on top of their traditional duties. Thus, perhaps the mobile clinics could utilize volunteers or take on staff members that travel or are in collaboration with mobile clinics.

Solving food inaccessibility needs to be thought of as a social responsibility, one that acknowledges individuals' respective financial backgrounds,

cultures, and circumstances. People are unaware of how they should be preparing and eating the foods they receive. This unawareness can lead to waste, as products eventually go bad or are never used. Instructions should be distributed alongside food that clearly explains how the ingredients are to be used and prepared. This is an effort to "bridge the gap between food pantries and the kitchen table."[32] Swacha (2018), describes how a group of students co-produced a cookbook for low-income, elderly, disabled users. The process represented an individual effort towards increasing nutritional literacy, demonstrating how understanding food preparation is a core aspect of food access. Providing people with easy-to-follow recipes and resources to learn more about their eating and cooking habits can help them establish a healthier diet.

4. Conclusions

Factors that go into food accessibility include people's understanding and interaction with food and the cultural circumstances surrounding the items they consume. These conditions should not be viewed in isolation but thought of as a community responsibility. Efforts need to be made to address the issue of food deserts with further emphasis on identifying the extent of the problem of food accessibility, learning to manage interventions and resources efficiently, and monitoring and improving access through joint community efforts.

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