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Zip Codes & Genetic Codes: A visual ethnography highlighting the relationship between place and health outcomes for women residing in the Linden area of Columbus, Ohio

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Zip Codes & Genetic Codes: A visual ethnography highlighting the relationship between place and health outcomes for women residing in the Linden area of Columbus, Ohio

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Abstract

This research investigates the health inequities being faced by Black women belonging to the 43211 zip code and living within the Linden community of Columbus, Ohio in order to answer and understand further in depth, how place, neighborhoods and/or zip codes reflect and contribute to Black women's health disparities. This is done by a collection of photographs that is then put into conversation with data conducted on the aforementioned area. The knowledge acquired was done through a qualitative method of inquiry, by looking at the empirical backings, statistical makeup, and visual representations of Linden's health disparities. A total of 8 separate locations, establishments and organizations were photographed. Cleveland Avenue, Agler Road, Westerville Road, Sunbury Road, and Morse Road were prominent streets that collectively showcased the remnants of racialized violence and exploitations that continue to seep its way into health outcomes that disproportionately impacts people categorized as marginalized and vulnerable.

Introduction

Throughout this study, efforts were made to highlight the social determinants of health that impact Black women living within the Linden area of Columbus Ohio. By using photo ethnography as a medium for highlighting health determinants; physical structures, spaces, and establishments were used to further synthesize the argument, of how the physical/structural makeup of zip codes, neighborhoods, and/or communities are contributors and reflectors of health disparities impacting communities that have been historically underserved at the public health and governmental level. Statistical evidence and indices, while beneficial in showcasing potential determinants and outcomes, in this study were placed in conversation with visual

evidence, and personal reflections of lived experiences. This idea was central in recentering marginalized voices, and humanizing their conditions which further aligns with the goals of this research.

Photo/ visual ethnography was used as a qualitative research method. This form of ethnography focuses on analyzing concepts of health, neighborhood construction, and racialized/ gendered inequalities through visual form, and acts as a tool for learning and communicating with potential readers. Photo ethnography adds an additional layer of engagement with the work, for both myself as the researcher and others interested in this study. Instead of focusing purely on textual evidence, images were included for the intricacies, realities and emotions that words may not fully capture. As stated previously, one of the many goals of this research is to humanize these experiences that researchers tend to theorize about. Being from the area myself, I wanted people to be aware of the lived experiences and realities of the people on the "ground," and eventually work my way up through descriptive analysis to put the images into context with already found data on the area. This was done in order to provide a more holistic view of residents' experiences and conditions.

By including lived experiences and visuals along with creative representations, an acknowledgement of unorthodox and undervalued epistemologies become valid sources of information, and knowledge. Furthermore, with intentional approaches such as these, the knowledge of health disparities and determinants become more accessible to the general population it seeks to highlight. The images within this study provide an additional frame of reference, that is easily digestible to the average reader and dispels hierarchies regarding knowledge production and acquisition. With that framework in mind, this project aligns itself within the realm of feminist research, that is, the intentional act of obtaining knowledge

regarding gendered and racialized modes of being, along with the realities of suppression that accompanies gendered and racialized experiences. With a prioritization of unorthodox forms of knowledge production, a commitment to social justice, along with the researcher's own reflections of their positionality, potential power differentials, and biases (Harding 1987), this study embodies feminist research.

The findings within this project include: (1) the results of corner stores and fast food restaurants and their contribution to the high cases of cardiovascular disease, diabetes and obesity within the area; (2) the lack of sidewalks as an explanation for the development of the aforementioned diseases; (3) the food insecurity crisis; (4) the over promotion of smoking and tobacco use; (5) the stark differences in structure, and access to nutritional foods between Linden and Sunbury, and (6) the resilience exuded by community members that are committed to tackling these issues.

This paper begins with a deep reflection of myself as a researcher, and the personal factors that have motivated and both intentionally, and unintentionally contributed to the research. Afterwards, the literature review provides an overview of the scholarly material within this field and thus sets the foundations for the research itself. There is then a section where I discuss the methodology and methods employed throughout this project. Following that is an analysis of the photos in conversation with documented data on the Linden community, which eventually lead to the conclusion which will summarize the research findings, and additional reflections/propositions.

Positionality Statement

My own positionality has greatly affected the ways I have decided to approach my research and even my initial arrival to investigate the proposed research topic and questions. According to Atsushi Takeda "the concept of positionality provides an explanation for the influence of race, gender, class, and other socially significant identities on our relational perspective" (Takeda 2012). These factors all have the ability to impact one's approach to research, from its genesis and its proposed methodologies, all the way to its conclusion. Aspects of my positionality, such as my race, gender, education level and socioeconomic status have all collectively and individually influenced this research and perhaps its potential outcomes.

As a Black woman who grew up in the city of Columbus, Ohio, the area, as well as the people I chose to focus on within this research is highly personal to me as it is both where I am from, and a suitable location for encompassing the demographic and the issues I wish to expand on and address. To be more specific, the Linden area which is one of the main focuses within this study is where I have lived for the past five years. Within those five years, my lived experiences have come to reflect the social and political implications that are still present within this community today. Linden has been nationally recognized as a vulnerable/underserved community (USA Today 2019). However, these labels for me, before I acquired the language and knowledge to conceptualize the neighborhood itself, does not fully encompass the complexities that is the community itself as well as the residents.

Linden is also known for its low socioeconomic status amongst its residents. With lack of access to employment opportunities, and finances, residents of Linden are subjected to negative outcomes that impact all aspects of their life. One aspect is that of health, which I have come to be highly interested in due to my own social location of being a Black woman. As a resident

from Linden, I have witnessed the lack of resources such as transportation to local grocery stores, areas polluted with fast food restaurants and shops that only provide perishable goods and food low in nutritional value, and healthcare facilities that are costly and not feasible for everyone to afford.

Admittedly, this position that I find myself in has motivated this research and has driven me to take the approach I have to make this research be reflective of the lived experiences of Linden residents, and to add additional context to the data, seeing that oftentime people get reduced to the numbers. While these numbers are important in their own capacity, it is important to see the realities of what the community is facing.

Literature review

Introduction

Concepts of health simultaneously exclude and exploit certain groups of people. Health systems and institutions have conditioned the general population to believe that they are neutral and unbiased in terms of the care they provide. However, constructions of health/ biology are influenced by epistemological and socio-cultural factors that place great value and credibility in colonial "objective" modes of thinking which contradicts conditioned notions of equity in healthcare. Such factors include, but are not limited to: creations of racialized, gendered and oppressive institutions that influence economic gain, and access to housing, education, transportation, safety and security. These determinants all have their unique and combined ability to influence health outcomes as "health conditions are not developed only due to biological factors but may have been the result of psychosocial processes [8]. That is, the health of people of different cultural backgrounds can be influenced by many factors, such as language, sexual

identity, mental health, psychological wellbeing, age, race, ethnicity, disability, socioeconomics, education…and access to health care and so forth" (Costas S Constantinou et al., 2017). This research aims to address zip codes and their influence on health outcomes in terms of access, health care. More specifically, the intent of this research project is to investigate the ways in which zip codes inhabited by underserved communities contribute to residents' health inequities by asking the question, how do zip codes contribute to health disparities in Black women residing in the Linden community of Columbus, Ohio?

Zip codes, formally known as the Zone Improvement Plan, were originally implemented by the United States postal service in 1963. This plan was a five digit code system created to sort and deliver mail more efficiently. This new system however went on to organize, categorize and represent communities and neighborhoods (United States Postal Service Office of Inspector General 2013). In the same breath, zip codes also evolved and became extremely racialized as they were used as signifiers of "good" versus "bad" neighborhoods due to prior historical processes that implemented housing policies targeting Black and Brown populations during the 1930s. These housing policies outlined the neighborhoods in which whites and non-whites resided, labeling areas with racial minorities as the red zones and therefore bad for investments. This gave white residents the upper hand in procuring housing loans and investments to improve their communities, while Black and Hispanic residents were denied the same resources conducive to their own form of community building and improvements. As a consequence, segregation between white and non-white populations remained, with white neighborhoods possessing better amenities in comparison to their Black and Hispanic counterparts (Legal Information Institute 2022).These policies set off a chain reaction that deterred individuals from seeking out healthcare facilities due to racial residential segregation (or redlining), being

associated with “neighborhood income, housing quality, exposure to environmental toxins and air pollution, health, and health care…[additionally] research has shown that residents of systemically disinvested communities face reduced access to providers, increased time-costs for traveling to appointments, and limited access to jobs with paid time-off and private health insurance coverage” (Smith et al., 2022). Zip codes act as reflectors of these histories of racial segregation, and the consequent impacts it had, and continues to have on the construction of particular communities and therefore their subsequent resources.

The existing literature on zip codes being linked to various social determinants of health, being that it is a socially constructed category with the power to shape health outcomes, reveals that people residing in zip codes/ neighborhoods classified as underserved or underprivileged, are more likely to 1) be unsatisfied with their healthcare experience when they do seek out care, 2) don’t have the means to access said care, through lack of resources such as health insurance, money and/or transportation, and 3) are discouraged from accessing health facilities due to the historical past of medical institutions and health providers’ exploitation of Black and Brown bodies. The matter in question is oftentime addressed by statistical indices and metrics that measure the levels of social determinants that influence health in marginalized groups. However, these indices/metrics, while important to the implementation of policies that address these disparities, oftentimes, do not account for specific details surrounding social systems within the measurements considering that:

> Statistical modelling is unlikely to be able to capture all the nuances and detail that can be observed with qualitative approaches, qualitative findings do suggest that quantitative epidemiological studies of context should investigate more carefully the

> extent of interactions between characteristics of individuals and the features of places associated with varying health risks (Cummins et al., 2007).

This is where individuals' accounts of their experiences become important and a viable assessment tool for what resources are actually needed on the ground. With that being said, this literature review uses the terms "zip codes" and "neighborhood" interchangeably. It reviews the existing literature on the importance of researching zip codes and their ability to determine individual and collective health experiences. It is then organized by introducing zip codes as interconnected to the existing social determinants of health, while additionally acknowledging the racialization of zip codes and the additional nuances that metrics and indices need to be coupled with in order to highlight the causal factors that influence health, healthcare access, and healthcare experiences within vulnerable communities.

Zip Codes in relation to Social Determinants of Health

Social determinants of health are the non-biological/ socially constructed domains of society that shape health outcomes. Such domains include race, gender, education, socioeconomic status, ability and residential location (Healthy People 2023, U.S. Department of Health and Human Services). Zip codes tend to encompass demographics that share similarities in race, education level and socioeconomic status. Hence, this is why zip codes are useful in measuring/encompassing the realities regarding the conditions that negatively impact health, health access and healthcare experiences for particular populations. Like DNA, zip codes are also onset prior to birth. For instance, an expectant individual who may not have proper access to prenatal care due to their designated zip code, or resides in an environment with heightened stressors; their position has the ability to generate adverse conditions pertaining to the

development of the unborn child. The term "ZNA," otherwise known as, zip code nativity area, coined by Thomas Glass and Usama Bilal illustrates the causal impact of zip codes on "natural" biological outcomes as "the inceptive environment into which persons are born (which we term ZNA for Zip code Nativity Area) exerts a potentially powerful causal impact on health" (Glass and Bilal 2016). For Glass and Bilal in their article *Are neighborhoods causal? Complications arising from the 'stickiness' of ZNA*:

> ZNA forms the exposomic and behavioral assembly instructions that produce a biobehavioral phenotype. ZNA is the "source code" for the inculcation of a behavioral repertoire, a cultural context of meaning and understanding, the mother tongue for thought and action. ZNA also shapes the biological trajectory of the organism through initial exposures that program key biological and epigenetic parameters (Glass and Bilal 2016)

Zip codes/ neighborhoods, while socially constructed and are therefore human made abstractions, are able to biologically alter an individual and their community. Glass and Bilal provide an example of this "biological alteration" as they make the claim that:

> Animal studies support a direct causal link between maternal stress, elevated maternal cortisol, and impaired brain and neuropsychiatric development in off-spring. LeWinn and colleagues recently showed that maternal cortisol, plausibly caused by living in environments high in psychosocial hazards, was associated with reduced childhood IQ (Glass and Bilal 2016).

Both Bilal and Glass' claims support the idea that environments riddled with psychosocial stressors have the potential to impact individuals even prior to birth.

The study of zip codes and its impacts on residents' social determinants of health is important in the consideration of a more equitable approach to health and health access. Authors Sally Macintyre, Susan Maciver and Anne Sooman, in the article *Area, Class and Health- Should we be Focusing on Places or People?* advocates for the study on the relationship between area and health by reviewing the existing literature that explores the two. The article proposes that research centered on the physicality of the environment and the personal decisions of the individual, for example air pollution or level of exercise, erases the very real effects of politics, policies and structural oppression on health. According to the authors, "rather than encouraging individuals to eat more healthily or take more exercise, perhaps it would be more useful to try to improve the availability, quality and prices of healthy foodstuffs in poor localities, or to improve the availability of sports grounds and green spaces there" (Macintyre et al., 1993). However, in order to do this, one must understand how the genesis of neighborhood constructions have shaped the availability and quality of life preserving resources.

The inclination to place individualized blame is a "practice [that] follows what Baum et al. describe as "a long-standing Western biomedical and individualistic concept of health," explored by author Dannie Ritchie in the article *Our Zip Code May Be More Important Than Our Genetic Code: Social Determinants of Health, Law and Policy*. According to Ritchie:

> By placing the responsibility of obesity reduction, for instance, on the individual to make more informed diet choices, the ACA [Affordable Care Act] fails to recognize that many low-income neighborhoods are food deserts, where fresh fruits and vegetables are scarce. In contrast, processed and shelf-stable foods are more abundant, which can lead to poor nutritional health (Ritchie 2013).

This showcases the importance of contextualizing the shaping of neighborhoods and its eventual connection to health as "the most urgent health problems facing Americans today – such as asthma, obesity, and heart disease – are influenced more by where people live and work than their genes or what their doctor recommends" (Ritchie 2013). Having the perspective that individuals possess the sole responsibility for their health outcomes, ignorantly dispels the very real effects of a socially constructed reality on the biological.

Contextualizing the power structures that go into the construction of places allows for a deeper understanding regarding the interconnections between racist housing policies, community food depravity, and inaccessibility to transportation, and how they have collectively been used to inhibit and paralyze marginalized people. Authors Steven Cummins, Sarah Curtis, Ana V. Diez-Roux and Sally Macintyre's *Understanding and representing 'place' in health research*, examines the relationship between place and health, when place encompasses the details of how they were racially and economically structured. The article states that:

> The way that areas are delineated administratively, the distribution of services, infrastructure and linkages among places and the ways that places are represented are not seen as socially and politically neutral but as the outcome of dynamic social relations and power struggles between groups in society (Cummins et al., 2007).

The distribution of important amenities within an area contributes to the amount of resources residents are allotted in order to be agents of their own health. With allocations of resources being determined by systems that simultaneously deny and inflict harm on vulnerable populations, it can be inferred that people of color, women and low income individuals residing in underserved zip codes aren't granted that luxury as "the characteristics of persons and the

contexts (and places) they live are tightly interrelated" (Cummins et al., 2007), in the context of healthcare access.

It is imperative that researchers consider these factors instead of focusing on individual responsibility. Not being properly addressed would reproduce existing gaps in terms of knowledge when it comes to the needs of historically marginalized people. *Neighborhoods and health: where are we and where do we go from here?* by Ana Diez-Roux suggests that:

> Health researchers need to consider the health effects of policies which are not traditionally thought of as health policies but that could have important health implications. Many of these non-health policies (such as housing policy or urban planning policy) could affect health through their impact on the contexts in which individuals live and work. Neighborhoods are clearly an important context (Diez-Roux 2007).

It is assumed that these policies stand alone, however, they are all connected in working together to oppress vulnerable communities and to uphold oppressive regimes.

While it is important to look at the current issues that have had negative ramifications for underserved neighborhoods and the health of their residents, focusing contemporarily, for example on more recent policies, might erase the historical components that still linger within these communities today. Recent policies might address issues impacting health disparities, however, past social constructions embedded in these communities still covertly work against residents of underserved communities and are nevertheless, strongly felt. The *Methods for the Scientific Study of Discrimination and Health: An Ecosocial Approach* by Nancy Krieger asks to implement what she terms "ecosocial theory." Ecosocial theory encapsulates the inequalities in health and the social determinants that contribute to disease exposure. For Krieger "measuring

only contemporary exposure is likely to dilute estimates of the impact of racial discrimination on health" (Krieger 2012). It is common to look at zip codes and assume that one's with lower income, people of color are more likely to have health issues, as a general consensus. While it is more often true than not, this is not absolute. People in underserved neighborhoods are not more likely to face health barriers and issues due to the community itself, but due to the social implications that went into the construction of the community. Therefore it is important to look at the empirical evidence rather than vague notions of so-called "bad" vs. "good" neighborhoods.

Racialized construction of Zip Codes/ Impacts

The racialized construction of neighborhoods was done through the process of redlining. Redlining is the denial of resources and services to people residing in areas usually associated with poverty, people of color and urban life. In 1933, the Home Owners Loan Corporation (HOLC) illustrated a map that categorized neighborhoods on desirability and their likelihood of paying back their loans with HOLC home investments. These neighborhoods were ranked from A through D, with A representing the more desirable areas and D being the opposite. These rankings were based on white versus non-white populations. Areas ranked with a D had larger populations of people of color residing in them. These classifications reproduced and recreated segregation between white and non-white populations (The New York Times 2021). With limited access to loans, people of color were denied the freedom to secure safer housing and live in more affluent neighborhoods. They were instead confined to their neighborhood of origin, where resources were scarce yet more abundant in majority white neighborhoods.

Considering the great impact of organizations like the Home Owners Loan Corporation, that is still present today, Anthony Nardone et al.'s *Associations between historical redlining and birth outcomes from 2006 through 2015 in California* investigates the lingering effects of the Home Owners Loan Corporation and their act of redlining on birth outcomes in Black and Hispanic women. Nardone found that due to instances of racial segregation that promoted limited access to education, healthcare, income and other disparities, "babies born to pregnant Black women are more than twice as likely as their white counterparts to experience fetal, neonatal, and infant death" (Nardone et al., 2020). Nardone further argues that "policies geared toward racially segregating neighborhoods in the US were widespread, pervasive, and well-documented in the time following the Great Depression up through the Civil Rights movement. Effects of such policies can outlive their implementation period and may continue to contribute to health disparities even after their repeal" (Nardone et al., 2020). Even though there have been efforts to correct these racist policies, such as the 1968 Fair Housing Act that criminalized redlining and discrimination when it comes to real estate and mortgage lending (Federal Reserve History 2023), the results are still being felt today through the Covid 19 pandemic, gun related violence, and diseases such as hypertension and diabetes that disproportionately impacts Black and Brown communities (Egede et al., 2023).

Policies created to maintain social order did not impact only one aspect of everyday living. Housing policies like redlining, while thought to be only limited to property acquisition, spilled over its effects and have consequently determined the quality of resources and amenities, such as health facilities, grocery stores and transportation in poorer communities. Laura Barrie Smith et al. assert that "driven by policies such as redlining and by out-migration of wealthy (typically white) households, residential segregation affects the ability of communities to provide

various social services. As a result, disinvested neighborhoods experience a deterioration of community resources, such as employment and educational opportunities" (Barrie et al., 2022). Likewise, in the research article discussing the recent Covid-19 pandemic's effects on racially segregated neighborhoods, by Min Li and Yuan Faxi, "disadvantaged populations, especially communities of color, are facing housing issues varying from poor conditions, instability, and even eviction/loss. Those precariously housed have difficulty practicing physical distancing and self-isolation…which therefore exposes them to the risks of infections" (Li and Faxi 2022). Diseases like Covid-19 are highly contagious and one of the main ways to avoid contracting the disease is through isolation and avoiding contact with possible and unsuspecting hosts. As claimed by Li and Faxi, residing in areas with lower housing values, does not leave the necessary space for people to safely practice social distancing. Additionally, people living in these areas are often working public service jobs which includes exposure to various people who might be infected by Covid-19. Public health concerns such as exposure to disease have to address the lived realities of the affected individuals in order to level the playing field.

The racialization of zip codes also affects early diagnosis. With early diagnosis, individuals are able to identify and mitigate the issue before it becomes increasingly hard to do so. However, without proper access to health care, people are more inclined to ignore the issue or to a greater extent, not be aware of the issue present due to them not exhibiting any symptoms, which becomes even more difficult to treat in the end. *Colorectal Cancer Screening Disparities Among Race: A Zip Code Level Analysis* by Carla Barberan Parraga et al. discusses how zip codes being an indicator of race and socioeconomic levels, can be used to measure the likelihood of residents seeking out early/preventative diagnosis. The study used "zip-code level data from 500 Cities to study the intersection of race, SES [socioeconomic status], and social deprivation

index on CRC [colorectal cancer] screening and determined which relationship is most integral to affecting CRC screening rates" (Barberan Parraga et al., 2023). The study found that the likelihood of inhabiting an identity that has been historically and contemporarily oppressed, leads to a decrease in seeking out colorectal cancer. Given the myriad of health issues that have specifically plagued marginalized communities, people may feel discouraged or are so used to that as their norm, that early detection is not feasible.

Pregnant Black and Latina women are a demographic that is extremely susceptible to the detrimental effects of residential segregation on the health of themselves and their babies. *Neighborhood Racial And Economic Polarization, Hospital Of Delivery, And Severe Maternal Morbidity* by Teresa Janevic et al. examined the ways in which Black and Latina mothers access hospitals for their delivery and the quality levels of said hospitals. The authors found that "Black and Latina women who live in the most racially and economically polarized neighbor-hoods may face constraints to accessing high-quality care, such as lack of timely prenatal care and poor transportation" (Janevic et al., 2020). This comes as no surprise given the historical context behind neighborhoods and their racist classifications. Nevertheless, Janevic went on to write that:

> Hospitals located in New York City neighbor-hoods with a high concentration of black residents or low-income households may face unique structural barriers to the delivery of high-quality care, such as a limited ability to recruit highly trained clinicians and administrators that in turn prevents the hospitals from attracting pregnant women from high-income and white neighborhoods (Janevic et al., 2020).

Though it can be argued that health facilities are present and are being constructed in these vulnerable neighborhoods. The quality of these facilities are oftentime lacking, causing outstanding waiting times, high cost of care, and lack of healthcare providers, which is a

demotivating cause for pregnant women to take advantage of their services, regardless of their spatial proximity.

Food deserts are also a top concern when looking at health disparities in vulnerable neighborhoods. Food deserts are defined as areas where residents aren't able to conveniently access fresh food and produce. Underserved zip codes also affect residents' health through food insecurity. Zip codes that are historically Black and Hispanic are forgotten when it comes to establishing grocery stores that offer fresh produce and healthy nutritional options. Instead, they are granted convenience stores, otherwise locally known as corner stores, bodegas or delis. These establishments became vital food sources within the community, however the items being sold are usually processed/ perishable items that have little to no nutritional value. Not only are these communities faced with having convenient stores instead of actual grocery stores, but they are also riddled with fast food and chain restaurants. Naturally, because of their proximity, residents are coerced into sustaining themselves through the unhealthy alternatives they've been subjected to. Authors Keumseok Koh, Rebecca Reno and Ayaz Hyder writes that "racial/ethnic minority and low-income communities in many of the largest cities in the USA, such as New York City, Chicago, and Detroit, have more convenience stores, fewer supermarkets, and more fast-food outlet restaurants than the predominantly white, middle and upper-income areas" (Koh et al. 2019). Leading public health concerns such as diabetes and obesity are linked to unhealthy eating. Black and Brown communities are disproportionately affected by these conditions. While it is easy to condemn the individual for their eating habits, when considering the types of environments they have been subjected to and the levels of accessibility they have been granted, the situation becomes more complex and moves away from individual based health outcomes, but to one that considers the weight of social structures on the wellbeing of individuals.

The Vilification of Underserved Neighborhoods

Why are certain neighborhoods classified to be "bad?" It has already been established that neighborhoods are constructed by ideas surrounding race, class and segregation between the oppressed and the privileged. Neighborhoods deemed to be bad are imagined to be economically impoverished ghettos inhabited by people of color. The historical factors aren't considered in the construction of what is deemed the "bad" neighborhood. However, the truth reveals that bad neighborhoods are areas that were neglected and/ or were racially targeted by the government. Language is extremely important in this case, as bad neighborhoods aren't just areas riddled with poor people committing crimes, they are areas that have been exploited by government institutions, which forced people to engage in risky behavior for the sake of their survival. The article *Are inner-cities bad for your health? Comparisons of residents' and third parties' perceptions of the urban neighbourhood of Gospel Oak, London* by Rob Whitley and Martin Prince looks at how negative constructions of neighborhoods by people in high social positions recreate stereotypes regarding the "bad" neighborhood and therefore the residents that live there. According to Whitley and Prince, "social labelling and symbolic effects are two of the main negative environmental influences on collective mental health. Stereotyping and stigmatisation of neighbourhoods can be internalised by residents, which lowers mood and adjusts behaviour patterns" (Whitley and Prince 2005). Although it is important to highlight the issues in underserved neighborhoods, doing so in a way that pathologizes the people and the area in the process, can lead to more harm than good. Harm such as being denied employment due to a potential employee's address being associated with a "substandard" area, therefore creating the

perception that they are incapable and unqualified for the job being offered (Whitely and Prince 2005).

It is important to highlight the "making" of a bad neighborhood, in order to envision ways to challenge place based issues. Highways are a good example in their contributions to the construction of "bad" neighborhoods. Highways are amenities that are considered desirable and convenient, the closer they are in proximity to users. However, the construction of highways have targeted historically Black neighborhoods and have inserted themselves in the midst of these underserved communities. Highway construction has been very strategic in this sense. It is quite easy to escape accountability and repercussions whilst occupying the land owned by marginalized individuals, considering how injustices such as housing segregation and enslavement were justified against Black and Indigenous people of color. According to *The Role of Distance-Dependent Versus Localized Amenities in Polarizing Urban Spatial Structure: A Spatio-Temporal Analysis of Residential Location Value in Columbus, Ohio, 2000–2015* that looks at neighborhood value based on proximity to amenities, "past transportation policies and infrastructures (e.g., the construction of Interstate 71 along the center of Columbus) divided the city and caused underserved communities on the East side to be cut off from essential services, amenities, healthcare providers, and job opportunities" (Lee et al., 2020). The implementation of this highway was also a significant contributor to the labeling of particular neighborhoods as "bad" in comparison to others. However, to take it a step further, given the racist past of the United States' underminement of Black and Brown communities, highway construction is usually a means to further exploit and under-develop marginalized communities as argued by Deborah N. Archer. Archer claims that, "the nation's transportation infrastructure was built at the expense of Black communities and has contributed to and sustained the underdevelopment of

Black America, often making it difficult for Black people to take advantage of society's opportunities" (Archer 2021). Automatically, these factors spill over into various aspects of natural, social and political life, that in turn have had great impacts on historically marginalized groups, and have influenced shared ideas (oftentime negative) regarding the ethos of their communities.

Accessibility Through Available Neighborhood Transportation

Seeing that transportation is so critical in the acquisition of healthcare services, looking at access to bus/train stations, ride shares and/or car ownership in marginalized communities, can provide even more context for how certain neighborhoods can contribute to negative health experiences. The article *Analyzing collective accessibility using average space-time prisms* by Jinhyung Lee and Harvey J. Miller studies the impact of implementing new transportation on health care accessibility in vulnerable areas. First, Lee and Miller define accessibility as:

> A fundamental concept in transportation science, planning, and policy. Accessibility provides abilities for people to participate in essential activities, acquire valuable resources, and interact with other citizens. Therefore, the absence of appropriate accessibility can be a key contributor to socio-economic and health problems (Lee and Miller 2019).

Transportation has been a major aspect in terms of accessibility. If individuals do not possess the means to freely move within and out of their neighborhoods, then certain resources may become difficult to access and/or procure. Lee and Miller goes on to write that "to enhance Linden residents' accessibility, the city of Columbus constructed a new [Bus Rapid Transit] system called CMAX…CMAX explicitly targets the Linden neighborhood and operates along Cleveland

Avenue which is the main street of the Linden neighborhood" (Lee and Miller 2019). By implementing specific initiatives such as the CMAX, to low income or communities predominated by people of color, healthcare services become more attainable, which Lee and Miller found was exactly the case for the Linden community within Columbus, Ohio (Lee and Miller 2019).

Transportation accessibility becomes even more of a key factor when thinking about the quality of facilities that are close in proximity versus ones that are further away. Health services located in underserved neighborhoods are oftentimes underfunded, understaffed and include long waiting times. To avoid this, instead of going to the facility that is closer and geographically more convenient, residents will seek out facilities in more economically privileged locations that tend to be further away. Timothy Hawthorne and Mei-po Kwan's *Using GIS and perceived distance to understand the unequal geographies of healthcare in lower-income urban neighbourhoods* examines healthcare inequalities in low income urban neighborhoods based on perceived distance and quality of care pertaining to healthcare facilities. Both Hawthorne and Kwan claim that "based on fieldwork in a predominantly lower-income community in Columbus, Ohio (USA), we find many residents felt neighbourhood healthcare facilities offered low-quality care, which suggested an added perceived distance as they attempt to access high-quality healthcare facilities" (Hawthorne and Kwan 2012). Thus, residents have had to find alternative ways, such as going to a healthcare facility further away in order to receive the proper care they deserve. Transportation therefore influences access to better healthcare services, which leads to Hawthorne and Kwan's point that "some residents in both US and non-US locations often bypass nearby health clinics due to negative stereotypes and a perceived lack of quality care at a facility" (Hawthorne and Kwan 2012). It is important to therefore, not only look at the proximity

of health facilities and services, but the quality of them depending on if they are located or closely related to disadvantaged or privileged neighborhoods.

Impact of Neighborhood Quality on Black Maternal Health

Given the prevalence of social and institutional violence on communities belonging to Black and Brown people, areas highlight why certain groups are more susceptible to negative health experiences. Whether it is due to their predisposition to illnesses stemming from institutional oppression and through subpar interactions, or having a justified aversion to the medical system, communities still play a significant role within these circumstances. Maternal mortality is a major public health concern, being faced mainly by Black and low income mothers. *The impact of neighborhood quality, perceived stress, and social support on depressive symptoms during pregnancy in African American women* by Carmen Giurgescu et al., highlights this issue by looking into the ways neighborhoods classified as disadvantaged can influence depression in Black women. Giurgescu et al. claim that "women who perceive poor quality of their neighborhoods may use unhealthy behaviors to cope with stress such as smoking, lack of physical activity and eating high fat diets which have been related to depressive symptoms" (Giurgescu et al., 2015). A unique angle that Giurgescu et al. takes is their inclusion of the ways in which pregnant Black women cope, albeit damaging, it showcases the destructive cycle that is constantly being perpetuated. The actual repercussions are "negative birth outcomes including preterm birth and low birthweight infants, maladaptive mother-child interactions and less than optimal child neurobehavioral development" (Giurgescu et al., 2015). Considering that these repercussions disproportionately affect low income Black women, it is important to include theories of intersectionality through using a feminist analysis that stresses the impacts of gender,

race, economic and social status on people that do not align in a world that places value in whiteness, patriarchy and capitalism.

Social Determinants of Health (SDoH) Metrics

There have been efforts to quantify/measure social determinants of health, through census and zip code tracking. These measurements are important in tracking the health of a population. However, with metrics and indices, it is very difficult to quantify lived experiences and the foundational details that go into healthcare inaccessibility. While the article *The social vulnerability metric (SVM) as a new tool for public health* by Loren Saulsberry et al. suggests that "valid measurement of SDoH can help policy makers accurately target their interventions and programs to communities facing the greatest social vulnerability and can help researchers better evaluate not only the role of SDoH but other risk factors in etiologic research" (Saulsberry et al., 2022) which according to Saulsberry, is usually true, she went on to propose a new metric that was more precise and would more likely include the details of the issues being faced by underprivileged communities. According to Saulsberry et al.:

> The SVM was derived from a large set of SDoH variables from multiple nationally representative public use administrative databases, and the SVM was constructed using multidimensional Item Response Theory (MIRT), which is a statistical model of measurement which provides a higher level of precision than existing SDoH metrics in estimating a geographic index of social vulnerability, across the entire range of social vulnerability (Saulsberry et al., 2022).

The proposed metric, which is proven to be useful in obtaining a more precise measurement of vulnerability pertaining to underprivileged neighborhoods, for it to fully encompass the essence

of deprivation and vulnerability within these metrics, these numerical ways of knowing need to be coupled with in depth qualitative approaches, to provide a comprehensive vision and an additional frame of reference for what these particular communities are experiencing and to further humanize their stories.

Feminist Analysis

Seeing that this research is dealing with the discussion of vulnerable people and vulnerable topics, it is imperative to employ a feminist analysis within the framing of this work. A feminist analysis brings into question modes of knowledge that goes into the construction of what we know as the standard today. Knowledge has been used in the justification of inhumane treatment of non-white, economically disadvantaged people and women. In exploring something like zip codes and neighborhoods, a feminist analysis aids in deepening the understanding of the stories of individuals such as Black women, who have been historically silenced and thus erased. According to Isabel Dyck, "throughout feminism's theoretical shifts, issues of power, matters of scale and the production of knowledge from women's experience are important continuities" (Dyck 2003). Therefore, it is important to bring into perspective women's own knowledge about their health experiences. Dyck also goes on to write that "while health status and access to health care among women varies across and within particular economies and polities, everywhere gender— expressed in what women do as mothers, daughters and wives that differentiates their lives from men's—is reflected in their health" (Dyck 2003). Gender is always a mediating factor when it comes to access to services conducive to health.

How women are treated determines their healthcare experiences and systems such as sexism and patriarchy affects that. For that reason, many women's social location such as being a

mother, sister, daughter or wife collectively impacts their health experiences. These roles/categories commonly associate women as caretakers and nurturers that put other individuals' well being above their own. Because of these dynamics, women often unconsciously put their own health and wellbeing on the backburner for the sake of their husbands, children, and general family. The *Environmental, policy, and cultural factors related to physical activity among Latina immigrants* by Kelly R. Evenson et al. investigates the effects of environmental and sociocultural factors on physical activity in Latina women. According to Evenson et al. "lack of time was often cited as a barrier to physical activity, because taking care of their families and household responsibilities were a higher priority. Several women who worked stated that when they arrived home they were expected to cook and take care of the children, which left little time for themselves" (Evenson et al., 2002). Women were thus reduced to their labor both inside and outside of the home, which left little to no time for them to focus on physical activities. One of the women from the study also claimed that "our husbands are relaxing and we are doing the household work. We continue working after working [referring to household work after coming home from their jobs]" (Evenson et al., 2002). The husbands in this case reinforce misogynistic expectations onto their wives/mother of their children. Additionally, Evenson et al. writes that, "some of the men did not value physical activity for their wives and they described their husbands as desiring to see the house clean and having dinner ready when they arrived home from work" (Evenson et al., 2002). This attests to the effects of gender roles that exude misogynistic ideals onto women to cater for patriarchal figures at their own expense.

Another aspect to be highlighted within this feminist analysis is the concept of safety. Safety is a big issue concerning women especially from minoritized communities. With the current presence and rise in gendered and racialized violence, women of color are subjected to

violence based on both their race and gender. This violence becomes even more complex because these women cannot shed either of their identities to make room for their safety. A states by the same article mentioned previously, this time looking at a more diverse sample of women (both Black and Hispanic), Amy Eyler et al.'s *Environmental, Policy, and Cultural Factors Related to Physical Activity in a Diverse Sample of Women: The Women's Cardiovascular Health Network Project–Introduction and Methodology*, "urban women were concerned about being harassed by homeless persons and drug dealers or being a victim of a drive-by shooting. Many urban women knew of places for exercise, but they had to go outside their immediate community to travel there, and they perceived doing so was unsafe" (Eyler et al., 2002). It is clear that safety is a main concern for these women in comparison to their male counterparts. For that reason, that is why having a feminist analysis is beneficial to identify issues that may not be visible to the patriarchal world that we have been conditioned to abide by. Highlighting points of concerns dealing with safety, gender roles, and misogyny allows for a better, more feminist approach for understanding and correcting the health issues, outcomes and experiences that negatively impact women of color.

Conclusion

Social determinants of health is an extremely wide ranging issue that involves all aspects of people's social location ranging from gender and race, to socioeconomic and education levels and so forth. With the existing scholarly material found within this literature review, it further contributes to understanding how people become even more impacted by particular social determinants of health depending on their residential location. It is important to note that there are a few limitations present within a few of the included studies, such as not addressing gender

dynamics and the role it plays entirely, and information/knowledge only stemming from people in positions of authority, rather than the affected demographic itself. Nevertheless, they have become beneficial in addressing the proposed research question, "how do zip codes contribute to health disparities in Black women residing in the Linden community of Columbus, Ohio?" through highlighting the effects of shared ideas regarding particular neighborhoods and the social and physical construction that went into the making of these areas which have all contributed to people's health outcomes.

Methodologies

The proposed question situated within this research investigates how place impacts health outcomes in women residing in the Linden community (a recognized food desert) of Columbus, Ohio (Columbus Public Health 2011). In order to unpack this question , a qualitative method of data collection was employed, which I found to be very effective during the research process. This research consisted of looking at statistical information and measurements regarding the economic, social and political status of women residing in the 43211 zip code. In an effort to further the feminist direction of this research, alongside with the idea that the statistical measurements previously mentioned, should be in conversation with qualitative and residents' lived experiences, to provide a holistic overview of the conditions these communities have been faced with, I also included an ethnographic photographic approach to fully encapsulate the environments that these women have been subjected to and its relationship to the statistical measurements and theories regarding their health experiences and outcomes. Photo ethnography is the "use of still photography as a means of gathering and presenting ethnographic information

and insight" (Christopher Wright 2018). By using this approach in this study, the photos act as visual representations and a non-traditional mode of inquiry within research. Misconceptions regarding the incorporation of pictures and visual references within research assume their use as purely decorative, however photos are viable sources of information that have the ability to communicate in different ways that words and numbers cannot and by making ethnography more powerful, dynamic and passionate (Perera 2019). Popular anthropological works such *Vita" Life in a Zone of Social Abandonment* by João Biehl and *Righteous Dopefiend* by Jeff Schonberg and Philippe Bourgois use photo based ethnographies to highlight themes of mental illnesses accompanied by social death, and the opioid epidemic respectively, proving its efficiency as an approach to research.

With this, I am prioritizing a research process that centers "unorthodox" forms of knowledge and places as useful tools in portraying marginalized people's lived experiences. This photographic ethnography included five locations. These five locations were a Saraga which is an international grocery store located on Cleveland avenue, a strip of fast food restaurants also on Cleveland avenue, two corner stores located on Alger Road, Westerville Road, and Sunbury Road along with Morse Road, which were used as comparisons to the Linden neighborhood. Each location was chosen based on their locale being in or approximate to the 43211 zip code and, their ability to reflect and provide context to the health outcomes in women of that area, with the exception of Sunbury road, which was used for purely comparative purposes due to its proximity and more resourced ladended landscape. Field notes were also incorporated during the research process as an ethnographer, photographer, and feminist researcher. I then went on to generate my analysis in terms of the photos, where field notes were used to further direct and develop my analysis. With the inclusion of field notes, an emphasis was placed on my own

experiences and engagements with these places, my interactions as an insider in the community, as well as a newly found outsider status that emerged from my role as a researcher.

Methods

In order to conduct this research, I visited various locations in Linden. This was carried out through driving as a means of transportation. Therefore, time estimates done in between locations are approximate based on speed limit laws, flow of traffic, etc. A field notes journal was held to document observations, feelings, and things I believed to be noteworthy. Locations and establishments were investigated based on their relevancy and ability to speak to issues such as diabetes, obesity and respiratory conditions that are disproportionately higher, compared to other communities in Columbus. Additionally, a Nikon D7500 camera, provided by Denison University's library, was used to visually capture and document these observations and areas for further analysis. In total 180+ photographs were taken, however only seventeen were included. The quantity of the pictures were mainly due to multiple shots of the same area, in order to find the perfect still. Therefore, the pictures that were chosen for this research were intentional in terms of aesthetics, as well as their ability to speak to the structure and injustices that influence the community's health. Initially, I intended to not include visible people within the pictures, to maintain a code of ethics that emphasized anonymity and participant protection. However, upon my encounter with one of the spaces on Cleveland Avenue, a designated area occupied by the *Food Not Bombs* network, I was compelled to highlight the organization and their efforts to offset the food crisis that continues to plague their community, and in order to further capture the essence of this movement, photos involving the members were included. To maintain those

previously thought about ethical considerations, consent from the organization's volunteers were granted, along with my efforts to block out their faces to maintain their anonymity and safety.

Analysis

To fully understand the disparities Black women within the Linden community face, an inquiry into the social and economic makeup of Columbus, is required. Columbus, Ohio is home to 907,971 residents as of July 1, 2022 and about 10.4 percent of people are without health insurance (United States Census Bureau). As previously noted, women of color are disproportionately impacted by barriers that limit access to health insurance, healthy foods, financial freedom, and other things conducive to their health and longevity. Around 54.9 percent of the Columbus population are White, while 29.1 percent are Black and another 6.7 percent are with Hispanic/Latinx ancestry (United States Census Bureau). With the median household income for Columbus residents being $58,857, 18.4 percent of people live below the poverty line. According to *Data US*, "the most common racial or ethnic group living below the poverty line in Columbus, OH is Black, followed by White and Hispanic" (Data US 2021). Linden, an area faced with high health disparities, crime, and poverty rates, located on the northeast side of Columbus, Ohio, houses approximately 23,160 people. The racial makeup of Linden is predominantly Black which is approximately 61.8 percent. 23.2 percent are White and an additional 8.8% are Hispanic/Latinx (United States Census Bureau).

Linden, a historically underserved area, has been exposed to the violence of state sanctioned oppression through racism, redlining, segregation. poverty and deindustrialization. The Health Affairs article *A History Of The Impacts Of Discriminatory Policies On Housing And Maternal And Infant Health In An Ohio Neighborhood*, states that "decades of policies and

practices triggered “White flight” and disinvestment, altering the community demographics…today Linden has high vacancies of residential properties, low investment in housing and businesses, poor street and sidewalk infrastructure, and one of the highest infant mortality rates in Franklin County” (Barnett et al., 2024). Due to former events of the past, rooted in the displacement and exploitation of Black and Brown people, many aspects of Linden’s infrastructure and community have gone deprived for decades. These disinvestments caused residents to be more “likely than those in the rest of Columbus to have coronary heart disease, diabetes and arthritis. They are less likely to have health insurance. Compared with the rest of Franklin County, [and] babies are twice as likely to die before their first birthday if they live in Linden. The life expectancy is eight years shorter than in Franklin County as a whole” (USA Today 2019). Implementation of policies and structures based on anti-blackness and white superiority are still being felt today as they did from their initial inception.

Some major public health concerns that are highly prominent in the Linden community include, high blood pressure, diabetes, obesity, limited access to health insurance coverage, chronic respiratory diseases, healthcare inaccessibility and arthritis. Aligning with Ayaz Hyder’s (professor at the Ohio State University's College of Public Health) *Columbus Health Map (CDC 500 Cities Data)* on the Linden area, health disparities within Linden are significantly higher, compared to average rates for the overall Columbus population. 15.38 percent of Linden residents lack health insurance compared to the standard 11.55 percent for Columbus. This outstanding amount of people lacking health insurance deters residents from seeking out care, and life saving medical treatment. Additionally, with the constant rise of Black single mother households within that area, insurance access becomes even more of a concern for families generating income from a singular individual.

High blood pressure, diabetes and obesity are leading diseases that gravely impact the Black community, especially Black women. Within the analysis and data provided by Dr. Ayaz Hyder, it was uncovered that 38.09 percent of Linden residents suffer from high blood pressure compared to the columbus average of 31.69 percent, diabetes impacted 15.97 percent, which is 5.38 percent higher than the average 10.59 percent of Columbus, and obesity affected 40.84 of residents while the Columbus average remained 33.26 percent. For comparative purposes, Hyder also included data on the Northland area, a more affluent and resourced area in Columbus, Ohio. There are clear distinctions between the two communities as for Northland: only 10.7 percent of residents lacked health insurance, 28.72 percent suffered from high blood pressure, 9.56 percent were diagnosed with diabetes, and 32.16 were categorized as obese. The proportion of Northland residents that suffered from these issues were lesser than the overall Columbus rates, and significantly lower than Linden's, which demonstrates how health differences become even more outstanding when comparing resource scarce areas with their resource abundant counterparts.

With chronic conditions such as high blood pressure, obesity and disease, dominant discourse tends to individualize these problems by basing them solely on the genetics and lifestyle decisions of the person. However, public health experts suggest that:

> Rather than encouraging individuals to eat more healthily or to exercise more, perhaps it would be more useful to try to improve the availability, quality, and prices of healthy foodstuffs in poor localities or to improve the availability of sports grounds and green spaces there. Obesity does not occur randomly in populations. It has been shown that lower socio-economic status (SES) persons are more likely to be overweight and their physical environment may play a role (Macintyre et al., 1993).

To fully recognize the complexities that are health disparities and “predisposition,” bringing in the social/political factors that create neighborhoods into perspective allows for a reconfiguration of individualized blame, to acknowledging the errors of the system and making strides to correct them.

Saraga International Marketplace

On January 31, 2018, the Kroger located at 3353 Cleveland Ave was permanently shut down. The Kroger, being in the low income community that it was, lost $3.6 million in revenue starting in 2012 (Columbus Dispatch 2019). Being one of the only major grocery stores within the area, mass concern among Linden residents came to fruition as they feared their community was on the verge of becoming a food desert, an area where access to fresh foods and produce becomes highly limited and scarce. In order to combat this issue, a Saraga International Marketplace was built to counteract the shortage that the Kroger left in its absence. Saraga, built in May of 2019 was a response to the closure of a major grocery store, to Linden’s impending food insecurity.

Saraga International MarketPlace, 3353 Cleveland Ave, Columbus, OH 43211. Feb.19,2024

Saraga International Marketplace has been a staple within the Linden community since its construction in May of 2019. For many Linden residents, Saraga has been more than just a grocery store, it is a testament to the potential that the Linden community has for business investments, development and its growing international population. In an interview conducted by the Columbus Dispatch on the potential of having Saraga serve the Linden community, “there are lots of immigrants. Low-income people need more food," said Sung, 56, an immigrant from South Korea who sees the store as more than a capitalistic enterprise: “It's an opportunity to serve a community that needs a grocery store” (Columbus Dispatch 2019). Along with its main purpose of being a food source in the midst of Linden’s food scarcity crisis, Saraga created a space for the growing immigrant population within the Linden area, and allowed them to

comfortably integrate into the community, while having the opportunity to preserve their culture and modes of being through particular foods that would otherwise be nonexistent in the average American grocery store, i.e. Kroger.

Despite the benefits that were expected to arise out of a Saraga being at such a high need area, the grocery store oftentime fell short and failed to benefit the community in ways that were previously imagined. As a resident of Linden for the past five years, I have personally witnessed the Saraga International Marketplace on 3353 Cleveland avenue be shut down an overwhelming amount of times. These temporary closures are rarely, if ever announced to the community, and oftentime go unaddressed, leading to more temporary closures. These closures are usually a response to the health/ sanitary violations of the store, lack of profit, and general expansion. With Saraga being implemented as a response to the potential trajectory of Linden moving into the food desert category, it would be imagined that there would be some efforts to highlight and provide solutions to limit closures, however, there have been very little attempts to achieve this.

Saraga International MarketPlace, 3353 Cleveland Ave, Columbus, OH 43211.

Feb.19,2024

Prior to my entrance into the broad brick building that stood in front of me, I lingered outside in the large yet deserted parking lot. Since living in the Linden area, Saraga has been a major food source for my family and I so my inquiry into this establishment were for both professional and personal pursuits. I stood in the parking lot and soaked up the stillness, the cold air and made note of the lack of consumers and cars at the time. It was a couple minutes after 1:00 pm, which meant people were more than likely at work or in school. Much to my surprise, upon entering the building, I was greeted with puddles of built up water, boarded up windows and caution tape. The deserted nature of the parking lot wasn't because of the time of day, rather, Saraga had been shut down temporarily yet again. This time however, I was greeted by an individual working at the MoneyGram where I had the opportunity to ask a few questions pertaining to the trajectory of the establishment and its seemingly ceaseless closures. The individual revealed to me that the Saraga was shut down recently in order to commence construction that would downsize their grocery section to make room for a flea market. Additionally, they estimated that construction would take about two more months before reaching full completion. This constant shutting down of

a grocery store, that in its genesis promised to combat the food insecurity issue in Linden further illustrates how remnants of past policies such as redlining, and disinvestments that impact the longevity of businesses within particular communities continue to make their way through contemporary spaces, despite efforts of correcting them.

Food Desert

Fast Food Strip, Cleveland Avenue. Feb. 19, 2024

According to *Examining disparities in food accessibility among households in Columbus, Ohio: an agent based model*, "convenience stores in urban areas sell fewer fresh produce and dairy items, and more processed and non-perishable food compared with stores in suburban areas (Koh et al., 2019). These differences in population and environmental factors often lead to

differential dietary intake patterns. For example, compared to food secure households, food insecure households are more likely to consume food of lower nutritional value and with higher calories" (Koh et al. 2019). Food deserts are defined as:

> A geographical area that has limited access to affordable and nutritious food, usually in impoverished areas in both urban and rural settings. These areas do not have grocery stores, farmers' markets, or health food providers that provide fresh foods. Instead, these areas often just have convenience stores and "dollar" stores that provide processed foods that are not nutritious or healthy (Ohio Developmental Disabilities Council 2019).

Along with convenience stores and dollar stores alike, fast food restaurants are also key contributors in the making of a food desert. Fast food restaurants are recognized for their efficiency in terms of quickness and costs. As stated previously, households within the Linden area are highly matriarchal. Approximately 53.2 percent of Linden residents come from single mother households (Statistical Atlas). With the general household income being lower than Columbus' average of $62,994, many low income women and mothers have to resort to quick and cost effective meals to sustain themselves and their families. This means eating frequently at these establishments for convenience, and oftentime lack of choice.

Fast Food Strip, Cleveland Avenue. Feb. 19, 2024

Diabetes and Obesity are prominent health concerns for Black women living in Linden. According to Ayaz Hyder (2019), 15.97 percent of Linden residents have diabetes and 40.84 percent are obese. These rates are 5.38 percent and 7.58 percent higher than Columbus' rates respectively. Women of color, especially Black women, are often condensed into bodily categories of being overweight, obese and at risk for diseases associated with these categories. Linden's higher percentages of diabetes and obesity is not necessarily a reflection of poor genetics based on essential notions of race and biology, rather it is reflective of the food source, poverty, and racial injustices that have plagued the Linden area. On Cleveland avenue, the main street of Linden, there is a designated region purely for fast food establishments. These fast food establishments include McDonald's, Wendy's, Tacobell, Popeyes, Tim Hortons, Long John

Silvers, KFC and much more. With the removal of grocery stores like Kroger, and the constant shutting down of Saraga, Linden residents are coerced into seeking nutrition from purely fast food establishments and/or convenience stores. Additionally, if residents do decide to seek out healthier alternatives, they must travel longer distances in order to achieve this, which can become burdensome for already socially disadvantaged individuals.

Conveniences, Corners and Bodegas

Bob's Market and Carry Out. Agler Road. Feb. 19, 2024

Bob's Market is one of the many convenience stores located on Agler Road and intersects at Perdue Avenue. Using my own home as a point of reference, Bob's market is approximately 1 minute and 7 seconds away driving distance going 35 miles per hour. Located next to Bob's

Market are a myriad of congested houses, close in proximity to one another, and various used car shops. Admittedly, I was a bit intimidated entering into this space, despite my multiple interactions with it before. This time, I felt more like an outsider rather than an insider as I stood outside with a black Nikon camera that was noticeably around my neck. I thought to myself of how much I resembled law enforcement looking to "patrol the inner city." Despite the occasional stares I received from passersby and folks enroute to this particular corner store, I reassured myself that these stares were rooted in justified curiosity, as it is not everyday that someone is seen hanging out by Bob's Market with a noticeable camera and book in which to jot down notes. Bob's Market was crowded around this time of day and during my time at this site, I made notice of the people that were going in and out of the store.

Bob's Market and Carry Out. Agler Road. Feb. 19, 2024

Agler Market. Agler Road. Feb. 19, 2024

It was around 40 degrees Farenheit at approximately 12:00 PM when I made my way over to Agler Market, which spanned a total of 51 seconds away from Bob's whilst maintaining the speed limit of 35 miles an hour. Similarly to Bob's Market, Agler Market was also located on the same street, making my familiarity with the location more pronounced. Agler Market at this time of day was a lot less busier than what I had previously encountered at Bob's. However, something quite interesting stood out to me. Despite my multiple interactions with this site, I noticed that there was a daycare located directly next to the convenience store. As I continued to observe things, both familiar and different, I took notice of the gray vehicle that was parked next

to me. Much to my surprise, the windows of the car were slightly down, there was a child playing in the front passenger seat. Initially, I was concerned, and made the conscious decision to remain there until whom I assumed was a parent returned, which they did after 8 minutes. However, instead of resorting to blame, or thoughts of child endangerment, I reflected on the basis of this research. As previously established, single mother households are quite prominent within the Linden area, therefore acquiring childcare and services can be costly and burdensome. While I have made the conscious effort to not assume or impose my own reasoning as to why the individual may have resorted to that, I do possess empathy for the situation, and for the individual who has more than likely been impacted by the structural makeup of the Linden community that was intentionally designed to uphold racist institutions and ideologies.

Overall, both of these establishments, and others alike sustain the community albeit in unhealthy ways. They both provide quick, easy, and cost effective solutions to a community already struggling with subpar food sources, and economic plights. For Agler market specifically, they showcased a sign, welcoming users of EBT/ food stamp cards, which goes a long way for people who might not have transportation to the nearest grocery store, as EBT unfortunately does not cover transportation to the food source itself.

Tobacco Advertisement, Agler Market

Game Cigars Advertisement, Bob's Market

Seneca Cigarette Advertisement, Agler Market

Smoking is a major component within the social fabric of the Linden community. Among adults aged 18-65 29.58 percent partake in smoking, which is 6.18 percent higher than the recognized Columbus average (Columbus Health Map 2016). With several convenience stores making their mark within the Linden community, they also promote smoking and tobacco use amongst residents. With ads promoting this lifestyle and the consequential easy access to said products, this maintains the labeling of the neighborhood as underdeveloped and lesser than to neighborhoods where that is not as prominent. For example, "women who perceive poor quality of their neighborhoods may use unhealthy behaviors to cope with stress such as smoking, lack of physical activity and eating high fat diets which have been related to depressive symptoms" (Giurgescu et al., 2015). Black women within this area already struggle

with life stressors such as low income and single mother households, and residing in a designated food insecure area, therefore a combination of these circumstances may influence their decision to partake in tobacco use and smoking which may contribute to Linden's high rates of chronic obstructive pulmonary disease which sits at 10.63 percent.

With multiple factors of food insecurity, tobacco and alcohol promotion, and the overall disenfranchisement of the Linden community, it comes at no surprise, the rising infant mortality rate that continues to plague the area as "exposure to adversity (e.g., structural racism, toxic stress) over time can result in physiologic changes that negatively impact women's health and can contribute to adverse pregnancy outcomes, even if the woman receives optimal clinical care during pregnancy" (Hade et al., 2021). According to USA Today's (2019) article *Living in Linden*, "infant mortality is improving in Linden, but it still is significantly higher than the rest of Franklin County. From 2013 to 2017, 17.9 babies died per 1,000 live births in Linden. Countywide, the rate was 8.2." These conditions not only impact the longevity of these vulnerable women within the community, but also the future generations which ends up with a continuous reproduction of the problem.

Westerville Road. Feb. 19, 2024

Exercise is one of those activities believed to be conducive to overall health and fitness. However, exercise is not always feasible for particular individuals. Not all women can afford to go out and buy a peloton[1], or freely engage in outdoor physical activity. Low income women of color are especially lacking when it comes to accessing and partaking in physical activity. According to Eyler et al. (2002), "women of color are less active than White women. Data from the 1994 BRFSS found that 46% of African American women reported no leisure-time physical activity in the past month compared with 30% of White women" (Eyler et al., 2002). One might wonder why this stark difference exists for physical activity between Black women and White women. The reality is that, with the impacts of structural racism, and gendered oppression, many Black women do not have the time, the money, or the social support to participate in exercise.

[1] At home cycling equipment

Given Linden's economic struggles, many women, especially mothers, do not have the resources to purchase exercise equipment to nurture their physical health. Additionally, time is also a major factor. According to a study conducted on physical activity as preventive measures to cardiovascular disease in women, researchers found that "having multiple roles as wife, mother, daughter, and as an active community member was mentioned as time-consuming and difficult, leaving little time or energy for exercise" (Eyler et al., 2002). Additionally, with the expenses and demands of childcare, women and mothers oftentime do not have the time, or the overall bandwidth to prioritize physical activity within their daily lives.

Along with these factors of economic turmoil, lack of time, and gendered roles that regulate child care solely to women, Linden's overall design is not conducive for women to go out and do something as simple as jogging or walking. In the image portrayed above, it is very clear that it is of a main street that has no sidewalks and is just not pedestrian friendly. This is the general makeup of the Linden area. Furthermore, with the current presence and rise of gender based violence, safety is a major concern for women who may have the desire to become more physically active. According to Eyler et al. (2002):

> Rural women were also concerned about harassment from strangers, but they were also afraid to walk on roads without sidewalks because of uneven pavement, dust, insects, and fast-moving traffic. Both urban and rural groups mentioned fear of being attacked by unleashed or stray dogs and indicated this impeded many outdoor activities, walking in particular (Eyler et al., 2002).

While Linden is classified as an urban neighborhood, these concerns still very much apply and are the realities of many women, especially with the high crime rates that continue to impact the area.

Comparative Analysis: Sunbury Road

Sunbury Road. Feb. 19, 2024

Sunbury is a street that is directly adjacent to Agler road and the 43211 zip code. Despite this adjacency, there is a stark difference between the makeup of Sunbury and the makeup of the general Linden area. Sunbury is a long stretch of road, however, this project highlights where it intersects with Agler Road to its connection to Morse Road. Similarly to the Linden area, Sunbury also has no sidewalks. Nevertheless, with the myriad of houses that had ample amount of yard space, and various vehicles for transportation, it can be inferred that a need for sidewalks became obsolete, which is not necessarily the case for Linden. My time at this site was especially different than the ones I encountered within the 43211 zip code. Most of my interactions and observations took place in a moving car, as I snapped pictures from the passenger side of the

vehicle. I imagine that this discourages people that do not reside in the area, from taking advantage of the scenic route and other amenities it might offer.

Sudbury Road. Feb. 19, 2024

Despite both areas' commonality of not having sidewalks to promote pedestrian friendly environments, and physical activity, Sunbury is home to many beautiful trails, with flowing water and luscious greenspaces. Residents have the option/ opportunity to take advantage of these amenities whereas Linden residents do not. With this display of open space, this encounter prompted me to think about the Covid-19 pandemic and how residents in both areas may have been impacted differently, despite how close the areas are to each other. As mentioned previously, the houses within the Linden area are smaller, quite congested, and have little to no real yard spaces. “Congested housing, high proportion of residents in essential work, and clusters of residents with pre-existing condition are health-compromising in the era of COVID-19

pandemic" (Li and Yuan 2021). Additionally "disadvantaged populations, especially communities of color, are facing housing issues varying from poor conditions, instability, and even eviction/loss. Those facing these issues have difficulty practicing physical distancing and self-isolation difficult, which therefore exposes them to the risks of infections" (Li and Yuan 2021). Sunbury on the other hand is quite the opposite. With that being said, I imagine that social distancing was more feasible for Sunbury residents in comparison to Liden's residents.

Morse Road. Feb 19, 2024

Sunbury is also connected to Morse Road. Morse road is a main road in Columbus that is booming with businesses, establishments, and more generally, people. It is plentiful when it comes to having establishments and resources for everyday living such as grocery stores, medical facilities and fitness establishments. Sunbury residents have easy access to this area,

mainly due to its proximity and spatial convenience. Unlike the grocery stores (or lack thereof) in the Linden area, there are multiple grocery stores on Morse Road, ranging from Walmart, to Whole Foods and others in between. Not only do the residents of Sunbury and nearby areas have the resources, they have the opportunity of choice. It may be argued that residents of Linden have the option of doing most of their shopping and daily activities in the Morse Road area, however this is not feasible for everyone. Unless they have reliable transportation, many residents are tasked with either walking, or taking the COTA bus. Walking far distances is not very ideal, especially for residents who do not have the time, bandwidth, or ability to walk for such long distances. Additionally, with the area being quite the journey, residents without personal transportation interested in shopping at the Walmart will have to trek their supplies from the store, onto the bus, then later to their home. This process can be tedious, and therefore discouraging to people in need of a closer grocery shopping experience.

Community Action

While it is important to highlight the physical reflectors of health disparities that have both historically and contemporarily impacted the residents of the Linden community, it is equally as important to lift up the resilience of the community as well. Researchers at times tend to have the habit of purely focusing on the negative within communities that are faced with heightened difficulties at the hands of racialized political and social systems which is expected considering that the funding and aid that does go into the communities are typically dependent on the notion that they are significantly in need. For Whitley and Prince's (2005) argument, "many population-based interventions such as urban-regeneration programmes rely on an anti-urban discourse, implicitly assuming a pathological inner-city urban context in need of

remedy" (Whitley and Prince 2005). This constant portrayal has the consequence of spilling over into the lives and lived realities of these residents. For example, with constant portrayals of Linden as this designated realm of negativity, from endless crime reports, to data representing the area as deprived, residents can potentially internalize these ideas and turn to them as examples of what they should represent themselves as, and this maintains the status quo. "Social labelling and symbolic effects are two of the main negative environmental influences on collective mental health. Stereotyping and stigmatisation of neighbourhoods can be internalised by residents, which lowers mood and adjusts behaviour patterns" (Whitley and Prince 2005). Therefore, it is important for 1) people in authority to check their positions of power, and how despite their efforts to do the right thing, they might be producing harm inadvertently, and 2) more emphasis on residents' own accounts of their condition, and collaboration working from the ground up.

Food Not Bombs. Cleveland Avenue. March 30, 2024

I had the opportunity of coming across a grassroots organization, dedicated to aiding Linden residents against the current food insecurity being felt.

> Food Not Bombs is an all-volunteer organization dedicated to nonviolent social change. Food Not Bombs has no formal leaders and strives to include everyone in its decision making process. Each group recovers food that would otherwise be thrown out and makes fresh hot vegan and vegetarian meals that are served in outside in public spaces to anyone without restriction. Many Food Not Bombs groups also share groceries and organize other efforts to support their communities (Food Not Bombs).

Outside, on Cleveland Avenue stood seven individuals lined against white folded tables occupied by potatoes, peppers, and PB&J sandwiches. I was greeted by one of the volunteers who gave me a very in depth overview of the organization as they helped one resident to a helping of PB&J

sandwiches. They explained that they are a strictly volunteer based organization that has, since 2017, met every Saturday from noon to approximately 1:00PM to give out fresh produce, snacks, and meals, to Linden residents. They emphasized their awareness surrounding the current food insecurity in the area. “People have to walk about an hour and a half just to get to the Kroger on Morse Road,” said one of the volunteers. This prompted me to inquire about their knowledge regarding Saraga’s temporary closure, which many of them were unaware of, but seemingly unsurprised. They also stressed the importance of food networks. They receive the majority of their donation from farmers, unsold food from grocery stores, along with items personally brought by the volunteers themselves. Many of the volunteers themselves were from the Linden community and understand the severity of the conditions their community is currently facing. While this work is important and currently being executed by community members themselves, they are faced with a lot of challenges. Because they are not recognized as a C3 organization, they struggle with funding which impacts their ability to keep things like fruits and vegetables fresh, and keep other foods at a safe temperature. Yet despite this, volunteers are still determined to support their community, and fight against hunger and food insecurity while providing a healthy alternative to the fast food restaurants, and perishable items that the residents of Linden have been confined to.

Reflection

It is established that Black women within the Linden community of Columbus, Ohio are disproportionately affected by conditions such as diabetes, hypertension, obesity, cardiovascular disease and chronic obstructive pulmonary disease. The myriad of convenient stores and fast food restaurants have influenced such diseases like diabetes, obesity and cardiovascular disease.

Additionally, it was evident that the included convenient stores heavily advertised the use of tobacco and smoking products, further proving the link to higher risks of obstructive pulmonary disease in Linden residents. The geographic layout of the Linden area was also a major area of concern, where a lack of sidewalks and access to green spaces made it evident why some women within the community might struggle with obesity and a lack of exercise. This was placed in comparison to an area close in proximity located between Agler Road and Morse– Sunbury Road. Sunbury, despite its proximity to Linden, has more greenspaces, no convenient stores, and better/closer access to multiple grocery stores. This showcases the visible inequities between the two areas, and the long term effects of events such as redlining, neighborhood disinvestments, and structural inequalities.

Conclusion

Statistical methods, metrics and numerical ways of knowing are important in the sense that they grant people ways of identifying and tracking disparities, vulnerabilities and possible interventions. With this framework in mind, this research proposes the coupling of these metrics and data with accounts of lived experiences, visual aids, and capturing the essence of the community to reiterate the humanity of the individuals impacted by structural violence, and government abandonment. This was executed by using visual aids, descriptive analysis, and identifying connections between physical establishments and data highlighting health disparities, and disease rates. This approach aligns itself as a form of feminist research, as it prioritizes marginalized stories, social justice and intersectionality. These factors allow for better representations and understandings of vulnerable populations, and seeks to unveil the realities that are oftentime erased, overlooked and hidden.

While this research was of personal interest to me, and was able to convey the preliminary visions I had in the beginning, some limitations were nevertheless present during the research process. These limitations included: time constraints, ethical considerations, and feelings of being an outsider within the community. Time constraints were mainly due to only having an academic year to conduct this study, therefore keeping a thorough timeline was important, and difficult to keep up with at times, especially when it came to having additional commitments as a student. Nevertheless, I was able to work around this, and continue with the timeline to the best of my ability. As for ethical considerations, I had to be very careful when it came to the inclusion of human subjects. I had some concerns regarding anonymity, especially with the use of images which is a major identifying factor. However, I was able to work around this by limiting the amount of people present in the images, and removing/ blocking out identifying features. In terms of feeling like an outsider, this was somewhat daunting during my initial interactions with the spaces as a researcher. At times, I felt out of place operating a camera, or taking notes in the open, and consequently received the occasional stare stemming from what I assumed to be curiosity. I eventually came to the conclusion that operating through this outsider lens was an added benefit because it allowed me a heightened awareness of where I was, who I am, and the type of story I was trying to tell.

To conclude, the findings in this research includes: (1) the growing food insecurity being faced by the Linden community; (2) the lack of sidewalks and greenspaces that impact physical health and activity; (3) the over promotion of smoking and tobacco use; (4) the differences between Linden, and Sunbury's access to quality food and greenspaces, and (5) community based incentives from residents that speak to their resilience and organizing skills. Considering my efforts of bringing to the forefront lived realities, and the findings that emerged from that, for

future research, I propose that there must be a prioritization of these methods to be in conversation with the theories and data, to have a comprehensive, compassionate and holistic approach when it comes to research involving vulnerable demographics.

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