

BROKEN SYSTEM

BROKEN HEARTS:

HOW SYSTEMIC RACISM

THROUGH RACIAL COVENANTS

AND REDLINING IN MINNEAPOLIS

IMPACTS CARDIOVASCULAR

HEALTH

BY:

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MADISON PILON, AND AYAH SULIMAN**

Broken System Broken Hearts:

How Systemic Racism Through Racial Covenants and Redlining In Minneapolis Impacts Cardiovascular Health

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Madison Pilon, and Ayah Suliman

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Introduction

Overview

The Centers for Disease Control (CDC) recently declared racism to be “a serious threat to the public’s health” (CDC, 2021). The COVID-19 pandemic emphasized the danger of systemic racism and exposed the disparities in our society that make living a healthy life more difficult and less attainable for communities of color. Our objective is to use a systems-thinking approach to explore the systemic and causal relationships at the root of these health inequities. Specifically, we study Minneapolis and cardiovascular disease. On May 30th, 2020 - five days after the death of George Floyd - The Washington Post published a story titled, “Racial Equality in Minneapolis is Among the Worst in the Nation” (Ingraham, 2020).

Where one lives is a determinant of health, and where one lives is often influenced by systemic forces beyond their control. A history of racist policies from the early 20th century established deep roots that continue to perpetuate health disparities today. Cardiovascular disease (CVD) is a threat to the nation’s health, as someone dies of CVD every 36 seconds (“Heart Disease and Stroke Statistics”). Additionally, the burden of CVD is not felt equally among racial groups, as Black folks are almost twice as likely as White folks to die from preventable heart disease and stroke (“Preventable Deaths from Heart Disease and Stroke”). A systems thinking approach - in which we visualize the issue through an iceberg model, causal loop diagram, and gaps and levers model - can be utilized to examine how the availability of resources and historical policies lead to stark differences in cardiovascular health outcomes, perpetuating a vicious positive feedback loop. Neighborhoods in Minneapolis may be only a couple of miles apart, but the respective opportunities to live a healthy life look very different.

Motivation

We are a team of undergraduate students attending college in Minneapolis-St. Paul, Minnesota and Fargo, North Dakota. All of us are pursuing science-centered degrees and are passionate about public health and health justice. With the renewed national focus on our community, we sought to understand what drives health disparities, specifically cardiovascular disease and inequity in Minneapolis as a lens through which to examine the broad trends that exist across the United States.

Challenge Landscape

History of Racial Covenants and Redlining

In the past, housing was often used to implement racist policies, and recent research has found that 20th century housing policies are still impacting health today. Racial covenants and redlining were designed to specifically prevent and keep People of Color from buying quality homes and to keep neighborhoods segregated. Racial covenants were included in property deeds across the country and declared that the home could not be sold or leased to People of Color. This kept neighborhoods segregated and People of Color from obtaining generational wealth through homeownership (Gross, 2017).

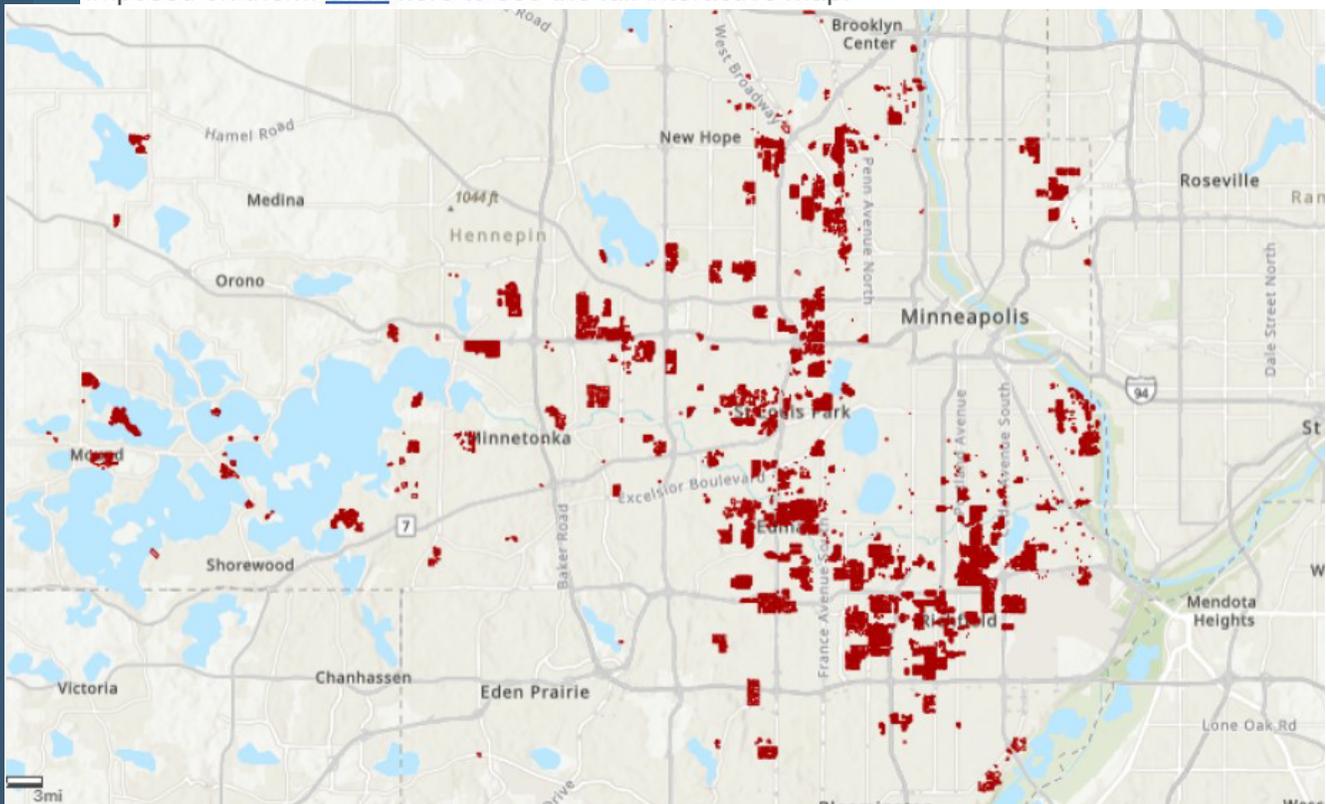
Redlining became prominent in the early 1900s when there was a housing shortage and the government implemented programs to provide families with resources to purchase housing. When maps of cities were drawn out to show where it was safe to issue mortgages, areas where African Americans resided were outlined in red and were not given mortgages (Gross, 2017).

Combined, racial covenants and redlining made it difficult for People of Color to obtain quality housing while these policies were enforced. Despite both policies no longer being enforced due to the Fair Housing Act of 1968, current day health outcomes and inequities can be traced back to them.

Wealth Gap

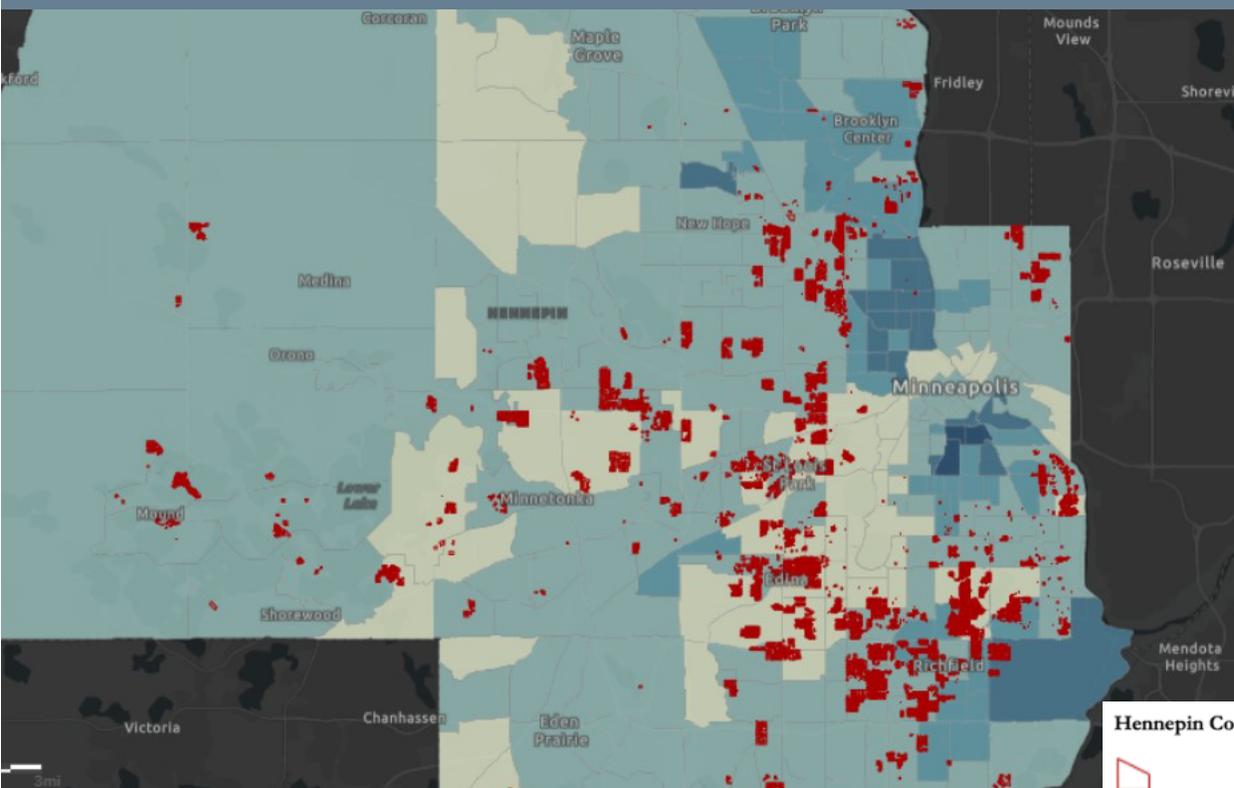
Wealth has become a crucial indicator of health as a result of uneven resource allocation. In America, low income adults were found to have higher rates of CVD than their wealthier counterparts (Woolf et al. 2015). When looking at rates in Minneapolis as they pertain to fair to poor health, it's noted that neighborhoods with racial covenants had lower crude percentages in and surrounding set communities, and better/higher health outcomes (ArcGIS). Looking at median household income across two zip codes, the median income of a family living in a formally redlined zone directly corresponds to today's R1 zoning of the suburbs. With home values nearly double that of a family living outside said neighborhood (Zillow 2022). Making the suburbs a prime example of wealth accumulation.

Red symbolizes homes in the Minneapolis metropolitan area with racial covenants historically imposed on them. [Click](#) here to see the full interactive map.



Health Implications

Estimated percentage of people with fair or poor health in Hennepin County and Hennepin County racial covenants. Areas that do not have racial covenants have higher rates of fair or poor health compared to areas that have racial covenants. [Click](#) here to see the full interactive map.

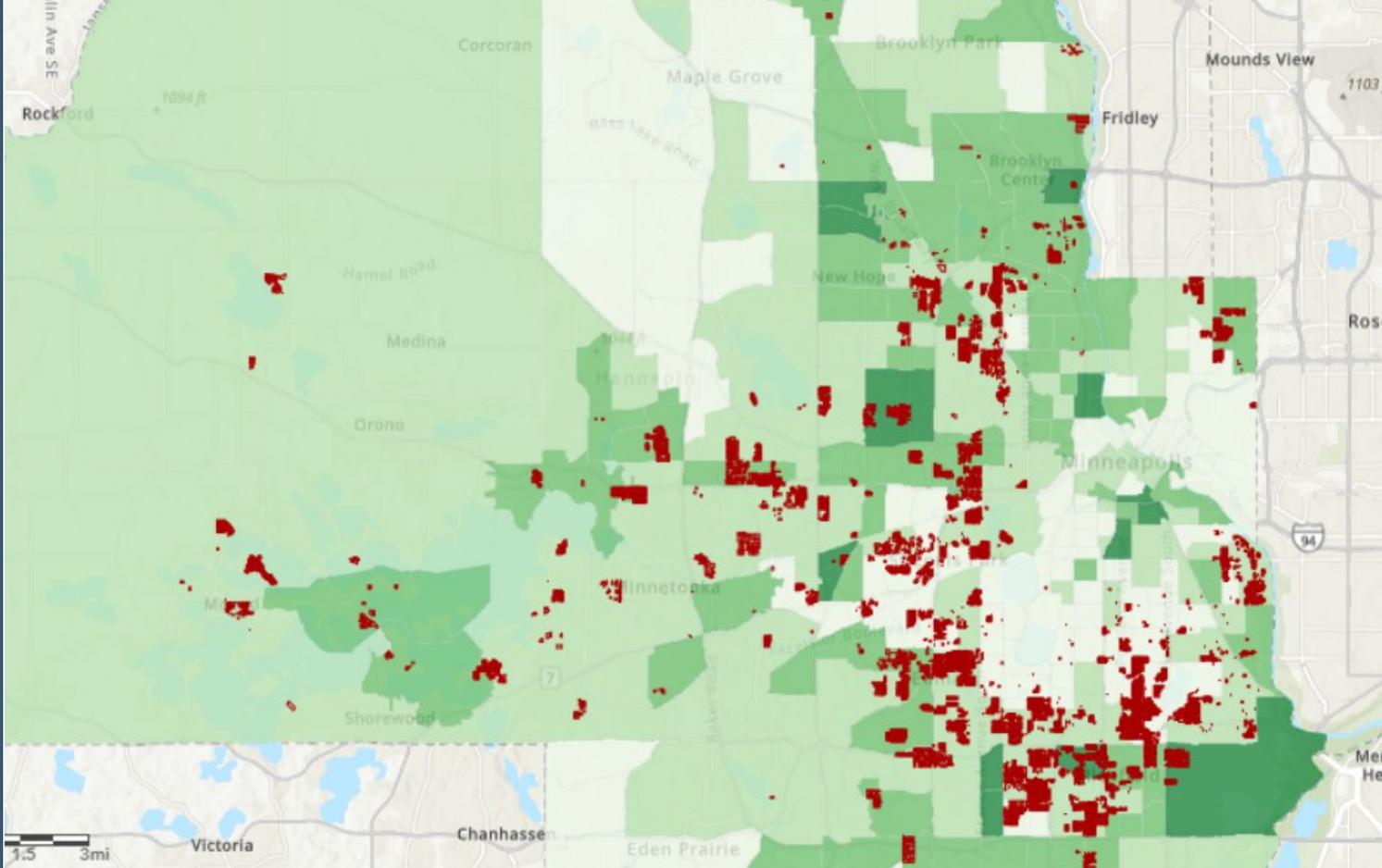


Hennepin County racial covenants



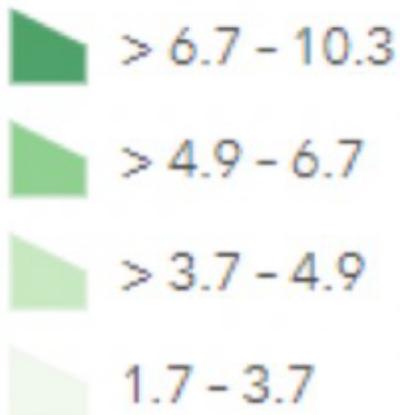
Estimated percentage of people with fair or poor health (%)

- > 30.2 - 36
- > 23 - 30.2
- > 16 - 23
- > 9.5 - 16
- 6 - 9.5



Estimated percentage of people living with coronary heart disease crude and Hennepin County racial covenants. Areas without covenants in general have higher rates of coronary heart disease than areas with covenants. [Click](#) here to see the full interactive map.

Estimated percentage of people with coronary heart disease in 2018 (%)



Why Housing is Important to Health

Updated housing is vital to the health of its residents, providing basic necessities as well as regulating temperature by providing air conditioning and heat in the extremes. However, if homes are not kept up to date, occupants' health can be affected. Older and lower quality homes may not have air conditioning which can exacerbate respiratory illnesses such as asthma and increase rates of heat related illnesses in the summer (Healthy People). Not only is one's physical housing important to health, but so is the broader community around one's home.

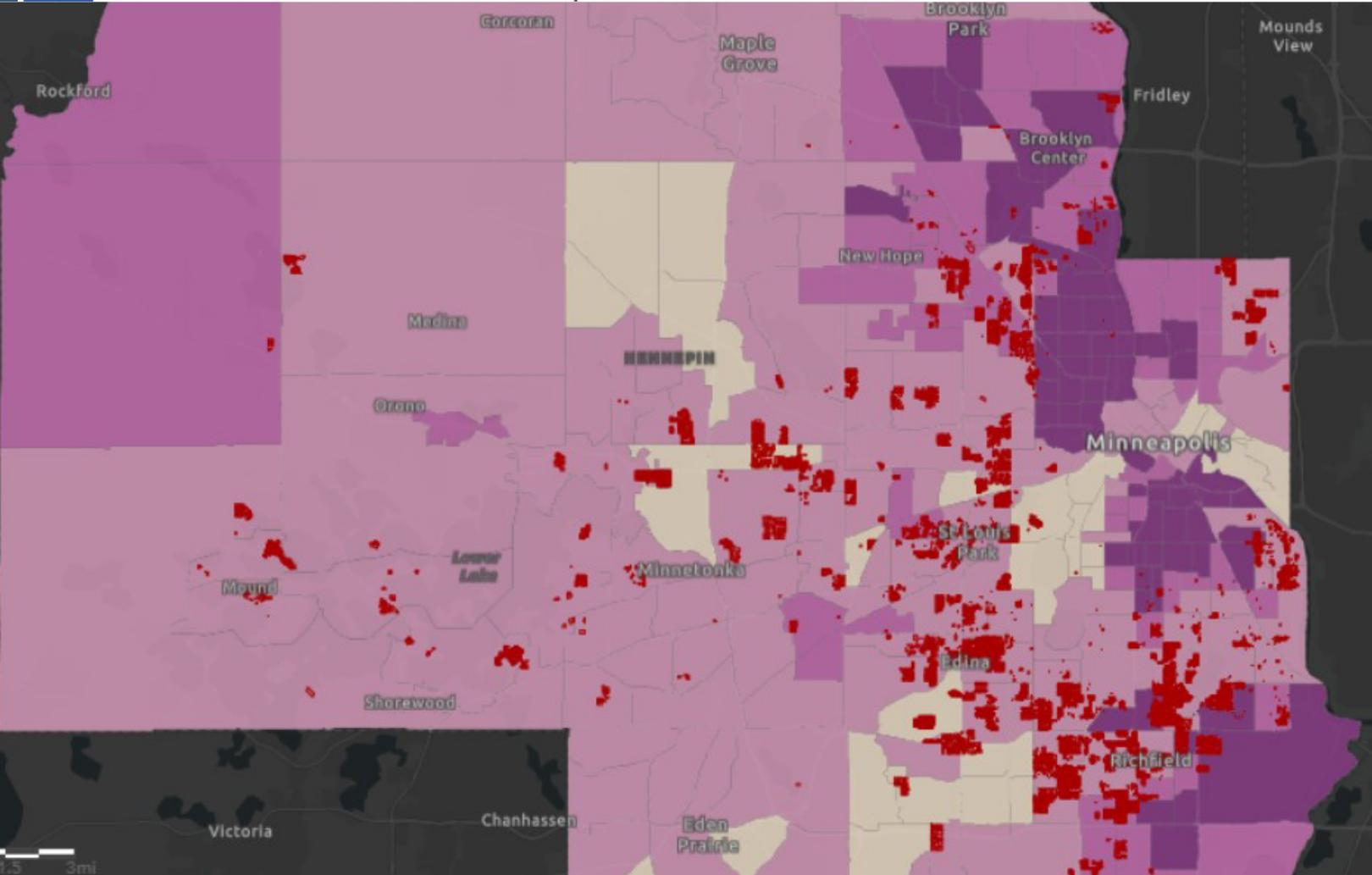
Communities of opportunity provide residents with resources such as access to healthy foods, places to exercise, and less exposure to pollution and fast food restaurants (Allen, 2021).

Access to Healthy Foods

Due to historical racism, there are vast differences in access to resources in Minneapolis-St. Paul leading to Black folks being more likely to have cardiovascular disease (CVD). The availability of healthy foods is vital to a healthy life and influenced by people's neighborhood. Communities with affordable grocery stores and produce can increase residents' nutritional health and decrease rates of diseases such as obesity and diabetes (Healthy People). However, not everyone has access to healthy foods and Minnesota ranks near the bottom per proportion of residents with access to grocery stores near their home. More specifically, since the start of COVID-19, 83% of Minnesota Black residents reported they were food insecure compared to 32% of White residents (Wilder Foundation). This leads Black communities in Minnesota to being disproportionately at a higher risk of CVD. Instead of having access to grocery stores and healthy foods, low income and African American neighborhoods are more likely to have more fast-food restaurants (Hilmers et. al, 2021). Eating fast food consistently is detrimental to health and is known to increase risk of CVD. Fast food is high in sodium, increases blood pressure, LDL cholesterol levels, and weight - all of which can lead to increased rates of CVD ("Here's How Fast Food Can Affect Your Body").

Estimated obesity rates in Hennepin County and Hennepin County racial covenants. Areas with racial covenants where Black families could not buy homes have lower rates of obesity compared to non-covenant areas contributing to higher rates of CVD in Black communities.

[Click here](#) to see the full interactive map.



Hennepin County racial covenants



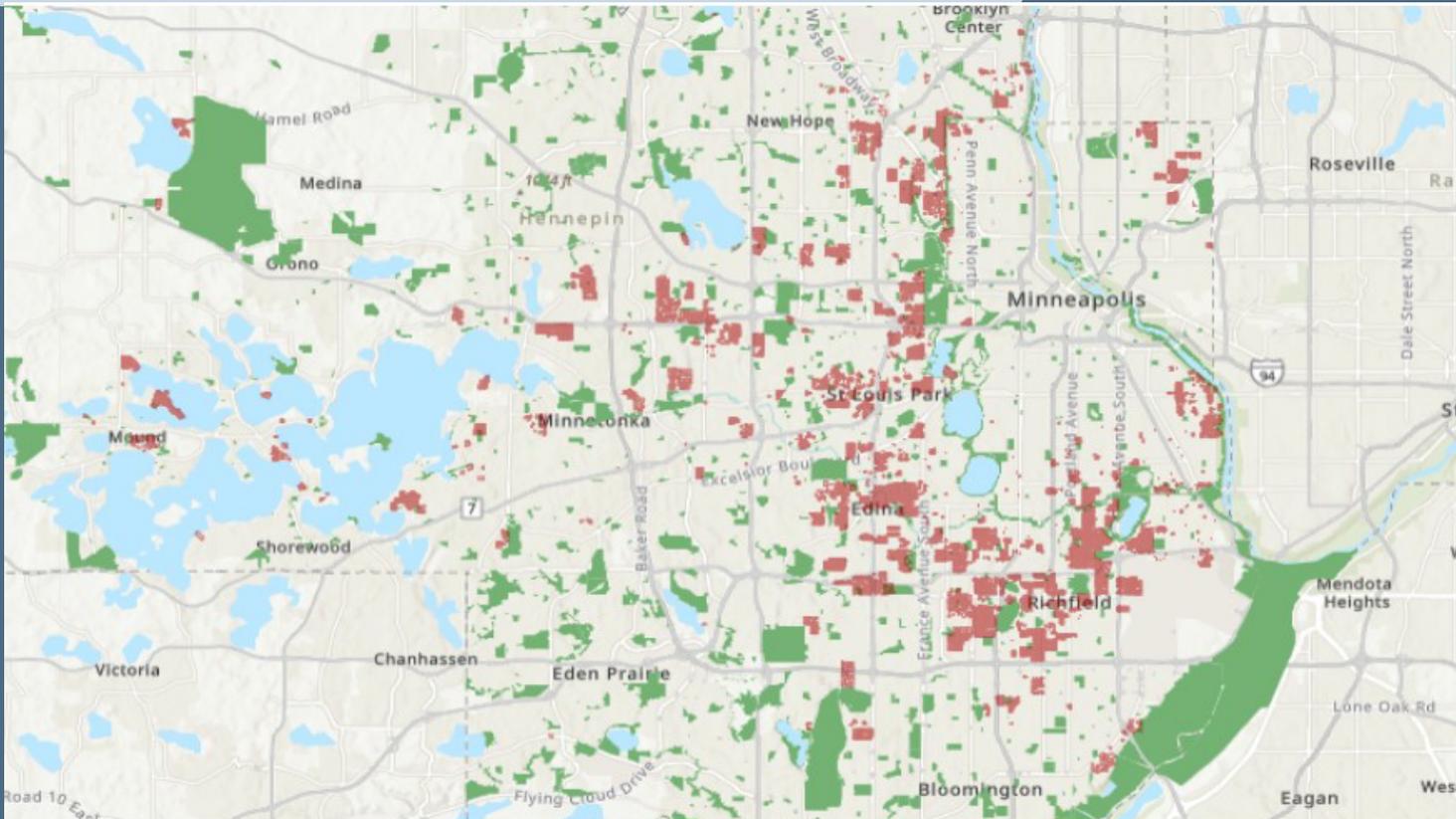
Estimated percentage of people with obesity in 2017 (%)

- > 28 - 39.8
- > 25 - 28
- > 22 - 25
- 19.1 - 22

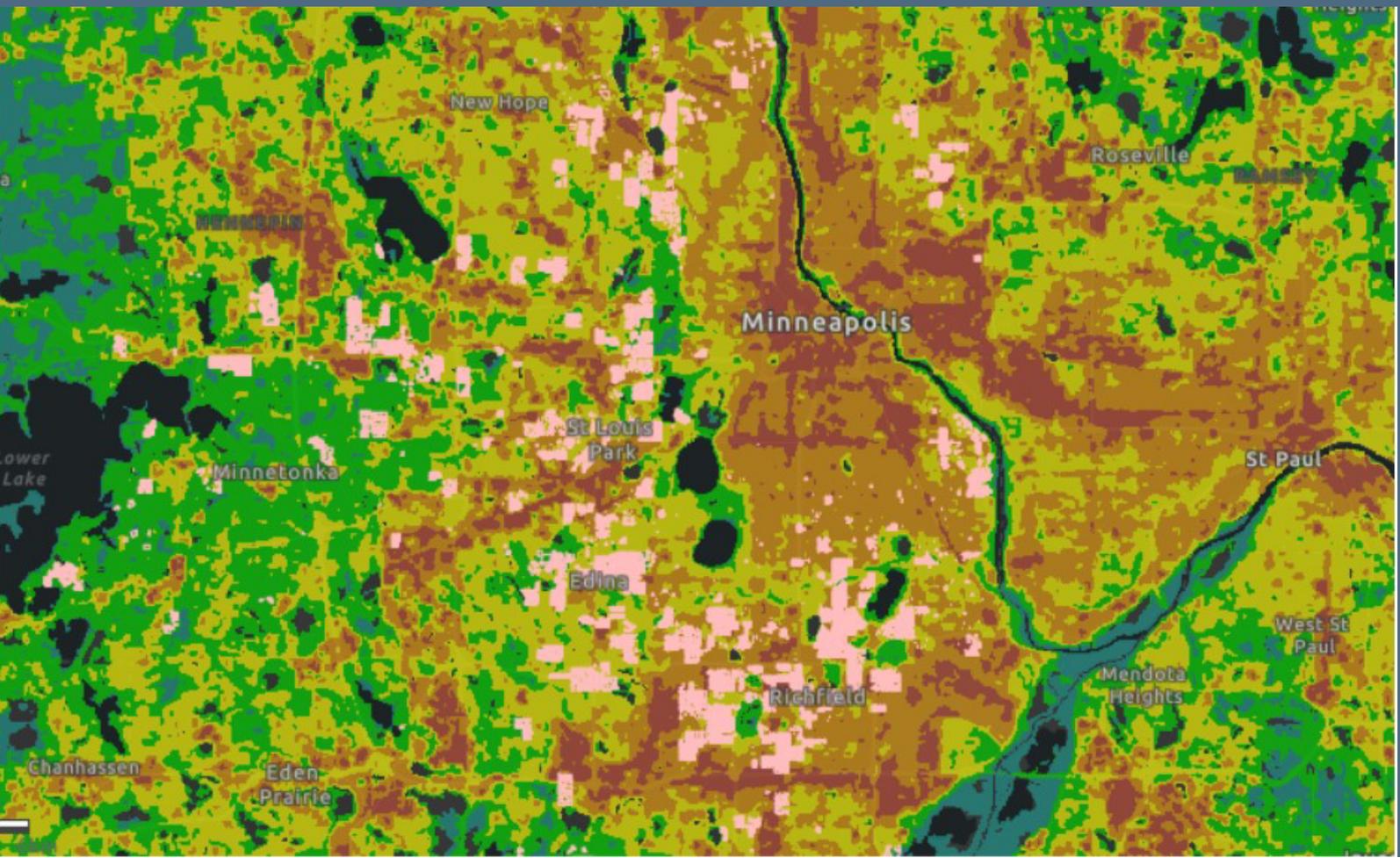
Access to Green Space

Access to parks impacts health significantly, as they provide increased opportunity to exercise and reduce stress (Bedimo-Rung) and aid in preventing childhood obesity (Hughey), all vital factors in maintaining cardiovascular health. It can be seen that areas with racial covenants are in or closer to areas with more space dedicated to parks and greenspace.

Trees play a role in moderating the temperature of their environment. Cities are susceptible to the urban heat island effect - higher temperatures due to the tendency for buildings to absorb and hold heat. Trees and vegetation help soothe the heat, providing shade and reflecting sunlight (Borunda). A study of 100 cities found that areas that were redlined in the 1930s are now on average 4.7°F hotter than areas that were not redlined. These neighborhoods are still primarily composed of Black and Brown communities who experience the effects nearly a century later. Increasing temperatures and worsening air quality go hand-in-hand, and take a toll on human health (Borunda). Increased heat exposure worsens rates of heart disease and hypertension. African Americans have the highest risk for hypertension than any other racial or ethnic group in the United States (Hedgepeth).



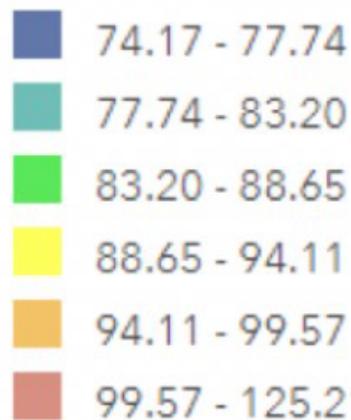
Parks in Hennepin County and Hennepin County racial covenants. Areas with covenants are in close proximity to green spaces and water which are beneficial to health. [Click](#) here to see the full interactive map.



Hennepin County racial covenants



Land surface temperatures on July 22, 2016 (°F)



Hennepin County land surface temperature and Hennepin County racial covenants. The hottest temperatures skirt around areas with racial covenants, while the hottest areas do not include racial covenants. [Click](#) here to see the full interactive map.

Racism

In addition to historical racism impacting health, present day racism and hatred have also been connected to poor health outcomes such as cardiovascular disease. People who experience racial discrimination early in life are more likely to develop cardiovascular issues later in life than those who never experience racial discrimination. This is due to the stress that racism can cause and the hormones that are released. When people are stressed the fight or flight response releases hormones that increase heart rate. This is beneficial short term, but when the fight or flight response is activated for prolonged periods of time health is negatively impacted (Ameroso, 2019). Additionally, within the medical system there are beliefs that prevent Black and African Americans from receiving proper care. Common beliefs that stem from racist unethical studies in the 1800s that prevent Black and African Americans from receiving proper care include that Black people have thicker skin than White people and that Black people experience less pain (Rao, 2020). These beliefs can lead to Black and African Americans not being listened to when talking to medical professionals about their health and being misdiagnosed. Without the right treatment, conditions such as cardiovascular diseases can become worse and heavily impact people's ability to live healthy lives.

Models

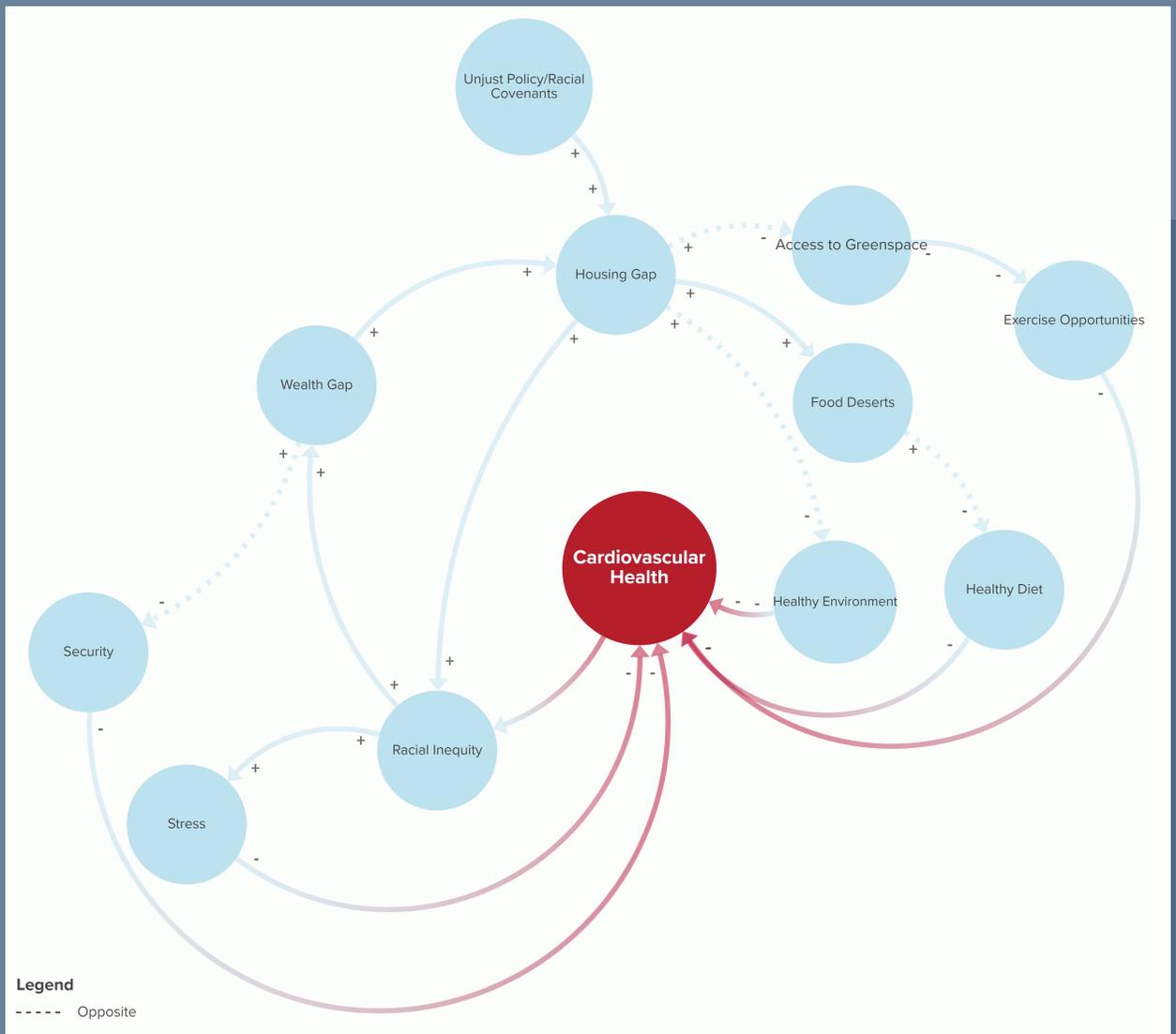
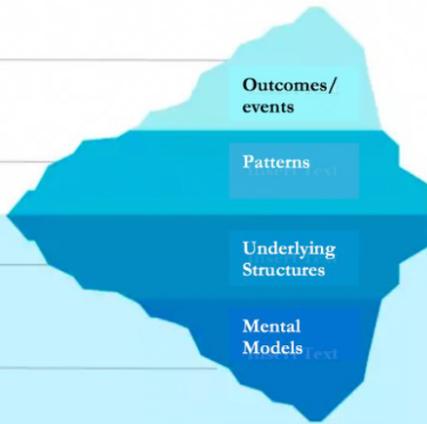
Iceberg Model

Black folks in Minneapolis are more likely to suffer from CVD

Resources are not allocated equally throughout Minneapolis communities, leaving some with less access to parks, healthy food, and safe housing

Racist housing policy through racial covenants and redlining was enforced in the 20th century, promoting more wealth in predominantly white communities

Racist ideologies centered on the oppression and exploitation of Black folks
Unwillingness to invest in neighborhoods perceived as dangerous and unprofitable



Solutions Landscape: Existing Programs and Solutions in Minneapolis

Minnesota Department of Agriculture
Good Food Access Program (Grant)

This grant is eligible to communities in low and moderate income areas, meant to promote the sale of healthy food. An increase in funding towards grants like this would aid in establishing local groceries and improving access to nutritious food (“Good Food Access Program Equipment and Physical Improvement Grant”).

Community Involvement in Planning Green Spaces

The Minneapolis Green Zones Initiative specifically targets underserved communities with limited access to green spaces and promotes the development of green spaces (“Green Zones Initiative”). While volunteers and community member input is welcome, we suggest incentives be offered - such as free childcare for meeting attendees - to overcome the barriers that prevent people, often working parents, from community involvement.

Minneapolis 2040 Plan: Present Day Housing Policies

Past zoning ordinances inadvertently allowed for segregation; developers would buy up entire blocks, and build large homes, creating the suburbs where the majority of the residential land is zoned for single family homes.

Prior to 2018, Minneapolis zoning ordinances mandated that 70% of residential land be zoned for single family homes mirroring that of other major cities. The Minneapolis 2040 Plan, approved that same year, is partly dedicated to removing single family zoning. The idea was to allow for more multi-family homes in residentially zoned neighborhoods. In turn creating more densely populated communities, with increased diversity.

It’s been noted that building more multi-family units could potentially increase rent, creating even more in-equitable conditions in the short term (Kuhlmann, 2021). This policy is too new to determine its long-term impacts, but is believed to be a step in the right direction as it will allow more housing in areas with better access to health resources such as greenspace and nutritious food. ¹⁵

Gaps and Levers of Change

“You have choices—lots. Many different eating patterns can help you manage your diabetes—from Mediterranean to low-carbohydrate to vegetarian.” -American Diabetes Association (“Food for Thought”)

Common interventions prescribed to lower risk of heart disease and improve heart health include eating healthier and reducing stress. The American Diabetes Association website provides recipes for eating healthier and suggestions for getting more exercise. However, these interventions are not available to everyone, due to gaps in the system where people can fall through, preventing them from living healthier lives. To prevent people from falling through gaps we suggest implementing the following solutions:

CHALLENGE LANDSCAPE

DESCRIPTION OF THE CHALLENGE

Racist housing policies of the 20th century continue to have lasting effects. Health disparities exist in Minneapolis Black communities, a specifically potent one being CVD.

IMPACT OF THE CHALLENGE

Nationally, Black adults are nearly twice as likely to die from preventable heart disease and stroke.

CAUSE OF THE CHALLENGE

The continued neighborhood segregation and lack of access to resources. Perpetuated by people in affluent communities with a lack of motivation and unwillingness to invest in communities other than their own.

HISTORY AND FUTURE OF THE CHALLENGE

While racial covenants are no longer enforced, systems set in place persist in the form of power and wealth imbalances that result in the continued oppression of those targeted by covenants and redlining. If left unaddressed, the continuation of these cycles would widen the wealth gap.

IMPACT GAPS

LACK OF ACCESS TO AFFORDABLE HEALTHY FOODS

The harm of living in a food desert is exacerbated by having a low income, and this lack of access to inexpensive, healthy food leads to poor diets.

LACK OF ACCESS TO PARKS AND GREENSPACE

Leads to limited opportunities to exercise as well as receiving the broad health benefits of being in nature.

INSECURITY AND STRESS ASSOCIATED WITH CONFRONTING RACISM

Racist structures and attitudes not only result in the perpetuation of cycles, but the combating of these systems and beliefs take a toll on the energy and health of Black folks.

SOLUTIONS MAPPING

ENCOURAGING THE SALE OF PRODUCE AT CORNERSTORES

Where there is not space for grocery stores, corner stores can sell small quantities of produce. This is not currently economically feasible as they must purchase produce at an increased rate if they do not purchase in bulk from a wholesaler.

Programs in which corner store owners are incentivized to sell produce or able to purchase produce at the wholesale rate could overcome these barriers.

COMMUNITY GARDENS

Can make fresh produce more accessible. However, studies of Minneapolis community gardens (of which there are over 200) show a correlation between establishment of these gardens and gentrification (Walker).

Encouraging not only the presence of community gardens but also community identity rooted in these spaces can counter the effects of gentrification while promoting this resource for fresh food.

CONVERSION OF EMPTY OR RUN-DOWN LOTS INTO COMMUNITY GARDENS, PARKS, OR PRAIRIE RESTORATION AREAS

Government funded initiatives to convert unused space into greenspace would provide more opportunities for community members to be outside as well as get involved in restoration projects.

INCREASING REPRESENTATION IN MEDICINE

When patients can relate to their providers and connect with them about culture, beliefs, and other aspects of their lives trust in the medical system is increased. Patients will seek care knowing they will be understood and treated without bias. The healthcare workforce needs to match the diverse population they are serving so that medicine is seen through more than one lens and set of values ("The Importance of Diversity").

TRACKING AND STUDYING MEDICAL RACISM

Part of ensuring all individuals have equal access to the resources that make it possible to live long healthy lives is by addressing health disparities. Tracking heart disease outcomes and medical errors holds healthcare professionals accountable to higher standards of care.

This also empowers patients by providing more necessary data points to make applicable changes to health plans.

PUBLIC HEALTH OUTREACH

Having more mobile health clinics available in certain neighborhoods would provide individuals access to educational resources and provide management tools closer to home. Inversely, having health care professionals more involved in community outreach would help to break down internalized implicit biases against African-American communities. In turn producing better heart health outcomes.

IMPACT GAPS

HISTORICAL RACISM

Past policy created systems and power structures that people remain trapped in today.

HEALTHCARE IS NOT A RIGHT IN THE US

Healthcare is seen as a luxury good, which leaves the uninsured without access to healthcare and preventative services.

SOLUTIONS MAPPING

REPARATIONS

Creating more fluidity in funding so that wealth is directed to neighborhoods that have been historically deprived of resources and funding

NATIONWIDE HEALTH SYSTEM:

Healthcare is a right and everyone has access to care. Systems making healthcare available to all would increase people's ability to seek care and be treated in the early stages of disease.

Insights

Our team was interested in learning about health disparities after becoming aware of them due to their amplification with the onset of the COVID-19 pandemic. As we dug into the literature, we realized that health disparities is a very broad topic that is interconnected with many systems. To narrow the focus of our topic, we decided to focus on cardiovascular disease because there has been new research released about long term COVID symptoms and its impact on heart health.

and

Lessons

Learned

Systems mapping was beneficial to our project because it allowed us to unearth and examine the complex and layered ways that racism is embedded in every aspect of our lives. Heart health may not be the first symptom of racism that people consider, but systems mapping allowed us to more clearly see how housing and historical racism heavily impact one's health. To address health disparities we must do more than tell people to eat healthier and exercise more. We need to reinvest in our communities and address the toll that historical racism has taken in our cities.

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Black women are often not listened to when visiting the doctor and have their concerns dismissed. This stems from racism and racist medical studies completed in the 1800s that are still believed today. Some of these beliefs include that Black people experience pain differently and that Black people have thicker skin.

Segarra, Marielle. "Neighborhoods Become Food Deserts Overnight." *Marketplace*, 6 June 2020, www.marketplace.org/2020/06/04/neighborhoods-where-stores-were-destroyed-become-food-deserts-overnight/.

Provides first-hand accounts of food deserts on Lake Street following the death of George Floyd and the upheaval that arose.

Shannon, Jerry. *Beyond the Supermarket Solution: Linking Food Deserts, Neighborhood Context, and Everyday Mobility*, Taylor & Francis, 11 Nov. 2015, www.tandfonline.com/doi/abs/10.1080/00045608.2015.1095059?casa_token=SCcuD7L9ir4AAAAA%3A2KjRZMULwIbvq-edFK-vc2pHBMJJAU9JCRsNyTDjzd0aU_8-nPQMuGEIETSJGmpig0BAbc7wwuyY&journalCode=raag21.

This study focused on urban food access. It specifically took place in Minneapolis and found that store quality and community socioeconomic status were closely tied.