Potential Solutions to Food Apartheid: Philadelphia and Beyond

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ABSTRACT

Food apartheid, a term that describes the deliberate nature of food insecurity in the US, is a bioethical issue because people need access to nutritious foods to help sustain a healthy lifestyle, but not all people have this access. The lack of this ability to easily obtain healthy food has contributed to chronic medical issues that span across generations in urban areas such as North Philadelphia. Hospital systems have an ethical obligation to address food apartheid in order to uphold the urban bioethics principles of social justice, non-maleficence, and solidarity.

There have been many solutions implemented by local and national organizations and governments to try to combat food apartheid, which healthcare institutions can incorporate in order to benefit their patients. In this thesis, I will discuss some of these solutions and whether they have been shown to be effective in combatting food insecurity. These solutions include fresh food financing initiatives, which aim to open more grocery stores carrying fresh produce in areas affected by food apartheid, and healthy Corner Store Initiatives, which try to increase produce availability in existing corner stores. I will also discuss produce subsidy programs, which discount the price of fresh fruits and vegetables, and urban agriculture, which is usually a community-based initiative to increase access to fresh produce. After a description of the solutions, I will discuss the efficacy of examples of each of these types of programs, and if applicable, will mention if these programs have worked to address food apartheid in Philadelphia. Then I will discuss how well each solution incorporates Urban Bioethics principles. Finally, I will conclude with an analysis on which method may be most sustainable in

combatting food apartheid and will explore why healthcare institutions must incorporate these methods in order to improve the effectiveness of the care they provide patients.

I dedicate this thesis to everyone who supported me throughout earning my degree, including my family, friends, and professors in the Center for Urban Bioethics.

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CHAPTER 1

INTRODUCTION

Food insecurity, or challenges with access to foods essential for life, is an issue that a huge percentage of the U.S. population faces. According to the USDA, 17.0 million U.S. households were impacted by food insecurity in 2022, an increase from 10.2 million in the previous year (USDA ERS, 2022). These statistics do not include the portion of the population that also faces nutrition insecurity, or the lack of consistent access to healthy foods, including fruits and vegetables, that are necessary for overall well-being.

Inadequate nutritional intake is one of the biggest risk factors for developing chronic diseases such as diabetes, hypertension and other cardiovascular disease. (Kimokoti et al. 2016). These chronic diseases have a high prevalence in low-income communities. In particular, low-income Black and Latinx communities have been shown to have less access to affordable healthy food compared to higher-income white communities (Zenk et al., 2014).

These socioeconomic disparities in access to healthy foods have a long history in the United States, and much of that history is due to structural racism (Houghtaling et al. 2022). One well-known example is redlining, or the practice of deeming largely Black and immigrant neighborhoods as “hazardous,” decreasing the value of the homes people owned, which was started by the Home Owners Loan-Corporation and taken up by the Federal Housing Administration (Gross, 2017). Mortgage redlining enticed supermarkets to move to largely White suburbs, and this along with housing discrimination made it hard for Black people to move into those suburbs (Shaker et al., 2022) . The harmful effects of redlining in the current day have contributed to “spatial supermarket redlining,” or the inclination of supermarkets located in low-income, urban areas to move to more affluent suburbs (Zhang et al., 2015).

With the context of structural racism, activists, including food-justice advocate Karen Washington, have pushed for calling food inequity “food apartheid” instead of “food desert,” as the word apartheid, which historically is defined as separation based on racial or ethnic criteria (“Apartheid,” Cornell Law School, 2022), emphasizes the deliberate history of food inequity low income, Black and Latinx neighborhoods. In addition, the term “food desert” undermines the richness of the solutions people in low-income neighborhoods have created for food insecurity, such as urban agriculture (Brones, 2018).

Food apartheid is especially prevalent in dense urban areas, such as Philadelphia (Deener, 2017). Particularly in North Philadelphia, where an estimated 30-45% of residents have household incomes below the federal poverty line, a recent study found 36.9% of households face food insecurity (Inguito et al., 2023). Additionally, a high proportion of the food stores in North Philadelphia are “low-produce” stores, which means they carry mostly calorie-dense foods and few fruits and vegetables (Hillengas et al., 2019).

Food apartheid is a bioethical issue because people need access to nutritious foods to help sustain a healthy lifestyle, but not all people have this access. The lack of this ability to easily obtain healthy food has contributed to chronic medical issues that span across generations in North Philadelphia. Thus, food apartheid violates the Urban Bioethics principle of social justice, as people living in areas impacted by food insecurity have to work harder to follow health recommendations because of lack of affordable fresh produce in their area. This inequity has to be addressed in order for people living in areas affected by food apartheid to maintain and improve their health.

Health care institutions and clinicians have an obligation to address food apartheid, as their recommendations to their patients about living healthily are contingent upon whether those patients are able to access the resources they need to have a good diet. Based on the Urban Bioethics principle of Solidarity, the clinician-patient relationship can only be successful if both parties are able to contribute to their agreements. However, this is principle is not upheld by the prevalent health insurance systems in the United States, including fee-for-service payment models, in which health systems stand to make more money for each test clinicians order, which can be at a large cost to patients (Magill, 2016). It does not offer proper incentives for clinicians to help their patients be more healthy, as the more sick they are and the more resources they need, the more financial benefit hospital systems can make. Although there has been a call to transition to more value based healthcare models, in which health systems are rewarded for better patient outcomes, this is not widespread enough.

Despite current health insurance models not reflecting the principle of solidarity, within the physician patient interpersonal relationship, there are benefits over time to both parties if patients are able to stay healthy, especially in a primary care setting in which patient volumes are high and time with each patient can be limited. In these settings, patients gain more from the advice of their primary care clinician if they have the tools they need to aid in the prevention and treatment of chronic disease. Conversely, primary care clinicians are less likely to report burnout if their clinics provide for their patients' social needs, which can impact the efficiency of appointments as well as the satisfaction felt by clinicians (Kung et al., 2019). Particularly for clinicians working in areas impacted by food apartheid and other major social disparities, they can start to feel powerless if their patients are not able to implement their advice due to lack of resources. In addition, because a diet rich in fruits and vegetables is required for patients to live healthily, food apartheid especially can impact patients relationships and satisfaction with their clinicians. Therefore, if clinics are able to help patients obtain access to fresh produce and improve their diets in a healthy way, solidarity and satisfaction in the physician-patient relationship will improve.

There have been many solutions implemented by local and national organizations and governments to try to combat food apartheid, which healthcare institutions can incorporate in order to benefit their patients. In this thesis, I will discuss some of these solutions and whether they have been shown to be effective in combatting food insecurity. These solutions include fresh food financing initiatives, which aim to open more grocery stores carrying fresh produce in areas affected by food apartheid, and healthy corner store initiatives, which try to increase produce availability in existing corner stores. I will also discuss produce subsidy programs, which discount the price of fresh fruits and vegetables, and urban agriculture, which is usually a community-based initiative to increase access to fresh produce. After a description of the solutions, I will discuss the efficacy of examples of each of these types of programs, and if applicable, will mention if these programs have worked to address food apartheid in Philadelphia. Then I will discuss how well each solution incorporates Urban Bioethics principles. Finally, I will conclude with an analysis on which method may be most sustainable in combatting food apartheid and will explore why healthcare institutions must incorporate these methods in order to improve the effectiveness of the care they provide patients.

CHAPTER 2

FRESH FOOD FINANCING INITIATIVES

Fresh food financing initiatives are diverse in funding and oversight, but they share the goal of increasing access to healthy foods in neighborhoods impacted by food apartheid. One example is the SNAP Healthy Food Financing Initiative (HFFI) is an initiative by the federal government through the USDA to provide loans, grants, and technical assistance to organizations seeking to increase access to “fresh, healthy, affordable food in urban and rural underserved communities (Food and Nutrition Service USDA, 2023). More recently, this program also started a Local and Regional Healthy Food Financing Partnerships Program in which they offer assistance to organizations in different sectors to establish/improve local, regional or state access to healthy food. These partnerships must involve one public entity, like a state/local government or tribal authority, and can involve a private organization such as a non-profit or a food access organization.

In practice, this initiative has helped open many healthy food retail stores around the country in areas impacted by food apartheid. One example of the SNAP HFFI is the Pittsburgh Hill initiative which brought a full-service supermarket to residents living in the Hill District neighborhood of Pittsburgh. A study was done that examined the impact of the newly opened supermarket on the diets of SNAP-participating residents living in the Hill District, and compared them to people’s diets in a comparison neighborhood in which there were no new food retailers (Cantor et al., 2020). The findings were that in the intervention neighborhood, residents’ food security improved and intake of sugars declined, and there was a relative decline in the percentage of daily calories they consumed from solid fats, alcoholic beverages and added sugars. These changes were not seen in the comparison neighborhood. This intervention and study points to the possibility that opening new healthy food retailers can cause positive dietary changes for people living with food insecurity.

Another HFFI project in Cleveland, Ohio, had contrasting results to the Pittsburgh program (Freedman et al., 2020). This project established a “food hub” or a healthy food retailer that offered other programming such as cooking classes and urban gardening mentorship. A study conducted on this project over three years examined the changes in diet healthy food availability experienced by the intervention neighborhood compared to a control. They found that while observed availability of healthy food increased in the intervention neighborhood, there were no significant changes in the number of fruits or vegetables consumed or changes in caloric intake. This study’s results conflict with the Pittsburgh Hill initiative results, and points to the possibility that simply opening a healthy food retailer in an area impacted by food apartheid may not be enough to increase dietary intake of healthy foods.

An example of a state-level fresh food financing initiative is the Food Retail Expansion Program to Support Health (FRESH) project in New York City (NYC Economic Development Corporation, 2024). This initiative provides incentives for grocery store operators and developers that are looking to establish a grocery store in an area impacted by food insecurity. A supermarket was opened in a neighborhood with low-food access in the Bronx, and a study on this program examined whether food intake behaviors changed in people living <0.5 miles from the new grocery store (Rogus et al., 2018). Through a survey, researchers found that there was an increase in produce available in the homes of people living within the radius compared with those living further away. Also, there was an increase in produce and water intake and decrease in soft drink and pastry intake in people within the 0.5 mile range. However, amounts of salty snacks and pastries in people's homes increased on average as well. This study's findings echo that of the Pittsburgh Hill HFFI by showing some positive dietary changes, but establishes that a new supermarket may naturally cause an increase in purchase of unhealthy foods as well.

A fresh food financing initiative was also established in Philadelphia starting in 2004 (CDC, 2013). This initiative started as a collaboration between three non-profit organizations including The Food Trust, The Reinvestment Fund, and The Greater Philadelphia Urban Affairs Coalition, and had government oversight by the Pennsylvania Department of Community and Economic Development (Giang et al., 2008). Over the six years that the program ran, it provided $30 million in grants for developing and expanding access to healthy, fresh foods in underserved areas of the city (Healthy - The Food Trust, 2015).

A few studies were done to evaluate the efficacy of this initiative. One study surveyed shoppers at a newly-established, full-service grocery store to determine their feelings about food access a few years after the store's opening (Chrisinger, 2016). Participants of the surveys mentioned that the new store was often cleaner, more orderly and offered more affordable options compared to other neighborhood food retailers. Participants also mentioned the challenges they had trying to tailor their grocery shopping for chronic medical conditions that either they or their families had. The discussion of this study stipulated that there should be more support for people shopping for healthy foods provided by the retailer.

Another study on the FFFI in Philadelphia surveyed people in a neighborhood with a newly opened grocery store and compared their answers to people from a nearby comparison neighborhood (Cummins et al., 2014). This study found that for people in the neighborhood with the new grocery store, there was increased perception of food access but no change in dietary habits or BMI. Both of these studies show that while new grocery stores may be helpful in increasing food access from the perspective of the customers, without additional support, learning to eat more healthily is difficult. This may especially be the case if people's dietary and cooking habits have adapted to the lack of fresh produce that has impacted their family through multiple generations.

CHAPTER 3

HEALTHY CORNER STORE INITIATIVES

Healthy Corner Store Initiatives (HCSIs) are similar to FFFIs in that they aim to increase the amount of healthy food available stores. These programs are aimed at increasing the fresh produce and healthy foods at existing corner stores, which are small, independent stores selling food items (Young et al., 2014). Corner stores are often abundant in areas impacted by food apartheid, and can sometimes be the major source of groceries for people in these areas. HCSIs are funded by various organizations and levels of government, similarly to FFFIs. Unfortunately, there are not many examples of HCSIs that have been studied, but a few will be discussed below.

One example is Fresh Foods Here, an HCSI that was established in Columbus, Ohio in 2010 (Young et al., 2014). Funding and planning involved the City government of Columbus and associated Creating Healthy Communities Initiative, the Franklin County government, United Way of Central Ohio, and Brexton construction company. A study was done on the efficacy of the HCSI on food availability and consumer knowledge and confidence in shopping for healthy foods. At the time of this study, eight corner stores were participating, and seven were evaluated. The results found that healthy food availability increased from pre to interim 3-month evaluation, but availability fell to and below baseline for 6/7 stores in the post-intervention analysis. Consumer knowledge of healthy food was measured pre and post-intervention in a cross sectional manner, and was unchanged. Consumer confidence in shopping for healthy foods was the lowest in the pre-intervention phase and highest in the interim. The findings of this study point to the possibility that HCSIs are potentially effective when there is a lot of observation of the intervention, such as during interim evaluations, but are not sustainable in the long term. In addition, it may benefit such interventions to provide more information for consumers about shopping for healthy foods so that they can make informed choices.

A similar intervention was implemented in Philadelphia when the Philadelphia Department of Public Health partnered with the Food Trust and local food distributers to implement a HCSI by providing investments, technical assistance, and training to corner-store owners in order to increase the availability of healthy foods (Healthy Corner Store Initiative Overview, 2014). This intervention had two levels: the basic intervention, which involved increasing the amount of healthy foods (including fresh produce, low fat milk, etc) and adding healthy food identification marketing, including shelf labels and recipe cards. Stores that could successfully implement these changes were selected for higher level “conversion” intervention in which they got mini-grants to help them store and market their healthy foods.

This HCSI was evaluated, and out of 211 corner stores that went through the intervention, 50 of them became conversion stores (Healthy Corner Store Initiative Overview, 2014). The results of the evaluation showed that the number of fruits and vegetables increased significantly post-intervention in conversion stores and non-significantly in basic stores. Although this study did not involve the perspective of consumers on the change in availability of healthy foods, the results indicate that in order for HCSIs to be successful at changing the amount of healthy food available, it is likely that corner store owners will need more significant support with storing and marketing healthy foods. Overall, the evidence on the efficacy of HCSIs is limited, and more evaluations need to be done on the sustainability of these interventions as well as consumers' perception of healthy food availability and whether it leads to dietary changes.

From a bioethical perspective, FFFIs and HCSIs increase people's agency in choosing what they want to buy, as introducing retail of fresh produce helps increase the variety of healthy food available for purchase. However, simply increasing the amount of fresh produce available may not fully address the inequity caused by decades of food apartheid. People who have been impacted by food apartheid may have adapted their diets to include more energy dense, less nutrient heavy foods (Mello et al., 2010). Therefore, when addressing food apartheid through these two types of programs, it is important to also share knowledge about culturally appropriate, nutritional foods and cooking methods in order to support people who may not have that information.

CHAPTER 4

PRODUCE SUBSIDY PROGRAMS

Produce subsidy programs are another category of interventions which provide fresh fruits and vegetables to people in communities impacted by food apartheid. These programs take many forms and come through many different partnerships and funding sources. A popular model for these interventions is produce-prescription programs, which involve health care practitioners providing vouchers for subsidized produce for people that express concern about food insecurity.

One nationwide example of a produce subsidy program is the Gus Schumacher Nutrition Incentive Program (GusNIP). This is a grant program developed by the nonprofits including the Gretchen Swanson Center for Nutrition and Fair Food Network and funded through the USDA, National Institute of Food and Agriculture (NIFA) with support from USDA Food and Nutrition Service (GUSNIP NTAE, 2023). This program came out with a report analyzing the effectiveness of year three of this program, which began in 2021. The program funding for three years was $110 million, and part of the funding went towards Produce Prescription Programs (PPPs), in which partnered health care facilities provided prescriptions for fresh FV purchases to eligible individuals who report low income, food insecurity, or diet-related chronic disease. These prescriptions include funding to shop at Farmers Markets, Farm Stands, and Community-Supported Agriculture sites as well as grocery stores/supermarkets.

The evaluation of the GusNIP program involved surveying participants of PPPs before and after program implementation and participation to examine food security levels, diet, and perception of overall health (GUSNIP NTAE, 2023). They also measured “site level outcomes” to see which particular programs were the most effective at encouraging FV purchase. The results showed that 66.2% of PPP participants reported food insecurity before program, 54.8% reported it after the program. Thus, PPPs likely had some effect in countering food insecurity among participants. Additionally, FV intake increased by 0.11 cups/day for participants post program. Per the discussion included in the report, program evaluators think this modest increase is due to the heterogeneity of sites at which prescriptions/vouchers could be used. Also, it is likely that participants saved money on FV that they used on other needs, even if their FV intake did not increase by much. Lastly, there was an increase in the percentage of participants who reported good, very good and excellent health post-intervention, and a decrease in the percentage of people who reported poor health. The programs outcomes, although largely positive on the surface level, may not be statistically significant because there was no comparison group. However, participants’ opinions were incorporated into the study evaluation, which allow for more insight into whether the program was effective for the people it was created to help.

Another example of a produce subsidy program was started in Athens, Georgia through the collaboration between the non-profit Wholesome Wave Georgia, the University of Georgia, Athens Nurses Clinic, Athens Farmers Market and the local Latinx community (Slagel et al., 2021). This was a produce-prescription program that also included culturally tailored nutrition education, and health screenings in safety-net clinics, farmers markets and other community settings. A 6-month non-randomized control trial was conducted that involved 54 adults who participated in SNAP at the time and had diet-related chronic conditions. Participants were given produce prescriptions that amounted to $1/day per household member and could be redeemed once a week at a local farmers market. They also had monthly health screenings and went to a culturally-tailored nutrition education class adapted from the SNAP-ed curriculum, which included cooking demonstrations and food tasting sessions.

The results of the trial were that intervention participants reported a statistically significant increase in FV intake (by 0.81 cups/day on average) compared to the control group. Intervention participants also reported an increase in FV preparation knowledge and reported they were more likely to think about healthy food choices than they would have pre-intervention. This program may have been more effective at increasing FV consumption compared to the GusNIP program because the Athens program had culturally-tailored nutrition education classes that accompanied the FV prescriptions. Echoing the findings from some of the FFFIs and HCSIs, it is possible that interventions aimed at increasing FV intake in communities effected by food apartheid need additional culturally adapted nutritional education in order to be successful.

Produce prescription programs have also been conducted in Philadelphia. One example is the non-profit The Food Trust's implementation of the GusNIP program. The Food Trust used the GusNIP framework as an extension of their already existing Food Bucks Rx program, which engaged healthcare clinicians across Pennsylvania to provide healthy food vouchers to patients that could be redeemed at supermarkets, farmer's markets and corner stores for fresh produce (Koprak, 2022). Based on a report published on the USDA website, participant surveys reported that FV prescriptions helped them purchase fruits and vegetables, and their consumption of fruits and vegetables had increased since they started using the prescriptions. Although this data is non-quantifiable based on existing reports, participant surveys seem to echo findings from the nationwide GusNIP report.

Another produce prescription/produce subsidy program is one that I have experience working with called Farm To Families, or F2F. F2F started as an initiative from St. Christopher's Foundation partnering with Lancaster Farm Fresh Cooperative, and involved healthcare clinicians providing prescriptions to patients for boxes of seasonal fresh produce (Temple University, 2024). The Department of Urban Bioethics at Temple brought F2F to patients at Temple University Hospital. At Temple, F2F first was provided on a prescription basis, but then program leaders started doing outreach outside some healthcare clinics to encourage patients to sign themselves up. Participants used to have to come pick up their produce boxes near TUH, but when the pandemic started F2F shifted to a delivery model for clients that chose to continue participation. Now, potential participants can self-refer or be referred by a clinician, not necessarily through a prescription, based on their household size and income. The can get subsidized boxes that cost from $5-10 depending on their income.

I participated in a qualitative research project examining the characteristics of long-term FV subsidy program participants in an effort to increase long term participation in this kind of program. I contributed to a paper that is currently in the process of being reviewed for publication, and throughout data collection, we were able to get narratives from twelve participants who engaged with F2F for three months or greater. We asked about their experience with F2F and how it changed the way they obtained fresh produce, as well as many more aspects of their relationship with healthy eating. I am including some of the many quotes from participants, a few of which are also in the paper.

For example, we found that participants self-reported an increase in nutritional content of their diet, and reported “feeling healthier.” A 52 year old woman reported that after getting deliveries from F2F, she and her family “feel a lot healthier. When we were eating other foods before farm to families it just wasn’t healthy for us and we’d be tired after eating it […] [Now our] skin is better. Just overall healthier.” Another client, a 59 year old woman, reflected on eating more vegetables via F2F: “ I feel better, I feel healthier, I feel like I’ve accomplished something. I’m losing weight […] with my health issues, I’m working towards a healthier lifestyle, you know, hopefully live a little longer, you know?” F2F increased clients’ perception of their health and helped them aim to live more healthily. Participants also reported that the F2F model made it easier for them to buy FV compared to before. A 78 year old woman said that before, if she “wanted fresh produce, there was a trip to the store […] having to use septa. And they didn't always have fresh vegetables, but I would select frozen vegetables. […] But now with Farm to Families, I have the fresh vegetables weekly without having to go to the store.” Because of the lack of easy to access grocery stores, obtaining FV before F2F was more difficult for clients. However, having F2F deliver fresh FV to clients’ homes mitigated that barrier.

The findings from the Temple F2F study echoed that of a F2F study done at the University of Pennsylvania. In this study, families of pediatric patients were given free farm fresh produce boxes at outpatient sites, and the patients’ caregivers were interviewed during their participation in the program (Brown, 2022). Salient themes from the interviews included how the produce boxes relieved some financial stress related to food purchasing, and how the produce in the boxes “cultivated favorable attitudes toward produce and healthy eating" in the patients' households. Again, although there is no quantitative data on the program's effects on food insecurity, interview responses from both the Temple and Penn F2F studies show that participants indicated positive effects of the program on fresh food availability and their diets.

Produce prescription programs, similarly to FFFIs and HCSIs address the Urban Bioethics principle of agency, but in a different way. Having subsidized fruits and vegetables means that people are able to spend more of their money on other necessities. However, these programs also can limit people's agency depending on their structure. If people are not allowed to choose which fruits and vegetables they receive, which is the case in some delivery-based models, this limits their ability to consume what they want. Additionally, people may not be able to cook some of the produce according to their culinary traditions. Although some people who enjoy exploring different cooking methods may benefit from being introduced to new produce, the reach of these programs could be limited if people do not know how to prepare new types of fruits and vegetables. Therefore, produce prescription programs need to address this inequity by including cooking classes and culturally-aligned recipes for the variety of produce they provide.

CHAPTER 5

URBAN AGRICULTURE

Lastly, urban agriculture, defined as the cultivation, production and processing of food and non-food goods in urban areas, is a solution to food apartheid that is often more community-driven than the other solutions discussed (Climate Smart Urban Agriculture, 2016). Urban agriculture can include community gardens and farms, and can be used as a method to increase food production in urban neighborhoods for use by local people in those communities.

Urban agriculture has been implemented in cities around the United States, and there have been many studies done to evaluate the effects of community gardens and farms. One such study took place in Baltimore, Maryland. Baltimore, Maryland. Researchers interviewed local food justice advocates, activists and scholars who were involved in urban agriculture or who did direct food justice work (Colson-Fearon et al., 2022). These interviewees were asked questions asked about their understanding of "food deserts" and their perception of the impact of urban farming on increasing food access in Baltimore.

One of the themes that emerged from the interviews was that urban farming likely played a role in community's self-reliance and empowerment, as residents were able to grow their own food. In this way, urban farms provided a material way to combat food insecurity. Interview participants mentioned that during the pandemic especially, produce from the farms was distributed to those with the least access. Instead of food being thrown away like in grocery stores, they said urban farms are able to distribute surplus as it comes in. In addition, residents and participants of urban farming were able to increase their nutrient intake and enabled community members to improve their health. Finally, many of them brought up that they thought Urban agriculture is sustainable for the environment and the community.

Another study done in Flint, Michigan, analyzed the impact of community gardens on FV intake of people living in households in which one member participated in Urban agriculture (Alaimo et al., 2008) Researchers interviewed 766 adults by phone, and found that 15% of the respondents had someone in their household who participated in community gardens in the last year. Additionally, they found that respondents with a household member who participated in community gardening consumed fruits and vegetables 1.4 more times per day than those in households in which no one participated. This study points to the direct positive impact that community gardening can have on FV intake, which could be especially beneficial in urban neighborhoods affected by food apartheid.

A similar study in Rockford, Illinois analyzed the food security-related as well as physical and social benefits of community gardening (Furness et al., 2018). Interviews were conducted with community gardeners as well as patrons of a large food pantry that also distributed garden produce. From the responses, they gleaned that while non-gardening community members are benefitted by an increase in availability of fresh produce, which they largely considered to be better than store-bought produce, they do not get all of the social and physical benefits of gardening itself. Non-gardening respondents also discussed that they were reluctant to join community gardens because they were not sure if they were allowed to, as they were not able to tell if the gardens were private. The authors discussed that relative newness of the gardens along with lack of widespread advertising probably lead to this feeling of exclusion.

A study in Denver, Colorado assessed similar outcomes as the Rockford study, but on a larger scale (Litt et al., 2011). Researchers examined the fruit and vegetable intake, several social and psychological processes and beneficial experiences that gardening provided to people living in an urban area. They interviewed 300 people who participated in urban gardens, and 474 households of those who had a home garden or those who did not participate in gardening. They found that an respondents who reported an increase in perception of neighborhood aesthetics, valued social involvement and participated in community garden had significantly more FV intake than others. Per the data collected, 56% of community gardeners met the recommended amount of five servings of FV per day, compared with 37% of home-gardeners and 25% of non-gardeners. The results of this study echo those from the Flint and Rockford studies, pointing to the increase in produce availability in urban neighborhoods in which community gardens exist. Gardening overall seems to have a positive impact on FV intake and social involvement, so increasing participation in these gardens may benefit people in physical and social ways.

Urban agriculture also exists in Philadelphia, and some gardens are funded through the city government, such as the FarmPhilly community garden network, which offers gardeners access to land reserved for parks and recreation, supplies, training and technical support for gardening (Gardening: Programs and Initiatives, 2023). However, it is worth mentioning that many of the gardens supported by this initiative are located areas that are not heavily impacted by food apartheid, and few are located in North and

Northeast Philadelphia. Although that particular initiative has not been implemented in a widespread manner in low-food security neighborhoods, a report released through the city government's Urban Agriculture Plan says that 70% of active community gardens and farms in Philadelphia are located in areas impacted by high poverty. This points to the reality that many communities likely turn to urban agriculture to increase their neighborhood's access to fresh produce.

A statistical study from 2022 looked into the relationship between urban agriculture and community characteristics in Philadelphia neighborhoods (Garrett et al., 2014). They found significant associations between majority Black neighborhoods and urban agriculture as well as higher poverty and urban agriculture. In addition, they found that the association between neighborhoods with low food access and the presence of urban agriculture was stronger in Black neighborhoods than in neighborhoods of different racial backgrounds. These findings show that community gardens are often started by communities facing food apartheid as a way for them to address low food access with their own collective action.

From a Urban Bioethics perspective, urban agriculture, if started as a community-based initiative, can increase the agency and solidarity within communities impacted by food apartheid. As mentioned above, community gardens and farms can serve as a way for people to take action to physically increase their access to fresh produce in their own neighborhoods. This allows for a strengthening in agency for the people who participate in urban agriculture. In order for this to happen, however, effort needs to be made to ensure that people are aware of the farms or gardens and are informed of how they can participate. In addition, agricultural knowledge needs to be distributed to address potential inequity related to gardening methods and tools. Finally, urban agriculture can also increase communities' sense of solidarity, as some gardens may be able to share excess fruits and vegetables with food banks; furthermore, solidarity can also increase if gardeners share excess with friends and family.

CHAPTER 6

DISCUSSION: WHICH SOLUTION IS BEST?

There have been many types of programs designed to alleviate the challenges imposed by food apartheid. These solutions come from a variety of sources, including governments and non-profits, and have differing costs and benefits based on studies analyzing their efficacy.

Firstly, Fresh Food Financing Initiatives and Healthy Corner Store initiatives seem to get a lot of funding through federal and state level initiatives. They are also a directly impactful way of combatting food apartheid by physically placing healthy food/grocery stores into neighborhoods where people face food and nutrition insecurity. However, they do not seem to be very effective in directly changing shopper's health, and may not be sustainable, as described by the HCSI in Columbus, OH, where intervention efficacy decreased in post-intervention follow up. Maybe with these types of interventions, there needs to be more regular direct oversight and support of the stores by the organizations that are funding them. Additionally, more studies need to be done on the health benefits accrued by people living in the selected neighborhoods as a result of having more fresh produce available to purchase.

Produce subsidy initiatives also are a method of directly increasing people's access to fresh produce. A nationwide example showed that FV intake increased slightly in participants, but did not report whether statistically significant. FV are expensive however, as reported by F2F clients, so subsidizing them may help people spend money on other necessities even if their FV intake does not dramatically increase. These programs may also be more effective if paired with nutrition education classes that are culturally tailored.

However, these programs may not be beneficial if they limit participant autonomy to choose the FV that they desire. Also, F2F participants were not able to choose what they buy, which then requires extra effort on their part to learn how to prepare unfamiliar FV. Finally, limited data exists on long-term participation in these programs and how effective they are for increasing participants' food security.

In contrast to the previously mentioned solutions, urban agriculture is unique in that the initiative to start this kind of program can come from within the community it is meant to benefit. Also there are social and psychological benefits of urban agriculture, including increased physical activity and social contact of people who farm, which has been shown to be beneficial to well-being (Gripper, 2023). Additionally, urban agriculture has been showed to improve health and FV intake, even for people that don't directly participate in farming. However, these efforts happen on a small scale, and don't necessarily help everyone in the neighborhood improve FV intake unless these farms partner with food banks/pantries to share their excess produce. Additionally, non-gardeners can feel excluded or are not sure if they are allowed to join the community gardens, likely because of poor advertising. Lack of access to agricultural knowledge could also preclude people from participating in urban gardens and farms.

Based on the literature review, all solutions impact food insecurity, but the one that seems to be most effective in different realms is urban agriculture. It is an outlet for people to potentially increase their agency in fighting the structural factors that created food apartheid in their neighborhoods. A study looking at Black and White participants of urban gardens in Philadelphia found that, compared to White gardeners, Black growers mentioned how urban agriculture helped them take charge of their food sources and well-being (Gripper, 2023).

This self-reliance was a form of resistance for the Black gardeners, as they reflected that gardening helped them build a sense of community and allowed them to avoid relying on outside groups for food. Therefore, urban agriculture has the ability to not only increase agency amongst individual community members, but also create solidarity amongst them as they work together to take ownership of their food source.

One drawback of urban agriculture is that outside efforts to bring in gardening may not be embraced by residents of communities effected by food apartheid, especially if the food grown is not culturally tailored or economically accessible (Guthman, 2008). Therefore, if urban agriculture is being funded or supported by the governments or non-profits, outreach efforts should ensure that leadership and participation come largely from the community itself. Additionally, the food being grown should be subsidized for people in the community so that it is not mainly wealthier people from outside the community that are able to purchase it. Also, policy support is needed to create and preserve spaces for urban agriculture through combatting land development and gentrification (Irazábal et al., 2009).

CHAPTER 7

CONCLUSION

There have been many solutions created to combat food apartheid, with collaboration between state/national government, non-profits and food equity organizations. However, programs started from outside groups overall seem to lack sustainable, widespread effects on food insecurity based on studies, especially if these programs did not include additional nutritional education or support for their clientele.

Overall, mainly only urban agriculture has been started by communities facing food apartheid themselves. Because urban agriculture can be started as a form of collective action, it can increase the agency of individual participants and the community as a whole, and can also increase solidarity amongst the community as people work together to combat food apartheid. In order for urban agriculture to be successful, communities need support so they can protect the land they need against gentrification.

Healthcare institutions and systems, as known contributors to gentrification in areas impacted by food apartheid, should promote urban agriculture as a means of increasing the food security of their patients. Healthcare institutions, especially those which move into working-class communities, can have a negative effect on the existing populations through a process called "medical gentrification," which describes how medical institutions expanding into low-income communities can function to displace and burden local homeowners and retail (Tweet et al., 2021) Especially in dense urban areas, the creation of hospitals and clinics and housing for healthcare workers can change the landscape of communities and even have the potential to increase poverty rates in their surrounding neighborhoods.

Following the bioethical principle of non-maleficence, their contribution to gentrification is all the more reason for healthcare systems to invest into urban agriculture as a way to rectify their negative impact on the communities they serve. Not only would this be a way for giving land back to the neighborhoods hospitals expanded into, but it would also serve as a way to mitigate the effects of food apartheid in a sustainable way. Health systems that were built in lower-income neighborhoods especially have an ethical obligation to address food apartheid, as the gentrification they caused likely contributed to the closing of some food retail in these neighborhoods.

In addition, as pointed out in the introduction, providing potential solutions for the social issues that impact their patients' abilities to become and stay healthy is a way to increase solidarity amongst healthcare clinicians and their patients. On an interpersonal level, clinicians will feel less burnout if they know they can suggest resources, such as urban gardens, to their patients if they struggle with food insecurity. On the flip side, patients can feel more empowered if they are able to seek out healthy foods and follow their doctors' recommendations, and they will have more time to convey their other health concerns during appointments if their social concerns are already addressed.

Along with increasing solidarity on an interpersonal level, if healthcare institutions seek to address food apartheid through urban agriculture, they can increase the overall solidarity between institutions and the communities they serve. By supporting urban gardening efforts through purchasing and protecting land for communities, healthcare systems can address their contribution to gentrification, and signal to communities that they are invested in truly increasing the health of residents. If done sustainably, this may function to increase the feeling of solidarity and trust that community members feel towards hospital systems.

Food apartheid is an issue that hospital systems have an ethical obligation to address in order to uphold the urban bioethics principles of social justice, non-maleficence, and solidarity. Especially in urban areas such as North Philadelphia, the lack of access to healthy foods and fresh produce has contributed to chronic health issues that span across generations. Based on the principle of social justice, all people deserve access to the tools they need to maintain their health. Healthcare systems, which project the idea that they want to help their patients stay healthy, thus have the obligation to promote social justice by combatting food apartheid. Secondly, as healthcare institutions have historically caused gentrification in lower-income communities they expand into, they have an ethical duty through the principle of non-maleficence to their patients to rectify these impacts, which they can potentially do through promoting solutions to food apartheid such as urban agriculture. Finally, addressing food apartheid is a way for healthcare systems to increase solidarity between themselves, their workers, and the patients they take care of.

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