



Food, Culture & Society

An International Journal of Multidisciplinary Research

ISSN: 1552-8014 (Print) 1751-7443 (Online) Journal homepage: <http://www.tandfonline.com/loi/rffc20>

Food Deserts and a Southwest Community of Baltimore City

Jessica Childs & Laura R. Lewis

To cite this article: Jessica Childs & Laura R. Lewis (2012) Food Deserts and a Southwest Community of Baltimore City, Food, Culture & Society, 15:3, 395-414, DOI: [10.2752/175174412X13276629245849](https://doi.org/10.2752/175174412X13276629245849)

To link to this article: <https://doi.org/10.2752/175174412X13276629245849>



Published online: 29 Apr 2015.



Submit your article to this journal [↗](#)



Article views: 408



Citing articles: 1 View citing articles [↗](#)



FOOD, CULTURE & SOCIETY

VOLUME 15 | ISSUE 3 | SEPTEMBER 2012

Food Deserts and a Southwest Community of Baltimore City

Jessica Childs

University of Maryland

Laura R. Lewis

Washington State University

Abstract

"Food deserts" lack both efficient transportation systems and stores carrying nutritious foods, and the cost of healthy food is generally more expensive than processed. This study is concerned with the presence of food deserts in Baltimore, focusing on the Cherry Hill community. An adapted ethnographic survey was used to analyze community food access and local stores were inventoried. Our results indicate the presence of a food desert in this neighborhood. This is of particular interest as Cherry Hill is characterized as a suburban area within the city of Baltimore. Moreover, this lower-income neighborhood's access to nutritional food options is further complicated by the physical and built environment characteristic of suburbs and contradictory to studies that focus on the dichotomy of inner-city versus suburban access to healthy food. We contribute to a growing body of knowledge concerning unequal food distribution in urban communities and issues of social and health injustice.

Keywords: food justice, suburban, built environment, geography, mixed methods

Introduction

The Definition of a Food Desert

The term "food desert" was first used in the later twentieth century by a resident of Scotland who was attempting "to capture the experience of what it was like to live in a deprived neighborhood where food was expensive and relatively unavailable" (Cummins and MacIntyre 2002: 2,115). Since the definition was first developed, many variations have been used to describe the experience of having limited access to food

within both urban and rural communities. Shaw (2006) proposes a conceptual understanding utilizing three specific criteria: *access* (physical ability to acquire nutritious food); *assets* (financial ability to purchase food); and *attitude* (a state of mind that prevents purchasing certain food items). In some studies, “food desert” is used to describe the poor quality and quantity of the types of food available, while other studies concentrate on areas of limited access to any type of food store, focusing on the size and number of available food stores in a region (Hendrickson *et al.* 2006). In this study, the definition of a food desert refers to a geographic area where there is limited access to foods that are required for a nutritionally adequate diet, mainly a lack of fruits, vegetables, whole grains, fresh meat and high-quality dairy. The study adopts this definition because communities that lack access to nutritionally valuable foods may face greater health risks than communities in neighborhoods with food options more diverse than processed and manufactured goods.

The importance of consuming foods from the five main food groups (fruits, vegetables, whole grains, protein and dairy) is well established. “Fresh fruits and vegetables contribute vitamins, minerals, antioxidants, fiber and phytochemicals to the diet. It has been suggested that regular consumption of these foods has been associated with a decreased risk of diabetes, cardiovascular disease, cancer and obesity” (Hendrickson *et al.* 2006: 372). Even though this is well acknowledged, “four of the 10 leading causes of deaths in the United States are chronic diseases for which diet is a major risk factor” (Zenk *et al.* 2005: 660). Several case studies have documented that minority groups and those with limited incomes have a greater risk of exposure to these types of diseases (Drewnowski 2004; Drewnowski and Darmon 2005a, 2005b; Drewnowski *et al.* 2009). One possible reason for this is that a greater proportion of minority and low-income populations live in areas where access to healthy foods is limited (Kwate 2008; Larsen and Gilliland 2008; Lopez 2007). According to a report by the US Department of Agriculture (2009), over 4 percent of the US population live in low-income areas that are located more than one mile from a supermarket. Additionally, researchers found that 6 percent “of all US households did not always have the food they wanted or needed because of access-related problems” (USDA 2009: iv). Consequently, food deserts are a result of both physical and financial barriers that create obstacles in obtaining foods that meet dietary requirements.

The Main Challenges to Access

The present study focuses on the spatial-temporal and socio-economic limitations in obtaining food. Utilizing physical and financial access as our conceptual framework to investigate an urban neighborhood and its ability to procure healthy food we developed five primary foci: (1) lack of available financial resources; (2) the lack of stores carrying nutritionally appropriate food in a geographic area; (3) limited mobility due to the physical and built environment; (4) neighborhood crime and; (5) deficient amount of time due to home and work responsibilities as well as difficulty for people with special needs.

Financial limitations are a major challenge in obtaining the food required for a nutritionally adequate diet. The main challenge is the high cost of healthy foods

versus cheap packaged products and fast food. Compounding this problem is the inflated cost of foods sold at small grocery stores in the urban or isolated rural areas that are located far from supermarkets (Franco *et al.* 2007). Individuals can experience temporal variability in their financial ability to purchase certain foods because income can vary based on the timing of available work, paydays and paying bills. One study found that “fresh fruits and vegetables were considered highly desirable by poor urban residents but were not purchased regularly because they were seen to be an impractical and unaffordable means of providing the family with enough bulk to satisfy hunger” (Hendrickson *et al.* 2006: 372).

In many communities without access to nutritious foods, the majority of food that is available comes prepackaged or from takeout vendors (Kwate 2008; Morland and Evenson 2009; Smoyer-Tomic *et al.* 2006). This is particularly evident in low-income neighborhoods with a high proportion of residents who identify themselves as belonging to a racial minority (Kwate 2008; Larsen and Gilliland 2008). This phenomenon creates an inequitable food landscape resulting in social and health injustices. Often, this trend is also present due to the lower price of packaged foods versus fresh, and that smaller, independent stores generally lack the storage space or air-conditioning to keep the non-packaged foods fresh. Moreover, spoiled fresh foods are a cost that many smaller stores cannot financially bear.

Drewnowski and colleagues (Drewnowski 2004; Drewnowski and Darmon 2005a, 2005b; Drewnowski *et al.* 2009) identified that individuals with limited incomes tend to purchase products that are more “energy-dense,” which generally include refined grains and foods with higher sugar and fat content (Drewnowski 2004). These products are generally low in cost, high in taste, and filling for the individuals consuming them (Drewnowski 2004; Drewnowski and Darmon 2005a). Overall, “food choices are made on the basis of taste, cost, and convenience, and to a lesser extent, health and variety” (Drewnowski and Darmon 2005a: 266S). As purchasing “energy-dense” foods is the most cost-efficient way to obtain dietary energy, there are serious health implications that correlate with this consumption pattern, especially in lower-income communities. “Based on aggregate census tract data, the proportion of families living in poverty was strongly associated with higher neighborhood rates of obesity and type 2 diabetes” (Drewnowski and Darmon 2005b: 900). Adopting a healthier diet requires a financial sacrifice as fresh produce and lean meats are considerably more expensive than more processed foods. For instance, one study found that every additional “100g increment in fruit and vegetable consumption was indeed associated with an increase in diet costs of 0.18-0.29 euros/day ... [whereas] each 100g of fats and sweets was associated with a 0.40 euros/day reduction in daily diet costs” (Drewnowski and Darmon 2005a: 268S). Food prices, in general, have also been on a rise since the 1980s. Over the last two decades, the price of fresh produce has increased by 89 percent, whereas foods with high fat content have increased by only 35 percent, creating an even greater challenge for lower-income individuals to purchase healthier, less processed foods (Drewnowski 2004).

Availability of nutritious foods, regardless of price, is another constraint that specific communities face. For instance, a study conducted in Edmonton, Canada



FOOD,
CULTURE
&
SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

“found, for the period from 1980 to 1998, a net loss of seven supermarkets ... and a ‘thinning out’ of stores, especially in the poorest part of the city” (Smoyer-Tomic *et al.* 2006: 309). Another component that contributes to the high cost of healthy food in poor, urban areas is that as supermarket accessibility is low, the smaller corner stores and independent food stores tend to be more expensive due to the high demand but low supply of grocers in the area (Franco *et al.* 2007; Smoyer-Tomic *et al.* 2006). “The actual cost of the MBP [market based price] of food in urban areas can be 15 percent higher in supermarkets, 26 percent higher in medium stores, and 38 percent higher in small stores” (Henderickson *et al.* 2006: 379). Similarly, Franco *et al.* (2008) found a 20 percent mark-up at a Baltimore City grocery store selling the same items as a supermarket located approximately one mile away. Smaller grocers also tend to have less shelf and refrigeration space to store fresh foods further displacing the presence of nutritious foods from these communities. Less shelf space also limits small grocers’ ability to stock a variety of products, which also inhibits consumers from meeting their daily nutritional requirements (Henderickson *et al.* 2006). Consequently, access to healthy nutritious foods is more related to the type of store that is located within a geographic area, than to the number of stores that are available for food purchase (Block and Kouba 2006; Kwate 2008; Morland and Everson 2009). Furthermore, studies suggest that the location of stores with revenues above \$10 million/year is primarily driven by neighborhood poverty rates, regardless of whether the area is located in a city or suburban setting (Chung and Myers 1999). Studies have also indicated that the income classification of a neighborhood location systematically affects the price charged by the store (Talukdar 2008). Thus, financial barriers are compounded when affordable supermarkets are absent from an area or prices are inflated, decreasing access to nutritious food.

What is more, physical and financial constraints are often correlated for several reasons. For example, areas that are geographically isolated from food stores also tend to lack efficient public transportation systems that extend the distance needed to retrieve these resources. This is particularly prevalent in rural communities that lack mass transit systems altogether. Another example of the association between physical and financial challenges in obtaining food is that low car ownership, and thus stunted mobility, is experienced by low-income families. As Whelan *et al.* reported:

[A] report of the *Independent Inquiry into Inequalities in Health* noted that 68 per cent of households in the predominately low-income social renting housing sector in the early 1990s had no access to a car compared with just 19 per cent in the owner-occupied housing sector, yet the ability to travel by car on shopping trips had become increasingly vital during the 1980s and 1990s as major food retail developments increasingly focused upon the car-borne consumer. (Whelan *et al.* 2002: 2,084)

Sprawl, poor urban planning, merging of companies and the higher purchasing power of higher-income suburbs have led firms to move supermarkets out of

inner-city areas (Smoyer-Tomic *et al.* 2006). This phenomenon also relates to rural regions as under-populated areas lack the political and consumer power that determine the overall location of supermarkets.

Many questions about food access and mobility are centered on the dissimilarity between lower-income inner-city neighborhoods and higher-income suburban communities. However, Talukdar (2008) demonstrated that poor suburban neighborhoods suffered from geographic isolation because of the physical and built environment inherent in these communities. This is further complicated by the lower level of car ownership in these diffuse neighborhoods compared with their higher-income counterparts. One study found that all individuals in a higher-income suburb had regular access to cars for food shopping, while only about 60 percent of those living in suburban neighborhoods classified as below the poverty level had access to cars (Talukdar 2008). Thus, poor individuals without personal transportation seek access to food in the closest stores to lower the cost associated with acquiring food. These individuals are also the least likely to be able to take advantage of market fluctuations in price and availability. When food stores are not physically or financially accessible to a certain group of individuals, then the overall health of the community will disintegrate, regardless of whether that community is rural, suburban or in the city.

Another factor that complicates issues of access to food is that a greater percentage of high crime areas are located in the inner-city opposed to the surrounding suburban communities (Logan and Stults 1999). This can prevent both supermarkets from moving into the area and individuals from leaving their communities to go to supermarkets outside their neighborhood. Logan and Stults (1999) found that affluent blacks living in suburban neighborhoods in Cleveland still experienced higher violent and property crime rates than their poor white counterparts. Additionally, low-income minority city neighborhoods experienced the highest crime rates for both violent and property crime (Logan and Stults 1999). Our study system, the neighborhood of Cherry Hill in Baltimore City is a low-income suburban area that is predominantly African American and is considered to have a high crime rate, allowing for a unique perspective of this concept. Moreover, this phenomenon can pertain both to real crime in neighborhoods or perceived crime, which generally relates to the stereotypical assumption that minority, low-income communities are crime-ridden. If companies have a perception of crime in an area, then they may be reluctant to open a store in that neighborhood, further limiting access.

The individuals, within all demographic groups, who are most vulnerable to facing the physical and financial challenges in obtaining food, include the elderly, the disabled and single parents—primarily women. Another impact of being economically marginalized is that women tend to have lower rates of car ownership than men:

studies of lone-parent households in the 1990s drew attention to how low income (two-thirds of such households required income support) went hand-in-hand with poorer levels of mobility (levels of car access amongst such



FOOD,
CULTURE
& SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

households were 40 percent below the national average) and, in turn impacted the diets and nutrition of those households. (Whelan *et al.* 2002: 2,084)

This results in restricted access to healthy foods because individuals cannot travel to more distant food stores that carry diverse products. Additionally, car-owning individuals who are experiencing financial hardship may not have adequate resources to consistently use a personal vehicle for routine tasks.

The elderly also face greater financial constraints than younger individuals because many are retired or working part-time and may be restricted due to limited mobility. Public transportation systems can be crowded and require transfers, which can be difficult for individuals with canes or wheelchairs. One important study on food access in Seacroft, England noted that many elderly participants expressed concern about being able to carry heavy bags of groceries home, walking to bus stops and having transit staff being impatient with less mobile individuals (Whelan *et al.* 2002). These same challenges could be faced with disabled individuals and single parents whom young children must accompany.

Overall, a greater percentage of food deserts are located within lower-income or minority communities. However, it is important to recognize that:

[the] analysis of the role of race without regard to poverty and of poverty without regard to race offers an incomplete picture of the potential importance of these factors in shaping the spatial accessibility of supermarkets ... given the roles of racial residential segregation and economic restructuring. (Zenk *et al.* 2005: 660; see also Kwate 2008)

Generally, the “typical” food desert is found in areas where residents do not have much political or purchasing power, which limits the community’s ability to demand a decent food market be brought into the area.

These demographics (minority, low-income, elderly, single parents and women, as well as the disabled) face greater constraints when obtaining healthy foods due to potentially confronting more financial and physical barriers than others who are more privileged with greater access to money, time and a vehicle. This illustrates that food deserts disproportionately affect certain populations more than others based on community and individual status. The consequence of this is that there is an inequality in health due to an uneven access of healthy food among populations, either individually or by community. The presence of food deserts is linked to environmental justice issues. Environmental justice is concerned with inequitable environmental burdens endured by groups such as racial minorities, women and residents of low-income areas, among others (Schlosberg 2007). Food deserts are linked to environmental justice issues because the environment, in a general sense, refers to one’s surroundings, and the placement of supermarkets is tied to a specific geographic area and certain characteristics of the community.

It is important to consider who is most affected by food deserts because this will indicate where there are unequal gaps in community health. If food deserts and poor availability of nutritious food have a greater effect on certain demographic

groups, then targeted policies (e.g. women, infant and children programs) would be useful in addressing this problem. Also useful would be special interest groups advocating for the placement of retail and commercial enterprises within specific urban and rural areas and the implementation of food justice initiatives.

Cherry Hill, Baltimore City

Cherry Hill is an isolated area, within the city limits, on Baltimore's fringe. The 2000 census lists the area as housing 7,681 individuals, mostly African American (98.7 percent). In Baltimore City as a whole, there are 651,154 individuals and 64 percent of this population is African American. The median income in Cherry Hill is \$19,193 annually and the unemployment rate is 8.8 percent. The main method of transportation for individuals living in Cherry Hill is by personal car (57.25 percent) followed by public transportation (35.7 percent) and biking/walking (5.6 percent).

According to Baltimore City Planning Department (2009), Cherry Hill was created to meet the housing needs associated with the increased demand for industrial workers during the Second World War. It experienced an influx of working and middle class African Americans in the middle of the twentieth century, and became known as one of the first African American suburbs in the United States. Following the end of the war, the availability of industrial jobs went into decline and the Cherry Hill community was targeted for the kind of low-income housing developments that are generally subsidized by local, state and/or federal programs (e.g. Section 8). These housing developments led to the flight of middle class families, a decrease in the overall median income, and the spread of low-income housing. Subsequently, these changes led to Cherry Hill becoming even more suburbanized, with housing spread out and the community relatively isolated from other neighborhoods. The Cherry Hill area is surrounded by the Baltimore Harbor and the Patapsco River on the eastern and northern side, and railroad tracks, highway infrastructure, and industry on its southern and western edge with only three main roads and one bridge that lead outside of the neighborhood into the surrounding Federal Hill area and Baltimore County. The community has also faced suburban sprawl as many businesses have closed in the area and resources are spread over a wide radius. Overall, the geographical isolation of this area makes traveling to distant grocery stores an automatic challenge.

The built environment can play a vital role in either increasing or decreasing one's access to nutritious and affordable food options. Urban neighborhoods built prior to the 1970s are more likely to have street patterns that are highly connected with walkable commercial destinations throughout the area (Berrigan and Troiano 2002). Although our study system located in the neighborhood of Cherry Hill is an older community, the retail stores are not in close proximity and its built environment is not conducive to walking. The community is located on a pseudo-island with water surrounding over half of the area, and major train, highway and industrial zones surrounding the rest of the neighborhood (see Figure 1). This physical and built environment creates boundaries and barriers to effective transportation, either by walking or the use of public transportation, throughout the neighborhood. Rather, residents must rely on personal vehicles or make multiple



FOOD,
CULTURE &
SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012



Fig 1: Map of Cherry Hill Neighborhood in Southwest Baltimore City, USA.

public transportation transfers to reach destinations where they can purchase affordable, nutritious food. Cherry Hill is also marked by the absence of any supermarkets. Absence of a neighborhood supermarket is significantly associated with increased risk of obesity, and thus other health problems that result from being substantially overweight; with the presence of just one supermarket in a neighborhood, obesity risk can be decreased by approximately 11 percent (Lopez 2007).

The problem that arises from a low-income suburban community is that resources in suburban areas are widely dispersed, which can be difficult for individuals to get around because of physical and financial limitations. If Cherry Hill is considered a food desert, under the researchers' definition, then it may be difficult for individuals of the neighborhood to obtain food due to the physical layout of the suburban community as well as the general lack of nutritious food available at local stores.

Research Questions

Several questions were used to frame our research in this community. The primary focus of our investigation looked at whether Cherry Hill fits the typical characteristics of an urban food desert, and whether Cherry Hill may be appropriately labeled as such. To answer this question we focused on three modes

of inquiry: (1) what individual and community barriers exist in obtaining food in this community; (2) what food groups and types of stores are readily available in Cherry Hill; and (3) what distance do community members have to travel to obtain nutritious foods? In our background research pertaining to the neighborhood, it was determined that car ownership in the community was moderate (57.25 percent) which is similar to studies of the lower-income suburbs of Buffalo, NY (Talukdar 2008). As a moderate to high rate of car ownership is uncharacteristic of typical urban food deserts, the present study provides an excellent opportunity to test whether the ability to use personal transportation hinders or facilitates access to nutritious food. Furthermore, nearly half of the community has no access to a personal vehicle for shopping needs, thus creating distinctiveness in realized food geographies among residents in the same neighborhood. Can Cherry Hill still be labeled a food desert for all residents based on local availability and access to nutritious foods, or does physical and financial access disproportionately affect certain parts of the community more than others? If so, how does the definition of a food desert pertain to other suburban geographical areas that have not been typically labeled as such in previous research studies? For instance, as Cherry Hill closely resembles the structure of a suburban community, can low-income suburbs also be labeled a food desert if healthy foods are lacking within the community's boundaries, despite relatively high levels of residents with cars? Overall, our hypotheses were that vegetable and fruit access would be low and more expensive in Cherry Hill, while highly-processed foods and takeout restaurants would be excessively available, and that, regardless of car ownership, other barriers would undermine uncomplicated access to healthy foods.

Methodology

To gain a greater understanding of food security within the Cherry Hill community, a mixed methods approach was utilized. The first method involved surveying the surrounding neighborhoods for the types of food stores available, the food groups present in each store and the general variety of products. This was determined by using the local Yellow Pages™ (www.yellowpages.com) and Google™ (www.google.com) to gather the number of food stores available within an eight-kilometer [five mile] radius of the Cherry Hill zip code (21225). Each store was visited once and an inventory of products was conducted. Stores were inventoried by using a spreadsheet with the basic food categories that are found in commercial settings (i.e. canned fruits and vegetables, fresh fruit and vegetables, processed foods, etc) and then tallies were made under each category for the types of products found in each location. Each food group was given a number according to availability (always = 5, often = 4, sometimes = 3, rarely = 2, never = 1). Additionally, stores were also labeled as a supermarket, convenience store or fast food/takeout vendor. The researchers also used Google™ Maps (maps.google.com) to determine both the distance and the estimated time it would take an individual who was coming from a focal point located within the population center of the community to reach the food source. The focal point used (780 Cherry Hill Road, 21225) was chosen as the origin because it was within the residential center of the neighborhood. The Cherry



FOOD,
CULTURE
& SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

Hill community is isolated and fairly compact and this was found to be a relevant central location within the community. It is where a previous grocery store was located before being shut down and is the focal point of the community in terms of social activity (senior center, library and takeout). The investigated neighborhood comprises a single census block; however, if larger areas are under investigation, using a centroid for each neighborhood or census block would be a comparable method to calculate a standardized mean distance to the nearest food outlet. Utilizing Google™ Maps was helpful when identifying transportation barriers within the community because it can estimate the travel time of public transportation in the area as well. The researchers were also able to identify stores that had recently closed down within the Cherry Hill area.

The other technique used in the research methodology was an adapted ethnographic survey, which helped us to understand community members' perspectives on food access and the barriers in obtaining food within the neighborhood. Qualitative research to test the food desert concept has been lacking in the literature and it has been suggested that more work needs to be done to incorporate qualitative outcomes and quantitative data in analyses which this study strives to do (Smoyer-Tomic *et al.* 2006; USDA 2009; Zenk *et al.* 2005). The consumer survey that was used was modeled after a similar study, the Baltimore Healthy Stores Project (<http://www.healthystores.org/BHS.html>), conducted by Johns Hopkins School of Public Health in 2000. The purpose of the questionnaire was to gain community perspectives on food availability in the neighborhood, as well as demographic information that would help us understand local food security issues within an environmental justice framework. The questionnaire was given to local organizations to distribute to community members, and to thirty residents of Cherry Hill who volunteered to participate in the study. The consumer surveys were passed out to the members of the Cherry Hill senior center and Saint Veronica's Church, visitors of the local public library and community center, and the Cherry Hill Family Hospital. The surveyed locations were limited by the ability to gain access to all locales within the neighborhood because the researchers were viewed as outsiders. However, the variety of locations where the surveys were administered helped to gain a diverse set of respondents from across the community. The participants were able to fill out the written survey and mail it in at a later date; a \$15 Wal-Mart gift card was offered as a stipend for those who completed a questionnaire. The choice of Wal-Mart for the gift card was determined during a pilot survey with residents at the Cherry Hill senior center. Overall, the written survey had four main components, including demographic information, questions on food availability, challenges in obtaining food and several open-ended questions that allowed participants to express their opinions on food options in Cherry Hill.

The demographic information collected includes: gender, age, ethnicity, marital status, household composition (number of individuals and ages) and involvement in food assistance programs. Participants of the study were also asked to rank their overall diet and health. In the next section of the questionnaire, there were several questions on purchasing patterns, such as where did individuals do primary and secondary shopping trips, what types of foods they bought the most of, and food

availability, which helped to assess the presence of different food groups within Cherry Hill. Specifically, individuals were asked a series of questions requesting them to rank the availability of all food groups. They were asked whether fresh products in each group were represented in the stores, whether canned or frozen products in each group were available, and whether they needed to travel outside the community in order to acquire certain types of foods. Participants were given a scale of 1–5 to (1 = never; 5 = always) to rank how often the surrounding stores were well stocked with products, and also asked to estimate how many varieties of fruits and vegetables were present at their primary food source. The participants were asked questions on barriers to obtaining food, which included ranking the importance of time, transportation difficulty, cost and crime in limiting ones' ability to acquire food. Individuals were also asked to write down the number of miles and minutes it generally required to travel to the nearest store and the mode of transportation they used (walking, biking, bus, light rail, metro, etc). The open-ended questions in the survey asked participants what types of foods they purchased the most of, whether fresh foods or fast foods were more present in Cherry Hill, what primarily affected their purchasing patterns and what they wished would change in regards to food access in their community. Once all the information was collected from the participants, the data were analyzed by calculating the average response to each close-ended question and by creating a frequency chart for the different responses to the various open-ended questions.

Results

The store survey and the consumer questionnaire had similar results, indicating that it would be appropriate to designate Cherry Hill as a food desert due to the quality and quantity of food for purchase in the area. The store survey helped to identify what types of food stores were in the area and what products were available. According to the Google™ and Yellow Pages™ search engines, there were fourteen food stores in Cherry Hill (21225). Two were convenience stores (Reedbird Deli & Market and the Cherry Hill Grocery), one was a closed supermarket (Coolsave Supermarket), nine were fast food/takeout vendors, one was a specialty food store (Filipino and Asian food store) and one was a liquor store. The closest supermarket, Food King, was located 3.37 kilometers [2.1 miles] from Cherry Hill. In order to shop at Food King, individuals must either take the bus, light rail or use a personal vehicle. The USDA's report on "Access to Affordable and Nutritious Food" (USDA 2009) states that food access is considered "low" when the nearest supermarket is more than one mile away. Furthermore, when searching for public transportation routes it was discovered that it could require up to three transfer buses for an individual to reach the Food King on Annapolis Road, Maryland. Overall, Food King seemed to be a place where many participants of the study shopped. The supermarket was relatively cheap and had dollar sales on boxed mashed potatoes, pickled beets and other similar items. Consumers were also able to buy in bulk, which can dramatically cut one's grocery bill. Food King offered both fresh produce and meats, as well as dried beans, cheese and eggs. It was also one of the only carriers of baby food in the area. Baby food was not found in either convenience



FOOD,
CULTURE
& SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

store located in Cherry Hill. On the scale of 1 to 5 (with 1 = least available and 5 = most available) fresh fruits and vegetables were the least available of all of the food types surveyed, with respondents reporting these as rarely available (2.39 ± 1.4 and 2.63 ± 1.52 for fresh vegetables and fruits respectively). Respondents reported the other food items as only sometimes available, the most available being canned and processed foods: protein (2.97 ± 1.47); non-dessert dairy (3.03 ± 1.4); canned/frozen vegetables (3.11 ± 1.5); grains/bread (3.13 ± 1.31); canned/frozen fruits (3.2 ± 1.49). The two convenience stores located in Cherry Hill had an overall similar selection (see Table 1).

The qualitative results of the ethnographic survey assisted in understanding the community's perspective on food issues within Cherry Hill. Most importantly, researchers observed that most participants did their primary shopping at grocery

Table 1: Selection of Food Items Available from the Only Convenience Stores Located in Cherry Hill—the Cherry Hill Grocery and the Reedbird Deli & Market.

Type of product	Cherry Hill Grocer	Reedbird Food Market
Fresh vegetables	Potatoes and onions	Tomatoes, onions,* and potatoes*
Canned/frozen vegetables	Corn, collard greens, sauerkraut, green beans, tomato sauce, peas, yams, and potatoes	Asparagus, spinach, tomatoes, tomato sauce, kale, turnips, and green beans
Fresh fruits		Apples* and lemons
Canned/frozen fruits	Apple sauce	Peaches, pineapple, and apple sauce
Proteins	Dried lentils, dried navy beans, processed meats (lunch meat, hot dogs, spam), and frozen meats (shrimp, fish, chicken)	Processed meats (hot dogs, lunch meat, canned hash and meat), canned salmon and clams, bacon, canned beans, dried black-eyed peas, dried navy beans, and peanut butter
Dairy (including eggs)	Eggs and milk	Milk and butter
Grains	Enriched pasta, egg noodles, and white rice	White flour, enriched pasta, white rice, oatmeal, grits, and cream of wheat
Other	TV dinners	Vegetable oil

*Not fresh, but edible

stores even though, as previously noted, there were no grocery stores located in the neighborhood. Overall, individuals ranked most food groups (vegetables, fruits, grains, dairy and protein) as sometimes to never available within Cherry Hill. Table 1 illustrates the availability of each food group and the rankings from the adapted ethnographic survey. The least available products were fresh fruits, fresh vegetables and protein sources. The food groups sometimes available were non-dessert dairy products, canned and frozen vegetables, and grains. The most available food group was canned and frozen fruits (see Table 1). This differs from the inventory of the two convenience stores, as noted above. On average, respondents stated that the stores in Cherry Hill were only sometimes well stocked (Table 1). It was also observed that 89.66 percent of respondents reported that they did not believe that fast food was cheaper than fresh products. Yet, 73.33 percent (22 respondents) believed that fast foods were more available than fresh foods in the Cherry Hill community (Figure 2).

In the questionnaire, participants were asked to list the primary factors that influence purchasing patterns and to rank how often certain barriers (transportation, time, cost and crime) were important in determining shopping options. The results are illustrated in Figure 3. Overall, financial concerns were the main limitations faced by consumers (44.44 percent of respondents mentioned cost as a primary factor influencing purchases). This corresponds with Shaw's criteria, which regards financial assets as one of the three primary constraints to food access associated with classification of a food desert (Shaw 2006). The second main factor influencing food purchases made by participants was health factors, followed by needs, time, availability and freshness of products. Neighborhood crime rates were not seen as a factor with a strong influence on shopping habits. The least significant factors included location and transportation needs. It is probable that transportation barriers were the smallest concern of community members due to the moderate to high ownership rate of personal vehicles in the area (57.25 percent). However, members of the Cherry Hill community are still forced to travel a distance that is considered substantial according to the USDA's report on access



FOOD,
CULTURE
& SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012



Fig 2: Categories of Food Most Available in Cherry Hill.

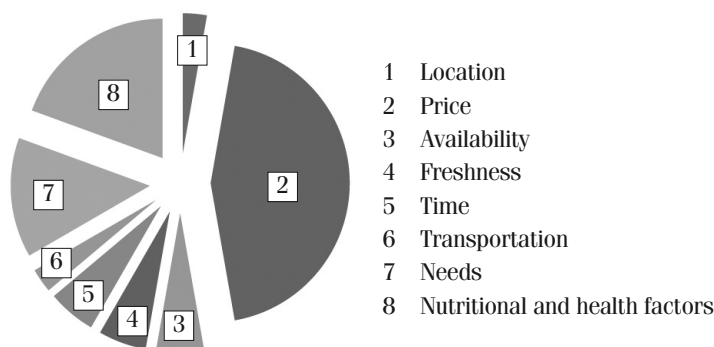


Fig 3: Primary Factors Affecting Food Purchases in Cherry Hill.

to healthy food, particularly for residents in a semi-urban/suburban locale (USDA 2009).

Overall, when asked to rank how often certain factors acted as a challenge in obtaining food, it was observed that cost was sometimes a problem and, that time and transportation were rarely to sometimes problematic. Although transportation was not labeled as a major constraint in obtaining food, it was determined that the mean distance for respondents to get to a supermarket from Cherry Hill was 6.2–6.7 km (3.8–4.1 miles), which is a very long distance to travel for adequate food in an urban area. The number of minutes it took to reach a supermarket differed for the participants of the study according to transportation methods and store preference. Most respondents were able to reach a supermarket in 6–15 minutes (refer to Figure 4), but it took others about 30 minutes to travel to a grocery store.

In the open-ended questions of the consumer survey, 50 percent of respondents stated that one thing that they would change about access to food in Cherry Hill would be to have a grocery store in the neighborhood. One response was “to open up a store that will be well stocked with quality food, healthy food and value conscious” while another was “to have a decent, ongoing, functional supermarket” in the neighborhood. When asked what they would like to see their local food provider carry, many responses included variety and fresh foods. One individual mentioned, “When grocery stores open here they are overpriced and never stocked with anything of value.” Another response was that “they could improve in having meat, fruits and vegetables that aren’t spoiled.” These responses paralleled another study on food access in Minnesota (USA). In this study, conducted in Saint Paul and rural areas of the state, the researchers analyzed food choices, concluding that (1) much of the foods located in the areas of interest were of poor quality and could be classified as inedible, and (2) the variety and number of available products in each food group were limited (Hendrickson 2006: 378). Consequently, poor nutritional quality and variety of foods result in suboptimal health and inadequate nutrition. For instance, in a study conducted by Cummins and MacIntyre (1999) in Glasgow, Scotland found that half the men and one-third of the women had sub-optimal vitamin C intake, with the majority of this intake coming from chips and potatoes rather than the preferred green vegetables and fresh fruit. It is well known that

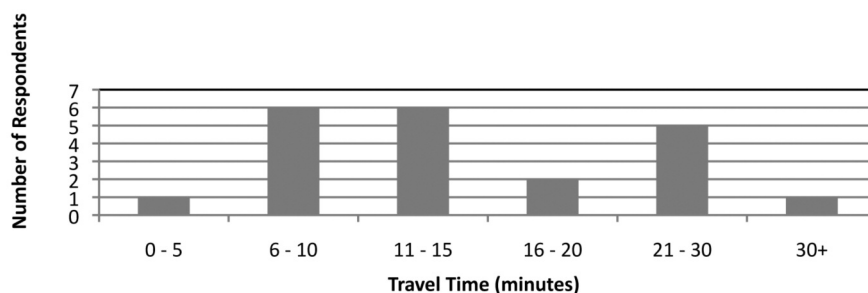


Fig 4: Mean Travel Time Spent Obtaining Food in Cherry Hill.

vitamins and minerals found in fresh fruits and vegetables support the immune system and help to prevent illnesses. This means that due to the low availability of nutritious foods in Cherry Hill, there may be a high percentage of individuals in the area who are not meeting their nutritional daily requirements and subsequently developing related health problems.

Discussion

Overall, this study is similar to the results of others in that it confirms the presence of food deserts in urban areas throughout North America. Many food groups were not always present in the stores located in Cherry Hill and community members may need to travel far distances to surrounding supermarkets. For instance, researchers that focused on Edmonton, Canada located six food deserts within the study area and found that “residents of these neighborhoods on average needed to travel about 2.1 to 2.5 km [~1.3 to 1.55 miles] to reach the nearest supermarket, compared to the city median of about 1.4 km [0.86 miles]” (Smoyer-Tomic *et al.* 2006, 315). In the present study it was generally found to take individuals 3.4 km (2.1 miles) to get to the nearest food store, which was Food King, and the mean was 6.2–6.7 km (3.8–4.1 miles) to shop for food. The main difference between this study and others is that the rate of car ownership is moderate to high in Cherry Hill, thus mitigating the difficulty of getting to distant grocery stores. This challenges the assumption that transportation issues heavily impact individuals’ ability to obtain nutritious foods, thus opening the definition of a food desert to other regions previously ignored as potential at-risk areas. An example of this region would be a low-income suburban community where car access may be relatively high, yet residents still have to travel substantial distances and incur further financial burden to obtain food. This indicates that other factors play a more important role in determining food availability, such as finances, traveling inconveniences and time.

This study has important health implications that connect to a study by the Baltimore Healthy Stores project. This study found that in West Baltimore, 31 percent of the adult residents were considered obese and that the number of deaths caused by heart disease increased by 75 percent in the 1990s (Baltimore Healthy Stores 2006). The same study also noted that Baltimore has experienced a significant drop in the number of supermarkets over the past two years. The



FOOD,
CULTURE
&
SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

connection between these two studies is important because it indicates that the loss of supermarkets in an area such as Cherry Hill can be linked to poor health. Health inequalities are a growing problem in the United States. Although we generally associate health inequalities with affordability and insurance coverage, the problem also includes disparities of access to healthy foods within communities. Even when demand is present for nutritious foods in a community, as it is in Cherry Hill, the little political and economic power within the community enables corporations to move to more affluent neighborhoods. The result of this is that individuals have less control over their food choices, and ultimately their health, which is an injustice because it reinforces the health inequalities between low and high-income groups.

The presence of a suburban food desert is uncommon in the literature and lower-income suburban communities are faced with challenges beyond access to healthy food. American suburbs currently house the greatest share of the US poor, with approximately 50 percent residing in such areas (Murphy and Wallace 2010). Research has shown that suburban low-income neighborhoods are more likely to lack functional local organizational infrastructure and support than are inner-city poor communities (Murphy and Wallace 2010). This phenomenon has been attributed to the theory that the inherent structure and sprawl of suburbia facilitates isolation from organizations that can help residents meet their daily needs. Furthermore, growth in numbers of suburban poor has been linked to an increase in social and physical corrosion often associated with the inner-city that includes rising crime rates, old buildings, deteriorating schools and population loss (Murphy and Wallace 2010). Unfortunately, these characteristics are coupled with the absence or loss of commercial infrastructure such as supermarkets because of the risk and the cost to benefit perceived by investors (Chung and Myers 1999). Therefore, we can argue that in many ways that poor suburban areas that are food deserts face even greater challenges to access of nutritious foods and food justice programs than their inner-city counterparts.

The topic of food deserts has become a highlight of research only since the later part of the twentieth century. One aspect of food deserts that needs further attention is the impact that food deserts and the low intake of nutritious foods have on children and their health and development. As previously noted, single parents are more vulnerable to the physical and financial challenges that can affect purchasing patterns. This results in poorer health for these families. For instance, a “study of lone parents revealed that respondents who bought in budget stores or whose consumption habits were significantly influenced by their children had, in general, much less healthy dietary patterns” (Whelan *et al* 2002: 2097). In the Cherry Hill study it was found that 60 percent of participants in the consumer questionnaire were single parents. Of that percentage, two-thirds of these individuals identified as female. Research is needed on the health of women versus men within food deserts, in order to help identify the demographics most at risk of serious health problems.

Food Justice in Baltimore, MD

Suggestions for creating greater access to food in communities experiencing these conditions include improving public planning in order to increase the number of public transportation routes that allow community members to acquire needed resources in shorter amounts of time; relocating supermarkets into areas of need; and working with independent store owners to increase product selection. The latter was attempted in East Baltimore with the help of the Johns Hopkins Bloomberg School of Public Health, the Center for a Livable Future and the Baltimore Healthy Stores project (Baltimore Healthy Stores 2009). Community gardens may also be an important method for increasing access to fresh fruits and vegetables, as well as empowering a community towards taking independent action to securing food availability. There are limitations to this option, however, including time, starting cost, interest and gardening experience within the neighborhood, and adequate space with healthy soil. There are also many organizations located within rural and urban communities who are aware of food security issues and working to expand access to these resources.

This problem is well acknowledged in many neighborhoods and community organizations of Baltimore City. The Johns Hopkins Bloomberg School of Public Health has conducted a number of case studies and programs, including the Baltimore Healthy Stores project, which have helped identify the barriers facing Baltimore City residents when making food purchases, as well as proposed strategies to improve access within the city. Other organizations striving to make change include the Johns Hopkins Center for a Livable Future, Baltimore City Public Schools and Baltimore City Health Department (Baltimore City Food Task Force 2009). One proposed strategy to help improve accessibility is the Baltimore City Health Department's Virtual Supermarket Program. This program allows individuals living in areas with low access to fresh foods, supermarkets and public transit to order groceries online at their local library and pick them up the following day. This program specifically targets communities that face many barriers to obtaining fresh foods. Cherry Hill is one of these communities and the Department of Health

Cherry Hill has the second highest stroke mortality rate and the third highest heart disease mortality rate among the 55 Baltimore City communities. Moreover, food options are much more limited in Cherry Hill, and the nearest supermarket is 2.3 miles away. (Baltimore City Health Department 2011)



FOOD,
CULTURE &
SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

This program was developed in 2010 and currently has four delivery sites.

There are also a wide variety of urban gardening and farming organizations that are active within the city limits. For instance, Real Food Farm (<http://real-food-farm.org>), a Civic Works project, located in northeast Baltimore has three hoop houses operating throughout the winter. These hoop houses are used as both an education space for Baltimore City students, as well as a produce source for a local winter farmer's market and restaurants. The Baltimore City Public School System also has a partnering farm, Great Kids Farm, to help connect students with opportunities to learn and participate in agriculture (<http://www.greatkidsfarm>).

org/). Cherry Hill was also awarded a grant in 2010 from the Baltimore Community Association to create an “Eat Healthy, Live Healthy Community Garden.” Although Cherry Hill is identifiable as a food desert, organizations of Baltimore City have been making strides to become aware of its impact on public health and to institutionalize programs that will limit its effects on city residents.

Conclusion

Overall, there were several key findings in both the qualitative ethnographic survey and the geographic food store survey and inventory. Cherry Hill is one example of a suburban food desert in the United States. The participants of the study, as well as individuals located in other food deserts in America, have difficulty in obtaining nutritious foods in their community because products from the main food groups are not always available or fresh and edible. This leads to some serious implications for public health and wellbeing, including health complications and disease, learning and attention disabilities for children and vitamin deficiencies. This creates a disadvantage for those living in geographically isolated areas that lack healthy foods. Food deserts tend to be primarily located in low-income and minority areas, in both rural and urban areas, thus affecting one population more than another and creating a health inequality between demographic groups. Addressing the significance of and need for food security is important in regards to healthcare reform and improving the livelihoods of individuals and the wellbeing of communities.

Jessica Childs is currently working as an agricultural specialist on a community-supported agriculture farm and plans to pursue a graduate degree focusing on food justice and urban agriculture. Geography and Environmental Systems Department, University of Maryland, Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21250, USA (jesschi1@umbc.edu).

Laura R. Lewis is the Washington State University Extension Director for Jefferson County. Her research and educational outreach focuses on issues relating to agrobiodiversity conservation and crop evolution as well as social-ecological aspects of agrobiodiversity in urban and rural landscapes. Washington State University Extension, Jefferson County, 201 W. Patison Road, Port Hadlock, WA 98339, USA (laura.lewis@wsu.edu).

References

- Baltimore City Health Department. 2011. Baltimarket: The Virtual Supermarket Project. Baltimore (MD). Available from: <http://www.baltimorehealth.org/virtualsupermarket.html> (accessed March 22, 2011).
- Baltimore City Food Policy Task Force. 2009. Final Report and Recommendations. Available from: <http://cleanergreenerbaltimore.org/uploads/files/Baltimore%20City%20Food%20Policy%20Task%20Force%20Report.pdf> (accessed July 15, 2009).
- Baltimore City Planning Department. 2010. City of Baltimore. Available from: <http://www>.

- baltimorecity.gov/Government/AgenciesDepartments/Planning.aspx (accessed July 15, 2009).
- Baltimore Healthy Stores. 2006. Baltimore (MD): Johns Hopkins University. Available from: <http://www.healthystores.org/BHS.html> (accessed July 15, 2009).
- Berrigan, D. and Troiano, R.P. 2002. The Association between Urban Form and Physical Activity in US Adults. *American Journal of Preventative Medicine* 23(2S): 74–9.
- Block, D. and Kouba, J. 2006. A Comparison of the Availability and Affordability of a Market Basket in Two Communities in the Chicago Area. *Public Health Nutrition* 9(7): 837–45.
- Chung, C. and Myers, S.L., Jr. 1999. Do the Poor Pay More for Food? An Analysis of Grocery Store Availability and Food Price Disparities. *The Journal of Consumer Affairs* 33(2): 276–96.
- Cummins, S. and MacIntyre, S. 1999. The Location of Food Stores in Urban Areas: A Case Study in Glasgow. *British Food Journal*. 101(7): 545–53.
- Cummins, S. and MacIntyre, S. 2002. A Systematic Study of an Urban Foodscape: The Price and Availability of Food in Greater Glasgow. *Urban Studies* 39 (11): 2,115–30.
- Drewnowski, A. 2004. Obesity and the Food Environment: Dietary Energy Density and Diet Costs. *American Journal of Preventive Medicine* 27(3S): 154–62.
- Drewnowski, A. and Darmon, N. 2005a. The Economics of Obesity: Dietary Energy Density and Energy Cost. *The American Journal of Clinical Nutrition* 82 (suppl): 265S–73S.
- Drewnowski, A. and Darmon N. 2005b. Food Choices and Diet Costs: An Economic Analysis. *The Journal of Nutrition* 135(4): 900–4.
- Drewnowski, A., Rehm, C., Kao, C. and Goldstein, H. 2009. Poverty and Childhood Overweight in California Assembly Districts. *Health and Place* 15: 631–5.
- Franco, M., Nandi, A., Glass, T. and Diez-Roux, A. 2007. Smoke before Food: A Tale of Baltimore City. *American Journal of Public Health* 97(7): 1,178.
- Franco, M., Diez Roux, A.V., Glass, T.A., Caballero, B. and Brancati, F.L. 2008. Neighborhood Characteristics and Availability of Healthy Foods in Baltimore. *American Journal of Preventive Medicine* 20(10): 1–7.
- Hendrickson, D., Smith C. and Eikenberry, N. 2006. Fruit and Vegetable Access in Four Low-income Food Desert Communities in Minnesota. *Agriculture and Human Values* 23: 371–83.
- Johns Hopkins Bloomberg School of Public Health. 2008. Results from Community Food Assessment in Southwest Baltimore. Center for a Livable Future. Available from: http://www.jhsph.edu/clf/resources/clf_reports.html (accessed October 2008).
- Kwate, N.O.A. 2008. Fried Chicken and Fresh Apples: Racial Segregation as a Fundamental Cause of Fast Food Density in Black Neighborhoods. *Health & Place* 14: 32–44.
- Larsen, K. and Gilliland, J. 2008. Mapping the Evolution of “Food Deserts” in a Canadian City: Supermarket Accessibility in London, Ontario, 1961–2005. *International Journal of Health Geographies* 7(16): 1–16.
- Logan, J.R. and Stults, B.J. 1999. Racial Differences in Exposure to Crime: The City and Suburbs of Cleveland in 1990. *Criminology* 37(2): 251–76.
- Lopez, R.P. 2007. Neighborhood Risk Factors for Obesity. *Obesity* 15(8): 2,111–19.
- Murphy, A.K. and Wallace, D. 2010. Opportunities for Making Ends Meet and Upward Mobility: Differences in Organizational Deprivation across Urban and Suburban Poor Neighborhoods. *Social Science Quarterly* 91(5): 1,164–86.
- Morland, K.B. and Evenson, K.R. 2009. Obesity Prevalence and the Local Food Environment. *Health & Place* 15: 491–9.



FOOD,
CULTURE
&
SOCIETY

VOLUME 15

ISSUE 3

SEPTEMBER 2012

- Schlosberg, D. 2007. *Defining Environmental Justice: Theories, Movements, and Nature*. New York: Oxford University Press.
- Shaw, H.J. 2006. Food Deserts: Towards the Development of a Classification. *Geografiska Annaler—Series B* 88(2): 231–47.
- Smoyer-Tomic K., Spence J.C. and Amrhein, C. 2006. Food Deserts in the Prairies? Supermarket Accessibility and Neighborhood Need in Edmonton, Canada. *The Professional Geographer* 58(3): 307–26.
- Talukdar, D. 2008. Cost of Being Poor: Retail Price and Consumer Price Search Differences across Inner-City and Suburban Neighborhoods. *The Journal of Consumer Research* 35(3): 457–71.
- US Department of Agriculture. 2009. *Report to Congress: Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences*. Economic Research Service. Government Printer: Washington, DC.
- Whelan, A., Wrigley, N., Warm, D. and Cannings, E. 2002. Life in a "Food Desert." *Urban Studies* 39(11): 2083–100.
- Zenk, S.N., Schulz, A.J., Israel, B.A., James, S.A., Bao, S. and Wilson, M.L. 2005. Neighborhood Racial Composition, Neighborhood Poverty and the Spatial Accessibility of Supermarkets in Metropolitan Detroit. *American Journal of Public Health*. 95(4): 660–7.