Gentrification, Health, and the Perceived Social Cohesion of Older Adults

A Dissertation

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As I end my formal schooling with this dissertation

I will finish with this poetic statement

I want to say, I intend to continue to learn and give, as others have given to me

The privilege I have, what is it to gain knowledge and not share it intentionally

This quest is not novel; it is learned behavior

Without the subsequent support, I wouldn't be here confidently with such fervor

To my family, who are there for me endlessly

To my friends, who allow me into their lives with such empathy

To my advisors and committee, who challenged me

And to all of those in between,

Without the support, where would I be?

And, finally, last but not least, to the person I was, to the person I am, and to the person I will be

Thank you to us for always supporting me.

And as I close, I would like to emphasize that's the point

Where would I be without support?

Without it, where would any of us be? You? Me?

So, if you take anything away from this, it's to make sure you involve community.

ABSTRACT

The changes brought by gentrification disproportionately affect older adults. Gentrification is the process by which higher-income residents move into and alter a neighborhood's characteristics through financial (but not necessarily social or community-engaged) investment. The process may adversely affect their health and well-being, as well as that of other residents in the neighborhood, through cumulative stress and potential declines in social cohesion. To address this gap, the present study used national survey and U.S. Census data to examine the interrelationships among gentrification, social cohesion, and health outcomes among older adults. The study was organized into three components. First (Aim 1), I conducted a narrative review to explore the existing literature on the relationship between gentrification and various outcomes for older adults. Second (Aim 2), I used data from the National Health and Aging Trends Study (NHATS) and the American Community Survey (ACS) for 2011 through 2022/23 to examine the association between gentrification and self-reported health among older adults, employing generalized linear models (GLMs) and a difference-in-difference model. Third (Aim 3), I examined the relationship between gentrification and social cohesion for older adults, employing the same data and modeling approach used in Aim 2. I discuss the implications of these findings for health and social policy, health equity, and future research.

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Chapter 1. Introduction

1.1 Introduction

This dissertation must commence with an examination of race. The term "race" was coined by humans to categorize and structure individuals into distinct social groupings based on attributes such as skin pigmentation, physical characteristics, and genetic lineage (Hirschman, 2004; Müller-Wille, 2014). While not a biological concept, race is a social construct that gives or denies societal privileges (Braveman & Parker Dominguez, 2021; Hirschman, 2004; Müller-Wille, 2014). The concept of race was initially developed early in American civilization to explain its new economic system of capitalism, which was built on the practice of forced labor, particularly the enslavement of African individuals (Hirschman, 2004; Müller-Wille, 2014). The concept of "race" as we know it emerged around the same time as the United States (U.S.) and was intimately tied to the concepts of "white" and "slave" (Braveman & Parker Dominguez, 2021; Hirschman, 2004; Mukhija et al., 2010; Müller-Wille, 2014). The terms "race," "white," and "slave" were initially employed by Europeans in the 16th and 17th centuries and brought to North America (Braveman & Parker Dominguez, 2021). However, the meanings of the words differed from those they have today. Instead, the needs of the emerging American culture transformed these phrases into something new.

The pseudoscience of eugenics, which first emerged in the mid-19th century, fueled and legitimized cultural views that portrayed White individuals as biologically superior and oppressed other ethnicities as skin tones darkened (Hirschman, 2004). According to Merriam-Webster, eugenics refers to the practice or promotion of regulated selective breeding of human populations (such as sterilization) to improve the population's genetic composition. Furthermore, in the early twentieth century, the term "white" was expanded from just those who have English descent to encompass a broader range of people, including Italian and Eastern European immigrants to America (Smithsonian, n.d.). At the same time, all other racial and ethnic minorities were barred

from the “white world” unless they were to assimilate (Smithsonian, n.d.). Even with assimilation, racism persisted.

New forms of prejudice emerged after the Civil War. The structural racism that shapes the landscape of the U.S. appears in the unequal distribution of inequities in homeownership and residential segregation. Policymakers and institutions enforce this through targeted housing policies and practices, combined with financial disparities, which heavily impact the Black community. Segregated housing patterns result from ongoing structural racism, as rental industry professionals, housing owners and managers, and real estate salespeople actively contribute to the process (Feagin, 1999).

As time has passed, racism has embedded its effects in society. One consequence is the distribution of wealth in the U.S. In 2021, the wealthiest 25% of US households accounted for 82% of all wealth (Pew Research Center, 2023). The wealth gap is substantial between races, and the inequitable distribution is especially pronounced among the Black population (Pew Research Center, 2023). The average White family has almost six times the wealth of the average Black family (Aladangady et al., 2023). The Pew Research Center (2023) stated that approximately 1 in 4 Black Americans either has no wealth or is in debt (owing more than the combined value of their assets), and this financial strain likely contributes to increased psychological suffering (Ryu & Fan, 2023). Adults in the U.S. who were unmarried, unemployed, in lower-income households, or renters showed a more vital link between economic concerns and psychological anguish than their peers (Ryu & Fan, 2023).

Other practices began to emerge to prevent Black Americans from obtaining homes, further perpetuating the discrimination. One of those methods is redlining. This method dates back to the 1930s and is characterized by the systematic denial of services to residents of particular neighborhoods, often based on race or ethnicity, predominantly in urban areas (Egede et al., 2023). This was driven by the federal government's creation of the Home Owners' Loan

Corporation (HOLC) to assist potential homeowners who were in default on their mortgages (Lathan, 2023). HOLC created maps to assess the risks of lending to the residents (Lathan, 2023; Mehdipanah et al., 2023). Neighborhoods were categorized into one of four grades and associated colors: A (green) for "best," B (blue) for "still desirable," C (yellow) for "definitely declining," and D (red) for "hazardous (Mehdipanah et al., 2023). Regions with a higher percentage of non-White racialized populations which were also communities with predominantly non-Hispanic Blacks, were designated as “hazardous” for investment (Lathan, 2023; Mehdipanah et al., 2023). This practice was discriminatory, pervasive, and it has obstructed non-White residents from securing mortgages.

There were various organizations, including landlords, homeowners, bankers, real estate salespeople, and government officials, that perpetuated the housing discrimination that Black residents have faced throughout the years. That is why the United States Department of Housing and Urban Development (HUD) had to implement formal rules to protect Black American residents and stated:

> It is illegal to discriminate in the sale or rental of housing, including against individuals seeking a mortgage or housing assistance, or in other housing-related activities. The Fair Housing Act prohibits this discrimination because of race, color, national origin, religion, sex (including gender identity and sexual orientation), familial status, and disability (Department of Justice, 2015).

Racial barriers in housing are ubiquitous in diverse communities (Feagin, 1999). At a broad level, lawmakers can address the legality of discrimination, but barriers will continue to evolve. The concept of gentrification is often operated in a legally ambiguous space.

Gentrification is a modern concept and strategy that disenfranchises and further marginalizes communities.

1.2 Issue

In the 1960s, Ruth Glass coined the term gentrification, defined as the process by which middle- and upper-income residents relocate to low-income urban districts, acquire and refurbish buildings, and substantially alter the area's social and economic landscape (Lees et al., 2013, p. 4). In the following years, Marcuse (1985) introduced a new definition that included race:

> Gentrification occurs when new residents who disproportionately are young, white, professional, technical, and managerial workers with higher education and income levels replace older residents who disproportionately are low-income, working-class and poor, minority and ethnic group members, and elderly from older and previously deteriorated inner-city housing in a spatially concentrated manner, that is, to a degree differing substantially from the general level of change in the community or region as a whole.

Over the years, there have been multiple definitions of gentrification (Bhavsar et al., 2020). The most common definition of gentrification is "the process by which low-income neighborhoods see increased investment and an influx of new residents from higher-income regions" (Hwang & Lin, 2016). While we most often observe gentrification as an urban phenomenon, it also occurs in rural areas (Phillips, 1993).

Scholars who seek to define gentrification (as there is no standard definition) often cite numerous sources to support their definition (Bhavsar et al., 2020). The absence of standardization leads to discrepancies in the definition of gentrification, complicating the assessment of its effects on residents as either beneficial or detrimental. The potential long-term

adverse effects on overall well-being are linked to limited housing options, often located in disadvantaged communities characterized by higher crime rates, reduced access to nutritious food, and limited educational and employment opportunities (Mehdipanah et al., 2018). Several factors drive gentrification, including retail, green space, climate, tourism, studentification, and healthcare (Cole et al., 2021). The mechanism by which gentrification affects a neighborhood is driven by changes in the social and physical environments of socioeconomically and racially divided areas, which increase the risk of gentrification and its implications for health equity (Cole et al., 2021; Mehdipanah et al., 2018).

A study conducted from 2013 to 2017 reported that nearly 10% of neighborhoods evaluated in the U.S. showed signs of gentrification (Richardson et al., 2020). More specifically, since 2000, approximately 20% of low-income, low-housing-value communities have experienced gentrification, up from 9% in the 1990s (Maciag, 2015). The pace of neighborhood transformation is accelerating. These dynamic changes indicate that increases in median home values, the proportion of residents with a college degree, and median household income are key indicators of gentrification (Richardson et al., 2020).

Older adults may be more vulnerable to the effects of gentrification, primarily because of their strong preference to age in place, which involves remaining in their current residence or community as they age (Van Vleet & de Medeiros, 2025). The process of gentrification is often associated with the disruption of the preference of aging in place by driving changes such as rising housing costs and neighborhood displacement, which exacerbate the challenges they face in maintaining stable living conditions (Crewe, 2017). Research indicates that nearly 90% of adults express a strong desire to age in place, preferring to remain in a familiar home or a similar environment that supports their independence and well-being as they age (Ratnayake et al., 2022). This preference persists even when individuals experience physical or cognitive impairments that may make independent living more difficult, underscoring the importance of stable and accessible

housing options in later life (AARP, 2011). Consequently, gentrification poses a significant threat to older adults' ability to secure their preferred living arrangements, thereby increasing their social and economic vulnerability. Many older adults will likely need to rely on other resources to remain aging in place, including home- and community-based services and age-friendly neighborhoods (Ratnayake et al., 2022).

A rapidly changing environment poses a threat to aging in place. Dahlberg (2020) argues that environmental changes can disrupt community cohesion, weaken social integration, and erode trust. Such changes may also lead to a diminished sense of political empowerment, erosion of neighborhood identity, and reduced representation within local government. Additionally, these shifts can undermine residents' sense of safety, contribute to actual or perceived increases in crime, and intensify intergenerational divides. Significant alterations to the physical landscape, including barriers within the built environment and challenges related to public transportation, further compound these impacts (Dahlberg, 2020).

In this introduction, I will provide a theoretical foundation for the dissertation's underlying issue through the lenses of sociological frameworks and economic theories. In the sociological section, I will examine the buffering hypothesis and apply the conflict theory to understand the social relationships of the gentrification process. The following section will examine economic fairness or efficiency, market failure, and payment in relation to the gentrification process. Predominantly Black neighborhoods have often been linked to adverse health outcomes, mainly as a consequence of structural segregation, which limits access to healthcare, concentrates poverty, and undermines community resources (Anderson et al., 2004; LaVeist & Wallace, 2000; Morrison et al., 2000). However, these same racially homogeneous communities can also generate meaningful social benefits, including cultural cohesion, shared identity, and strong social support networks that may enhance resilience and buffer against external stressors (Anderson et al., 2004; Turner et al., 2022). Despite inconsistent measures and

definitions of gentrification, the distribution of health inequality tends to be similar. Hwang and Ding have shown that the negative consequences of gentrification are felt disproportionately by minority groups, whose members have fewer options for places to migrate to than their white counterparts (Hwang & Ding, 2020a). More specifically, studies have found that gentrification leads to poorer health outcomes for the Black population (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). This duality highlights the complexity of the relationship between neighborhood racial composition and health. As Anderson et al. (2004) note, the overall effects remain uncertain, and simplistic labels of "good" or "bad" fail to capture the nuanced interplay between disadvantage and community strength. More comprehensive research is needed to clarify under what conditions racial homogeneity contributes to either health risks or protective group dynamics. Given the existence of health disparities and the fact that gentrification disproportionately impacts minoritized populations, specifically the Black population, interventions and policies focused on mitigating the negative impacts of gentrification should be targeted at the neighborhood level.

1.3 Sociological Frameworks

Buffering Hypothesis

Research indicates that, as a result of gentrification, many individuals cannot afford the rising rental rates and property taxes, which drives them to leave the area they have called home for many years (Ding & Hwang, 2020; Marcuse, 1985). People often underestimate the extent of displacement, and the upheaval and influx of new residents disrupt the neighborhood's once-strong cohesion (Newman & Wyly, 2006). It is important to acknowledge, however, that such cohesion does not characterize all neighborhoods. The neighbors that older residents once relied on may have relocated. The family member who once provided care is no longer a few houses down the road, and the institutions that provided support may no longer be there. Social support

can indirectly impact health by enhancing mental well-being, reducing stress, or fostering a sense of meaning and purpose in life (Umberson & Montez, 2010).

Moreover, when analyzing gentrification from a sociological perspective, a primary issue is its effects on the community's population, both individually and collectively. The buffering hypothesis suggests that the perceived availability of social support mitigates the negative correlation between perceived stress and negative outcomes (Bowen et al., 2014; Gellert et al., 2018). People can benefit from social support, both directly and indirectly, by shielding them from risk factors that otherwise harm their health (Reblin & Uchino, 2008). The impact of gentrification directly relates to social support. It exemplifies how the interaction of human relations and institutions influences people's health. The CDC defines social support as "a strategy that provides supportive social networks, friendships, and actions to help people start, maintain, or increase physical activity. Social supports include buddy systems and walking or other activity groups" (CDC, 2023). Additionally, it refers to the emotional sustaining of relationship qualities (Umberson & Montez, 2010).

Empirical evidence demonstrates that insufficient social support can result in social isolation and loneliness, as well as increased susceptibility to various physical and mental ailments, including hypertension, cardiovascular disease, obesity, compromised immune function, anxiety, depression, cognitive deterioration, and Alzheimer's disease (NIA, 2019). Gentrification can diminish social support and quality of life through forced displacement, social breakdown, and heightened social vulnerability (Mehdipanah et al., 2018). Policies are essential to safeguard long-term residents from the upheaval of gentrification, which can lead to diminished social support and negative health consequences.

Social support is closely related to social cohesion. Social cohesiveness is a social determinant of health that significantly impacts one's life and health outcomes (Miller et al., 2020). Social cohesion is defined as residents' unity and solidarity and generates many benefits

for members, including increased social participation and positive well-being (Berkman & Kawachi, 2000; Keith, 1977; Shippee, 2005; Streib & Metsch, 2002). This disruption has the potential to fracture the neighborhood that many people had previously loved and respected, turning it into something unrecognizable. Social cohesion may be harmed by gentrification. As new residents integrate with long-standing residents, interpersonal relationship dynamics may shift, and social cohesion is significantly diminished (Crewe, 2017; Dahlberg, 2020).

If one perceives that their community lacks social cohesion, it can have disadvantages, including a significant impact on one's health (Cacioppo & Cacioppo, 2014). For example, a lack of social cohesion can lead to social isolation, which is particularly concerning for older adults (Crewe, 2017). Social isolation can be connected to an increased risk of older adult mistreatment and perceived social estrangement from the community (Crewe, 2017). Those affected by the lack of social cohesion can have shorter life expectancies, higher cancer rates, and a higher incidence of asthma, diabetes, and cardiovascular disease (Donovan & Blazer, 2020). Because of the adverse effects of social cohesion, vulnerable populations are specifically at risk (e.g., the older Black population).

Conflict Theory

Conflict theory focuses on the competition among societal groups for scarce resources, positing that social and economic institutions serve as instruments in the struggle of groups or classes to perpetuate inequality and the dominance of the ruling class (Simon, 2016). The theory forces us to acknowledge that every aspect of social organization can be conceived as "winners" and "losers," and social conflict frequently has terrible and tragic repercussions for the losers (Simon, 2016). In gentrification, the beneficiaries are the new residents, while the detriment falls upon the long-standing residents. In instances of gentrification, the divide has consistently been characterized by monetary factors, class distinctions, and consumption patterns that create

opportunities for gentrification. At the same time, the racial hierarchy has politicized the phenomenon (Boyd, 2008). The racial hierarchy in America is a social structure that ranks racial groups, with White individuals historically occupying the highest position and other racial and ethnic minorities positioned lower (Danico, 2024). Prior research shows that neighborhoods sought after and undergoing gentrification often include many Black and older adult residents (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). By targeting these neighborhoods and reinforcing the established racial hierarchy, the conflict between class and race becomes a potential driver of gentrification, which can both produce and perpetuate health disparities.

Since the early conceptualization of gentrification, the most prominent theoretical framing of its effects in the literature has been the Marxist approach. The Marxist approach situates gentrification within financial institutions' investments in existing built environments (Rose, 1984). Marxist researchers frequently examine economic structures, class dynamics, and the role of capital in causing gentrification; they may cite historical and economic evidence to support their claims (Rose, 1984; Zukin, 1987). In contrast, scholars also examine gentrification from a cultural studies perspective (Lees, 1994). This approach examines the cultural dimensions of gentrification, highlighting changes in lifestyle, aesthetics, and cultural consumption (Lees, 1994; Zukin, 1987). As time progressed, sociologists criticized the fiscal objective approach, which lacks nuance within the social framework, focuses on economic values, and lacks extensive class analysis (Holgersen, 2020; Rose, 1984). Additionally, drawing on the Marxist approach to gentrification (Wesson, 1969) and applying more relevant socioeconomic critiques (Holgersen, 2020; Rose, 1984), sociologists recognized the value of viewing gentrification through both the critical lens of the Marxist approach and a cultural perspective (Lees, 1994).

Having a cultural perspective is imperative given the associated health inequalities and drivers of gentrification. According to Hwang and Sampson's (2014) study on gentrified neighborhoods in Chicago, IL, middle-class white residents and investors seem to consider

racially mixed communities, especially those with over 40% Black residents, the most desirable when seeking homes and neighborhoods to purchase/invest in. However, the Black population represents only approximately 14.4% of the U.S. population (Martinez & Passel, 2025). White residents and investors target neighborhoods that do not reflect the national demographic composition, leading to disproportionate representation and potentially adversely affecting Black residents in gentrified areas. Numerous older adults perceive urban transformation as harmful to their quality of life and the social networks to which they are connected (Hwang & Sampson, 2014a).

Discussion

Systemic racism can undermine the rights of minoritized communities through various institutions, laws, and behaviors. Although presented as a revitalization strategy, gentrification can have adverse effects on the most disadvantaged and minoritized populations. The concept of revitalizing and transforming a less desirable area of a city into a more attractive neighborhood may seem appealing at first glance; however, this perception may be misleading. Further research is essential to develop policies and interventions to prevent disruptions in the lives of many residents. Inconsistencies in the definitions and measurements of gentrification complicate the understanding of its repercussions, whether beneficial or detrimental to residents. Moving forward, to build a more comprehensive and critical understanding, urban sociologists should more explicitly identify the broad geographic, demographic, and political breadth of the dynamic process of gentrification (Billingham, 2015; Valle, 2021). These nuances contribute to research on gentrification, enabling a more comprehensive understanding of the process.

1.4 Economic Theories

Wyly and Hammel (2004) state that the gentrification process has increasingly been integrated into public policy, either as a justification for adhering to market forces or as a mechanism to manipulate them to reshape the urban environment. In this context, gentrification may be perceived as beneficial due to the influx of higher-income residents and new businesses. Many of the renewal projects framed as urban "regeneration" in gentrified neighborhoods fail to meet their optimistic goals and often worsen housing affordability in a deregulated neoliberal context (Wyly & Hammel, 2004). Even well-intentioned gentrifiers intensify market pressures, reinforcing urban policies that avoid tackling deeper structural inequalities (Wyly & Hammel, 2004). Furthermore, with the new influx of residents, the gentrification process displaces long-term residents politically, reducing their impact on local governance and decision-making (Martin, 2007; Tighe et al., 2015). Research suggests that the political and economic reshaping of neighborhoods associated with gentrification can perpetuate disparities by misrepresenting or disenfranchising long-term community members (Beck, 2024; Casellas & McBrayer, 2019; Martin, 2007).

Fairness or Efficiency

Both fairness and efficiency are goals of economists for society. Economic fairness occurs when individuals derive equal utility from their outcomes and are compensated in proportion to their effort rather than to uncontrollable factors (Konow, 1996; Trump, 2020). Economic efficiency occurs when all items and factors of production in an economy are allocated to their optimal uses, while waste is minimized or eliminated (Palmer & Torgerson, 1999). Given the magnitude of disparities that occur during gentrification, both fairness and efficiency are threatened. Couture and Handbury (2023) reported that higher salaries among young college graduates and their decreased proclivity to marry and have children early in life contributed to downtown gentrification. When higher-income residents move into an area, the local facilities

adapt to accommodate their preferences and financial needs. Improving schools and local services makes those neighborhoods more appealing to higher-income residents, accelerating neighborhood change (Couture & Handbury, 2023).

Research indicates that the influx of new, higher-income residents shifts neighborhood housing prices and, in turn, the previous residents in gentrified neighborhoods and surrounding areas spend a higher proportion of their income on rent or property taxes (Couture & Handbury, 2023; Wilhelmsson et al., 2021). Due to gentrification, the purchasing power of affluent households reshapes neighborhood amenities; however, housing supply restrictions exacerbate housing and commercial real estate costs (Couture & Handbury, 2023). The financial shifts have a disproportionate effect on Black older adults. Black residents have a lower average median income than other racial and ethnic groups (Administration for Community Living, 2020; Brooks, 2021). In 2024, over 40% of Black older adults' income fell below 200% of the federal poverty level (US Census Bureau, 2025). Therefore, rising housing prices can displace them from their neighborhood. The financial spillover effects, often exacerbated by gentrification, can lead to housing insecurity. The stress of housing insecurity, combined with the dynamic shift in the neighborhood population, may contribute to additional stress (Alroy et al., 2023), which, in turn, may lead to adverse health outcomes for community members.

Market Failure and Payment

During gentrification, two market failures may occur: a scarcity of homes and negative externalities. Research has consistently demonstrated that rigorous zoning and land use laws result in diminished housing production, thus contributing to increased home prices and racial and economic isolation, further perpetuating the gentrification process (Glaeser & Ward, 2009; Lens & Monkkonen, 2016; Quigley & Rosenthal, 2005; Reid et al., 2025). The gentrification process can create negative externalities that further perpetuate their financial vulnerability. Negative

externalities are defined as an individual's consumption diminishing the well-being of those the individual does not compensate for (Nagler, 2011). Negative externalities are spillover effects that occur when new residents move into the neighborhood, affecting the lives of long-standing residents. The most notable and common negative externalities of gentrification that drive disparities are increases in rents, housing prices, and property taxes (Chong, 2017; Glaeser et al., 2020).

These negative externalities directly affect long-term residents (Chong, 2017; Glaeser et al., 2020), particularly Black older adult residents, who are disproportionately affected by this process (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). Approximately 1 in 3 older adults are economically insecure, with incomes 200% below the poverty line (National Council on Aging, 2022). A substantial proportion of older adults living alone have annual incomes below the Elder Index: 43% of White individuals, 59% of Asian individuals, 61% of Black individuals, and 67% of Latino individuals (Mutchler et al., 2023). Moreover, according to the U.S. Bureau of Labor Statistics (BLS) (2025), the median weekly earnings for workers aged 65 and older were $1,198 in mid-2025. Consequently, approximately half of an individual's earnings are allocated for rental expenses. These numbers assume an individual earns at or above the median income, yet approximately 40% of Black older adults are not at or above that level (US Census Bureau, 2025). More specifically, property prices have increased by approximately 30% in recent years (Arnold, 2022). Additionally, rent prices are also growing. The median asking rent is roughly $2,000 per month nationwide (Arnold, 2022). Over time, affordable housing is becoming increasingly difficult to secure.

While older couples face a lower risk of economic insecurity compared to those living alone, minority individuals remain disproportionately affected. Resembling the oscillation of a pendulum, gentrification and housing insecurity are intricately intertwined. Gentrification forces long-term residents to restructure their finances to meet new housing costs. When those residents

cannot meet the financial criteria, they can experience housing insecurity, which reinforces and reproduces contemporary economic inequality (Kim et al., 2017).

Discussion

Market failures, the scarcity of homes, and the negative externalities associated with gentrification may lead to financial and housing insecurity for residents (Alroy et al., 2023) and to their displacement (Chong, 2017; Glaeser et al., 2020). The rising incomes of new residents and the introduction of new amenities in the neighborhood significantly affect demand, which, in turn, drives up housing prices (Ryan, 2016). The economic factors at play further highlight and perpetuate the financial vulnerability of older adults, with some of the most vulnerable being Black and Latino. Superficially, gentrification appears appealing, but throughout the process it may also exacerbate health disparities and inequalities, as described earlier. Subjectively, some people, such as incoming residents, may believe that an "unbecoming" neighborhood needs to be revitalized and transformed into a more attractive location. The "revitalization" process may thus primarily benefit newcomers rather than long-term residents. The interruption and disruption to the neighborhood can significantly impact residents' lives.

1.5 Conclusion

Housing discriminatory practices can be perpetuated and upheld by various groups, including landlords, homeowners, lenders, real estate agents, and government authorities. This is accomplished through the historical actions of structural racism in the U.S. It is possible that gentrification perpetuates the legacy of housing discrimination and is a process of structural racism. The gentrification process has already occurred in many communities (~10%) throughout the U.S. (Richard et al., 2020) and disproportionately affects Black older adult residents (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). The market failures of the scarcity of homes

and negative externalities may maintain the system in place, exacerbating the issues of gentrification. There are specific negative externalities associated with gentrification. It is theorized that social cohesion within the neighborhood serves as a buffer, mitigating conflicts that might arise from the influx of new residents. If this hypothesis is established, community members and stakeholders must ensure that their voices are heard when proposing policy measures to discourage more disruption (such as inclusionary zoning) to establish equity by addressing many of the community's establishments that support cohesion and create an age-friendly neighborhood. Community institutions play a vital role in promoting social cohesion and neighborhood identity, and they must be adequately protected to continue operating. Establishments can help keep the community together and keep Black older adults engaged. Preserving long-standing establishments provides familiarity, even if they have lost some social cohesion in their neighborhood (Kim & Park, 2018; Zahnow, 2024). Place familiarity is crucial for the well-being of community members, especially older adults (Fung, 2020), and enables successful aging in place.

A conclusion may be drawn that if more neighborhoods had a homogenous population that would remedy the issue of gentrification, because racially minoritized populations could not be targeted. The group is being disproportionately affected by this process, but it is more complex than that. The historical and systemic racism led to the unequal treatment and wealth distribution that, at one point, forced Black residents to live in racially homogenous neighborhoods. The evolution and perpetuation of discriminatory housing practices deteriorated the community's health, thus making homogeneity moot (Anderson et al., 2004; LaVeist & Wallace, 2000; Morrison et al., 2000). Conversely, a culture of resilience in the Black community can serve as a protective factor, seemingly making homogeneity beneficial (Turner et al., 2022). There is much uncertainty regarding the relationship between the racial composition of a neighborhood and its effects, specifically concerning health (Anderson et al., 2004), While more homogeneous Black

communities may pose health problems due to segregation (Anderson et al., 2004; LaVeist & Wallace, 2000; Morrison et al., 2000) they may also generate valuable group resources as a result of shared cultural experiences (Anderson et al., 2004; Turner et al., 2022). More research is needed on which solution is "good" or "bad."

While several studies have investigated the health effects of gentrification (Gibbons et al., 2018; Gibbons & Barton, 2016; Lim et al., 2017; Smith et al., 2018; Tran et al., 2020; Versey, 2023), few have focused specifically on the health impacts of gentrification and/or social cohesion among underrepresented older adults at the national level (A. Schnake-Mahl et al., 2020). This dissertation seeks to address that gap by providing early insights that can inform more effective interventions, services, and policy or community planning. To achieve this, the study uses data from the National Health and Aging Trends Study (NHATS) merged with the U.S. Census Bureau's American Community Survey (ACS) to conduct a cross-sectional analysis of the relationships among gentrification, health, and perceived social cohesion among older adults. Aim 1 involves a narrative review that synthesizes the current literature on gentrification and its effects on various outcomes for older adults. Aim 2 uses NHATS and ACS data to examine the association between gentrification and self-reported health among this demographic, employing generalized linear models (GLMs) and a difference-in-differences approach. Aim 3 examines the correlation between social cohesion and self-reported health among older individuals, using the same data sources and modeling techniques as in Aim 2.

Chapter 2. Gentrification and Aging: A Narrative Review

2.1 Introduction

By 2030, approximately 1 in 6 people will be over 60 years old globally (World Health Organization, 2022). By the year 2050, the World Health Organization predicts the population of older adults will double to approximately 2.1 billion worldwide (World Health Organization, 2022). The increase in the older adult population has raised several key issues and concerns in combination with other critical sociodemographic trends in the U.S. (i.e., changes in family systems and dynamics) (Ratnayake et al., 2022). For example, older American adults are less likely to live with extended family or within one hour of family members who provide at least occasional care than in decades prior (Bookman & Kimbrel, 2011). Ratnayke et al. (2022) reported that 15.2 million older individuals do not have children, and 22% of adults are or will not have children available to provide unpaid care as these adults age. For these reasons, many older adults may need additional resources to help them successfully age in place. One definition of aging in place is "remaining in a community-based dwelling during one's late years in life" (Ratnayake et al., 2022). According to the American Association of Retired Persons (AARP), nearly 77% of adults who are 50 years and older wish to age in place, even when physical or cognitive impairment makes it more challenging to live independently (AARP, 2021).

A person's built and social environment can support successful aging in place. For example, familiarity with one's environment can facilitate the effective use of neighborhood resources and assist one in staying socially engaged due to the proximity of friends (Dye et al., 2010). It is important to note that "place" is not static, nor are the environments in which older adults attempt to achieve successful aging in place (Dahlberg, 2020). One possible threat to aging in place for older adults is a rapidly changing environment and neighborhood. For instance, gentrification may result in displacement and potentially threaten the social well-being of older adults, particularly those from minoritized backgrounds (Acolin et al., 2024). The implications

that come with the process of gentrification uniquely impact older adults and provide an important opportunity for social workers to intervene and assist in addressing the challenges associated with gentrification. Social workers can offer individuals, if not whole communities, a comprehensive plan to recognize, fight, and respond to gentrification while encouraging equitable neighborhood growth (Thurber et al., 2021). The changes can happen through the incorporation of social determinants of health. For instance, social workers assessing the health and well-being when practicing in community-based and healthcare settings can serve as a mechanism to remedy the impact of gentrification. That is why much more research needs to be done. Research can inform intervention strategies that interventionalists, like social workers, can use. To date, there have been limited efforts to review existing evidence summarizing the potential effects of gentrification on older adults. This review explores the gentrification process internationally, focusing on the U.S. and its possible impact on health, well-being, and successful aging in place, with a particular emphasis on the health effects of gentrification among older adults from minoritized backgrounds.

2.2 Background

The term ‘gentrification’ was initially coined in the 1960s by urban sociologist Ruth Glass to describe the process of middle- and upper-income groups purchasing and improving houses in disadvantaged neighborhoods in cities (Lees et al., 2013). Over the years, multiple definitions of gentrification have been offered (Bhavsar et al., 2020). The most common definition of gentrification is "the process by which low-income neighborhoods see increased investment and an influx of new residents from higher-income regions" (Hwang & Lin, 2016, p. 10). Though gentrification is commonly understood to occur in urban areas, the process is not bound to geographical location.

Nationally, 9,743 out of the 72,668 neighborhoods analyzed in a 2020 study were eligible for gentrification. Of these, 954 (~10%) showed signs of gentrification between 2013 and 2017 (Richardson et al., 2020). To be identified as a gentrified neighborhood, researchers analyzed socioeconomic data related to income, home value, and education level (Richardson et al., 2020). The operationalization, or measurement, of gentrification is diverse. Galster and colleagues (2003) found that the inclusion of race was necessary when measuring gentrification. Alternatively, Freeman (2005) was the first to measure gentrification using census tract data. This approach identified neighborhoods that are eligible for gentrification by measuring a change in z-score value, percent, or numerical change from a baseline period to follow-up for a variable of interest such as selected socioeconomic factors (e.g., median household income and educational attainment) (Bhavsar et al., 2020; Freeman, 2005). Presently, scholars are still enacting their own creative methodology to measure gentrification, for example, by utilizing Google Street View (Hwang & Sampson, 2014b).

The most commonly accepted approach to classifying given neighborhoods/communities as "gentrified" is utilizing the census tract methodology. This approach determined that there must be an increase in the neighborhood population, the median home value must be less than the 40th percentile, and the median household income must be less than the 40th percentile (Richardson et al., 2020). The gentrification process transforms "vacant or low-income inner-city areas into economic, recreational, and residential use by middle- and upper-income individuals" (Collins et al., 2019). Multiple and multi-level factors appear to result in a neighborhood's or community's gentrification, including retail, green, climate, increased tourism activity, increased student population from nearby higher education institutions, and expansion of healthcare facilities (Cole et al., 2021; Powell, 2016).

The changes brought by gentrification, often happening in socioeconomically and racially diverse communities, have led some to ascertain whether gentrification-related changes

disproportionately influence health outcomes among residents (Cole et al., 2021). The potential short-term health effects of gentrification are associated with stress related to the disruptions of one's daily activities and social networks, specifically for low-income residents (Mehdipanah et al., 2018). The long-term, potential adverse health effects of gentrification are associated with limited affordable housing choices, higher crime rates, less access to healthy foods, and minimal education and employment opportunities (Mehdipanah et al., 2018). Limited affordable housing choices and higher crime rates induce an increase in stress, which negatively impacts a person's health. Minimal education and employment opportunities affect one's finances, indirectly impacting health. Lastly, lack of access to affordable, healthy foods directly negatively impacts a person's health.

Minoritized groups of older adults may be at particular risk during and following their neighborhoods' gentrification (Crewe, 2017). A study conducted by Hwang and Ding (2020) determined that the adverse effects of gentrification are felt disproportionately by minority communities, whose residents have fewer options for neighborhoods than their White counterparts. This study provides a framework for evaluating residential displacement in the context of gentrification by drawing on sociological theory and research on neighborhood stratification and residential mobility in Philadelphia (Hwang & Ding, 2020b). The authors evaluated how gentrification influences whether and where disadvantaged residents migrate and identified that the effects of gentrification on the housing mobility patterns of financially disadvantaged adult residents differ across racial groups (Hwang & Ding, 2020b). In addition, Gibbons and Barton (2016) found that health outcomes related to gentrification vary based on race; specifically, gentrification leads to worse health outcomes for Black adult residents (Gibbons & Barton, 2016).

Middle-class White residents and investors seem to find racially mixed communities, especially those with over 40% Black population, as the most desirable when seeking homes and

neighborhoods to purchase/invest in (Hwang & Sampson, 2014b). However, the Black population represents only 14.7% of the U.S. population (Moslimani et al., 2023). White residents and investors seek out neighborhoods that are not proportionally representative of the national demographic makeup, thus resulting in Black communities experiencing disproportionate gentrification and potentially increasing the risk of adverse outcomes to Black residents and Black older residents of gentrified neighborhoods. Furthermore, Black residents who live in gentrifying neighborhoods are almost 75% more likely to report poor/fair self-reported health than residents of other racial backgrounds (Gibbons & Barton, 2016).

Gentrification presumes similar or more intense effects among older adults because of the increased stress and the risk of being displaced. Older adults are more vulnerable to stress than those younger (Jeon & Dunkle, 2009). Such increases in stress and vulnerability severely affect older adults (Mikneviciute et al., 2022). These health effects include cognitive decline (Mikneviciute et al., 2022). The effects of gentrification disproportionately affect minority populations and have negative health implications.

I conducted a narrative review of the literature as it relates to gentrification, aging, and health and explored recommendations to remedy the effects of gentrification that disproportionately influence minority populations, with a focus on Black older adults. The review is necessary to address the gaps in understanding the process of gentrification and its impact on the older adult population. The broad issue driving this review is as follows: Is there an association between gentrification, aging, and health outcomes? If so, what are the health implications for Black older adults?

2.3 Methods

Literature Search and Study Inclusion

The authors conducted a narrative review, which provides a general overview of the current state of research on a given topic from a theoretical and contextual perspective (Rother, 2007). The first author identified and considered published studies eligible for the review if they examined gentrification and aging or, more broadly, focused on gentrification and its relationship to health outcomes. To identify studies that met our inclusion criteria, the first author identified peer-reviewed literature through the searches of five electronic databases: OVID Medline, CINAHL Plus with Full Text, Academic Search Premiere, PsychInfo, and Scopus. The first author conducted searches by screening the title, abstract, and keyword terms 'gentrification' and 'aging.' In addition, the first author manually searched the reference listing of articles that fit the inclusion criteria and conducted open-ended searches relying on the Google search engine. The database search occurred from March through May 2022 and again in September 2023. Inclusion criteria were as follows: (1) the study was reported in a peer-reviewed article published in English before September 2023, (2) the study was published in English, and (3) the sample included 18 years of age and over. At the end of the screening procedure, each included study was extracted. The first author manually searched each study's reference section for additional studies.

Data Extraction and Synthesis

Data were extracted from each study to (1) describe the characteristics of the study, (2) define gentrification and its measurements, and (3) analyze the outcomes of gentrification. In the initial step, the first author individually read each abstract to determine the inclusion of the studies in the review. Through the five electronic database searches, the first author identified 220 abstracts and analyzed them to determine the presence of inclusion criteria. From the initial analysis, the first author independently retrieved data from the studies that matched the inclusion criteria (n = 13). In addition to the initial 13 articles selected from the database search, the first author manually retrieved an additional 36 articles based on citation review. From the citation review, the first author selected a further 29 studies for inclusion, resulting in a final review

sample of 39 articles. The first author then extracted data into a spreadsheet to pertinent study information. Extracted study details included the study authors' and year of publication, the definition and measurement of 'gentrification' applied in the study, results, implications, and limitations.

2.4 Results

The findings have an international perspective on gentrification and its impact on older adults. This study analyzed a wide range of outcomes were analyzed for this study (see Table 1). The first author categorized the results into four groups: defining and measuring gentrification, international studies, outcomes, and age-friendly cities. The first author then categorized studies as reporting positive, negative, or mixed outcomes in correlation to gentrification.

Gentrification Definitions

Of the 39 articles examined, 10 included unique definitions and measurements of gentrification (see Table 2). Table 2 highlights the various definitions of gentrification. Common elements of gentrification definitions included increased housing costs, taxes, or the proportion of higher-income residents. Firth and collaborators (2020) conducted a literature review on gentrification measures, and their findings revealed similar anomalies in how location and time are handled in gentrification definitions and measurements (Firth et al., 2020). A few articles expounded on the analysis and measurement of gentrification. Gibbons and Barton (2016) found that it is typical for studies to measure and analyze gentrification by examining the influx of residents into neighborhoods. Commonly amongst researchers who examine gentrification, the influx of White residents is the principal driver of the gentrification process. The Gibbons and Barton (2016) article discusses less common forms of gentrification, such as an influx of higher-income Black residents.

Table 2.1 Gentrification Definitions

Study	Gentrification Definition
Abel & White (2011)	Generally refers to the upward socioeconomic transformation of urban neighborhoods by income, housing values, education, and occupational levels
Burns et al. (2011)	This process involves a change in population characteristics with the arrival of younger, better-educated people with higher incomes, a significant increase in the cost of housing (including house values, rents, and property taxes), particular styles of commercial revitalization, increased traffic on neighborhood commercial streets, and finally, displacement of former residents to more affordable neighborhoods
Cole et al. (2021)	A process of neighborhood change through which the demographic, real estate, and business characteristics of a place reveal a transition toward a more privileged population (e.g., more educated, wealthy, whiter population), able to afford new or renovated, more expensive homes while also fomenting new cultural and consumption practices
DeVylder et al. (2019)	The growth of affluence and its associated changes to local infrastructure, housing costs, and displacement of long-term residents, who are typically of lower socioeconomic status (SES)
Murphy et al. (2008)	In practice, gentrification is a process that up-roots the urban poor by raising rents and taxes and making it impossible for them to stay
Santos et al. (2022)	A transitional stage where low-income neighborhoods become wealthier

Schnake-Mahl et al. (2020)	The process whereby neighborhoods that have undergone disinvestments and economic decline experience a reversal, reinvestment, and the in-migration of a relatively well-off population
Steinmetz-Wood et al. (2017)	A neighborhood process that may contribute to the disruption or development of neighborhood collective efficacy, as gentrification is characterized by a rapid change in the social status and economic characteristics of a neighborhood as compared to the rest of the city
Tran et al. (2020)	A process marked by accelerated physical restructuring, rapid economic growth, and shifts in the social and cultural characteristics of neighborhoods
Wilder et al. (2017)	Generally refers to the upward socioeconomic transformation of urban neighborhoods by income, housing values, education, and occupational levels

Outcomes

Positive Outcomes

Articles included in this review analyzed numerous outcomes in correlation to gentrification, including the overall well-being of residents in their gentrifying neighborhoods. The main population of interest was the adult population, with some focusing on the older adult population. The majority of the outcomes explored were related to health in some capacity. Several studies found that gentrification can lead to positive outcomes for adults (Abel & White, 2011; Barton, 2016; DeVylder et al., 2019; Gibbons et al., 2018; Gibbons & Barton, 2016; Mair et al., 2015). Gibbons and Barton (2016). Gentrification had an overall marginal effect on improving self-rated health (Gibbons & Barton, 2016). However, these positive outcomes were not apparent in other populations, specifically for Black residents (Gibbons & Barton, 2016; Huynh & Maroko, 2014). Furthermore, focusing on different outcomes of interest, Mair and collaborators (2015) found that New York City residents perceived their neighborhoods as safer, less stressful, less violent, and more socially cohesive. Such findings could be due to gentrification reducing crime rates, partly due to the increase in policing in such neighborhoods (Barton, 2016).

Negative Outcomes

Approximately one-fourth of the articles reviewed found that gentrification negatively influenced selected outcomes (Croff et al., 2021; Fuller et al., 2019; Lim et al., 2017; Linton et al., 2017; Millar, 2020; Smith et al., 2018; Tran et al., 2020; Versey, 2018; Versey et al., 2019). For example, multiple studies found that gentrification had a negative relationship to health (i.e., self-rated health, mental health, or increased emergency department visits) (Lim et al., 2017; Smith et al., 2018; Tran et al., 2020; Versey et al., 2019). Results further indicated that gentrification affects those who are economically vulnerable (Tran et al., 2020) and/or older (Smith et al., 2018; Versey et al., 2019). Among the reasons provided to explain these findings

are the dynamic changes in the neighborhood that can lead to displacement, lack of neighborhood identification, housing insecurity, and financial insecurity (Versey et al., 2019). Fuller and colleagues (2019) conducted focus groups, and they reported that "participants described interactions with dismissive and inadequate business treatment frequently, a drastically diminished sense of community as a result of the dissolution of Black businesses, and gentrification-related financial strain limiting their ability to keep their homes." Moreover, the process of gentrification has far-reaching consequences beyond poor health outcomes. Gentrification is associated with homelessness, disruption of social capital (defined as sentiments of mutual trust, togetherness, closeness, readiness to help others, and shared values among community members; Millar, 2020), and the process disproportionately negatively affect socially vulnerable people (Linton et al., 2017; Versey, 2018).

Mixed Outcomes

Numerous articles demonstrated that gentrification could lead to both positive and negative outcomes for adults (Cole et al., 2021; Huynh & Maroko, 2014; Iyanda & Lu, 2021; Izenberg et al., 2018; A. Schnake-Mahl et al., 2020; Smith et al., 2020; Steinmetz-Wood et al., 2017; Wilder et al., 2017). However, one consistent finding that emerges from available studies indicates that Black residents and older adults were particularly at risk for adverse health and well-being outcomes during and following gentrification (Crewe, 2017). Researchers found that Black residents and older adults are disproportionately affected by the gentrification process compared to their counterparts (Smith et al., 2020).

Neighborhood Disruption

Multiple articles emphasized how the process of gentrification and the new changes that come with it disrupt the neighborhood (DeVylder et al., 2019; Gibbons & Barton, 2016; Mehdipanah et al., 2018; Steinmetz-Wood et al., 2017). Steinmetz-Wood and collaborators (2017) utilized the term *disruption* in their own definition of gentrification, highlighting the

significance of this process during gentrification. The disruption of the neighborhood is especially impactful to older adults. A consistent narrative from the analyzed literature is the negative impact of the gentrifying process on the aging community (Crewe, 2017; Versey et al., 2019). One fundamental difficulty associated with gentrification is who is participating in neighborhood revitalization. Long-term residents are often not included in the process; cultural and social environment modification usually occurs with no resident input (Mehdipanah et al., 2018). Neighborhood "revitalization" can jeopardize the affordability and independence that residents once knew, disrupting the neighborhood's cohesion (Mehdipanah et al., 2018; Steinmetz-Wood et al., 2017).

International

Several international literature reviews explored gentrification's global impact (Bhavsar et al., 2020; Cole et al., 2021; Crewe, 2017; Mehdipanah et al., 2018; Murphy et al., 2008; Santos et al., 2022), with one specifically focusing on the aging population (Santos et al., 2022). Additionally, there were studies focused on specific, unique populations outside of the United States. These studies include populations from five countries: Canada, England, Spain, the United Kingdom, and Wales (Buffel & Phillipson, 2019; Domínguez-Parraga, 2020; López et al., 2022; Steinmetz-Wood et al., 2017). These articles found that gentrification has mixed results internationally.

Two articles specifically focused on the well-being of adults living in gentrified neighborhoods outside of the U.S. Researchers found no significant association between gentrification and self-perceived mental or physical health among Canadian residents (Steinmetz-Wood et al., 2017). These results conclude that the effects of gentrification may be complex. Conversely, Domíniguez-Parraga (2020), who interviewed 32 individuals in Spain, concluded that gentrification has potentially adverse outcomes for older adults. Adverse outcomes are, in part, due to changes in lived environments. After gentrification, older adults feel disconnected,

lonely, and insecure in their living environments (Domínguez-Parraga, 2020). Furthermore, two international articles specifically examined the gentrification process of the aging community. Researchers concluded that intervention is needed during gentrification to protect long-term residents, specifically older adults living in the aging community (Buffel & Phillipson, 2019). The impact of gentrification internationally has revealed mixed outcomes when analyzing its impact on adults' well-being (Domínguez-Parraga, 2020; Steinmetz-Wood et al., 2017).

2.5 Limitations

A limitation of this study is that narrative reviews can only provide a broad overview and critique of the literature that is currently out there. Due to this, this narrative review provides a general analysis of the research concerning the topic of 'gentrification and aging.' Additionally, this literature review is wide-ranging, the authors influence the study's setting, screening, and analysis. Because of this, it will be hard to reproduce the study for future researchers. Furthermore, the authors had limited accessibility to research articles. Due to the inaccessibility of some of the articles, the study was unable to include every abstract in the study that the first author screened, thus limiting its scope.

2.6 Discussion

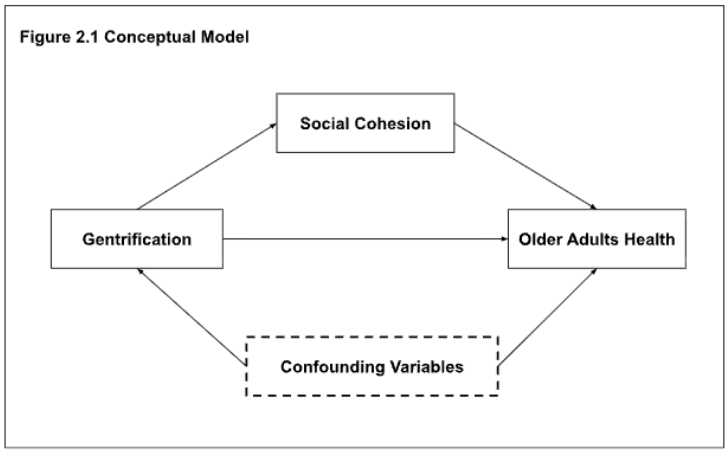
This narrative review highlighted the need for a more integrated approach to gentrification research among older adults. Throughout the review, the direction of empirical effects on various health outcomes was heterogeneous. A proportion of the outcomes yielded positive results (Abel & White, 2011; Barton, 2016; DeVylder et al., 2019; Gibbons et al., 2018; Gibbons & Barton, 2016; Mair et al., 2015), others yielded negative results (Croff et al., 2021; Fuller et al., 2019; Lim et al., 2017; Linton et al., 2017; Millar, 2020; Smith et al., 2018; Tran et al., 2020; Versey, 2018; Versey et al., 2019), while the remaining outcomes were inconclusive or

had no association (Cole et al., 2021; Huynh & Maroko, 2014; Iyanda & Lu, 2021; Izenberg et al., 2018; A. Schnake-Mahl et al., 2020; Smith et al., 2020; Steinmetz-Wood et al., 2017; Wilder et al., 2017). The apparent discrepancies need to be addressed through standardization of methodology to measure gentrification. The variation in measuring gentrification has hindered scientific efforts to ascertain the health implications of living in "gentrified" communities or neighborhoods. In addition, a greater understanding of how gentrification influences essential intersectional identities, specifically minoritized older adults, such as Black older adults, is required. Findings on gentrification and its influence on older adults suggest potential pathways to intervention, such as the dissemination and adoption of age-friendly communities. However, critical, descriptive research that conceptualizes the pathways of gentrification and health for diverse older adults is essential. We address each of these recommendations below in detail.

This review found ten iterations of the definition of gentrification. A unified definition is necessary from a scientific and practical standpoint. Gentrification has been defined and operationalized in the literature in several ways, which hinders its ability to consistently measure its impact. For example, studies have applied multiple metrics to measure gentrification, significantly impacting the results of the neighborhoods examined in earlier studies (Barton, 2016; Firth et al., 2020). Various metrics include temporal dimensions and spatial scale (Firth et al., 2020). Standardization in the measurement of gentrification may lead to more consistent results related to the health or other potential implications of gentrification on older adults and important minoritized communities (e.g., Black older adults). The standardization of the measurement can potentially lead to the discovery of conceptual links (i.e., social cohesion) that could guide programmatic or policy innovations that ease the potential adverse effects of gentrification for at least some older adults. Otherwise, the lack of dependable measures or even consistent definitions of gentrification will continue to lead to mixed outcomes and interpretations of the effects of this process on older adults and their communities.

The need for a unified definition is of both scientific and practical concern. Gentrification cannot be measured uniformly due to the multiple ways it has been described and operationalized in the literature. Inconsistencies and a lack of consistency in quantifying gentrification can lead to complex interpretations of outcomes, making it challenging to synthesize the effects of gentrification across current literature. Additionally, this is a practical concern because it leads to inconsistencies and the inability to achieve comparability. The authors suggest a more concise definition of gentrification, which they define as the process by which higher socioeconomic residents move into and alter the characteristics of a neighborhood through financial (but not necessarily social or community-engaged) investment. Social or community engagement refers to the collaborative approach involving residents and community members.

In addition to improving methods of measurement and definitions of gentrification, further conceptual refinement is required to better understand the processes or mechanisms that may drive outcomes among older adults experiencing gentrification. For example, social cohesion, the residents' unity and solidarity, generates many advantages for members, including increased social participation (Millar, 2020). Social cohesiveness is a social determinant of health, significantly impacting one's life and health consequences. The potential disruption borne by gentrification can fracture the social and physical bonds of a neighborhood that many people previously valued and perhaps even gained health benefits from, transforming the gentrified neighborhood into an unrecognizable one. Social cohesion may threaten the integration of new residents with long-standing residents (Bernstein & Isaac, 2023; Crewe, 2017; Dahlberg, 2020).



Older adults are more at risk of social exclusion if their neighborhoods change, making it difficult for them to integrate socially and have a sense of belonging (Dahlberg, 2020; Versey, 2018). The inability to integrate socially with one's own neighborhood thus leads to a degradation of the social cohesiveness of the neighborhood, which can then lead to feelings of loneliness, abandonment, and insecurity (Domínguez-Parraga, 2020). Prior research has suggested that the social cohesiveness of a community is inversely related to the probability of residents reporting poor/fair health (Gibbons & Barton, 2016). Considering the mechanistic potential of social cohesion, the first author has proposed a conceptual model to guide future work on gentrification and older adults' health (see Figure 2.1). It is important to note that if displacement is the focus, conceptualization may be necessary to incorporate these considerations.

As previously mentioned, most (~77%) adults desire to age in place (Ratnayake et al., 2022). However, the relationship between gentrification and aging in place is inverse (Croff et al., 2021). Because of this, there should be an emphasis on co-creating a neighborhood that can continue to benefit older adults. A promising potential strategy is the age-friendly community. The World Health Organization (2007) defines Age-Friendly Cities and Communities as "an age-friendly community, policies, services and structures related to the physical and social environment. These cities and communities are intentionally designed to support and enable older people to 'age actively'—to live in security, enjoy good health, and continue to participate fully in society." The dynamic process of gentrification directly threatens age-friendly communities as gentrifying entities often do not centralize nor engage older adults during the process of neighborhood transformation. For example, gentrification limits affordable housing availability, resulting in housing scarcity and several adverse health and social impacts (i.e., homelessness). Age-friendly communities, however, may serve as a potential intervention strategy to combat the issues of gentrification because they could identify and develop community-centric solutions to the possible adverse effects of gentrification on older community members. A core element of the

age-friendly community movement that can achieve this goal is the involvement of older adults in the development of the neighborhood. There are five mechanisms to engage older adults in creating an age-friendly community: information, consultation, involvement, collaboration, and empowerment (Buffel & Phillipson, 2019).

This goal is achievable through the help of social workers. When considering key practitioners, social workers are often not considered when assisting individuals or communities confront or adapt to gentrification, as gentrification is frequently conceptualized and addressed through an economic and political lens (Thurber et al., 2021). The *Agenda for Social Work and Social Development*, a collaborative project designed by the International Federation of Social Workers, the International Association of Schools of Social Work, and the International Council on Social Welfare, stated that one of their initiatives is "promoting community and environmental sustainability and the importance of human relationships (IFSW, 2020)." Their initiative aligns with efforts to reverse the harm caused by the gentrification process. As previously noted, gentrification generates neighborhood disruption. This disruption has social repercussions that may impair residents' health, necessitating social workers' engagement in their critical roles in assessing, referring to, and developing/delivering supportive resources for older adults.

There is a clear gap in existing research when it comes to gentrification's effects on older adults' health, particularly those affecting Black communities and older adults in general. Future research should specifically focus on the impact of gentrification among key aging communities, specifically Black older adult residents. This population has persistent health disparities in addition to being mistreated and underinvested in the past and present. Additionally, more research must happen at the international level on the influence of the gentrifying process on residents. Comparing policies among many locations, states, or countries can be difficult. Thus, additional descriptive and conceptual/theoretical remains a critical need. Along with further research, inclusionary practices are essential to implement in current gentrifying neighborhoods

(Buffel & Phillipson, 2019; López et al., 2022). We realize such a goal is aspirational, but harmonizing measurement will help facilitate future reviews and/or meta-analyses attempting to fully understand gentrification's impacts among diverse older adults.

Despite inconsistencies with measurement and the impact of gentrification on outcomes, available results implied that older adults, and potentially Black older adults, are disproportionately affected by the process of gentrification (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). Having a cultural perspective is imperative because race and class drive the health inequalities associated with gentrification. As aforementioned, White residents and investors favor neighborhoods that are not proportionally representative of the national demographic makeup, resulting in disproportionate gentrification happening within Black communities and potentially increasing the risk of adverse outcomes for Black older adult residents. Furthermore, Black residents living in gentrifying neighborhoods are more likely to indicate poor/fair self-reported health than individuals from other racial backgrounds (Gibbons & Barton, 2016). As many older adults view urban transformation as detrimental to their quality of life and the networks to which they belong (Hwang & Sampson, 2014b), the effects of gentrification on Black older adults require greater attention in future research and, perhaps as crucially, in age-friendly community building efforts. Researchers and advocates should perform culturally sensitive research, intervention research, and community participatory research and initiate community-based recruitment tactics to remain aware of and sensitive to the diversity of aging communities (Huang & Coker, 2010).

2.7 Conclusion

Throughout the available literature, Black older adults are disproportionately affected by gentrification. Future research must address several critical gaps. In addition to inconsistencies in defining and operationalizing gentrification, there exists little conceptual or theoretical research

considering how gentrification affects the health of Black older adults who both resided in and currently live in gentrified neighborhoods. Future quantitative, qualitative, and mixed methods research that fully considers the effects and process of gentrification on Black older adults is required, along with more rigorous conceptual/theoretical considerations of gentrification and health among at-risk communities. The advent of the age-friendly movement may emerge as a potential intervention approach. Including social workers as facilitators in the age-friendly movement can be beneficial. However, full engagement with Black communities will be necessary to tailor solutions that fit the needs and resources of each gentrified neighborhood.

2.8 Ethicical Statement

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Chapter 3. The Association Between Gentrification and the Health of Older Adults

3.1 Introduction

The older adult population (age 65+) is growing exponentially. By 2050, experts expect the global number of older adults to nearly double, reaching approximately 2.1 billion (World Health Organization, 2022). The environment where older adults live is crucial to their well-being. Staying in one's home and remaining in a familiar environment can serve as a protective factor for potentially adverse psychological and physical health outcomes of older adults (Ratnayake et al., 2022). Familiarity with one's environment fosters a sense of security, comfort, and consistency for older adults. These characteristics are essential for mitigating anxiety and stress levels (Meagher & Cheadle, 2020).

Over time, family dynamics within the United States (U.S.) have undergone changes (Stone, 2015b). For example, in the preceding decades, there has been a decline in intergenerational households (Ruggles, 2007). Currently, three in ten older adults live alone (US Census Bureau, 2022). More than 15 million older adults in the U.S. are childless (Ratnayake et al., 2022). Furthermore, 22% of adults will not have children available to provide unpaid care as they age (Ratnayake et al., 2022). These changes in family systems and dynamics over the preceding decades have influenced the living and care arrangements of older adults, making the reality of aging in place challenging for many.

Assistance is frequently required to preserve independence due to potential future changes in health and functional status (Ratnayake et al., 2022), but older adults' independence can be interrupted without proper support. The Urban Institute (2019) reported that among those who reach age 65, approximately 70% will experience significant long-term support and services (LTSS) needs before death, and 48% will receive some form of paid care during their lifetimes. LTSS refers to a comprehensive range of health and health-related services and supports required by individuals who are unable to perform self-care due to physical, cognitive, or mental

disabilities or conditions (Colello, 2025). Family or surrogate family caregivers are typically the best suited for delivering care, especially culturally relevant care, aligned with the desires of particular older adults (Schulz et al., 2016), with the vast majority desiring to receive the care within their community, whether that be receiving care at home or through a community-based service.

The majority of older adults aged 65 years or older (approximately 77%) desire to age in place (AARP, 2021). Aging in place is defined as remaining in a community-based residence of one's choice (e.g., one's house or another residential environment that affords autonomy) during one's later years (Ratnayake et al., 2022). For aging in place to occur, a community must maintain a balance between familiarity for older residents and access to necessary infrastructure, housing quality, and resources to become an "age-friendly" community (Choi, 2021). However, some disruptions, such as gentrification, may counteract the ability to age in place successfully. Ruth Glass first coined the term "gentrification," defined as the process by which middle- and upper-income groups move into low-income urban neighborhoods, purchase and renovate properties, and thereby significantly alter the area's social and economic landscape. (Lees et al., 2013, p. 4). A person's familiarity with their surroundings can facilitate the effective use of neighborhood resources and the maintenance of ongoing social engagement (e.g., proximity to peers), which can subsequently influence their health (Dye et al., 2010). Gentrification may threaten older adults' ability to maintain social connections and remain familiar with their surroundings. The combination of disruptions in familial support and the environment underscores the need for social engagement. Staying socially engaged is vital to aging in place, as it improves older adults' mental, physical, and emotional health (Pinazo-Hernandis et al., 2022). Though the changing demographics of gentrifying neighborhoods can lead to a lack of familiarity and displacement of previous residents, resulting in mixed health outcomes (Iyanda & Lu, 2021), with varying results

depending on individual-level factors such as income, race, and social support (Crewe, 2017; Iyanda & Lu, 2021; Wilder et al., 2017).

Many older adults view urban transformation as detrimental to their quality of life and the networks to which they belong (Hwang & Sampson, 2014b). Although studies have considered the health effects of gentrification (Gibbons et al., 2018; Gibbons & Barton, 2016; Lim et al., 2017; R. J. Smith et al., 2018; Tran et al., 2020; Versey, 2023), very few have examined the health implications of gentrification among older adults on a national scale (A. Schnake-Mahl et al., 2020). This is important because, as the older adult population grows, so does the number of neighborhoods potentially undergoing gentrification in which older adults live. More specifically, it remains unclear whether gentrification is associated with adverse health outcomes among older adults, who are disproportionately affected by gentrification (Izenberg et al., 2018; Smith et al., 2020, 2018; Steinmetz-Wood et al., 2017). Although gentrification has health implications for older adults living in neighborhoods undergoing such changes, the mechanisms by which gentrification accounts for variations in health outcomes remain unclear (Versey, 2023). The objective of this paper is to investigate the relationships between gentrification and the self-rated health and mental health of older adults over time.

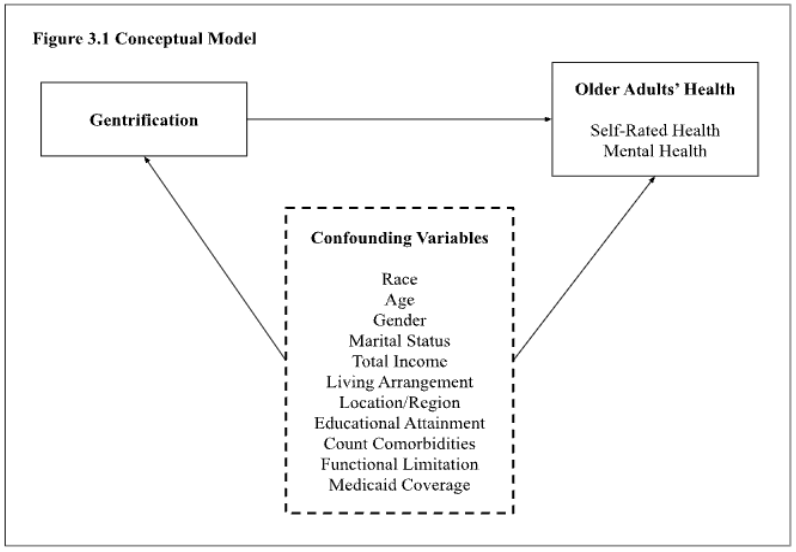
Theoretical Framework

A widely studied concept across many fields is place attachment. The concept of place attachment first appeared in the 1960s, introduced by Marc Fried. Fried expressed concerns about modern society's view of community and the potential effects imposed on it (Fried, 1970). Place attachment has since evolved and is now understood as a phenomenon in which individuals develop emotional attachments to physical places (Inalhan et al., 2021). Place attachment shapes our identity, provides our life with meaning, fosters community, and impacts behavior (Manzo & Devine-Wright, 2020). Place attachment is associated with better mental health outcomes,

including diminished feelings of depression and anxiety, along with elevated general well-being (Scannell & Gifford, 2017).

Furthermore, environmental psychology can be beneficial for understanding the association between gentrification and the overall health and well-being of older adults. Environmental psychology examines the influence of the environment on human cognition, emotions, and behavior, as well as the reciprocal effects of human actions on the environment (Gifford, 2014). Mortimer Powell Lawton first articulated the person-environment (PE) fit theory in the 1980s, conceptualizing it as the convergence of these two processes. Lawton's theory of PE fit posits that the physical and social environments of an older adult, along with their behavior, interact dynamically and evolve in ways that can significantly affect their well-being (Lawton, 1983). The theory highlights the individual's needs, abilities, and preferences, as well as the environmental characteristics (i.e., physical, social, and psychological) that are pivotal in shaping health outcomes (Caplan, 1987).

Both Fried's place attachment theory and Lawton's PE fit highlight the significant role that place plays in the health outcomes of older adults. Older adults are more vulnerable to illness and chronic diseases than younger adults (Langmann, 2023). More health deficiencies can increase an older person's social vulnerability within their community (Abeliansky et al., 2021). Older adults living in gentrified neighborhoods may have better physical health than those living in poorer neighborhoods (Smith et al., 2018). However, they still experience higher rates



of anxiety and depression symptoms (Smith et al., 2018). This conceptualization led to the model developed by Bailey and Gaugler (2025) and guides the current study. Figure 3.1 illustrates a modified version of the original Bailey and Gaugler (2025) framework. These authors created the conceptual model as a guide due to the practical concerns with the prior framework. They state that researchers must refine existing concepts to better understand the processes and mechanisms that influence outcomes among older adults affected by gentrification (Bailey & Gaugler, 2025). That is why, in this study, I will focus on the pathway between gentrification and older adults' health. I will test the one specific pathway from the model with two different outcomes: (1) the association between gentrification and the self-rated health of older adults, and (2) the association between gentrification and the mental health of older adults. I hypothesize that living in gentrified neighborhoods will be negatively associated with both self-rated health and mental health among older adults over time.

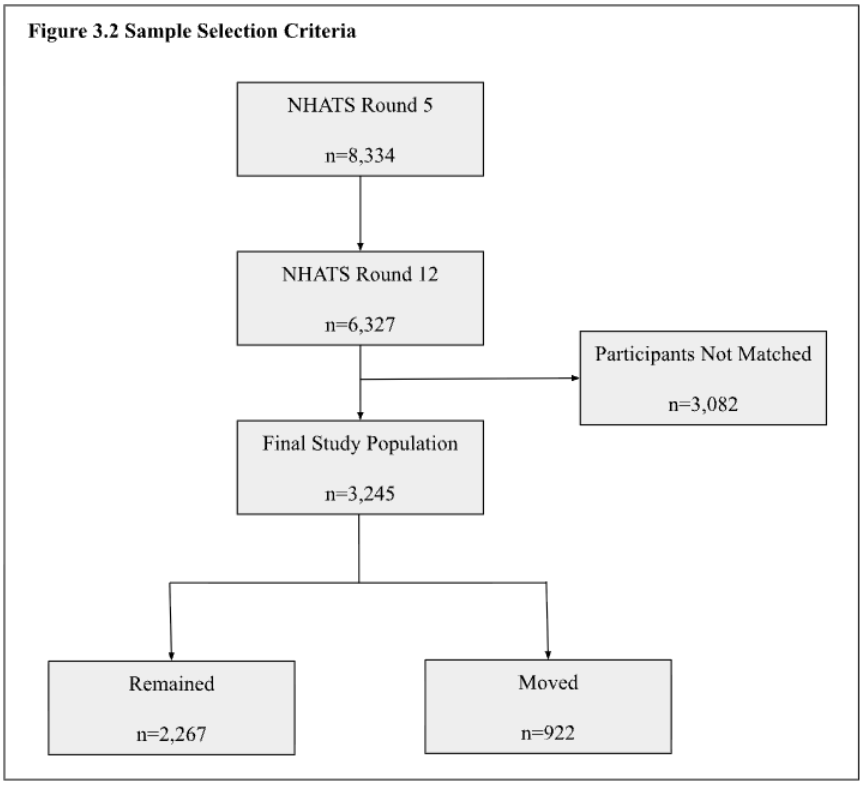
3.2 Methods

Sample

This study is a repeated cross-sectional analysis using data from 2011 through 2022/23, drawn from the American Community Survey (ACS) and the National Health and Aging Trends Study (NHATS). The ACS and NHATS are two datasets that survey similar respondents over similar periods (Freedman & Kasper, 2019; Herman, 2008) and were merged for this analysis. The ACS is a comprehensive, continuous survey of the entire U.S. population, whereas the NHATS is a targeted, annual study focused exclusively on Medicare beneficiaries aged 65 and older. These datasets were merged for this research.

The U.S. Census Bureau administers the ACS, which is conducted monthly or annually (Herman, 2008). The U.S. Census Bureau distributes the ACS survey to approximately 3.5 million addresses in 50 states, the District of Columbia, and Puerto Rico (Herman, 2008). It

contains key data on the American population, including housing characteristics (Blewett et al., 2016). The National Institute on Aging (NIA) sponsored NHATS, an epidemiologic panel study of a nationally representative sample of Medicare beneficiaries aged 65 and older residing in community and residential care settings, which began in 2011 (Freedman & Kasper, 2019). NHATS data include demographic information, health and physical functioning, social and economic circumstances, and environmental variables (Freedman & Kasper, 2019). The NHATS oversamples older adults in the oldest age groups and Black respondents to provide adequate statistical power for trend analysis (Freedman & Kasper, 2019).



For this study, I used data from the years 2011, 2015, and 2022/23 to examine trends over time. I integrated these datasets using Federal Information Processing Series (FIPS) codes, which provide unique geographic identifiers for each U.S. county. Using FIPS codes enabled me to accurately link county-level data across all three time points, ensuring consistent geographic tracking. The year 2011 was utilized as the earliest year for the construction of the gentrification variables utilized for this study. Additionally, I specifically selected the years 2015 and 2022/2023 to align with NHATS surveillance periods.

NHATS began data collection in 2011, and the 2022/23 dataset represents the most recent wave available at the time of this analysis. I included 2015 as a key midpoint in the analysis of census data, as it marks a period during which NHATS administered survey questions relevant to this study in a format consistent with both the 2015 and 2022/23 waves. By incorporating an intermediate year, I aimed to capture temporal change while maintaining comparability of survey measures across 2015 and 2022/23. Figure 3.2 illustrates the selection of the analytical sample utilized for this study. In 2015, 8,334 participants responded to the NHATS. In the year 2022/23, there were only 6,327 participants. Only participants who responded in both samples were included in the study (n = 3,245). Within the final sample, participants were further dichotomized as those who had never moved (n = 2,267) and those who had moved (n = 922) (see Appendix C for outcome characteristics and Appendix D for covariate characteristics). As a result of the merger of the round 5 and round 12 data, several participants were excluded from the study (n=3,082). It was important to report participant flow to handle missing data. Appendix B examined the variables used in this study by year and percentage, before and after merging the datasets, to highlight sample differences.

Measures

Key Independent Variable. Adapting the methods used by Izenberg et al. (2018) and Freeman (2005), I applied the following criteria to determine whether a neighborhood has experienced gentrification. (Finio, 2022; Izenberg et al., 2018). Census Tracts were

Table 3.1 Measures

Variable	Variable Construction	Data Source
Key Independent Variable: *Gentrification*	(1) Tract median gross rent price increase (2) Tract median income increase (3) Tract median home value price increase (4) Tract median college-educated residents increase	ACS
Outcome Variables	Self-Rated Health and Mental Health (PHQ-2 and GAD-2 questions)	NHATS
Covariates	Race, Age, Gender, Marital Status, Total Income, Living Arrangement, Census Division, Educational Attainment, Count Comorbidities, Functional Limitation, and Medicaid Coverage	NHATS

assessed using the Census-Based Statistical Area (CBSA) definition by determining whether a tract's median household income falls below the CBSA-defined metropolitan area median (Izenberg et al., 2018). For a neighborhood to be deemed gentrified, the census tract must exhibit increases in median educational attainment, median income, median rent, and median housing price relative to the respective medians in the observation year. All factors must exceed the previous year's median values for a tract to be classified as gentrified.

Outcome Variables. I assessed self-rated health (SRH) using an ordinal scale ranging from excellent to poor (1 = excellent; 5 = poor). Mental health was assessed using the 2-item Patient Health Questionnaire (PHQ-2) and the 2-item Generalized Anxiety Disorder (GAD-2), which are validated, brief screening instruments for depression and anxiety, respectively. The PHQ-2 and GAD-2 consist of four questions asking, "Over the last month, how often have you: (a) had little interest or pleasure in doing things; (b) felt down, depressed, or hopeless; (c) felt nervous, anxious, or on edge; (d) been unable to stop or control worrying?" Response categories include: “Not at all,” “several days,” “more than half the days,” and “practically every day.” Items "a" and "b" comprise the PHQ-2, while items "c" and "d" comprise the GAD-2. Values were analyzed individually and aggregated into a composite measure by summing the individual variables. The scale ranges from excellent to poor, like the SRH measure. Prior research has combined the two for its analyses (Kroenke et al., 2001, 2016; Mukuria et al., 2025). The integrated tool has demonstrated strong reliability and validity in measuring symptoms of both anxiety and depression (Kroenke et al., 2001, 2016; Mukuria et al., 2025).

Covariates. NHATS classified race and ethnicity as White non-Hispanic, Black/African American non-Hispanic, Hispanic, and Other due to the small sample size of Native Americans and Pacific Islanders. NHATS categorizes age into five-year intervals (65-69, 70-74, 75-79, 80-84, 85-89, and 90+). NHATS categorized gender into two binary groups: male and female. Age and gender are well-established factors that influence the health of older adults (Johnson &

Wolinsky, 1994). NHATS asked respondents about their marital status. It was categorized into five groups: Married/Living with Partner, Separated, Divorced, Widowed, or Never Married. Marital status correlates with the general life satisfaction and well-being of older adults (Fonseca et al., 2008; Gove et al., 1983). Educational attainment was categorized into less than high school, high school graduate, post-high school education/associate's degree, bachelor's degree, and graduate degree. Educational attainment was included as a covariate because it affects multiple facets of older adults' lives, including cognitive performance, physical and mental health, and overall well-being (Adams, 2002; Leggett et al., 2019).

Income was included as a covariate and categorized into quartiles, because it is an indicator of socioeconomic status, in addition to educational attainment (Temple, 2016). Income was a respondent's estimate of the sample person's income, plus that of the person's spouse or partner, if relevant, over the previous year, taking into account all monetary sources. To account for regional differences, census tracts were grouped into the four U.S. Census regions: Northeast, Midwest, South, and West (U.S. Census Bureau, 2024). Region and local conditions and events influence the gentrifying process (Shaw, 2008). Lastly, a residence-related covariate was utilized, which states whether the resident owns, rents, or has another arrangement for the property. This specific housing covariate is critical in explaining the ramifications of gentrification (A. S. Schnake-Mahl et al., 2020).

Medicaid status was also a covariate—NHATS asked respondents whether they had active Medicaid coverage. In 2015, 7.52% of respondents were dual-eligible; this increased to 10.17% in 2022/23. Medicaid is often used as a proxy for socioeconomic status, and is an essential predictor of what home and community services a person can access by way of financial eligibility (Kasper, 1986), should they require such services to age in place. Additionally, counts of comorbidities and functional status served as covariates of interest. I constructed a count variable of the number of comorbidities and defined four categories: zero, one, two, and three or

more. I created a new variable to measure functional status by combining NHATS functional limitation questions into a single "yes" or "no" indicator. If a respondent answered "yes" to at least one functional limitation question, I classified them as having a functional limitation. If they answered "no" to all questions, I classified them as having no functional limitations. This modified approach is based on a study by the Centers for Disease Control and Prevention (CDC) (2024), which analyzed functional limitations. Comorbidity and functional limitation covariates are directly associated with self-reported health status, particularly among older adults (Koroukian et al., 2016; Williams & Egede, 2016).

Missing Data

I conducted four regressions for both self-rated health and mental health. For each regression, sample participants remained the same. I ran the first regression using 2015 data as the baseline comparison group. I performed a second regression using 2022 data. The last two regressions were also conducted for 2022 but were dichotomized by whether residents moved or remained in the same neighborhood over time. To address missingness, I assessed the NHATS variables and used only demographic and covariate measures with less than 10% missingness. Variables that were related to housing tenure were not included due to having over 10% missingness. Because this selection criterion retains only variables with less than 10% missingness, the methodology may introduce selection bias. Excluding individuals with at least 10% or more missingness may introduce selection bias, as those dropped may systematically differ from those included. One way this bias was addressed was through multiple imputations, ensuring that the data accurately reflect the full population.

Some variables have no missing values (e.g., race and gender). This is due to NHATS using imputation to address absent values in its survey data, which may result from nonresponse or many other complications (NHATS, 2025). In the absence of imputation, missing data may

lead to biased results and incorrect analyses. Imputation generates comprehensive datasets that precisely capture the variability of missing data, particularly for variables such as income, thereby providing reliable estimates for research (Sterne et al., 2009). Appendix B displays the percentage of missing values for each variable in the merged dataset. Only one variable exhibits missingness greater than 5%. That variable is Age in 2022/23, at 7.4%. The majority of the variables used in this study have less than 2% missingness. The vast majority of variables exhibited missingness rates between 0.55% and 1.5%.

Statistical Analysis

To account for differential nonresponse and ensure nationally representative estimates, I applied analytic weights generated by NHATS for each year. I performed all statistical analyses using Stata within the University of Michigan's secure data enclave. I conducted chi-square tests to assess differences in sociodemographic characteristics between individuals living in gentrified and non-gentrified neighborhoods. To examine the association between neighborhood gentrification and poor self-rated health, I estimated adjusted odds ratios using logistic regression, controlling for key covariates including age, sex, race/ethnicity, household income, educational attainment, living arrangement, U.S. Census division, presence of chronic conditions or functional limitations, and Medicaid coverage. A parallel logistic regression model was used to evaluate the likelihood of reporting poor mental health, adjusting for the same covariates. Finally, a difference-in-differences approach was employed to assess temporal changes in health outcomes associated with gentrification, comparing differences in predicted probabilities before and after exposure.

In addition to the primary models employed in this study, I performed a sensitivity analysis to assess the robustness of the gentrification variable. This analysis aimed to evaluate potential variation in the classification of census tracts as undergoing gentrification. Consistent

with the main analytical framework, the operationalization of the gentrification variable was informed by prior work, including Freeman (2005), Deng (2024), Finio (2022), and Hirsch and collaborators (2021). For the construction of this gentrification variable, I examined only census tracts with increases in median college education attainment rates and median house prices relative to the observed year. I intentionally excluded the rental prices and income levels of neighborhood residents because these factors are influenced by, and may interfere with, the mechanisms that underpin the underlying economic framework. I constructed this variable based on an economic framework that emphasizes the supply-and-demand dynamics inherent to the gentrification process (Finio, 2022). My sensitivity analysis yielded slight differences relative to the original analyses, with sample differences favoring gentrified neighborhoods compared with non-gentrified neighborhoods. As a team, we consulted and incorporated the omitted variables to improve the specificity of the analyses.

3.3 Results

Descriptive Statistics

Table 1 presents the characteristics of the study population by year, categorized by residence in a gentrified or non-gentrified area (n = 3245). Overall, in 2015, 4.5% of census tracts were classified as gentrified; by 2022/23, this proportion had risen to 5.3%. Descriptive results are from the years 2015 and 2022/23. The mean age group for participants in 2015 was 70-74 years, whereas in 2022/23, it was 80-84 years. Over half of the participants identified as female in both gentrified and non-gentrified neighborhoods in the years 2015 and 2022/23. Among the selected participants, 2267 (69.9%) remained in the same residence over the 7-year survey period.

Difference-in-Differences Models

The primary analysis of interest was a difference-in-differences model used to assess changes in self-rated health and mental health over time. Tables 3.4 and 3.6 show the unadjusted difference-in-difference models. The coefficient for the difference-in-differences analysis of self-rated health was 0.749 ($p < .01$). Specifically, among residents who remained in the same gentrified neighborhood, self-rated health declined over time relative to those who remained in non-gentrified neighborhoods. In addition, the difference-in-differences model for mental health yielded a coefficient of 2.398 ($p < .01$), indicating that residents who remained in the same gentrified neighborhood experienced a decline in mental health over time relative to residents who remained in non-gentrified neighborhoods.

Table 3.2 Outcome Variables Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods (*N* = 3245)

		2015 Non-Gentrified	2015 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Self-Rated Health				0.055			0.076
	Excellent	47.40%	37.13%		36.17%	29.62%	
	Very Good	36.83%	38.39%		41.18%	42.77%	
	Good	13.38%	21.30%		18.27%	21.96%	
	Fair	2.04%	2.41%		4.14%	5.36%	
	Poor	0.36%	0.77%		0.24%	0.29%	
Mental Health				–			0.2293
	4	48.49%	43.05%		44.65%	39.09%	
	5	17.15%	19.79%		16.11%	16.44%	
	6	12.72%	13.30%		13.13%	12.25%	
	7	8.20%	10.78%		9.09%	11.80%	
	8	6.30%	3.22%		6.62%	9.38%	
	9	2.81%	1.71%		3.51%	3.53%	
	10	1.56%	2.69%		2.43%	3.20%	
	11	0.88%	0.90%		0.72%	1.19%	
	12	0.52%	0.85%		1.28%	0.51%	
	13	0.43%	2.04%		0.79%	0.81%	
	14	0.27%	0.84%		0.35%	0.48%	

	15	0.12%	0.00%		0.41%	0.78%	
	16	0.18%	0.14%		0.61%	0.00%	
	17	0.00%	0.00%		–	–	
	18	0.02%	0.00%		0.06%	0.00%	
	19	–	–		0.02%	0.00%	
	20	0.25%	0.69%		0.22%	0.54%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

Table 3.3 Covariate Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods (*N* = 3245)

		2015 Non-Gentrified	2015 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Race/ Ethnicity				0.836			0.913
	White, Non-Hispanic	83.39%	80.50%		83.37%	81.02%	
	Black, Non-Hispanic	7.55%	10.89%		7.54%	10.54%	
	Other (Native American, Asian, Hawaiian)	3.70%	2.13%		3.67%	2.82%	
	Hispanic	2.86%	3.75%		2.88%	3.32%	
	More than One	0.10%	0.00%		0.12%	0.00%	
	Don't Know/Refused to Answer	2.40%	2.74%		2.42%	2.31%	
Age				0.000			0.000
	65-69	31.68%	1.96%		--	--	
	70-74	33.24%	38.17%		15.09%	0.00%	
	75-79	18.91%	25.75%		40.69%	31.15%	
	80-84	11.31%	19.78%		21.79%	29.46%	
	85-89	3.76%	9.75%		14.51%	21.46%	

	90+	1.10%	4.59%		7.92%	17.93%	
Gender				0.006			0.010
	Male	44.63%	33.78%		44.63%	35.56%	
	Female	55.37%	66.22%		55.37%	64.44%	
Income				0.016			0.022
	Quartile #1 (2015: $0-$16,799; 2022/23: $0-$19,999)	12.78%	20.14%		14.63%	24.00%	
	Quartile #2 (2015: $16,800-$32,861; 2022/23: $20,000-$39,999)	19.3%	29.46%		24.11%	27.91%	
	Quartile #3 (2015: $32,862-$63,499; 2022/23: $40,000-$77,999)	28.66%	28.58%		30.76%	25.99%	
	Quartile #4 (2015: $63,500+; 2022/23: $78,000+)	39.26%	21.82%		30.5%	21.10%	
Educational Attainment				0.000			0.003

	Less than High School	10.32%	23.42%		10.40%	19.91%	
	High School Graduate	24.29%	33.69%		24.54%	27.7%	
	Vocational, Technical, or Business, Some College, Associates	28.95%	28.34%		29.02%	27.28%	
	Bachelor's Degree	17.70%	7.21%		17.62%	10.34%	
	Master's, Professional, or Doctoral	18.74%	7.35%		18.34%	14.77%	
Marital Status				0.016			0.004
	Married/Living with a Partner	62.12%	49.25%		51.91%	43.06%	
	Separated/Divorced/Widowed	34.67%	46.83%		44.92%	53.92%	
	Never Married	3.21%	3.93%		3.18%	3.02%	
Living Arrangement				0.009			0.021
	Own	81.9%	72.93%		73.47%	66.28%	
	Rent	12.71%	17.97%		18.28%	25.75%	
	Other Arrangement	5.38%	9.10%		8.25%	7.96%	

Count Comorbidities				0.005			0.057
	0	22.56%	15.47%		11.74%	8.31%	
	1	33.95%	27.86%		29.14%	25.71%	
	2	28.8%	38.71%		33.78%	33.45%	
	3+	14.68%	17.96%		25.35%	32.52%	
Functional Limitation				0.002			0.069
	No	47.07%	33.41%		28.58%	21.57%	
	Yes	52.93%	66.59%		71.42%	78.43%	
Medicaid Coverage				0.180			0.369
	Yes	7.61%	11.31%		10.32%	12.98%	
	No	92.39%	86.67%		89.68%	87.02%	
Census Division				0.929			0.970
	Northeast Region	18.45%	19.22%		18.05%	17.68%	
	Midwest Region	24.80%	27.92%		24.43%	28.41%	
	West Region	35.51%	26.86%		36.57%	30.4%	
	South Region	21.24%	26.01%		20.95%	23.5%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

3.4 Unadjusted Self-Rated Health Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	-0.546	0.024
Time	-1.987	0.000
Difference-in-Differences	0.749	0.004

3.5 Fully Adjusted Self-Rated Health Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	-0.375	0.066
Time	-0.847	0.000
Difference-in-Differences	0.491	0.023
Age	0.033	0.017
Gender	-0.237	0.000
Marital Status	0.397	0.000
Income	0.012	0.324
Living Arrangement	0.000	0.062
Education	-0.007	0.456
Comorbidities	0.213	0.000
Functional Limitations	0.338	0.000
Medicaid Coverage	0.474	0.000
Census Division	-0.005	0.734

3.6 Unadjusted Mental Health Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	-2.190	0.006
Time	-8.650	0.000
Difference-in-Differences	2.398	0.004

3.7 Fully Adjusted Mental Health Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	-1.282	0.046
Time	-3.849	0.000
Difference-in-Differences	1.186	0.082
Age	0.193	0.000
Gender	-0.283	0.008
Marital Status	1.815	0.000
Income	0.221	0.000
Living Arrangement	0.000	0.104
Education	-0.012	0.662
Comorbidities	0.234	0.000
Functional Limitations	0.187	0.160
Medicaid Coverage	1.557	0.000
Census Division	-0.011	0.824

In the fully adjusted models (see Tables 3.5 and 3.7), the results remained relatively consistent. The coefficient for the difference-in-differences analysis of self-rated health was 0.491 ($p < .05$). This indicates that, for residents who remained in the same gentrified neighborhood, self-rated health declined over time relative to those who lived in non-gentrified neighborhoods. In the fully adjusted mental health difference-in-differences model, the coefficient was 1.186 ($p < .10$), suggesting that the mental health of residents who remained in gentrified neighborhoods was not significantly different.

Regression Models

Table 3.8 displays the change in self-rated health between 2015 and 2022/23. In the fully adjusted model for self-rated health, gentrification was not significantly associated with self-rated health in any year. Participants who identified as Non-Hispanic Black (2015 Coeff: 0.417, $p < .001$; 2022/23 Coeff: 0.213, $p < .001$) or Hispanic (2015 Coeff: .568, $p < .001$; 2022/23 Coeff: 0.275, $p < .001$), compared to those who identified as Non-Hispanic White, were more likely to report poorer self-rated health both in 2015 and 2022/23. Respondents who identified as female, compared with those who identified as male, were less likely to report poorer self-rated health. Education was significantly associated with better self-rated health. More specifically, higher education was associated with better health. Those who reported having a Master's, Professional, or Doctoral degree reported having significantly better self-rated health in both the year 2015 and 2022/23 (2015 Coeff: -0.369, $p < .001$; 2022/23 Coeff: -0.208, $p < .01$) compared to those with less than a high school degree. Those who identified as having at least one comorbidity were more likely to report poorer self-rated health compared to those who had none. Having a functional limitation was significantly associated with reporting poorer self-rated health (2015 Coeff: 0.438, $p < .001$; 2022/23 Coeff: 0.439, $p < .001$). Lastly, Medicaid coverage, compared

with no Medicaid coverage, was associated with poorer self-rated health (2015 Coeff: 0.213, $p < .001$; 2022/23 Coeff: 0.279, $p < .001$).

Furthermore, Table 3.9 displays the changes in self-rated health in 2022/23, stratified by residents who remained in the same neighborhood versus those who relocated. The results revealed that Non-Hispanic Black (Coeff: 0.218, $p < .001$) and Hispanic (Coeff: 0.340, $p < .001$) respondents who did not move out of their neighborhood had poorer self-rated health than those who identified as Non-Hispanic White and remained in the same neighborhood. Additionally, respondents who identified as female (Remained Coeff: -0.192, $p < .001$; Moved Coeff: -0.197, $p < .01$), compared to those who identified as male, were less likely to report poorer self-rated health. Those who reported having a Master's, Professional, or Doctoral degree yielded significant results. Having a Master's, Professional, or Doctoral degree was associated with better self-rated health when stratified by those who never moved (Coeff: -0.198, $p < .01$) versus those who moved (Coeff: -0.246, $p < .05$).

Table 3.10 displays the change in mental health between 2015 and 2022/23. Across study years, those who identified as female had a higher likelihood of poorer mental health compared to those who identified as male (2015 Coeff: 0.186, $p < .05$; 2022/23 Coeff: 0.173, $p < .05$). Furthermore, having a higher income had a significant positive association with mental health. In the years 2015 and 2022/23, respondents that had income that fell into quartiles #3 (2015 Coeff: -0.578, $p < .001$; 2022/23 Coeff: -0.451, $p < .01$) and #4 (2015 Coeff: -0.701, $p < .001$; 2022/23 Coeff: -0.443, $p < .05$) reported more positive mental health compared to those that had lower income in quartile #1. Additionally, the results revealed that poorer mental health was associated with those who rented compared to those who owned their home. In 2015 and 2022/23, renters (2015 Coeff: 0.235, $p < .05$; 2022/23 Coeff: 0.455, $p < .001$) were more likely to report poorer mental health than homeowners. Moreover, in both years, having two (2015 Coeff: 0.225, $p < .05$; 2022/23 Coeff: 0.501, $p < .01$) or 3+ (2015 Coeff: 0.654, $p < .001$; 2022/23 Coeff: 1.121, $p <$

.001) comorbidities, compared to respondents with zero, was associated with poorer mental health. Lastly, having at least one functional limitation was associated with poorer mental health than those living with none (2015 Coeff: 0.714, $p < .001$; 2022/23 Coeff: 0.625, $p < .001$).

Table 3.8 Self-Rated Health Linear Regressions (Range: Excellent to Poor)

		2015	2022/23
		N=3245	*N=3245*
Variable	**Category**	**Coefficient**	**Coefficient**
Gentrified (Ref: Non-Gentrified)			
	Gentrified	0.141*	0.0443
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	0.417***	0.213***
	Hispanic	0.568***	0.275***
	More than One	-0.783	0.11634
	Other	0.206*	0.067
	Don't Know/Refused to Answer	0.023	0.006
Age		(Ref: 65-69)	(Ref: 70-74)
	70-74	-0.0401	--
	75-79	-0.0448	0.00331
	80-84	-0.096	-0.029
	85-89	-0.0472	0.020
	90+	-0.067	-0.0653
Gender (Ref: Male)			
	Female	-0.165***	-0.185***

Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	-0.117**	-0.008
	Never Married	0.044	0.070
Income (Ref: Quartile #1)			
	Quartile #2	-0.056	0.0098
	Quartile #3	-0.171**	-0.119*
	Quartile #4	-0.264***	-0.137*
Living Arrangement (Ref: Own)			
	Rent	0.093*	0.037
	Other Arrangement	0.145*	0.057
Education (Ref: Less than High School)			
	High School Graduate	-0.141*	-0.034
	Vocational, Technical, or Business, Some College, Associates	-0.189**	-0.122*
	Bachelor's Degree	-0.253**	-0.087
	Master's, Professional, or Doctoral	-0.369***	-0.208**
Count Comorbidities (Reference: Zero)			
	1	0.271***	0.216***
	2	0.444***	0.436***
	3+	0.757***	0.713***
Functional Limitation (Ref: No)			

	Yes	0.438***	0.493***
Medicaid Coverage (Ref: No)			
	Yes	0.213***	0.279***
Census Division (Ref: Northeast Region)			
	Midwest Region	0.032	0.040
	South Region	0.043	0.056
	West Region	-0.041	0.000

Note: Negative values indicate better self-rated health. Positive values indicate poorer self-rated health.

***$p < .001$, **$p < .01$, *$p < .05$.

Table 3.9 Self-Rated Health Linear Regressions (Range: Excellent to Poor)

		2022/23 (Remained)	2022 /23 (Moved)
		N=2267	*N=992*
Variable	**Category**	**Coefficient**	**Coefficient**
Gentrified (Ref: Non-Gentrified)			
	Gentrified	0.024	0.118
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	0.218***	0.157
	Hispanic	0.340***	0.088
	More than One	0.114	--
	Other	0.1154	-0.135
	Don't Know/Refused to Answer	-0.3775	0.290
Age (Ref: 70-74)			
	75-79	0.006	0.023
	80-84	-0.0547	0.089
	85-89	0.004	0.097
	90+	-0.059	-0.071
Gender (Ref: Male)			
	Female	-0.192***	-0.197**
Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	0.029	-0.090
	Never Married	0.181	-0.197

Income (Ref: Quartile #1)			
	Quartile #2	-0.0067	0.089
	Quartile #3	-0.055	-0.238
	Quartile #4	-0.107	-0.105
Living Arrangement (Ref: Own)			
	Rent	0.106	0.050
	Other Arrangement	0.040	0.138
Education (Ref: Less than High School)			
	High School Graduate	-0.020	-0.049
	Vocational, Technical, or Business, Some College, Associates	-0.102	-0.199*
	Bachelor's Degree	-0.044	-0.215
	Master's, Professional, or Doctoral	-0.198**	-0.246*
Count Comorbidities (Reference: Zero)			
	1	0.228***	0.184
	2	0.445***	0.412**
	3+	0.786***	0.572***
Functional Limitation (Ref: No)			
	Yes	0.490***	0.534***
Medicaid Coverage (Ref: No)			
	Yes	0.234***	0.402***
Census Division (Ref: Northeast Region)			

	Midwest Region	0.074	-0.032
	South Region	0.086	-0.005
	West Region	-0.019	0.030

Note: Negative values indicate better self-rated health. Positive values indicate poorer self-rated health.

***$p < .001$, **$p < .01$, *$p < .05$.

Table 3.10 displays the change in mental health between 2015 and 2022/23. Across study years, those who identified as female had a higher likelihood of poorer mental health compared to those who identified as male (2015 Coeff: 0.186, $p < .05$; 2022/23 Coeff: 0.173, $p < .05$). Furthermore, having a higher income had a significant positive association with mental health. In the years 2015 and 2022/23, respondents that had income that fell into quartiles #3 (2015 Coeff: -0.578, $p < .001$; 2022/23 Coeff: -0.451, $p < .01$) and #4 (2015 Coeff: -0.701, $p < .001$; 2022/23 Coeff: -0.443, $p < .05$) reported more positive mental health compared to those that had lower income in quartile #1. Additionally, the results revealed that mental health was associated with poor mental health for those who rented compared to those who owned their home. In 2015 and 2022/23, renters (2015 Coeff: 0.235, $p < .05$; 2022/23 Coeff: 0.455, $p < .001$) were more likely to report poorer mental health than homeowners. Moreover, in both years, having two (2015 Coeff: 0.225, $p < .05$; 2022/23 Coeff: 0.501, $p < .01$) or 3+ (2015 Coeff: 0.654, $p < .001$; 2022/23 Coeff: 1.121, $p < .001$) comorbidities, compared to respondents with zero, was associated with poorer mental health. Lastly, having at least one functional limitation was associated with poorer mental health than those living with none (2015 Coeff: 0.714, $p < .001$; 2022/23 Coeff: 0.625, $p < .001$).

Moreover, Table 3.11 displays the changes in self-rated health in 2022/23, stratified by residents who remained in the same neighborhood versus those who relocated. When further stratified, renters who remained in the same neighborhood (Coeff: 0.392, $p < .01$) and renters who moved (Coeff: 0.497, $p < .05$) were associated with poorer mental health than renters who owned their homes. In addition, higher income was associated with better mental health among both those who remained in the same neighborhood and those who moved. Respondents who had an income in quartile #3 (Coeff: -0.427, $p < .05$) and #4 (Coeff: -0.364, $p < .05$) had an association with better mental health compared to those who had a lower income in quartile #1 for residents who remained in the same neighborhood. They were not significant for residents who moved.

Table 3.10 Mental Health Tobit Regressions (Range: High to Low)

		2015	2022/23
		N=3245	*N=3245*
Variable	**Category**	**Coefficient**	**Coefficient**
Gentrified (Ref: Non-Gentrified)			
	Gentrified	-0.003	-0.048
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	0.082	-0.124
	Other	0.252	-0.096
	Hispanic	0.240	0.339
	More than One	-0.530	-0.925
	Don't Know/Refused to Answer	0.279	0.020
Age		(Ref: 65-69)	(Ref: 70-74)
	70-74	-0.121	–
	75-79	-0.177	. 2050919
	80-84	-0.176	0.088
	85-89	-0.289	0.048
	90+	-0.180	0.284
Gender (Ref: Male)			
	Female	0.186*	0.173*
Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	-0.144	-0.217*
	Never Married	-0.106	-0.260

Income (Ref: Quartile #1)			
	Quartile #2	-0.386**	-0.105
	Quartile #3	-0.578***	-0.451**
	Quartile #4	-0.701***	-0.443*
Living Arrangement (Ref: Own)			
	Rent	0.253**	0.455***
	Other Arrangement	0.252	-0.106
Education (Ref: Less than High School)			
	High School Graduate	-0.254	-0.189
	Vocational, Technical, or Business, Some College, Associates	-0.306	-0.336**
	Bachelor's Degree	-0.418*	-0.474**
	Master's, Professional, or Doctoral	-0.215	-0.500**
Count Comorbidities (Reference: Zero)			
	1	0.001	0.235
	2	0.225*	0.501**
	3+	0.654***	1.121***
Functional Limitation (Ref: No)			
	Yes	0.714***	0.625***
Medicaid Coverage (Ref: No)			
	Yes	0.485***	0.256

Census Division (Ref: Northeast Region)			
	Midwest Region	-0.056	-0.222
	South Region	0.020	0.036
	West Region	0.179	-0.101

Note: Negative values indicate better mental health. Positive values indicate poorer mental health.

***$p < .001$, **$p < .01$, *$p < .05$.

Table 3.11 Mental Health Tobit Regressions (Range: High to Low)

		2022/23 (Remained)	2022/23 (Moved)
		N=2267	*N=992*
Variable	**Category**	**Coefficient**	**Coefficient**
Gentrified (Ref: Non-Gentrified)			
	Gentrified	0.002	-0.042
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	-0.091	-0.229
	Other	-0.394	0.330
	Hispanic	0.342	0.349
	More than One	-0.875	
	Don't Know/Refused to Answer	1.040	-1.253
Age (Ref: 70-74)			
	75-79	0.266	-0.059
	80-84	0.181	-0.126
	85-89	0.118	-0.222
	90+	0.312	0.001
Gender (Ref: Male)			
	Female	0.115	0.223
Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	-0.088	-0.433*
	Never Married	-0.100	-0.492
Income (Ref: Quartile #1)			

	Quartile #2	-0.197	0.145
	Quartile #3	-0.427**	-0.440
	Quartile #4	-0.364*	-0.477
Living Arrangement (Ref: Own)			
	Rent	0.392**	0.497*
	Other Arrangement	-0.210	-0.09
Education (Ref: Less than High School)			
	High School Graduate	-0.172	-0.153
	Vocational, Technical, or Business, Some College, Associates	-0.303*	-0.497
	Bachelor's Degree	-0.497**	-0.428
	Master's, Professional, or Doctoral	-0.570**	-0.432
Count Comorbidities (Reference: Zero)			
	1	0.301	0.049
	2	0.570***	0.307
	3+	1.204***	0.937**
Functional Limitation (Ref: No)			
	Yes	0.692***	0.522*
Medicaid Coverage (Ref: No)			
	Yes	0.314*	0.162
Census Division (Ref: Northeast Region)			
	Midwest Region	-0.383	0.243

	South Region	-0.120	0.486**
	West Region	-0.204	0.224

Note: Negative values indicate better mental health. Positive values indicate poorer mental health.

***$p < .001$, **$p < .01$, *$p < .05$.

3.4 Discussion

Using the NHATS and ACS, I examined associations between gentrification and self-rated and mental health among older adults. In 2015, 4.5% of census tracts were classified as gentrified, and by 2022/23, this number had risen to 5.3%. The National Community Reinvestment Coalition (NCRC) (2025) reported that in the 2010s, 1,807 census tracts were found to be gentrified. In the 2010s, the U.S. Census tabulated approximately 73,057 census tracts, of which approximately 2.5% were gentrified. This number is nearly twice the rate reported in this study. This could be due to how gentrification is measured. NCRC (2025) measures gentrification using established indicators, such as income levels, rising property values, and the proportion of college-educated residents, which is similar to the measures utilized for this study. They also included additional measures such as changes in professional and managerial employment, transformations in racial and ethnic demographics, and current trends in mortgage lending (NCRC, 2025). It also assessed cultural displacement in neighborhoods exhibiting gentrification that transitioned from predominantly Black residents between 1980 and 2020 (NCRC, 2025). The additional factors alter the overall measurement, underscoring the need for a uniform measure for proper comparison across studies, as noted by Bailey and Gaugler (2025).

For both self-rated health and mental health, identifying as Black or Hispanic was associated with poorer health results compared to identifying as White. These findings are consistent with the existing literature and further demonstrate racial and ethnic disparities in self-rated mental health (Acolin et al., 2024; Stone, 2015a). Black residents who live in gentrified neighborhoods are more likely to report poor/fair self-reported health than residents of other racial backgrounds residing in the same neighborhoods (Gibbons & Barton, 2016; Izenberg et al., 2018). This is due in part to the neighborhoods targeted for gentrification. Research findings indicate that neighborhoods undergoing gentrification often have a high number of Black

residents (Croff et al., 2021). According to several studies on gentrification, middle-class White residents and investors seem to find racially mixed communities, especially those with over 40% Black population, as the most desirable when seeking homes and neighborhoods to purchase/invest in (Hwang & Sampson, 2014b). However, the Black population represents 14.7% of the total U.S. population (Passel, 2025).

A foundational aspect of the gentrification process is demographic change. Increased educational attainment is a protective factor for health (Zajacova & Lawrence, 2018), and our results indicate that higher education is associated with better health than less than a high school degree. High educational attainment can serve as a protective factor for self-rated and mental health for older adults (Mehdipanah et al., 2018). The literature has found that individuals without college degrees residing in gentrified neighborhoods are less likely to move than similar households elsewhere (Freeman & Braconi, 2004; Vigdor, 2002). These findings align with our results: in 2015, 14.6% of residents with at least a college degree lived in gentrified neighborhoods. In 2022/23, the share of residents who remained in their gentrified neighborhoods increased to 25.7%. Over time, the number of residents with higher educational attainment also increased.

Higher levels of neighborhood educational attainment can serve as a protective factor for overall well-being for older adults in gentrified neighborhoods. Even if the education is not directly their own, an influx of highly educated individuals into a neighborhood can have spillover effects on the rest of the residents. They can do this by improving resources, social cohesion, and the environment (Nieuwenhuis & Hooimeijer, 2016). It is important to note that the integration of spillover from new residents is only possible through inclusive strategies (Love & Krupicka, 2024), whereas the process of gentrification is not inclusive and thus impedes the theorized benefits.

As mentioned previously, comorbidity and functional limitation covariates are directly associated with health status, particularly among older adults (Koroukian et al., 2016; Williams & Egede, 2016), and my results support this. Individuals with comorbidities and functional limitations often require a supportive environment to manage their health successfully and maintain their quality of life. Hwang and Sampson (2014) reported that older adults view urban transformation as detrimental to their quality of life (Hwang & Sampson, 2014b).

3.5 Limitations

This paper does not come without limitations. First, because this study used repeated cross-sectional analyses, it precludes inferring causality. Causal inference is relevant to research on neighborhood effects on health (Diez Roux & Mair, 2010). There is no uniform method for measuring gentrification, given the multiple ways it has been defined and operationalized in the literature (Firth et al., 2020). Inconsistencies in measuring gentrification can lead to nuanced interpretations of outcomes and complicate efforts to synthesize the effects of gentrification across the existing literature. Despite this limitation, I drew on the work of Freeman (2005), Izenberg and collaborators (2018), and Finio (2022) to conceptualize and analyze the gentrification process. Another limitation of this study is the utilization of census tracts.

Census tracts are only a proxy for neighborhoods and do not necessarily map onto older adults' lived and self-conceptualized neighborhoods, and they are less helpful for rural areas. Furthermore, attrition can introduce a bias. This bias arises when the number of participants differs among groups and years, therefore skewing the association between variables. Lastly, selection bias could also impact the self-rated mental health of participants. Neighborhood characteristics that may positively or negatively impact the health of older adults, contingent upon the participant's place of residence. This analysis excludes broad evaluations of the neighborhood-built environment and other neighborhood characteristics, including asset

measures; future research should integrate these variables into its analyses. Additionally, future researchers should work toward having a unified definition and standard methodology for gentrification. Moreover, researchers should be cognizant of environmental factors beyond gentrification that can affect the well-being of older adults. This will lead to research that can be applied more accurately and compared with other studies.

3.6 Conclusion

In this study, the fully adjusted difference-in-differences analysis revealed a significant association between gentrification and poorer self-rated health. Gentrification was not significantly associated with poorer mental health among older adults who remained in gentrified neighborhoods over time, compared with those who remained in non-gentrified neighborhoods. My cross-sectional findings revealed that older adults who identified as Non-Hispanic Black or Hispanic were more likely to report poorer self-rated and mental health than their Non-Hispanic White counterparts overall. In addition, other factors, including education, functional limitations, and the number of comorbidities, influence self-rated health and mental health among older adults.

The findings from my studies indicate that gentrification, along with several other factors, is significantly associated with poorer self-rated health among older adults. Without policy and pragmatic attention to this issue for the process of gentrification, there is a risk of exacerbating the poor health outcomes for older adults. A way to combat this is through age-friendly cities. Age-friendly cities substantially enhance health by improving both the physical and social environments, thereby promoting the well-being of older adults (WHO, 2023). This framework promotes healthy aging by ensuring the availability and accessibility of essential services and infrastructure (WHO, 2023).

3.7 Ethical Statement

This study was conducted using restricted NHATS and ACS census data. The study was reviewed and approved by the University of Minnesota Institutional Review Board, which holds a Federalwide Assurance (FWA # 00000312) from the Office for Human Research Protections in the Department of Health and Human Services.

Chapter 4. The Association Between Gentrification and Older Adults' Perceptions of Social Cohesion

4.1 Introduction

The places where older adults (65+) live have a substantial impact on their ability to age successfully. However, gentrification may disrupt older adults' ability to age in place successfully. The National Institute on Aging (NIA) (2023) refers to aging in place as the common desire among older adults to remain in their own homes, maintain independence for as long as possible, and rely on family and friends for support when needed. Gentrification was first coined by Ruth Glass in the 1960s and is defined as "the transformation of a poor neighborhood in cities by the process of middle- and upper-income groups buying properties in such neighborhoods and upgrading them" (Lees et al., 2013). This process is dynamic and occurs in stages (Hwang & Sampson, 2014b; Tulier et al., 2019), and a body of research has considered the social, economic, and health ramifications of gentrification for the remaining residents of communities that undergo this transition (Cole et al., 2021; Crewe, 2017; Millar, 2020).

Webber and colleagues (2023) argue that perceptions of home in later life are not static but fluctuate over time due to changes in the local environment and the deterioration (or absence) of social relationships, which gentrification can affect. Community support is essential for older adults to age in place (Ratnayake et al., 2022). However, gentrification can disrupt community support and lead to the departure of resources (e.g., local businesses, healthcare providers) (Mendoza-Graf et al., 2023). It thus may be counterproductive for those who wish to age in place. For example, changes in the neighborhood and available resources resulting from gentrification pose a significant risk to the neighborhood's social composition and cohesion, which, in turn, can affect residents' health (Berkman & Kawachi, 2000; Hernandez et al., 2006).

Social cohesiveness is a subset of social cohesion. Social cohesion is defined as unity and solidarity among residents, which confer numerous benefits on members, including increased

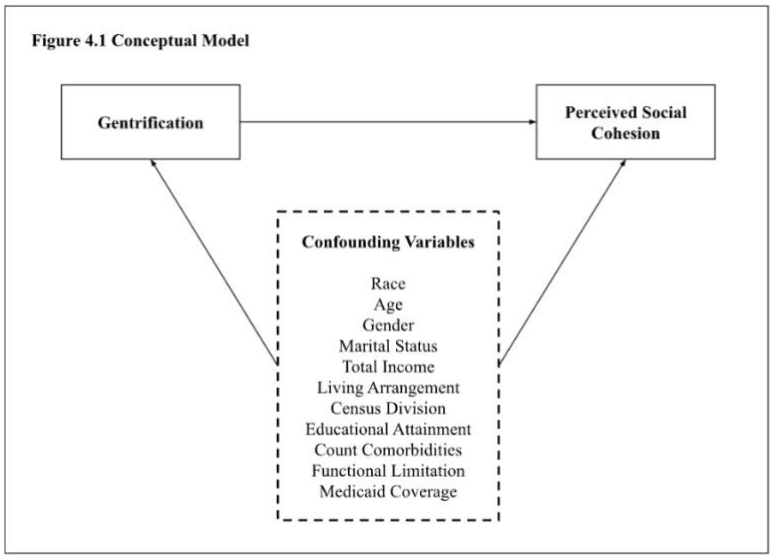
social participation and improved well-being (Berkman & Kawachi, 2000; Keith, 1977; Shippee, 2005; Streib & Metsch, 2002). Typically, social cohesion is assessed across dimensions such as institutional confidence, interpersonal trust, sense of belonging, shared values, social connections, participation, and socioeconomic inequality and mobility (UNECE, 2023). Still, because of the contextual nature of social cohesion, results are often inconsistent and nuanced (Oberndorfer et al., 2022). One study found that social cohesion can serve as a protective factor against the potential adverse health effects of gentrification, with each one-unit increase in social cohesion (indicating an increase in social cohesiveness) resulting in a 14% decline in the probability of a resident in a gentrified neighborhood reporting 'fair/poor health' (Gibbons & Barton, 2016). Other studies examining social cohesion concepts, such as social capital (i.e., civic engagement, reciprocity norms, and trust in others) (Iyanda & Lu, 2021) have reported similar findings (Bookman & Kimbrel, 2011). For example, Kawachi and colleagues found that greater social capital is associated with lower mortality (Kawachi et al., 1997). These studies lead to the implication that place has a significant association with social relationships (Mendoza-Graf et al., 2023; Ratnayake et al., 2022; Webber et al., 2023), and the place where older adults reside can impact their health (Berkman & Kawachi, 2000; Gibbons & Barton, 2016; Hernandez et al., 2006; Kawachi et al., 1997). The objective of this paper is to explore the association between gentrification and the social cohesion of community-dwelling older adults over time.

Theoretical Framework

According to Lawson's theory of person-environment fit, the physical and social environments of older adults, as well as their behavior, are dynamic, constantly evolving processes that influence well-being (Lawton, 1983). Similarly, gentrification alters older adults' living environments and likely has individual-level implications for their well-being and health; however, the mechanisms by which environmental change (i.e., gentrification) influences

individual-level outcomes remain unclear. Gentrification, by eroding social cohesion, may lead to adverse health outcomes for older adults (Kress et al., 2020).

Research indicates that various neighborhood-level factors, including green spaces (i.e., environments containing greenery, including parks and trees) and other features of the built environment, impact health outcomes, and social cohesion mediates this relationship (de Vries et al., 2013; Diez Roux & Mair, 2010; Kress et al., 2020). For example, de Vries and colleagues (2013) concluded that the health benefits of green activity (i.e., physical activity performed in a public setting) may not derive from the physical effort involved, but rather from its capacity to reduce stress and promote social cohesion. A dynamic change in greenery is a neighborhood-level indicator of change, with a similar level of influence to gentrification and other dynamic changes (e.g., climate, retail) that may affect residents' well-being (Cole et al., 2021). Maas and collaborators (2009) found that green space, loneliness, and perceived lack of social support mediated the association between green space and participants' mental health. Similarly, another study found that social cohesion is a causal link between the environmental and built qualities of a neighborhood and health, with a progressively stronger mediating effect on physical health over time (Kress et al., 2020).



Rowles' (1983) place attachment theory further shapes the conceptualization of this study. Rowles' study reveals that attachment to place is a multifaceted phenomenon

encompassing physical, social, and psychological elements (Rowles, 1983). As people form new friendships and social ties evolve, they may subsequently develop social insideness (Rowles, 1983), defined as the degree of integration within the community and neighborhood, exemplified by various forms of social participation and civic engagement (Woolrych et al., 2020). However, feeling connected to a new place may take a long time because it depends on having meaningful experiences that help shape one's sense of self (Rowles, 1983).

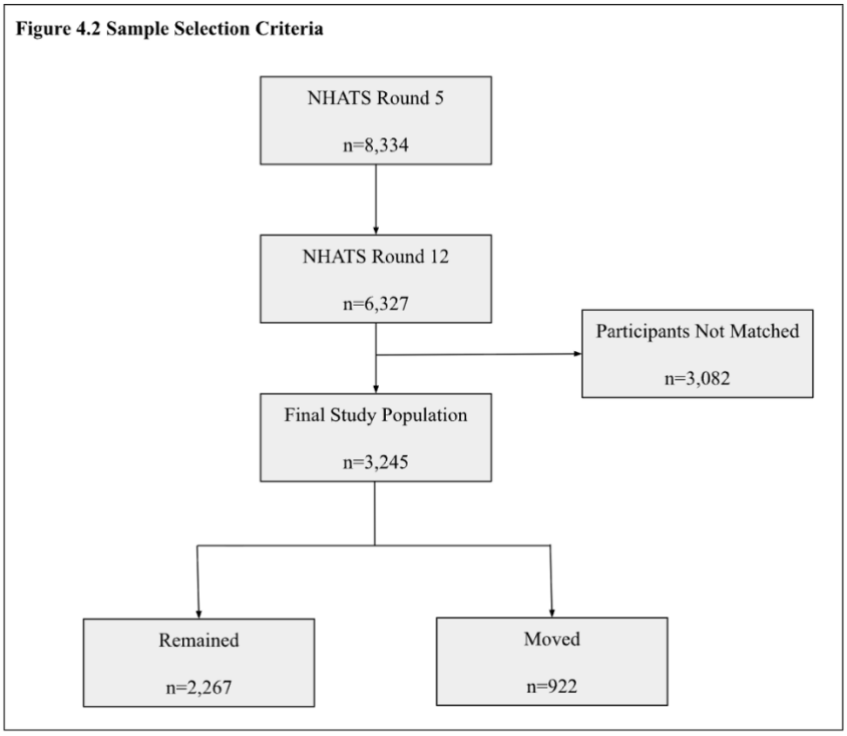
Analysis of Lawton's (1983) and Rowles's (1983) place attachment theories led to the development of the conceptual framework for this study (Figure 1). This conceptual model comes from a narrative review of the literature on gentrification, aging, and well-being by Bailey and Gaugler (2025). Existing research and theory indicate that social cohesion serves as a potential mediator for health outcomes when older adults encounter various stressors that impede green activities or other beneficial characteristics of the built environment (Bailey & Gaugler, 2025; de Vries et al., 2013; Diez Roux & Mair, 2010; Kress et al., 2020). Before examining social cohesion as a mediator, I aim to investigate its direct effects on the health of older adults exposed to gentrification. I hypothesize that, over time, as the social composition of neighborhoods changes, perceived social cohesion will decrease among older adults residing in gentrified neighborhoods relative to those living in non-gentrified neighborhoods.

4.2 Methods

Sample

I conducted a repeated cross-sectional analysis using data from 2011 through 2022/23, using the American Community Survey (ACS) and the National Health and Aging Trends Study (NHATS). The ACS and NHATS poll respondents over similar periods of time (Freedman & Kasper, 2019; Herman, 2008). The ACS is a comprehensive, ongoing survey of the whole United States (U.S.) population, whereas the NHATS is a specialized, annual survey concentrating solely

on Medicare beneficiaries aged 65 and older. These datasets were combined for this research using Federal Information Processing Standards (FIPS) codes, which serve as unique geographic identifiers for counties across the U.S., thereby enabling uniform linkage of county-level data over time.



The NIA-sponsored NHATS is an epidemiological panel research of a nationally representative cohort of Medicare beneficiaries aged 65 and older living in community and residential care settings, initiated in 2011 (Freedman & Kasper, 2019). The data collection encompasses demographic details, health and physical functioning, social and economic conditions, and environmental factors (Freedman & Kasper, 2019). The NHATS oversamples older persons in the oldest old age group (85+) and Black respondents to ensure sufficient statistical power for trend analysis (Freedman & Kasper, 2019). The U.S. Census Bureau administers the ACS on a monthly or annual basis (Herman, 2008). The ACS disseminates the survey to more than 3.5 million addresses across the 50 states, the District of Columbia, and Puerto Rico (Herman, 2008), providing essential data on the American population and housing attributes (Blewett et al., 2016).

This cross-sectional study design included the same individuals who were surveyed and answered NHATS and Census Bureau questions in all three rounds of data collection: 2011, 2015, and 2022/23. The 2011 dataset corresponds with the launch of the National Health and Aging Trends Study (NHATS), while the 2022/2023 data reflect the most recent wave available at the time of analysis. The year 2011 was selected as the initial year for the development of the gentrification variables used in this study. The year 2015 was strategically selected as the midpoint, not only because it is relevant to the census data but also because NHATS survey items administered during this wave were consistent in format and content with those in the 2022/2023 wave. To ensure geographic consistency across all three periods, county-level data were linked using Federal Information Processing Series (FIPS) codes, standardized geographic identifiers that enable accurate matching over time. This approach facilitated the integration of data across NHATS surveillance periods, ensuring comparability of geographic and survey measures throughout the study period. Figure 4.2 displays the selection of the analytic sample used for this study. In 2015, 8,334 individuals participated in the NHATS. During the 2022/23 period, there were just 6,327 participants. Participants were included in the analysis only if they completed both rounds of data collection (n = 3,245). The final sample was subsequently categorized into two groups: individuals who had never relocated (n = 2,267) and those who had experienced residential mobility and moved out of (n = 922). Detailed descriptions of the outcome variables and covariates are provided in Appendices D and E, respectively. Furthermore, due to the dataset merger or rounds 5 and 12, some participants were excluded from the analytical sample (n=3,082). Reporting participant flow was therefore critical for evaluating attrition bias. Appendix A presents descriptive statistics for the annual distributions and percentage values of the variables used in this study, prior to dataset integration, and compares them with the corresponding values after merging to highlight differences in the final sample.

Measures

Key Independent Variable. Building on the methodologies established by Freeman (2005), Deng (2024), Ding and colleagues (2018), and Izenberg and colleagues (2018), the subsequent criteria were employed to determine whether an area has undergone gentrification. Using the Census-Based Statistical Area (CBSA) framework to ensure geographic comparability, census tracts were first assessed for eligibility based on socioeconomic criteria. A tract qualified as eligible for gentrification if its median household income was below the median income of its respective metropolitan area, as defined by the CBSA (Izenberg et al., 2018). Among eligible tracts, gentrification status was determined by whether, in subsequent years, the tract experienced concurrent increases in four key indicators: median educational attainment (specifically, the proportion of residents with a college degree), median household income, median rent, and median housing prices. All indicators were required to exceed the corresponding CBSA median values for the same period for a tract to be classified as gentrified.

Table 4.1 Measures

Variable	Variable Construction	Data Source
Key Independent Variable: *Gentrification*	(1) Tract median gross rent price increase (2) Tract median income increase (3) Tract median home value price increase (4) Tract median college-educated residents increase	ACS
Outcome Variable: *Social Cohesion*	(1) "People in my community know each other well" (2) "People are willing to help each other" (3) "People can be trusted"	NHATS
Covariates	Race, Age, Gender, Marital Status, Total Income, Housing Tenure (Rent vs. Own), Census Division, Educational Attainment, Count Comorbidities, Functional Limitation, and Medicaid Coverage	NHATS

Outcome Variable. I assessed social cohesion based on respondents' answers to three NHATS survey questions: (1) "People in my community know each other well," (2) "People are willing to help each other," and (3) "People can be trusted." Respondents self-defined their community or neighborhood in response to these questions. They answered each question using a three-point scale (1 = agree a lot, 2 = agree a little, 3 = do not agree). I combined them into an

ordinal scale that ranges from 1 to 9. This scale ranges from low to high; a rating of "1" indicates high social cohesion, and a rating of "9" indicates low social cohesion.

Covariates. NHATS categorizes age into five-year groups (65-69, 70-74, 75-79, 80-84, 85-89, and 90+). Gender was dichotomized into male and female. Race and ethnicity were classified as White non-Hispanic, Black/African American non-Hispanic, Hispanic, and Other due to the small sample size of Native Americans and Pacific Islanders. Age, gender, and race are key social determinants of health that can influence social and environmental factors (National Academies of Sciences et al., 2021). Educational attainment was classified into several categories: less than high school, high school graduate, post-high school education (associate's degree), bachelor's degree, and graduate degree. Educational attainment is a covariate because it influences various aspects of older adults' lives, including cognitive performance, physical and mental health, and overall well-being (Adams, 2002; Leggett et al., 2019). Finally, NHATS inquired about the respondents' marital status. It was classified into five categories: Married/Living with Partner, Separated, Divorced, Widowed, or Never Married. Marital status is associated with the overall life satisfaction and well-being of older adults (Fonseca et al., 2008; Gove et al., 1983).

Census Divisions were categorized into four regions: Northeast, Midwest, South, and West. Regional and local conditions and events influence the gentrifying process (Shaw, 2008). Income was a respondent's estimate of the sample person's income, plus the spouse or partners, if relevant, over the previous year, aggregated with other household income. Income was divided into quartiles. Income was included as a covariate because it is an indicator of socioeconomic status, in addition to educational attainment (Temple, 2016). Medicaid status was included as a covariate; respondents were asked about their Medicaid coverage status (enrolled vs. not enrolled). The final covariate of interest is housing-related, indicating whether the resident owns,

rents, or has another arrangement for their residence. These specific housing covariates are critical in explaining the ramifications of gentrification (A. S. Schnake-Mahl et al., 2020).

Medicaid status in research frequently serves as a proxy indicator of socioeconomic status (Marcin et al., 2003; Yuma-Guerrero et al., 2018), and it is crucial in defining the home- and community-based services (HCBS) accessible to individuals wishing to age in place, since it frequently serves as the primary, or sole source of funding for long-term care delivered outside institutional environments (MACPAC, 2024; O'Keeffe et al., 2010). I included measures of health and functional status. First, respondents were asked to reply "yes" or "no" to whether they had the comorbidities (i.e., heart attack, arthritis, osteoporosis, diabetes, lung disease, stroke, dementia, and cancer). The comorbidities were quantified into a categorical variable with four classifications: none, one, two, and three or more comorbidities. Moreover, a new variable was also created to assess functional status. Functional limitations were operationalized as a binary variable (yes/no), derived from respondents' answers to a set of questions assessing physical abilities. Specifically, participants were asked whether they could perform the following tasks: walk six blocks, walk three blocks, climb 20 stairs, climb 10 stairs, carry 20 pounds, carry 10 pounds, kneel, bend over, lift a heavy object overhead, reach overhead, open a sealed jar by hand, and grasp small objects. Each item was answered with either "yes" or "no." Respondents who answered "yes" to at least one functional restriction question was classified as having a functional limitation; those who answered "no" to all were classified as having none. Comorbidity and functional limitations are directly associated with reported health status, particularly among older adults (Koroukian et al., 2016; Williams & Egede, 2016).

Missing Data

I conducted four regression analyses to examine social cohesion, using the same sample for each. The first regression used 2015 data as the baseline for comparison, while the second

used data from the 2022/23 period. The third and fourth regressions also used 2022/23 data but were stratified by whether participants had moved or remained in the same neighborhood over time. Appendix B indicates the percentage of missing values for each variable in the combined dataset. To manage missing data, I included only demographic and covariate variables with less than 10% missingness. Variables associated with housing tenure were excluded due to exceeding 10% missingness. This methodology may introduce selection bias. Excluding participants with 10% or greater missing data can introduce selection bias, as excluded individuals may differ systematically from those retained in the analysis. To mitigate this potential bias, multiple imputation techniques were employed, allowing the dataset to more appropriately represent the underlying target population.

Furthermore, without imputation, missing data may lead to biased results and inaccurate analyses. Imputation produces extensive datasets that accurately reflect the variability of missing data (e.g., income) and provide dependable estimates for research purposes (Sterne et al., 2009). This results from NHATS' use of imputation to address missing values in its survey data, which may arise from nonresponse or other issues (NHATS, 2025). Certain variables exhibit no missing values (e.g., race and gender). All but one variable exhibit missingness greater than 5%. Age in 2022/23 displays the highest level of missing data at 7.4%. Nearly all other variables have missingness below 2%, ranging from 0.55% to 1.5%.

Statistical Analysis

Analytic weights generated by NHATS were used to adjust for varying nonresponse rates and to produce national prevalence estimates. All analyses were conducted using Stata within the University of Michigan enclave to access restricted data. Chi-square tests were employed to compare the demographic characteristics of persons residing in gentrified neighborhoods with those in non-gentrified neighborhoods. I employed a logistic regression model to assess the

likelihood of high social cohesion, while controlling for factors such as gentrification, age, race/ethnicity, gender, income, living arrangement, census division, educational attainment, presence of comorbidities and/or functional limitations, and Medicaid coverage. Finally, a difference-in-differences approach was employed to assess temporal changes in reported social cohesion associated with gentrification among residents who did not move.

A sensitivity analysis was conducted for the gentrification variable. The construction of the gentrification variable was informed by Freeman (2005), Deng (2024), Fino (2022), and Hirsch et al. (2021). This variable construction placed heavy emphasis on the economics of the gentrifying process (Finio, 2022). For this reason, the construction of this gentrification variable employed threshold models that included factors such as median housing price and educational attainment. Rental prices and resident income levels were deliberately excluded from the initial construction of the variable, as these factors are influenced by and potentially confounded with the mechanisms central to the underlying economic framework. Sensitivity analyses revealed minor discrepancies in sample composition between gentrified and non-gentrified neighborhoods when compared to the original model. Following team consultation, the previously omitted variables were subsequently incorporated into the analysis to enhance specificity and robustness.

4.3 Results

Descriptive Statistics

Characteristics of the study population, categorized as non-gentrified versus gentrified (n = 3245), are presented in Table 1 by year. In 2015, 4.5% of census tracts were classified as gentrified. By 2022/23, the percentage had increased to 5.3%. The participants' ages ranged from 65 years and older. The average age category for participants in 2015 was 70-74 years old. In 2015, more than half of participants identified as female in both gentrified and non-gentrified

neighborhoods. Among the selected participants, 2267 (69.9%) did not move during the 7-year period of follow-up.

Significant differences were observed between residents of gentrified and non-gentrified neighborhoods in total income and rent between the baseline and follow-up interviews. Residents of gentrified neighborhoods exhibited significant differences in income and rent. The median income for residents in gentrified versus non-gentrified neighborhoods in 2015 was $40,000 and $30,000, respectively ($p < .01$). In 2022/23, the income of residents living in gentrified neighborhoods increased to $42,000.00, while that of residents in non-gentrified neighborhoods increased to $33,051.50 ($p < .01$). Additionally, the median rent for the year 2015 was $882.05 and $575.00, respectively ($p < .01$). The rent increased to $805.00 and $937.50 ($p < .01$) in the year 2022/23. Over time, rent increased by 40%-64%, whereas income increased for all residents by 5%-10%.

Table 4.2 Outcome Variables Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods (*N* = 3245)

		2015 Non-Gentrified	2015 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Social Cohesion (Range: High to Low)				0.0801			0.8603
	3	31.20%	26.42%		33.41%	32.93%	
	4	20.99%	25.91%		21.77%	21.65%	
	5	18.61%	21.39%		17.17%	16.72%	
	6	14.94%	13.99%		15.98%	15.77%	
	7	8.10%	2.91%		6.17%	8.11%	
	8	3.41%	5.70%		3.04%	2.57%	
	9	2.73%	3.68%		2.46%	2.27%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

Table 4.3 Covariate Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods (*N* = 3245)

		2015 Non-Gentrified	2015 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Race/ Ethnicity				0.836			0.913
	White, Non-Hispanic	83.39%	80.50%		83.37%	81.02%	
	Black, Non-Hispanic	7.55%	10.89%		7.54%	10.54%	
	Other (Native American, Asian, Hawaiian)	3.70%	2.13%		3.67%	2.82%	
	Hispanic	2.86%	3.75%		2.88%	3.32%	
	More than One	0.10%	0.00%		0.12%	0.00%	
	Don't Know/Refused to Answer	2.40%	2.74%		2.42%	2.31%	
Age				0.000			0.000
	65-69	31.68%	1.96%		--	--	
	70-74	33.24%	38.17%		15.09%	0.00%	
	75-79	18.91%	25.75%		40.69%	31.15%	
	80-84	11.31%	19.78%		21.79%	29.46%	
	85-89	3.76%	9.75%		14.51%	21.46%	

	90+	1.10%	4.59%		7.92%	17.93%	
Gender				0.006			0.010
	Male	44.63%	33.78%		44.63%	35.56%	
	Female	55.37%	66.22%		55.37%	64.44%	
Income				0.016			0.022
	Quartile #1 (2015: $0-$16,799; 2022/23: $0-$19,999)	12.78%	20.14%		14.63%	24.00%	
	Quartile #2 (2015: $16,800-$32,861; 2022/23: $20,000-$39,999)	19.3%	29.46%		24.11%	27.91%	
	Quartile #3 (2015: $32,862-$63,499; 2022/23: $40,000-$77,999)	28.66%	28.58%		30.76%	25.99%	
	Quartile #4 (2015: $63,500+; 2022/23: $78,000+)	39.26%	21.82%		30.5%	21.10%	
Educational Attainment				0.000			0.003

	Less than High School	10.32%	23.42%		10.40%	19.91%	
	High School Graduate	24.29%	33.69%		24.54%	27.7%	
	Vocational, Technical, or Business, Some College, Associates	28.95%	28.34%		29.02%	27.28%	
	Bachelor's Degree	17.70%	7.21%		17.62%	10.34%	
	Master's, Professional, or Doctoral	18.74%	7.35%		18.34%	14.77%	
Marital Status				0.016			0.004
	Married/Living with a Partner	62.12%	49.25%		51.91%	43.06%	
	Separated/Divorced/Widowed	34.67%	46.83%		44.92%	53.92%	
	Never Married	3.21%	3.93%		3.18%	3.02%	
Living Arrangement				0.009			0.021
	Own	81.9%	72.93%		73.47%	66.28%	
	Rent	12.71%	17.97%		18.28%	25.75%	
	Other Arrangement	5.38%	9.10%		8.25%	7.96%	
Count Comorbidities				0.005			0.057

	0	22.56%	15.47%		11.74%	8.31%	
	1	33.95%	27.86%		29.14%	25.71%	
	2	28.8%	38.71%		33.78%	33.45%	
	3+	14.68%	17.96%		25.35%	32.52%	
Functional Limitation				0.002			0.069
	No	47.07%	33.41%		28.58%	21.57%	
	Yes	52.93%	66.59%		71.42%	78.43%	
Medicaid Coverage				0.180			0.369
	Yes	7.61%	11.31%		10.32%	12.98%	
	No	92.39%	86.67%		89.68%	87.02%	
Census Division				0.929			0.970
	Northeast Region	18.45%	19.22%		18.05%	17.68%	
	Midwest Region	24.80%	27.92%		24.43%	28.41%	
	West Region	35.51%	26.86%		36.57%	30.4%	
	South Region	21.24%	26.01%		20.95%	23.5%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

4.4 Unadjusted Social Cohesion Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	0.995	0.013
Time	0.515	0.000
Difference-in-Differences	-1.036	0.015

4.5 Fully Adjusted Social Cohesion Difference-in-Differences Model

	Coefficient	P-value
	N=2267	
Treated	0.960	0.014
Time	0.343	0.002
Difference-in-Differences	-0.910	0.029
Age	-0.088	0.029
Gender	-0.132	0.001
Marital Status	-0.064	0.041
Income	-0.130	0.210
Living Arrangement	0.000	0.000
Education	-0.061	0.018
Comorbidities	0.190	0.000
Functional Limitation	0.485	0.000
Medicaid Coverage	0.177	0.001
Census Division	0.073	0.464

Difference-in-Differences Models

The primary analysis of interest was the difference-in-differences model, which aimed to show the change in social cohesion over time by gentrification status. In the unadjusted model (see Table 4.4), the coefficient for the difference-in-differences analysis of social cohesion was -1.036 ($p < .05$). Specifically, for residents who remained in the same gentrified neighborhood compared with those in non-gentrified neighborhoods, social cohesion declined over time. In the fully adjusted model (see Table 4.5), the results remained consistent. The coefficient for the difference-in-difference model was -0.910 ($p < .05$) for residents who remained in the same gentrified neighborhood compared to those in non-gentrified neighborhoods.

Regression Models

In my repeated cross-sectional analyses, my results identified factors that may be associated with social cohesion, in addition to gentrification. Table 4.6 presents the change in the outcome as perceived social cohesion ranges from high to low for 2015 and 2022/23. Additionally, the year 2022/23 was stratified to analyze residents who remained in the same neighborhood versus those who relocated (see Table 4.7).

In the fully adjusted model for self-rated health, gentrification was not statistically significant in any year. Participants who identified as non-Hispanic Black (2015 Coeff: 0.263, $p < .001$; 2022/23 Coeff: 0.403, $p < .001$) compared to those who identified as White, were significantly associated with lower perceived social cohesion in both 2015 and 2022/23. In addition, participants who identified as Hispanic (2015 Coeff: 0.300, $p < .05$; 2022/23 Coeff: 0.140, $p < .01$) compared to those who identified as White, were associated with lower perceived social cohesion in both 2015 and 2022/23. More specifically, when further dichotomized based on whether the residents remained in the same neighborhood or moved, non-Hispanic Black (Stayed Coeff: 0.363, $p < .001$; Remained Coeff: 0.441, $p < .01$) and Hispanic (Stayed Coeff:

0.473, $p < .001$; Moved Coeff: 0.921, $p < .001$) respondents had a significant association with lower social cohesion compared to those who identified as White.

Respondents who identified as separated, divorced, or widowed were associated with experiencing lower levels of social cohesion compared to those that identified as married or living with a partner (2015 Coeff: 0.136, $p < .05$; 2022/23 Coeff: 0.137, $p < .05$). In both 2015 and 2022/23, older adults in age group 85-89 (2015 Coeff: -0.391, $p < .01$; 2022/23 Coeff: -0.563, $p < .001$) were more likely to report higher levels of social cohesion than those aged 70 to 74. Additionally, when these groups were analyzed by those who remained in the same neighborhood and those who moved, the 85-89 age group (Remained Coeff: -0.596, $p < .001$; Moved Coeff: -0.497, $p < .05$) showed higher social cohesion than those aged 70-74. Furthermore, in 2015, individuals with total income in the third quartile (Coeff: -0.356, $p < .01$) and the fourth quartile (Coeff: -0.322, $p < .05$) had a likelihood to exhibit higher social cohesion than those in the first quartile. Finally, respondents that have at least one functional limitation in the year 2022/23 were associated with having lower levels of social cohesion compared to those who do not have any functional limitations (Coeff: 2.37, $p < .01$). When further analyzed, based on those who remained in the same neighborhood and those that moved, both groups had an association of lower social cohesion compared to those that did not have a functional limitation (Remained Coeff: 0.205, $p < .05$, Moved Coeff: 0.367, $p < .05$).

Table 4.6 Social Cohesion Logistic Regressions (Range: High to Low)

		2015	2022/23
Variable	Category	Coefficient	Coefficient
Gentrified (Ref: Non-Gentrified)			
	Gentrified	0.078	0.063
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	0.263***	0.403***
	Other	-0.100	0.115
	Hispanic	0.300*	0.594***
	More than One	-0.509	-1.455
	Don't Know/Refused to Answer	0.417	-0.210
Age		(Ref: 65-69)	(Ref: 70-74)
	70-74	-0.040	–
	75-79	-0.277	-0.147
	80-84	-0.144	-0.434***
	85-89	-0.391**	-0.563***
	90+	-0.269	-0.429***
Gender (Ref: Male)			
	Female	-0.123	-0.176**
Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	0.136*	0.137*
	Never Married	0.143	0.046
Income (Ref: Quartile #1)			

	Quartile #2	-0.231*	0.014
	Quartile #3	-0.356**	-0.330**
	Quartile #4	-0.322*	-0.231
Living Arrangement (Ref: Own)			
	Rent	0.066	0.174**
	Other Arrangement	-0.036*	-0.039
Education (Ref: Less than High School)			
	High School Graduate	-0.254	0.036
	Vocational, Technical, or Business, Some College, Associates	-0.201	-0.030
	Bachelor's Degree	-0.222	-0.136
	Master's, Professional, or Doctoral	-0.205	-0.031
Count Comorbidities (Reference: Zero)			
	1	-0.009	0.121
	2	0.034	0.185
	3+	0.215	0.291**
Functional Limitation (Ref: No)			
	Yes	0.101	0.237**
State Medicaid (Ref: No)			
	Yes	0.003	0.037
Census Division (Ref: Northeast Region)			
	Midwest Region	0.031	-0.131

	South Region	0.059	-0.013
	West Region	0.207	-0.017

Note: Negative values indicate higher social cohesion. Positive values indicate lower social cohesion.

***$p < .001$, **$p < .01$, *$p < .05$.

Table 4.7 Social Cohesion Logistic Regressions (Range: High to Low)

		2022/23 (Remined)	2022/23 (Moved)
Variable	Category	Coefficient	Coefficient
Gentrified (Ref: Non-Gentrified)			
	Gentrified	0.066	0.042
Race (Ref: White Non-Hispanic)			
	Black Non-Hispanic	0.363***	0.441**
	Other	0.090	0.306
	Hispanic	0.473***	0.921***
	More than One	-1.496	--
	Don't Know/Refused to Answer	-0.494	-0.246
Age (Ref: 70-74)			
	75-79	-0.189	-0.069
	80-84	-0.448***	-0.443
	85-89	-0.596***	-0.497*
	90+	-0.387**	-0.472
Gender (Ref: Male)			
	Female	-0.155**	-0.168
Marital Status (Ref: Married/Living with Partner)			
	Separated/Divorced/Widowed	0.109	0.120
	Never Married	0.306	-0.678*
Income (Ref: Quartile #1)			
	Quartile #2	0.141	-0.144

	Quartile #3	-0.222	-0.506*
	Quartile #4	-0.148	-0.374
Living Arrangement (Ref: Own)			
	Rent	0.369***	0.173
	Other Arrangement	-0.163	0.221
Education (Ref: Less than High School)			
	High School Graduate	0.133	-0.252
	Vocational, Technical, or Business, Some College, Associates	0.075	-0.301
	Bachelor's Degree	-0.078	-0.307
	Master's, Professional, or Doctoral	0.129	-0.409*
Count Comorbidities (Reference: Zero)			
	1	0.105	0.113
	2	0.198	0.131
	3+	0.317	0.197
Functional Limitation (Ref: No)			
	Yes	0.205*	0.367*
State Medicaid (Ref: No)			
	Yes	0.080	-0.091
Census Division (Ref: Northeast Region)			
	Midwest Region	-0.047	-0.300
	South Region	0.004	0.020
	West Region	-0.031	0.038

Note: Negative values indicate higher social cohesion. Positive values indicate lower social cohesion.

***$p < .001$, **$p < .01$, *$p < .05$.

4.4 Discussion

Utilizing NHATS and ACS data, I examined changes in social cohesion associated with gentrification. In my difference-in-differences analyses, I found that social cohesion over time differed between older adults who remained in the same gentrified neighborhood and those who remained in non-gentrified neighborhoods. The difference-in-differences model revealed a positive association between gentrification and social cohesion over time among individuals who remained in the same gentrified neighborhood, compared with those who remained in non-gentrified neighborhoods. Residents who remained in the same gentrified neighborhood were 3.6% more likely to report higher social cohesion than those who remained in the same non-gentrified neighborhood.

The association between age and social cohesion was significant among older adults. In 2022/23, respondents aged 85-89 were more likely to report higher levels of social cohesion than their younger counterparts. Furthermore, when these groups were compared by whether they remained in the same neighborhood or moved, the age group 85-89 had a likelihood of reporting higher social cohesion than their younger counterparts. Older adults, especially those in the oldest-old age group, have a particularly important connection to place (Rowles, 1983). Due to retirement and/or reduced mobility, their daily activities tend to be concentrated within their immediate local environment, further amplifying their exposure to the consequences of neighborhood change, such as gentrification (Torres, 2020). Maintaining a connection to place is crucial for older adults' well-being, but the type of social participant an older adult identifies with affects their outlook on social cohesion (Cheung, 2025; Emlet & Moceri, 2012). Shandra (2017) indicated that individuals with disabilities or functional limitations are less inclined to participate in social activities, thereby affecting their perceptions of the neighborhood's social cohesion. In my study population, 66.59% of older adults living in gentrified neighborhoods had at least one functional limitation. In the year 2022/23, the percentage increased to 78.43%. Despite physical

limitations, older adults' perceptions of their environment significantly affect neighborhood social cohesion (as observed in this study).

Cultural diversity also needs to be considered when assessing socially cohesive environments for older adults. Classifying older adults as a homogeneous group inadequately acknowledges the diversity of their needs (Wiles et al., 2012). My results revealed significant racial differences in the reporting of perceived social cohesion. Those who identified as non-Hispanic Black, compared with those who identified as non-Hispanic White, were associated with reporting lower perceived social cohesion in 2015 and 2022/23. Additionally, those who identified as having Hispanic heritage in the year 2022 were associated with reporting lower perceived social cohesion compared to those who identified as non-Hispanic White. More specifically, non-Hispanic Black and Hispanic respondents who did not move out of their neighborhood were significantly less likely to report higher social cohesion compared to those who identified as non-Hispanic White. Kannan and Veazie (2023) found that Black Americans experienced more social isolation and less social engagement, overall, relative to other races, while Hispanic Americans experienced less social isolation than their non-Hispanic White counterparts.

Neighborhood-level racial disparities can be addressed through effective policy. Aging-in-place policies often acknowledge cultural diversity but are rarely implemented, and even less attention is paid to structural disadvantage (Finlay et al., 2021). Policy frameworks often overlook the entrenched inequities of systemic racism and classism that impact housing, wealth, and income dynamics (Bucknell et al., 2019; Colarossi, 2024). This oversight profoundly prevents marginalized older adults from successfully aging in place. Moving forward, policymakers should prioritize policy alignment across multiple spheres of influence to advance health equity.

Racial makeup and age have a significant influence on perceptions of social cohesion. These two factors are also heavily associated with the financial status of older adults. Older non-

Hispanic Black and Hispanic adults generally have lower income and increased poverty rates in comparison to older non-Hispanic White adults (Ochieng et al., 2021). A significant concern is the stark disparity between the increases in median rent and income among residents of gentrified neighborhoods. The median income of residents of gentrified neighborhoods was $30,000 in 2015 and rose to $33,051.50 by 2022/23. Over the past 7 years, residents' incomes in gentrified neighborhoods have increased by 5%. Compared with residents in gentrified neighborhoods in 2015, the median rent in 2022/23 was $937.50. The percentage increase was 64%. Income and rent did not increase at the same rate, which may lead to discrepancies in the financial circumstances of residents of gentrified neighborhoods. The stark and disproportionate changes in rents became apparent when I examined the regressions independently. Renters had lower social cohesion than homeowners in 2022/23. When I dichotomized this, those who remained in the same neighborhood in 2022/23 also reported lower social cohesion than those who owned their own homes.

The financial burden imposed on renters in gentrified neighborhoods can put lower-income residents at risk of displacement. A study found that over the course of a year, slightly more than half of older adult respondents reported cutting back on at least one everyday expense, with 38% reporting reduced participation in social and recreational activities (Kullgren et al., 2024). As time and gentrification progress, financial limitations on older adults intensify, compelling them to either reduce expenditures in ways that affect their community engagement or relocate, although moving may prove financially detrimental for the resident (HUD, 2018; Santos et al., 2022; A. S. Schnake-Mahl et al., 2020). Financially vulnerable residents relocating from gentrified neighborhoods due to rising costs often face additional financial constraints as a result of their move. They may also encounter further financial challenges stemming from widespread affordability losses as gentrification progresses in other neighborhoods (Ding & Hwang, 2016).

4.5 Limitations

This paper does not come without limitations. First, this analysis is based on a limited measure of social cohesion derived from the NHATS questions. The limited nature of measurement may not fully capture the neighborhood's social environment. Secondly, there is no uniform method for measuring gentrification. This is due to the multiple definitions and operationalizations of the construct in the literature since its conception (Firth et al., 2020). Variations in how gentrification is measured can produce subtle differences in the interpretation of outcomes and hinder efforts to synthesize findings across studies. To address this issue, a sensitivity analysis was performed employing methodological approaches developed by several leading gentrification researchers (Deng, 2024; Finio, 2022; Freeman, 2005; Hirsch et al., 2021). Thirdly, because this analysis excludes broad measures of the neighborhood-built environment and other factors such as asset indicators, future investigations should incorporate these dimensions to provide a more comprehensive understanding. Fourthly, because of my inclusion criteria for both the sampling and the variables used in this study, this could lead to two distinct biases. Attrition bias can skew the relationship between variables. The other bias, selection bias, can positively or negatively affect the perceived social cohesion of a resident's neighborhood. Lastly, the utilization of census tracts was a limitation of this study. Census tracts are only a geographic proxy for neighborhoods and do not necessarily correspond to older adults' lived or self-conceptualized neighborhoods. Although only a proxy, they are the only established metric that corresponds to the typical size of neighborhoods; no other widely recognized definition of neighborhood exists (Cunningham & Droesch, 2005).

4.6 Conclusion

The findings from my study indicate that gentrification is significantly associated with older adults' perceived social cohesion. My fully adjusted difference-in-difference analysis

revealed that older adults who remain in the same gentrified neighborhoods experience an increase in social cohesion over time. Other factors associated with social cohesion were identified in my cross-sectional results. Factors such as race, age, income, marital status, and functional limitations of older adults influence perceived social cohesion. Furthermore, the financial discrepancies associated with gentrification warrant attention.

The findings from my studies highlight and further contribute to the literature, indicating that gentrification, along with other factors, is significantly associated with the perceived social cohesion of the gentrified neighborhood. Results from this study align with other studies (Santos et al., 2024a; Uitermark et al., 2007). Santos and collaborators (2024) found that social cohesion weakened among residents living in the gentrified neighborhood. Another study found that gentrification undermines a neighborhood's social cohesion (Uitermark et al., 2007). Gentrification poses challenges to advancing healthy aging in urban environments. As older adults increasingly seek to age in place, neighborhood changes associated with gentrification, including the loss of social familiarity, can undermine their well-being and sense of belonging (Santos et al., 2024b). Therefore, policy and planning efforts must intentionally incorporate the perspectives and needs of older residents to create inclusive and supportive environments that promote health and flourishing in later life (WHO, 2023).

4.7 Ethical Statement

This study was conducted using restricted NHATS and ACS census data. The study was reviewed and approved by the University of Minnesota Institutional Review Board, which holds a Federalwide Assurance (FWA #00000312) from the Office for Human Research Protections in the Department of Health and Human Services.

Chapter 5. Conclusion

5.1 Conclusions

The overarching purpose of this dissertation was to examine the relationship between gentrification and health and social cohesion outcomes for older adults. This dissertation provides a thorough examination of the literature and analysis of relevant data. Despite numerous studies examining the health consequences of gentrification (Gibbons et al., 2018; Gibbons & Barton, 2016; Lim et al., 2017; Smith et al., 2018; Tran et al., 2020; Versey, 2023), limited research has concentrated specifically on the health effects of gentrification and/or social cohesion among marginalized older adults at the national level (A. Schnake-Mahl et al., 2020). This dissertation seeks to address that gap by providing early insights that can inform more effective interventions, services, and policy or community planning. It includes a narrative review that examines the literature on gentrification and aging (Aim 1). The following two papers examined the association between gentrification and the overall health of older adults (Aim 2) and their perceived social cohesion (Aim 3). It is important to note that for both Aims 2 and 3, the extent to which the final results are limited. The study is limited in its ability to represent the experiences of broader populations of marginalized older adults due to the study's analytical decisions and its sample inclusion and exclusion criteria made as described in the chapters above. These assumptions are supported by empirical assessments comparing individuals who were included in the analysis with those who were excluded.

Aim One Conclusion

The narrative review of gentrification and aging (Aim 1) expands the existing literature on what is currently known about older adults and the association of gentrification on their health and social outcomes. An analysis of 39 studies revealed that inconsistent definitions and measurements of gentrification have contributed to mixed findings across the literature.

Nonetheless, a recurring theme emerged: Black older adults and other marginalized populations are disproportionately affected by neighborhood change and displacement pressures (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020). Numerous substantial gaps persist unresolved. The primary issue is the absence of conceptual and theoretical frameworks that effectively analyze the association of gentrification with the health of Black older adults, both those who have stayed in and those who have relocated to gentrifying communities. Moreover, there are ongoing discrepancies in the definitions and operationalizations of gentrification across studies, coupled with a significant lack of research on this demographic.

Furthermore, the emergence of the age-friendly movement presents a viable solution to these challenges, particularly when equity is prioritized in its implementation. Incorporating social workers into these efforts may augment their scope and efficacy. Significant advancement will depend on the thorough inclusion of Black communities in the formulation and implementation of these initiatives, ensuring that plans address the unique histories, needs, and resources of each gentrifying area. These findings underscore the heightened vulnerability of older adults, particularly those from minoritized racial and ethnic groups, to the adverse effects of gentrification. This points to a critical need for greater conceptual clarity and methodological standardization in gentrification research. Establishing a more uniform framework and expanding on the recommended framework by Bailey and Gaugler (2025) for defining and operationalizing gentrification will be essential to advancing the field and ensuring that future research can more effectively capture its implications for older adults. The expansion should incorporate consideration of additional plausible mechanisms, explicitly differentiate between individual- and population-level phenomena, and address both short- and long-term effects. Doing so will not only strengthen the evidence base but also support the development of targeted, equitable policies and interventions that address the specific needs of aging populations in rapidly changing urban environments. The results from this study led to the modeling of Aims 2 and 3.

Aim Two Conclusion

The focus on older adults residing in gentrified neighborhoods and its effect on their overall health (Aim 2) extended the evidence on how this process affects this age group. These findings in Aim 2 indicate that gentrification is significantly associated with poorer self-rated health among older adults. The analysis further revealed no significant association between gentrification and poorer mental health among older adults who continue to reside in gentrified neighborhoods, compared to those in non-gentrified areas. Cross-sectional findings also demonstrated that Non-Hispanic Black and Hispanic older adults were more likely to report poorer self-rated and mental health than their Non-Hispanic White counterparts. Additional determinants, including educational attainment, functional limitations, and the number of comorbidities, also influence health outcomes among older adults.

These data highlight that gentrification, in conjunction with many socioeconomic and demographic factors, significantly adversely affects the self-reported health of older adults and perpetuates enduring racial disparities in health outcomes. In the absence of targeted policies and practical solutions, these discrepancies may worsen, thereby exacerbating health inequities among aging populations. Advocating for age-friendly cities is a practical approach to mitigating these effects, as such frameworks improve the physical and social environments that support healthy aging by providing accessible infrastructure and essential services (WHO, 2023).

Aim Three Conclusion

The findings from this study reveal a significant association between gentrification and perceived social cohesion among older adults. Findings from the fully adjusted difference-in-differences analysis indicate that older adults who remained in gentrified neighborhoods experience an increase in perceived social cohesion over time. Cross-sectional analyses identified

additional factors influencing social cohesion, including race, age, income, marital status, and functional limitations. Moreover, the financial disparities that often accompany gentrification warrant further attention, as they may exacerbate social divisions within changing communities.

This study reinforces the growing evidence that gentrification, alongside various demographic and socioeconomic factors, significantly affects residents' perceptions of social cohesion in changing neighborhoods. Such disruptions pose particular challenges for older adults who wish to age in place, as the loss of familiar social connections can erode their well-being and sense of belonging (Santos et al., 2024b). To address these issues, urban planning and policy must actively consider the needs of older residents, fostering inclusive and supportive environments that promote healthy aging (WHO, 2023). Integrating these perspectives is essential to enhancing the quality of life and social cohesion in gentrifying areas.

5.2 Future Direction for Research

The results from the first aim extended the literature on gentrification and the aging community. The second and third aims revealed that gentrification is negatively associated with older adults' self-rated health and positively associated with their perceived social cohesion within the neighborhood, compared with those who do not live in a gentrified neighborhood. These results raise the question of whether social cohesion mediates the relationship between gentrification and older adults' health.

Gibbons and Barton (2016) researched and reported concepts related to the protective effects of social cohesion on residents' health. Other studies examining constructs related to social cohesion, such as social capital (e.g., civic engagement, reciprocity norms, and trust in others), have found similar associations with residents' health and well-being (Bookman & Kimbrel, 2011; Iyanda & Lu, 2021). Social capital is defined as the extent of an individual's interconnectedness, together with the quality and quantity of their social relationships

(Richardson et al., 2022). Social capital is negatively associated with mortality rates; moreover, greater social support may positively influence health outcomes through behavioral and psychological mechanisms (Cacioppo & Cacioppo, 2014; Kawachi & Berkman, 2014).

More specifically, aim three highlights how empirical evidence shows that various neighborhood-level factors, including green space and other features of the built environment, significantly influence health outcomes, with social cohesion functioning as a crucial mediating factor in this relationship (de Vries et al., 2013; Diez Roux & Mair, 2010; Kress et al., 2020). De Vries and colleagues (2013) suggested that the health benefits of green activity stem more from stress reduction and social connection than from physical exertion. In contrast, dynamic changes in neighborhood greenery also reflect broader environmental transformations, such as gentrification or climate variation, that influence residents' well-being (Cole et al., 2021). Maas et al. (2009) found that the relationship between exposure to green environments and mental health was mediated by green space, loneliness, and perceived social support. Similarly, Kress et al. (2020) identified social cohesion as a causal pathway linking neighborhood environmental and structural characteristics to health, with its mediating effect on physical health strengthening over time. Bailey and Gaugler (2025) highlight the mediating role in their conceptual model presented in Chapter 2 (see Figure 2.1). In my future research, I will examine the hypothesis that social cohesion mediates the relationship between gentrification and self-rated health, as multiple studies indicate that social cohesion is disrupted by gentrification over time (Gibbons & Barton, 2016; Ratnayake et al., 2022).

Beyond social cohesion, other mechanisms are byproducts of gentrification and can affect the health of older adults. A significant mechanism is the neo-material pathway. Neo-materialist pathways attribute health inequalities to structural configurations of material and environmental resources, rather than to individual behavioral or psychosocial factors (Singh et al., 2016). For neo-materialism to persist, it must encompass two elements: 'structural factors differentiating

equal and unequal societies' and 'systematic underinvestment in public policies and health care' (Lynch et al., 2000). Neo-material pathways operate either directly (e.g., nutrition security, walkable neighborhood) or indirectly through chronic stress that impacts the health of older adults (Avery & Kuhl, 2026). Example pathways include infrastructure investments, the political economy, and labor market dynamics (Singh et al., 2016). Furthermore, another mechanism that can be explored in relation to gentrification and the health of older adults is policing. As the process of gentrification progresses, it results in increased policing in gentrifying neighborhoods (Beck, 2020). Increased policing may exacerbate the racial inequities in arrest due to the increased police presence, which in turn results in more arrests for the Black population (Richardson et al., 2019; Wendel et al., 2022). Additionally, it has been reported that greater police presence is associated with elevated stress and anxiety and with longer-term adverse mental and physical health outcomes, especially within communities of color (Sewell & Jefferson, 2016).

As highlighted throughout all three aims, the process of gentrification disproportionately affects those who identify as Non-Hispanic Black or Hispanic. Future research using quantitative mediation analysis will further add to the literature surrounding gentrification and the aging population. If the study hypothesis is confirmed, a qualitative study of Black older adults living in gentrified neighborhoods could further explore, through the voices of Black individuals themselves, how and why gentrification has influenced their well-being. Because gentrification disproportionately affects marginalized populations, such as Black older adults (Crewe, 2017; Gibbons & Barton, 2016; Smith et al., 2020), researchers, policymakers, and activists should be mindful of the Black experience when examining gentrification and addressing its effects. This population is marginalized and has historically been ostracized and mistreated, so participants can be hesitant to participate in research. Therefore, when contributing to further research, investigators must consider the experiences and histories of Black individuals with institutions

and how they will perceive being included in research. Before engaging with these communities, one must consider their reasons for undertaking research and helping the Black community and the Black experience. Future studies should conduct culturally sensitive research, intervention research, and community participatory research (including community stakeholders), employing community-based recruitment tactics while being aware of and sensitive to the diversity within Black populations (Huang & Coker, 2010). Conducting research in such an inclusive and thoughtful manner will enable a more thorough exploration of the experiences of older adults undergoing gentrification.

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APPENDICES

Appendix A. Sample Distribution

		2015 Whole Dataset	2015 Merged Data	2022/23 Whole Dataset	2022/23 Merged Data
		N=8,334	*N=3,245*	*N=6,327*	*N=3,245*
Variable	Category	%	%	%	%
Race					
	White, non-Hispanic	77.88%	83.26%	77.80%	83.25%
	Black, non-Hispanic	8.24%	7.70%	8.87%	7.70%
	Other (Native American, Asian, Hawaiian)	3.87%	3.63%	4.09%	3.63%
	Hispanic	6.97%	2.90%	8.31%	2.90%
	More than one DKRF primary	0.10%	0.10%	0.09%	0.11%
	Don't Know/Refusal	3.00%	2.41%	0.85%	2.41%
Age					
	65-70	28.90%	30.35%	26.14%	–
	70-74	26.21%	33.46%	29.46%	13.13%
	75-79	18.48%	19.22%	21.16%	39.45%
	80-84	12.81%	11.69%	11.93%	22.79%
	85-89	8.43%	4.03%	7.08%	15.41%
	90+	5.17%	1.25%	4.22%	9.22%
Gender					
	Male	44.15%	44.15%	44.87%	44.15%
	Female	55.85%	55.85%	55.13%	55.85%

Income					
	Quartile #1 (2015: $0-$16,799; 2022/23: $0-$19,999)	19.93%	13.09%	33.02%	15.10%
	Quartile #2 (2015: $16,800-$32,861; 2022/23: $20,000-$39,999)	22.07%	19.72%	18.92%	24.30%
	Quartile #3 (2015: $32,862-$63,499; 2022/23: $40,000-$77,999)	26.11%	28.66%	19.68%	30.52%
	Quartile #4 (2015: $63,500+; 2022/23: $78,000+)	31.90%	38.53%	28.38%	30.08%
New Educational Attainment					
	Less than High School	16.27%	9.70%	12.06%	10.90%
	High School Graduate	25.58%	24.37%	21.78%	24.71%
	Vocational, Technical, or Business, Some College, Associates	29.66%	30.19%	29.57%	28.92%
	Bachelor’s Degree	15.18%	18.10%	18.08%	17.23%
	Master's, Professional, or Doctoral	13.32%	17.64%	18.51%	18.23%
Marital Status					
	Married/Living with a Partner	56.59%	61.55%	58.49%	50.76%
	Separated/Divorced/Widowed	39.73%	35.21%	36.83%	46.09%
	Never Married	3.69%	3.24%	4.68%	3.16%
Rent vs Own					

	Own	73.30%	81.49%	74.01%	73.09%
	Rent	18.72%	12.95%	18.44%	18.67%
	Other Arrangement	7.62%	5.55%	7.56%	8.24%
Census Division					
	Northeast Region	18.87%	18.48%	17.96%	18.03%
	Midwest Region	22.61%	24.94%	21.63%	24.64%
	West Region	37.32%	35.12%	38.21%	36.24%
	South Region	21.21%	21.46%	22.20%	21.09%
Count Comorbidities					
	0	21.29%	22.24%	18.80%	11.56%
	1	30.51%	33.68%	32.44%	28.95%
	2	27.63%	29.25%	27.00%	33.76%
	3+	20.57%	14.83%	21.75%	25.73%
Functional Limitation					
	No	38.04%	46.45%	37.08%	28.21%
	Yes	61.96%	53.55%	62.92%	71.79%
Covered by a state Medicaid program?					
	No	87.67%	92.21%	87.01%	89.54%
	Yes	12.33%	7.79%	12.99%	10.46%

Appendix B. Chapters 3 and 4 – Analytic Variable Missingness

Category	Variable	N	n missing	% missing	N	n missing	% missing
		2015	2015	2015%	2022/23	2022/23	2022/23
Overall Health							
	Self-Rated Health	3245	18	0.55%	3245	48	1.48%
	Little Interest/Pleasure	3245	48	1.48%	3245	48	1.48%
	Feel Down, Depressed, Hopeless	3245	48	1.48%	3245	48	1.48%
	Nervous/Anxious	3245	18	0.55%	3245	48	1.48%
	Unable to stop worry	3245	18	0.55%	3245	48	1.48%
Social Cohesion							
	People know each other well	3245	18	0.55%	3245	48	1.48%
	People are willing to help each other	3245	18	0.55%	3245	48	1.48%
	People can be trusted	3245	18	0.55%	3245	48	1.48%
Covariates							
	Race	3245	0	0.00%	3245	0	0.00%
	Age	3245	0	0.00%	3245	240	7.40%
	Gender	3245	0	0.00%	3245	0	0.00%
	Income	3245	18	0.55%	3245	48	1.48%
	Educational Attainment	3245	4	0.12%	3245	0	0.00%

	Marital Status	3245	18	0.55%	3245	48	1.48%
	Living Arrangement	3245	18	0.55%	3245	48	1.48%
	Census Division	3245	0	0.00%	3245	0	0.00%
	Count Comorbidities	3245	0	0.00%	3245	0	0.00%
	Functional Limitation	3245	0	0.00%	3245	0	0.00%
	Medicaid Coverage	3245	18	0.55%	3245	48	1.48%

Appendix C. Chapter 3 – Outcome Variables Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods

		2022/23 Non-Gentrified	2022/23 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
		Remained *n=2267*	Remained *n=2267*		Moved *n=992*	Moved *n=992*	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Overall Health Condition				0.012			0.724
	Excellent	10.13%	5.99%		8.29%	7.12%	
	Very Good	32.80%	27.28%		32.67%	29.74%	
	Good	38.02%	41.97%		35.47%	34.94%	
	Fair	16.01%	20.22%		17.84%	21.83%	
	Poor	3.03%	4.54%		5.72%	6.37%	
Mental Health (Range: High to Low)				–			0.0522
	4	47.24%	39.16%		38.23%	38.44%	
	5	17.97%	16.70%		11.32%	16.22%	
	6	11.11%	13.17%		18.60%	10.27%	
	7	8.66%	11.17%		10.33%	13.66%	
	8	6.41%	8.95%		7.29%	10.69%	
	9	2.93%	3.47%		4.96%	3.54%	
	10	2.00%	3.90%		3.54%	1.52%	

	11	0.79%	0.95%		0.54%	1.82%	
	12	1.33%	0.62%		1.16%	0.25%	
	13	0.60%	0.35%		1.33%	1.97%	
	14	0.37%	0.45%		0.28%	0.56%	
	15	0.34%	1.10%		0.58%	0.00%	
	16	0.26%	0.00%		1.55%	0.00%	
	17	--	--		--	--	
	18	--	--		0.22%	0.00%	
	19	--	--		0.04%	0.00%	
	20	0.00%	0.00%		0.00%	1.06%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

Appendix D. Chapters 3 and 4 – Covariate Characteristics of of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods

		2022/23 Non-Gentrified	2022/23 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
		Remained *n=2267*	Remained *n=2267*		Moved *n=992*	Moved *n=992*	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Race				0.424			0.172
	White, Non-Hispanic	83.13%	84.36%		82.93%	83.36%	
	Black, Non-Hispanic	7.70%	9.19%		6.68%	11.03%	
	Other (Native American, Asian, Hawaiian)	3.11%	3.62%		5.41%	0.01%	
	Hispanic	2.83%	2.02%		3.42%	3.47%	
	More than One	0.18%	0.00%		--	--	
	Don't Know/Refused to Answer	3.05%	0.08%		1.56%	0.14%	
Age				0.000			0.000
	70-74	15.69%	0.00%		13.68%	0.00%	
	75-79	41.28%	31.02%		39.39%	32.25%	
	80-84	22.57%	30.43%		19.97%	26.81%	

	85-89	13.88%	23.17%		15.74%	17.75%	
	90+	6.58%	15.38%		11.22%	23.19%	
Gender				0.017			0.010
	Male	46.76%	40.28%		41.55%	28.31%	
	Female	53.24%	59.72%		58.45%	71.69%	
Income				0.271			0.116
	Quartile #1 (2015: $0-$16,799; 2022/23: $0-$19,999)	13.52%	17.87%		16.92%	22.42%	
	Quartile #2 (2015: $16,800-$32,861; 2022/23: $20,000-$39,999)	22.42%	23.02%		28.77%	35.05	
	Quartile #3 (2015: $32,862-$63,499; 2022/23: $40,000-$77,999)	31.08%	29.51%		30.57%	21.63%	
	Quartile #4 (2015: $63,500+; 2022/23: $78,000+)	32.99%	29.60%		23.74%	20.91%	
Educational Attainment				0.067			0.006

	Less than High School	9.99%	15.16%		10.31%	19.42%	
	High School Graduate	23.89%	25.68%		25.58%	26.75%	
	Vocational, Technical, or Business, Some College, Associates	29.72%	27.17%		27.58%	29.60%	
	Bachelor's Degree	18.65%	14.69%		15.71%	10.50%	
	Master's, Professional, or Doctoral	17.76%	17.30%		20.83%	13.73%	
Marital Status				0.030			0.005
	Married/Living with a Partner	55.59%	47.06%		42.66%	33.82%	
	Separated/Divorced/Widowed	41.47%	49.32%		53.51%	64.62%	
	Never Married	2.95%	3.62%		3.84%	1.57%	
Living Arrangement				0.4248			0.076
	Own	85.22%	83.28%		43.24%	35.93%	
	Rent	9.38%	11.72%		40.55%	49.45%	
	Other Arrangement	0.54%	5.01%		16.21%	14.62%	

Count Comorbidities				0.007			0.558
	0	13.51%	7.15%		8.13%	7.13%	
	1	31.28%	29.64%		24.28%	20.12%	
	2	33.05%	33.88%		35.45%	36.67%	
	3+	22.16%	29.33%		32.13%	36.09%	
Functional Limitation				0.001			0.193
	No	31.52%	22.25%		23.18%	17.28%	
	Yes	68.48%	77.75%		76.82%	82.72%	
Medicaid Coverage				0.662			0.355
	No	90.74%	91.67%		85.76%	88.71%	
	Yes	9.26%	8.33%		14.24%	11.29%	
Census Division				0.736			0.651
	Northeast Region	19.31%	23.40%		13.70%	10.05%	
	Midwest Region	23.38%	27.03%		25.97%	32.40%	
	West Region	36.16%	30.87%		38.76%	33.78%	
	South Region	21.15%	18.69%		21.57%	23.77%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods

Appendix E. Chapter 4 – Outcome Variables Characteristics of Older Adults Living in Non-Gentrified and Gentrified Neighborhoods

		2022/23 Non-Gentrified	2022/23 Gentrified		2022/23 Non-Gentrified	2022/23 Gentrified	
		Remained *n=2267*	Remained *n=2267*		Moved *n=992*	Moved *n=992*	
Variable	**Category**	**%**	**%**	**P-value**	**%**	**%**	**P-value**
Social Cohesion (Range: High to Low)				0.8162			0.2046
	3	33.42%	32.19%		33.66%	33.54%	
	4	21.98%	22.15%		21.27%	20.74%	
	5	16.19%	17.22%		19.61%	15.74%	
	6	16.41%	17.54%		14.95%	11.51%	
	7	6.45%	7.25%		5.08%	10.46%	
	8	2.99%	22.24%		3.20%	3.47%	
	9	2.56%	1.40%		2.22%	4.54%	

Note: p-values are comparing residents who live in gentrified neighborhoods versus non-gentrified neighborhoods