



Mini Review

A Mini-Review: Everything You Need to Know About Food Deserts

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Abstract

Food deserts are areas with limited access to healthy and nutritious food items. Low income is the main contributor of poor health in food deserts. Residents in food deserts have an increased risk of health problems, including higher HbA1c levels, obesity, and increased cardiovascular risks.

conducted a short review of the available literature regarding food deserts and associated factors. We simply conducted a literature search on PUBMED using the words “food deserts.” We then concisely summarized the first ten entries that were consistent with our goal of emphasizing factors associated with food deserts.

1. Introduction

Food deserts are defined as geographic areas with limited access to fresh produce and affordable nutrition.1 Despite a well-known concept throughout academia, food deserts are often overlooked quite possibly due to lack of emphasis on factors contributing to rise of food deserts. Here, we

2. Explanation

Living in a food desert can negatively affect a resident’s HbA1c level [1]. In this study, HbA1c levels were measured in a randomized sample of patients within a primary care system [1]. All patients in this sample had either Type 1 or Type 2 diabetes [1]. Patients that reported dealing with food insecurity

were more likely to have higher HbA1c, whereas there was no significant link in patients with higher HbA1c and low physical food access [1].

Other factors in determining obesity are race and socioeconomic status [2]. African Americans and people in low-income areas tend to have poorer health and higher rates of obesity [2]. In this article, researchers used data from a study known as Pittsburgh Hill/Homewood Research on Eating, Shopping, and Health (PHRESH) to explore relations between obesity in low-income areas and either distance to stores or food prices [2]. PHRESH used surveys to determine where residents in two food deserts shopped for groceries [2]. This study concluded that the placement of supermarkets is not as influential as the price of goods sold within different markets [2]. Low-income residents tended to shop outside of their area to find better prices, which shows that the placement of markets is not as important as the pricing of the food offered [2]. The promotion of healthy foods in higher priced stores and unhealthy foods in cheaper stores may influence the buyers' habits, which could be a factor that leads to poorer health and higher obesity levels [2].

The number of areas that qualify as "low access" food deserts have declined [3]. New supermarkets in these areas are unlikely to influence obesity rates [3]. However, a new supermarket can positively affect community health and provide economic benefits to that area [3]. Pricing and convenience are the most important factors influencing people's health in food deserts [3].

One interesting study looked into the relationships

between food deserts, farmers' markets and food assistance programs in Hawaii [4]. Limited access to healthy food makes it difficult to maintain a nutritious diet [4]. In food deserts, nearby food options do not always include healthy food; instead, it contains fast food and processed items [4]. Most Hawaiians live in urban areas, but the majority of Hawaiian counties are rural. In rural communities, the problem of food deserts is amplified as residents may have to travel longer distances to access healthy foods [4]. Recently, farmers' markets have become more popular in the United States [4]. However, farmers' markets face challenges such as pricing and marketing when expanding into food deserts [4]. Also, residents in food deserts in Hawaii depend on food assistance programs like SNAP, which are not accepted in several food markets [4]. High pricing that cannot be reduced by food assistance programs makes farmers' markets inaccessible to the residents in these food deserts [4].

Another similar study was conducted in Delaware. There are few farmers' markets in Delaware located within food deserts [5]. Only some of the farmers' markets in these food deserts participated in Nutrition Benefit Programs, which lowers the cost of fresh foods for lower-income individuals [5]. Because of this, fresh food remains inaccessible to low-income residents of food deserts in Delaware, which leads to a higher risk of obesity and other diet-related conditions [5].

Living in food deserts can elevate the risk of cardiovascular problems [6]. In this study, 4944 individuals with cardiovascular issues, specifically undergoing cardiac catheterization, were followed for

myocardial infarction and death [6]. Nine hundred eighty-one of these individuals resided in food deserts [6]. The subjects living in food deserts had an unfavorable cardiovascular risk [6]. These subjects also had a higher risk of myocardial infarction independent of cardiovascular risk and other factors [6]. These outcomes were associated with low income rather than poor access to food [6].

Increased health risks are expected in those living in food deserts [7]. In this article, 1421 subjects from two studies, META-Health and Predictive Health, were studied to explore health risks involved with living in a food desert [7]. One hundred eighty-seven of these subjects resided in a food desert [7]. These subjects were more likely to have a higher body mass index and 10-year risk for cardiovascular disease [7]. These risk factors are driven by area income and individual income, not physical access to healthy foods [7].

Living in a food desert has a significant association to cardiovascular health risk [8]. Personal socioeconomic status is the main link between food deserts and cardiovascular health risk [8]. When income was factored out of this study, there was no significant association between food deserts and cardiovascular health risk [8].

This study has also shown a wide range of literature regarding food deserts [9]. Although food deserts are quite prevalent in America, there is very little evidence that suggests that food deserts exist in other high-income countries [9]. Low-income areas in America had fewer supermarkets or larger stores per capita than more advantaged areas [9]. Instead, these

areas had more convenience stores [9]. Distance to supermarkets was, therefore, higher in low-income areas and areas with a higher proportion of African Americans [9]. Availability is poorer in disadvantaged areas, according to five studies cited in this article [9]. There are mixed findings on pricing in stores [9]. Overall, low-income and minority areas have poorer access to nutritious food [9].

Research on “food deserts” is limited and has mixed results. Regarding supermarkets, 11 studies cited in this article show positive association between access to supermarkets and either body weight or diets [10]. Seven studies cited in this article did not show a correlation between access to supermarkets and diet or weight [10]. Regarding fast food, seven studies in this article showed null results in association to body weight [10]. However, six studies showed a positive correlation between fast food access and higher body weight [10]. There is a lack of longitudinal data and analysis to provide concrete relations between food availability and obesity [10].

3. Conclusion

In conclusion, we believe that there is a wide range of parameters that need to be considered to food deserts. Our research has shown that cardiovascular health, metabolic disorders such as diabetes and obesity, race, ethnicity, socioeconomic status, and government-associated assistance programs all are important when it comes to further understand the concept of food deserts better.

Authors Declaration

The Authors declare that they have no financial or

non-financial competing interests to disclose.

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