The State of Latino Housing, Transportation, and Green Space: A Research Review

Abstract

Across the United States, Latino communities vary in affordable housing, safe and adequate transit, parks and open green space, and other elements that are necessary to fully thrive and achieve health equity.

These differences in opportunity result in health disparities between different zip codes or census tracts—with poor health outcomes more prevalent in communities of color and low-income communities. It is perhaps even more critical to address these underlying social, economic, and environmental factors that contribute to health than to address the health disparities directly if we are to hope for long term changes in community health and well-being.

This research review aims to examine the literature with regards to the current status of housing, transportation, and green space within U.S. Latino communities, and highlight programs and policies that could improve neighborhood health equity in Latino communities. Access to safe, high-quality housing, transportation, and green spaces are discussed together because when combined in a single community, they form the foundation for healthy, active lifestyles that allow further access to work places (financial stability), health and educational resources, and social networks, all of which play a role in health equity. Thus, by

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addressing inequities in housing, transportation, and green space within Latino communities, we hope to also improve health equity in these communities.

Furthermore, a combined analysis of housing, transport, and green space allows urban planners, developers, and policy makers to work together to design community spaces that best fit the needs of residents while addressing these social causes of health inequities. To best support Latino communities, evidence suggests that transit-oriented development should be prioritized in low-income Latino neighborhoods, with an emphasis on creation of affordable rent units directly adjacent to the transport hub. To mitigate the risk of displacement that often follows revitalization projects in Latino communities, public policy, incentives, and regulations are needed to stabilize and secure current affordable housing stock and to build more affordable housing in these areas.

These transport-oriented development projects should build on the social, political, economic, and cultural forms of capital that already exist in Latino neighborhoods, and should emphasize preemptive public participation by community members in the development process. Emerging evidence has shown that cases in which a central plaza is built, and decorated by local artists, results in reinvigoration of the neighborhood, retention of the Latino identity of the community, and satisfaction among its residents. Such community activism and involvement in the development process has resulted in successful neighborhood revitalization with limited displacement and gentrification.

Finally, use of horizontal networks of nontraditional public-private partnerships, along with Latino "cultural brokers," has been effective in leading to lasting neighborhood change. This has been especially true for promoting addition of green space in low-income Latino communities, where environmental justice issues have long been a challenge.

Introduction

Latinos form the second-largest racial/ethnic group within the United States and will play a significant role in shaping the future of the U.S. economy [1]. Within the context of American neighborhoods, Latino subpopulations face specific challenges in finding affordable and stable housing, safe, accessible transportation options, and maintained green spaces.

The location of quality housing, accessible public transit, complete sidewalks, protected bike lanes, safe streets, and well-maintained parks is highly associated with the presence of healthy food, good schools, medical care, and low-crime environments [2]. As a result, where you live is significantly associated with how healthy you are [2–4].

However, residential segregation has created social and physical environments in which hazards, risks, and the availability of goods and services are differentially distributed across neighborhoods. Community-wide problems including inadequate housing, lack of public transportation, and neighborhood deterioration shape health and contribute to health inequities affecting Latino populations in the United States [5].

Land use decisions, which shape the physical environment of a community, affect the health of residents in many ways. Land use decisions impact the design, permitted use of space, housing location and density, format of transportation, level of segregation, and the state of the natural environment in a given area [6]. In the past, land use regulations and policies have worsened health inequities in Latino communities by limiting access to important neighborhood features such as high quality, safe, and affordable housing, parks and open spaces, healthy foods, transit, and educational and employment opportunities [6]. Even though many historic discriminatory policies have been outlawed, "racial discrimination persists in many forms, such as unfair bank lending and realtor practices that sort prospective homebuyers into certain neighborhoods based on their race, and zoning laws that prohibit lower cost multi-family housing," which can limit the opportunities for people of color to rent or own an affordable home in neighborhoods with good schools, living wage jobs, green spaces, and safe transportation and environments [7]. When new policies do not adequately address the historic segregation and discriminatory policies that have led to the unhealthy state of many Latino neighborhoods in the U.S., the physical, mental, and social well-being of a large and growing segment of the American population is neglected.

A lack of affordable housing has forced Latinos, and particularly low-income Latinos, to move farther away from transport hubs where rents tend to be high [8]. As the cost of housing is barely sustainable, more and more Latinos are moving to areas where rents are lower but public transport is insufficient and poorly accessible [8, 9]. As urban housing markets have become unaffordable, Latino migration into town and rural communities in the South and Midwest has occurred, restructuring how Latino neighborhoods are established in the U.S. [8, 10, 11].

In urban areas, gentrification has led to displacement of Latino residents, forcing many to leave family, friends, jobs, and social networks. Within the Latino context, gentrification can be defined in two ways. The first results when home prices rise as a result of improved quality of the home itself or of the neighborhood and its resources, making real estate or rents unaffordable for current residents and allowing more wealthy residents, of the same or a different cultural group, to move in. In this report, this concept is called "displacement." The second definition of gentrification refers specifically to when neighborhood revitalization leads to displacement of one cultural group and replacement with a more affluent, different cultural

group [12]. In response, some Latino communities have undertaken successful community activism initiatives to maintain affordable housing and cultural authenticity in their neighborhoods [12–15]. These communities provide examples of tools policymakers, nonprofit organizations, and community residents can use to limit displacement and gentrification in Latino communities while neighborhood revitalization projects provide needed amenities such as better-quality housing, improved transport, or safer, modern green spaces.

Thus, as Latino communities are further characterized by lower-quality, lower-cost housing that is a greater distance from transport and has less recreational green space, the health-promoting resources accessible to Latinos are decreasing as well [4, 12]. Only by understanding the current housing, transport, and green space needs of Latino communities across the United States today can policymakers appropriately recommend changes to support equitable neighborhood development for all.

Neighborhood revitalization projects have traditionally been extremely detrimental to low-income communities and communities of color, including Latino communities. This review provides examples revitalization projects in Latino communities that have successfully avoided the consequences of displacement, gentrification, and extreme housing unaffordability that are often a byproduct of revitalization, by focusing on public policy and social sector activism that promotes housing affordability and effective community involvement in the development process. Multi-sectoral and multilevel collaborations engaging nontraditional partners have been an essential component of successful initiatives that have led to sustainable, health-promoting equity benefits in housing, transportation, and green space in Latino communities across the United States.

Methodology

For this research review, electronic searches of PubMed, Google Scholar, and relevant government and organization websites were performed to identify peer-reviewed literature, government and organization reports, policies, and programs pertaining to the current state of housing, transportation, and green space needs in Latino communities across the United States.

Combinations of the following keywords were used: "Latino," "Hispanic," "Access," "Affordable Housing," "Bike Lanes," "Environmental Justice" "Equitable Development," "Eviction," "Gentrification," "Green Space," "Home Ownership," "Housing," "Housing Policy," "Neighborhood," "Park Access," "Public Transportation," "Rural," "Safe Routes," "Transit Use," "Transit-Oriented Development," and "United States." The terms "Latino" and "Hispanic" were used interchangeably to perform searches, but only "Latino" will be used in this report for simplicity.

Included in this review are studies, government and organization reports, policy statements, and news articles that best explain the state of Latino communities across the United States with regard to their current housing patterns, transportation use, and green space access, to better understand the needs American Latinos face in each category. Particular attention was

paid to sources that describe issues specific to Latino communities in the United States, and which offered solutions in the Latino context, proven by success in diverse Latino communities.

Exclusion criteria included articles written in languages other than English. No firm limits were placed on publication date for background research, but no studies older than 15 years were used to describe current housing, transport, or green space patterns, and an attempt was made to keep these analyses within the last 5 years. Studies and reports from which policy suggestions are derived were conducted in the United States and included Latinos, though some studies providing background or supporting research were conducted outside the United States.

Key Research Results

- An increasing number of Latinos are burdened by high housing costs and can even face possible eviction, displacing them from urban centers near public transport to the fringes of urban areas, where transport, services, and employment are more difficult to access. Efforts to keep renters in their homes and to increase the available stock of affordable housing would help Latino communities.

- A pattern of Latino migration to small town and rural areas in the Southeast and Midwest instead of to traditional urban centers has led to the formation of isolated, segregated rural Latino communities with unique housing and transportation needs.

- U.S. Latinos report specific transportation challenges that arise due to the discrepancy between where Latinos live versus where they work. These challenges include transit fare affordability, reliability, and coverage. Income-based fare reductions, improved scheduling, and transit routing improvements to link places of residence with places of employment are emerging ways to improve quality of life for Latinos living in the U.S.

- To improve access to affordable housing near public transport, Latinos would benefit from transport-oriented development projects in their neighborhoods that increase the stock of affordable housing centered around the transport hub. These projects should emphasize strong preemptive community involvement to limit displacement and gentrification that has frequently plagued these projects, and to maintain cultural authenticity in Latino neighborhoods that have undergone revitalization.

- Latino communities lack green spaces that are safe, accessible, functional, and culturally relevant. Green space initiatives that take community concerns, needs, and desires into consideration may be most effective at improving Latino physical and mental well-being.

- Neighborhood development initiatives in Latino communities that rely upon "bottom-up" activism, a wide public-private partnership network, and "cultural brokers" have

been effective at driving and maintaining long-term community change, especially in the context of environmental justice in Latino communities.

Studies Supporting Key Research Results

An increasing number of Latinos are burdened by high housing costs and can even face possible eviction, displacing them from urban centers near public transport to the fringes of urban areas, where transport, services, and employment are more difficult to access. Efforts to keep renters in their homes and to increase the available stock of affordable housing would help Latino communities.

Currently at 58.6 million, Latinos account for more U.S. population growth than any other demographic [1]. Public policy has led to decades of disinvestment in low-income communities and communities of color in the United States, which has led to worsened physical and mental health in these communities [16, 17]. Health equity refers to the ability of all individuals to reach their full health potential [5], and several studies have shown that inequities in health actually arise from social and structural inequities, including poverty, racism, segregation, and the policies, laws, and culture that keep them in place [5, 6, 16].

The availability of high-quality, safe, and affordable housing affects health on many levels. Physical conditions within the home, such as the presence of lead, particulates in the air, and allergens, can shape health outcomes for adults and children, whereas policies in multi-residence structures, such as those regarding indoor smoking, noise, and violence can harm or improve residents' health [5, 18]. The neighborhood conditions surrounding the home determine access to health-related resources including healthy foods, recreational spaces, medical resources, and educational or employment opportunities. Where one lives also determines one's sense of physical safety as it relates to crime in the [6, 19]. Finally, housing affordability and stability affect financial stability, stress, and the overall ability of families to make healthy decisions.

A 2018 study found that housing instability was linked to poor health outcomes in both children and their caregivers [20]. In this study of urban renter families, being behind on rent at any time in the past 12 months, moving more than twice in the past 12 months, or having any history of homelessness was defined as "housing insecurity." Compared with children in stable housing, children with any form of housing insecurity were more likely to have been in the hospital or have fair and/or poor health at any point in their life. Caregivers who face housing insecurity were more likely to have fair and/or poor health, or maternal depressive symptoms [20]. Importantly, these families were also at high risk for material hardship, including food

insecurity, child food insecurity, energy (utility) insecurity, household foregone care, child foregone care, and health cost sacrifices [20]. Therefore, access to high quality, safe, and affordable housing is an important community feature that shapes health outcomes [5].

Housing costs are usually the single largest expense for most households, and are a fundamental driver of where people live [12]. Housing and transportation combined account for approximately half of the average U.S. household budget [21], more so among Latinos [22]. Affordable housing is defined as that which costs no more than 30% of a household's gross annual income [23]. However, this measure does not include the transportation costs associated with the home's location. Thus true affordability is related to the cost not only of housing but also to the cost of transportation from that location to work and other locations important to the individual, such as child care, family, and health care [18].

Several studies have found that Latinos in the United States have become increasingly home cost burdened. The amount of Latinos who are "housing cost burdened"–those who spend more than 30 percent of household income on housing costs–has risen from 42.4 percent in 2000 to 56.9% in 2015, according to data from the National Equity Atlas. Latinos are more burdened by housing costs than Whites (46.8%) and every other racial/ethnic group except for African Americans (58.3%) [24]. Across counties, every 10% increase in the share of households severely cost burdened is linked to 29,000 more children in poverty, 86,000 more people who are food insecure, and 84,000 more people in fair or poor health, according to the 2019 County Health Rankings [7].

Latinos, especially Latina women and other women of color, face particular risk of eviction and displacement [22, 25–27]. For the past 3 years (2014-2017), Latino homeownership rates have decreased each year [8], suggesting that the proportion of Latino families renting their homes is increasing. In 2016, 54% of Latino household heads were renting their homes, compared to 28% of White household heads [28], across all levels of educational attainment [8, 28].

As the National Association for Latino Community Asset Building (NALCAB) put it in their Guide to Equitable Neighborhood Development:

> "These trends present the U.S. economy with a fundamental and long-term challenge: the people who are the demographic future of our nation are not well positioned to lead our economy. Failure to effectively build wealth and create access to opportunity for large segments of our population will become an increasingly critical macroeconomic risk for the country. Housing affordability and equitable neighborhood development are at the crux of this challenge" [12].

A recent study of home instability in low-income communities found that due to rising housing and utility costs, stagnant or falling incomes among the poor, and a shortfall of federal housing assistance, most poor renting families today devote 50-70% of their income to housing costs, and eviction has become commonplace in low-income communities [22]. Latino and African American families, the majority of whom rent their housing, have been disproportionately

affected by these trends. In 2013, 25% of Latino renting families spent at least half of their income on housing [22]. Owing to cutbacks in federal budgeting, two thirds of poor renters do not receive any form of federal assistance toward housing, making eviction a real risk for a large proportion of low-income renters [22].

To properly study eviction (both formal and informal) among low-income renters in a multicultural community, the Milwaukee Area Renters Study quantified formal evictions processed through the court, but also informal evictions not processed through court, landlord foreclosures, and building condemnations, with data collected through a novel combination of statistical analyses and survey techniques [22, 25, 26]. The negative consequences of eviction are numerous—first are the obvious effects of involuntary displacement, including disruption of social networks, risk of moving into substandard housing and more dangerous neighborhoods, long commutes, and even homelessness. However, housing instability, and eviction in particular, puts individuals at greater physical and mental health risk [20], leads to employment insecurity [27], and is associated with a prolonged trend of moves and the resultant lack of social/community cohesion [26].

The Milwaukee Area Renters Study found that between 2009 and 2011, the rate of Latino renters being forced to move involuntarily was significantly higher (23%) compared to white (9%) and black (12%) renters, with landlord foreclosure being the primary single cause of eviction [22]. Furthermore, being a woman and having children independently increased one's risk of eviction. One in twelve Latino women reported being evicted in their adult life, compared to one in fifteen white women. Tenants living with children face nearly triple the

odds of a formal eviction judgement, even after controlling for amount of debt to the landlord, household income, and several other key factors [22]. Combined, these data suggest that Latino households, particularly those headed by Latinas, are at high risk for eviction and its associated social and health consequences.

Two forms of intervention could improve the current state of housing instability in Latino communities. First, devoting more resources toward keeping renting families in their homes, and second, increasing the number of affordable housing initiatives with the ultimate goal of increasing the stock of affordable housing in Latino communities.

Toward the first goal, development of a program that could provide aid to renters who experience drastic, but temporary, loss of income due to job loss, medical emergency, or other unexpected financial burden could prevent many forced displacements. In 2009, Milwaukee tenants facing eviction were given access to emergency housing aid from the American Recovery and Reinvestment Act, and the city's formal eviction rate fell by 15% [22].

Formalization of such a program, ideally in partnership with local Latino advocacy groups that could provide assistance with paperwork and social services, would be ideal.

Providing Latino tenants with public lawyers in housing court could also prevent many evictions, especially in the case of Latino families with children. While roughly 90% of landlords in housing court have attorneys, 90% of tenants lack representation due to cutbacks in legal aid to the poor [29]. Regardless of the merits of their case, tenants with legal counsel are much less likely to be evicted than those lacking representation [30, 31]. Therefore, establishing publicly funded legal services for Latino families in housing court could prevent the long-term negative consequences of eviction, decrease homelessness, and help limit discrimination in the eviction decision [22].

Toward the second goal, efforts are needed to increase the number of affordable housing initiatives. The November 2018 midterm elections are one example of how municipalities and states can meet voters' increasing demand for affordable housing, as initiatives were approved by voters in Texas (an affordable housing bond in Austin, a 34.5% Latino city of 950,715, according to 2017 U.S. Census population estimates), North Carolina (an affordable housing trust in Charlotte, a 13.7% Latino city of 859,035, and an affordable housing bond in Chapel Hill, a 6.2% Latino city of 59,862), Washington (extend an existing property tax for new construction of affordable housing and the preservation of existing buildings in Bellingham, a 8.3% Latino city of 89,045), and Oregon (an affordable housing bond in Portland, a 9.7% Latino city of 647,805), while voters were split in California [32].

As Latinos are seeing a larger number of their representatives coming from their own communities, they can and are leveraging this political capital to get their voices heard and their needs met [33], as these elections results suggest. In a more general sense, municipal, state, and federal affordable housing initiatives include [12, 32]:

- Strategic land purchases- municipalities buying land that they give to affordable housing developers
- Rental housing assistance programs- "low-income housing tax credits" or other subsidized rental programs
- Homes built or sold only to residents who fall under a specific income level (usually a specific percentage of the local median income)
- Mixed-income housing developments- ensure developments with any public funding set aside a proportion of units for rental to low-income residents
- Programs that pay for repairs to homes in underserved communities
- Development of an affordable housing trust to fund future projects, by providing incentives to businesses that contribute seed funds

Increasing the number of affordable housing units in some Latino communities has recently taken a new, different form. It has become clear that to bring about lasting change in disadvantaged communities, the root causes of social inequities must be addressed. In an example outlined below, nontraditional partnerships have been established to increase the

quality and number of affordable housing units in high-risk neighborhoods, in an effort to improve not only social inequity but also overall community health [5, 6]. With this approach, large neighborhood institutions such as hospitals or universities take on the role of community "sponsors" because they see the co-occurrence of clinical and social disparities, and hypothesize that addressing the social and physical environment of local residents will result in long-term, cost-effective improvements in community health and prosperity.

The Healthy Neighborhoods, Healthy Families (HNHF) Initiative is underway in the Southern Orchards neighborhood of Columbus, OH, a low-income community with high rates of housing instability. In 2008, more than half of the households reported being home cost-burdened (>35% of income), 50% of the area's children were living in poverty, and more than half of those children were African American and Latino [6]. Nationwide Children's Hospital, the neighborhood medical institution, had been treating children for conditions associated with chronic stress, resulting from concentrated poverty, racial segregation, trauma, violence, low social cohesion and support, and poorly performing schools. However, because treating individual children had been ineffective and inefficient, the hospital decided, in partnership with residents, a church, and United Way, to approach the whole neighborhood as a "patient" and to treat the underlying social causes of the health conditions, starting in 2008 [6].

Because housing instability was the most obvious blight in the community, the hospital sought to improve community health by improving the state of housing in the neighborhood. In partnership with the Mayor's office and a not-for-profit development corporation, neighborhood stabilization funds were acquired and put toward repair of currently owned homes, acquisition and repair of vacant and abandoned homes, rehabilitation of mixed-income properties, development of rent-controlled units for rental to minimum wage workers, and renovation of low-quality rental units to high-quality, low-cost rental units. This example demonstrates that a local institution can be motivated to invest in community housing initiatives and can successfully establish nontraditional partnerships with decision-making entities including government officials and local organizations [5, 6, 34]. As housing instability greatly affects many Latinos, such an approach undertaken by large institutions in Latino communities could play a role in reducing both the social and health inequities experienced by these populations [6, 34].

Early outcomes from the Healthy Neighborhoods, Healthy Family study are beginning to emerge. Home vacancy rates have decreased from greater than 25% to less than 6%, improving safety in the neighborhood as well as real estate values. Youth who have participated in associated programs have shown progress in emotional health and academic performance, and the local high school graduation rate has increased from 64% in 2013 to 79% in 2017. Homicides have declined in Southern Orchards despite having increased in the City of Columbus [6]. While the effect of this initiative on the rental market is not yet clear, it *is* clear that despite improvements in neighborhood safety and health, displacement of low-income residents has not occurred, and access to high-quality affordable housing is increasing. While the long-term health data are not yet available, the hospital believes that the up-front cost of improving the social inequities affecting the community will be lower than the healthcare cost of the resultant

health inequities arising from the poor housing conditions in this community. It will be important to determine if this hypothesis is true, and if the health disparities within this community decrease as a result of the improved living conditions.

A pattern of Latino migration to small town and rural areas in the Southeast and Midwest instead of to traditional urban centers has led to the formation of isolated, segregated rural Latino communities with unique housing and transportation needs.

Real estate and transportation trends have shown two prominent residential shifts among Latinos. First of all, in urban areas, Latinos are living farther from transport hubs and amenities, where housing is more affordable. Secondly, a large number of Latinos are migrating into new areas where jobs are available and rents are more affordable, primarily to non-urban areas in the South and Midwest, instead of to traditional urban centers [8, 10–12, 19, 35].

The "suburbanization" of Latinos in urban areas is well documented; instead of viewing this as Latinos moving into privileged, affluent suburbs, it must instead be understood as low-wage workers being "priced out" from city centers and pushed into lower-cost areas further from transportation centers and high-quality amenities, squeezed into non-affluent city edges and suburban spaces. One study of low-income Latino residents of Round Lake Beach, a near suburb of Chicago, Illinois, directly asked why those who had moved from a municipality of the Chicago metropolitan area chose to move to Round Lake, and 83% chose "availability of affordable housing" as the number one reason over other choices including better neighborhood amenities, safety, presence of family or friends, cultural comfort, or proximity to employment [36].

As mentioned earlier, displacement caused by neighborhood revitalization projects has been an ongoing problem in many Latino communities [12–15]. Public investment in low-income communities to address issues of insufficient transportation, diminished economic activity, high crime rates, or to develop new green spaces, can often lead to improved quality of life for residents, but it can also increase property values in the area [12, 37]. Those who own their homes benefit by gaining equity and building wealth, but if incomes don't increase at the same rate as property values (and in most cases, they don't), housing becomes less affordable, and residents of the community—particularly renters—cannot keep up with housing costs [12, 16]. As a result, these residents then have to move where rents are lower—often farther from where development has occurred, meaning to areas where transport is less accessible, crime rates are higher, and access to green space, healthy foods, and medical and social services is diminished [15]. Add to this the burden of losing one's social networks and cultural base, and the effects of displacement can be life-altering.

Furthermore, in many Latino communities, residents are experiencing the effects of gentrification that result from successful neighborhood revitalization. In this case, gentrification is defined as "a type of neighborhood change in which real estate appreciation leads to involuntary displacement and significant cultural change"[12]. If a property developer, someone who buys land and builds on it, sees an opportunity to profit by targeting a wealthier demographic, for example through development of a new green space or recreation area near a prime transport hub, the community-based institutions and small businesses that were once central to the identity of that neighborhood must change their target clientele or close their doors. When a neighborhood changes, its culture is often lost [12, 14]. Strategies for mitigation of displacement and gentrification in Latino neighborhoods will be discussed later in this review.

For many Latinos, living in urban centers is not sustainable if they cannot afford a place to live or easy way to get to work [11, 35]. Alternatively, transportation costs from outside the urban center can be too high, and public transport may not be available, may take too long, or may not run at the hours needed based on the type of employment [9]. Census data has shown that Latinos have been demonstrating new settlement patterns over the past 30 years. A greater number of Latinos are bypassing the traditionally Latino gateway cities of Miami, New York, Chicago, Houston, and Los Angeles, and are instead settling where jobs in agriculture, construction, and the service industry are plentiful and affordable housing is made available, most commonly by employers. This has primarily been driven by immigrant Latinos, though native-born Latinos are joining the "Latino migration" as well [19]. Since 1990, the Latino population in the rural United States has more than doubled [38].

Within the new destination states of Colorado, Florida, Georgia, Illinois, Idaho, Kansas, North Carolina, Utah, and others primarily in the Southeast and Midwest, Latinos are settling in areas where cheap labor is recruited [10]. The "new Latino 'pioneers' to these destinations are often drawn by the availability of low-skilled jobs, which they learn about from family and friends. This leads to clustering for both housing affordability and social networking reasons" [19]. In many cases, migrant workers or other temporary Latino employees began the influx of the Latino "pioneers," who established the new communities in these areas. Interestingly, in these new, non-urban destinations, Latino communities seem to be more segregated from non-Latino communities than in more traditional urban locales [10, 19, 35].

A 2010 study published in *Social Science Research* examined the extent to which Latino immigrants became spatially incorporated into the communities in which they settled [35]. Overall, it was found that Latino segregation rates were highest when they settled into new destinations lacking established Latino communities, particularly in suburban and rural areas. A greater incidence of manufacturing and service jobs was also associated with higher levels of Latino-white segregation, as were higher numbers of foreign-born Latinos and higher poverty rates [35]. New Latino communities were overrepresented in the South and Midwest, while established communities were located primarily in the West [35]. Another study confirms this finding, demonstrating that between 2000 and 2010, Latino neighborhood segregation rates across the United States have actually increased, especially in emerging markets in the

Southeast and Midwest [19]. In contrast, urban areas that have traditionally attracted large Latino populations, such as Chicago, San Antonio, New York, Miami, Phoenix, and Houston, are seeing Latino segregation declines [19]. These trends indicate that Latinos in the "new Latino destinations" are developing novel types of semi-isolated Latino communities that have specific needs for housing, transport, and green spaces, and policymakers will have to become informed regarding how to best serve these communities. Data on these communities is limited and must be gathered to better inform policymakers on these issues.

In many of the "new Latino destinations," Latinos live in both socially and spatially excluded communities [10, 35]. Work by Mendez and Nelson specifically studied the settlement dynamics of Latino communities that have developed in the South, one in a larger Virginia town (population ~96,000) and one in rural Georgia (population ~ 16,000) [10]. In both cases, these areas have been marked by "rural gentrification," defined as when "wealthy, overwhelmingly white, ex-urban amenity migrants attracted by scenic natural settings, abundant recreational opportunities (including golf), and appealing historic or bucolic landscapes" settle in an area [10]. The arrival of these amenity migrants has driven demand for low-wage workers to build and maintain the residential landscapes, and to provide the services to support the quality of life sought by the new residents.

Significantly, however, the Latino newcomers who are recruited or attracted by the work in these areas cannot afford the cost of independent housing in these gentrified markets, and accessing low-cost housing in these contexts is a challenge. Of note, this study was not of migrant or seasonal workers, but of Latinos who had chosen to settle in the area long-term. In both the town and the rural environment, the study authors found that workers were often provided employer-furnished housing, or they struggled to access dispersed low-quality, low-cost rentals [10]. In each case, this left the Latino employees completely dependent upon shared rides from employers, as few or none could afford cars, walking, biking, or very limited public transport (if any) to get to work. Furthermore, the workers' ability to navigate the spaces of everyday life was completely inhibited, as their homes were isolated from commercial, educational, and social networks [10]. Improvements in public transportation options, especially those that are suitable for low-income individuals in non-urban settings, such as complete streets, greenways, and bike routes, could improve living conditions for Latinos in these communities.

While a limited amount is known about the needs of the Latino communities forming in these new destinations, community activism will be required to ensure equitable neighborhood development in these new gateway destinations. Policymakers need to ensure affordable housing is made available in rural areas and enforce equitable rental agreements and maintenance requirements. Effective methods for organizing and gaining support from community members may prove essential to move toward more equitable housing, transportation, and green space policies in these "new Latino destinations" as well as in traditional urban Latino communities, as will be discussed further in this review.

U.S. Latinos report specific transportation challenges that arise due to the discrepancy between where Latinos live versus where they work. These challenges include transit fare affordability, reliability, and coverage. Income-based fare reductions, improved scheduling, and transit routing improvements to link places of residence with places of employment are emerging ways to improve quality of life for Latinos living in the U.S.

According to the Pew Research Center, Americans who are lower-income, non-White, immigrants, or under 50 are most likely to use public transportation on a regular basis [39]. Among urban residents, 27% of Latinos use public transit daily or weekly, compared to 14% of non-Latino Whites, and foreign-born urban residents are 20% more likely to regularly use public transportation than native-born urban dwellers (38% vs 18%) [39]. Latinos and immigrants are less likely to have access to an automobile than other groups, are more likely to use public transit for commuting to work, and tend to live father away from their jobs—making walking or biking to work more challenging [40, 41]. Therefore, in the United States, Latinos are heavily dependent on access to public transport.

As many low-income Latinos have been pushed into neighborhoods further from transport hubs to maintain housing affordability, the ability of these individuals to access jobs, essential services, and social networks has changed. A trend toward the "suburbanization" of jobs has also been occurring, so that employees have to commute from their home to a suburb for work, and in the case of low-wage workers, frequently to a *different* suburb than the one they live [42]. It has long been known that a transit coverage gap exists between urban and suburban locales, with suburban areas generally underserved by public transit [42]. The basic implication of these coverage differences is that transit routing and job location will, along with where they live, either expand or limit an individual's employment and transportation choices. Thus, the suburbanization of low-wage jobs, and the increasing suburbanization of low-income residents—not necessarily to the same cities and towns—means that public transit cannot provide sufficient service to pair employees and employers disbursed throughout a given region [43]. Thus, simply getting to work has become increasingly difficult for many low-income Latinos.

Unfortunately, the industries specifically employing high numbers of Latinos, including agriculture, construction, and manufacturing, have demonstrated the greatest shift to the suburbs [42]. Other jobs often employing Latinos, including landscaping, home cleaning services, and child care, are frequently located in suburbs where low-income Latinos do not commonly reside, and which have poor public transit access [9, 41]. This is also called spatial mismatch or employers and employees. As a result, commute times and the number of modes of transportation used per commute is increasing for Latinos in the U.S., who often walk, bike

and use transit or vehicles in a single commute [9, 41]. Latinos spend 26.9 minutes on average to commute to work, a longer time than their White peers (25.1 minutes), according to the National Equity Atlas. Also, a higher percentage of Latino households do not have access to a car (12%) than White households (6.5%) [44].

Two studies analyzed the transportation barriers faced by Latinos in diverse regions of the United States. The first study, by Barajas and colleagues directly surveyed and interviewed low-income Latinos residing in the San Francisco Bay Area, including San Francisco itself, as well as Berkeley, Oakland, San Jose, and the regions in between [41]. The second study, by Williams and colleagues directly surveyed and interviewed low-income Latinos in Massachusetts, including East Boston, Lynn, Springfield, Worcester and their environs [9]. Both studies spanned a range of transportation environments with varying access to public transit. Interestingly, in both studies, the same primary barriers to transportation were reported: transit fare affordability (cost), schedule reliability, and route insufficiency.

For the lowest-income transit riders, managing household budgets to accommodate transit costs can add significant stress and force reduction of expenditure on other necessities including food, education, and healthcare [45]. One respondent, Gabriela, "spoke of taking her daughter out of school because of the added expense of taking her child there when she no longer worked near the school."

> I had just changed my job—and as I told you, I don't drive—so then I had to change my daughter's school. I took her out in third grade. Right now she's in fifth grade and she wants to return to the [old] school, but I think about the expense of transportation, and as I said, I'm going in the same direction. I know that it's going to be the same cost, it's $2.35 to go, $2.35 to return, and again because I have to take her, return to my house, pick her up, and return to my house.

"Some of the cost would be alleviated by purchasing a monthly pass, but Gabriela noted that 'sometimes it's easier to spend $10 per day because you don't have $80 to buy the monthly pass' " [41].

As stated earlier, suburbanization of low-wage jobs and low-wage employees, often to non-overlapping areas, is increasing commute times and corresponding commuting costs [41, 42]. Efforts to more accurately align transit routes between riders and destinations, as well as to make fares income-based, would go far to improve transit usability for low-income Latinos [41, 46]. One such example is already in use in the Alameda-Contra Costa transit district, where cash fares are automatically converted to day passes when using a regional Clipper fare card. Day passes are then automatically converted into monthly passes, which saves users money in the long run, and also important for low-income riders, eliminates the need to pay for a monthly pass up front [41]. Therefore, by simply promoting use of a transit card, transit authorities could help low-income riders save significant amounts of money and encourage sustained ridership.

In areas with insufficient public transit, many Latinos report a lack of reliable service as a primary problem; for example, in both studies, interview respondents reported routinely leaving for work early because they could not depend on transit schedules getting them to work on time [9]. As Barajas notes, "For a trip that might take 20 minutes by car, some interviewees reported leaving up to two hours early to be sure they arrived to work on time" [41]. Others reported that many routes were suspended without notice, did not get them where they needed to go (to the daycare to pick up their kids, to suburban office parks or industrial complexes for their jobs) or did not run at the times they needed (after hours for community college night classes). Many routes ran only once per hour, or less often [9].

As a result, many Latinos resort to automobiles as their primary mode of transport, but this comes at a financial and legal cost [9]. In the Bay Area, 15% of low-income Latinos had access to a car every day of the week, 16% had access 1-6 days of the week, and the rest had no access to a car; there was no difference in vehicle access between native-born and immigrant low-income Latinos [41]. Many reported that the cost of car ownership and repairs resulted in foregoing the purchase of other necessities including food and healthcare [9]. Latinos without cars often reported *another person's car* as their primary mode of transport. In Springfield, Massachusetts, 25% of Latinos reported that this was their primary means of transit [9]. In that same survey, 43% of respondents did not have a driver's license, suggesting that many of these drivers are driving themselves and others illegally. Many respondents reported bargaining goods and services for rides, or having to come up with money to convince neighbors, relatives, or friends to drive them places. Most participants were not comfortable with this dependence on others for transportation, reported being late to work and appointments because of these unstable arrangements, and agreed with the statement, "if public transportation was better, I would drive and/or be driven less" [9].

Support for more organized systems of these informal transportation arrangements could improve connectivity between places of residence and places of employment for low-income Latinos. Both Barajas et al. and Williams et al. found that Latinos were unwilling to substitute public transit for driving when they had the option to drive or get a ride, suggesting they use car access for particular purposes that transit does not serve, or when their experiences on public transit have been unpleasant or unsafe [9, 41]. Most respondents reported greater access to jobs as the primary reason for preferring a vehicle for transport, suggesting that insufficient transit coverage is a problem for low-income Latinos.

Overall, there is a strong need to improve transit connectivity and service, especially in non-urban Latino communities. Environmental, economic, and social equity goals often compete for attention from policy makers in transportation-planning decision making [46]. The current public funding crisis is limiting agencies' ability to expand services and enhance connections

between jobs and households [42]. Often, transportation planning decisions in North America place a stronger focus on local environmental concerns and traffic congestion reduction than on social equity [46]. Therefore, to improve transit connectivity and safe transportation options in Latino communities, smart advocacy decisions will have to be made. Transit routing improvements will have to address coverage gaps in the suburbs and disconnects between population centers and job nodes [42]. Transit scheduling improvements must be made to meet the working hour needs and reliability required for regular use [9, 41]. Assessment of true transit "affordability" will have to be measured, and a method to normalize transit cost based on income implemented [9, 41, 42]. Safety, both in the context of crime reduction near public transit and with regard to pedestrian and biker injury, must also be addressed [41].

Therefore, emerging ways to meet the public transport needs of Latinos in the United States include:

- Public transport routes that are distributed where the highest proportion of low-income individuals reside.
  - For example, Minneapolis City Council passed a capital spending resolution for street maintenance and safety improvements with a mandate to advance equity; 40% of projects funded through 2022 are in areas of concentrated poverty, which account for 23% of city streets [47].
- Community surveys and spatial analyses that are performed to determine how to establish public transport routes to shorten commute times between the majority of residential neighborhoods and places of employment for low-income Latinos.
  - For example, in San Francisco, Calif. (15.3% Latino, to prevent and mitigate displacement in the Bay Area, the Metropolitan Transportation Commission commissioned researchers at UC Berkeley to develop the "Regional Early Warning System for Displacement" [47].
- Assessments of transport affordability for low-income groups and establishment of reasonable prices as a percent of monthly income.
- Payment options that spread periodic lump-sum costs over time.
  - Conversion of daily payments into monthly passes.
- Increased public awareness of transportation cost assistance programs offered by both public agencies and nonprofit organizations
  - Information supplied in grocery stores, children's schools, as well as television and mobile device ads, not just on transit vehicles.
  - Information supplied in Spanish and English.
- Better support for the informal transportation networks that exist in low-income communities, such as carpooling organized by employers.
  - For example, for workers at Virginia Hospital Center in Arlington, heat map technology called Modeify plans optimal commutes in hopes of saving people time and money–while increasing use of multimodal transportation options that are good for health and the environment [48].

- Policymaker-driven transportation improvement initiatives that go before public vote and can increase funding for public transit.
  - During the 2018 midterm election cycle, U.S. voters passed 80% of public transportation ballot measures. For example, Broward County, Florida (29.7% Latino), voters approved a one-cent increase in the sales tax, for a 30-year period. The sales tax is expected to raise $357 million in the first year and $16 billion dollars over the next 30 years to fund transportation projects, like electric buses, light rail, bike lanes, sidewalks and improvements to intersections. Broward County commissioners will create a nine-member oversight board to determine how the county will spend the funds, according to Broward County [49].

Community activism will be central to overcoming the transportation barriers faced by Latinos in the U.S. Examples of initiatives that have worked highlight the importance of linking multiple sectors across the community whose ultimate goals are to address the social determinants of health through racial and economic equity [5, 15]. One such example is the Ticket to Opportunity initiative, organized by IndyCAN, a multiracial, nonpartisan organization in central Indiana, to mitigate the effects of inadequate transit as a barrier to employment opportunities. The goal of this initiative was to pass a regional transit expansion referendum to triple bus service in Indianapolis, to fuel economic development, and to increase job access threefold for low-income communities. Importantly, Ticket to Opportunity created dialogue with 80,000 marginalized voters of color and partnered them with faith-based organizations, businesses, government, and community leaders to build sustained capacity for achieving transit equity [5]. Again, an emphasis on cross-sector partnerships and bottom-up activism led to sustained change and improved transit accessibility in this low-income, multicultural community.

To improve access to affordable housing near public transport, Latinos would benefit from transport-oriented development projects in their neighborhoods that increase the stock of affordable housing centered around the transport hub. These projects should emphasize strong preemptive community involvement to limit displacement and gentrification that has frequently plagued these projects, and to maintain cultural authenticity in Latino neighborhoods that have undergone revitalization.

Transit-oriented development is a model for neighborhood revitalization that can be defined as 'walkable, dense, compact, mixed-use development in close proximity to high-quality transit [50]. Office, residential, retail, and civic uses are in close proximity around a central transit hub, and high-density, high-quality housing surrounds the transit hub within a 10-minute walking radius. The general goals of transit-oriented development are to [50]:

- Increase "location efficiency" so people can walk, bike, and then take public transit
- Boost transit ridership and minimize traffic
- Provide a rich mix of housing, shopping, and transportation choices
- Generate revenue for the public and private sectors and provide value for both new and existing residents

- Create a sense of place

An important aspect of transit-oriented development is mixed-income housing, which limits income segregation and *allows low-income households easy access to public transit*. Low-income housing is incorporated in a deliberate effort to limit displacement and to increase the vibrancy of the community [50]; without maintenance or expansion of affordable housing stock, transit-oriented development projects in Latino communities have been historically detrimental [18]. Because developers often resist building affordable housing, potential strategies for enticing them to do so include use of low-income housing tax credits (LIHTC), creation of a public land disposition plan (city-owned land provided at low/no cost if used to build affordable housing), fast track permitting, fee waivers, and inclusionary zoning [50]. Once built, maintaining the affordability of housing over the long-term becomes the challenge, as development often leads to real estate appreciation and gentrification.

However, gentrification is *not* an inevitable result of investment in low-income Latino neighborhoods. Several case studies have shown that when development is informed by the community's voice and influenced by local activism, long-time neighborhood residents can benefit from these revitalization projects. Looking at large-scale transit-oriented development projects in low-income Latino neighborhoods that have successfully limited displacement, maintained their Latino identity, and satisfied the community's needs and desires have highlighted four conditions that when met, improved the quality of life for the Latino residents of the community [13, 14]:

- Building affordable housing (beyond the amount originally planned by the developers)
- Supporting or establishing Latino culturally relevant public spaces
- Investing in community-based public arts
- Collaborating with activists in the neighborhoods to make the transit-oriented developments more community-oriented

In-depth study of four large-scale transit-oriented development projects in four Latino communities demonstrates that the most essential element to success at limiting displacement and gentrification was expansion of affordable housing [13, 14]. In each case, this was accomplished through community involvement with the development process—current neighborhood residents joined together to demand affordable housing, and they would stall development if it was not provided. In each case, local Latino politicians or community groups served as "champions" for the projects and used their political capital to make sure the plans were implemented as agreed [19, 51]. As one of the study authors, Sandoval, states:

"All four barrios analyzed point to resistance and activism as being important features in these barrios. All these TOD [transit-oriented development] projects have run into some form of neighborhood resistance. This is because urban and transportation planners have not paid close enough attention to public participation issues and to tailoring these projects to benefit current residents. In the MacArthur Park case, resistance came from Supervisor Gloria Molina and neighborhood activists who pushed the MTA to go back to the drawing board and develop a TOD that was more in tone with the neighborhood context. In the Fruitvale Transit Village, the Spanish Unity Council stopped BART from building a large parking structure that would cut off International Boulevard (and hence the neighborhood) from the BART station. Instead, the Unity Council took over the development of the TOD and now it has become a model of doing TOD in low-income neighborhoods. In Barrio Logan, neighborhood activists demanded that the Mercado Del Barrio Apartments be designed as affordable housing instead of market rate housing before the project could be approved. And in Boyle Heights…one key neighborhood activist organization sprung up from these struggles, Union de Vecinos. This organization became one of the key organizations working on tenant housing rights in the area and now still organizes around anti-gentrification struggles. The organization is a grassroots organization and its founders emerged from faith-based communities in the neighborhood. They were key players in making sure tenants either received relocation assistance or could come back to the new development" [19].

Though the transit-oriented developments in the majority-Latino neighborhoods of MacArthur Park, Los Angeles; Fruitvale, Oakland; Boyle Heights, Los Angeles; and Logan Heights, San Diego were each quite different in their concept, each received and responded to community input that affordable housing be added. One particularly interesting transit-oriented development example is MacArthur Park, Los Angeles: though the development now has many of the amenities that draw wealthy urbanists, the original community was not displaced because of the key role affordable housing played in its development. Other services incorporated in the development also offer positive equity impacts, as the Fruitvale development includes health care, child care, a city library, a senior center, and a charter high school [13]. An important and interesting point is that the neighborhood resistance and activism in each of the 4 TOD areas have in fact dictated the types of community benefits that emerged from the projects [14]. As Sandoval states, "The important role activists played in the transformation of the TOD from a market rate housing development project to an affordable housing development project is key to understanding how these TOD projects can have equitable outcomes in low-income areas" [14].

Investing in Latino placemaking is defined as creating a culturally relevant Latino public space to spur vibrancy in the neighborhood. In Boyle Heights, Los Angeles, this was done by creating Mariachi Plaza that brought a kiosk in from Mexico. This plaza serves as a community center to host music festivals, urban farmers markets, lowrider car shows, and other social and cultural events. Importantly, it has also re-activated and contributed to economic investments along the main commercial street in the area, because residents from other areas of the city travel to the plaza to enjoy the special events held there. In Logan Heights, San Diego, Chicano Park has served as the culturally relevant central space that has both historic and artistic importance for the community [14].

Murals play a large role in Latino culture and placemaking. In both Boyle Heights and Logan Heights, planners commissioned local artists to provide public art at their development. In doing this, representations of the everyday lived experiences, both historic and present, as well as the cultural aesthetic of current residents were represented and respected. As Sandoval writes, "The design team incorporated murals into the project, built a plaza, and encouraged a supermarket, Northgate, that caters to a Latino niche retail market" [14]. These actions responded to community demands and allowed the project to move forward with resident support.

Because Chicano park is ingrained with political history, it is protected by local activists, which represents a strong supply of political capital from the community. Neighborhood organizations including the Environmental Health Coalition, the Chicano Park Steering Committee, and the Barrio Station Committee can be called upon at any time to organize if there are threats to the neighborhood, or if further development is being considered. This form of political capital is a great strength to the community, and serves as a form of resistance to the pressures of gentrification and neighborhood turnover [14, 33]. In the face of revitalization projects, many community organizations emerge from faith-based organizations or from professional organizations and can persist for years to come, providing the community with political capital and strength to leverage in the face of external threats.

When transit-oriented developments are able to expand the stock of affordable housing, establish culturally relevant Latino public spaces, invest in community-based public arts, and collaborate with local residents to make developments as community-oriented as possible, there is a strong chance they will be successful at limiting displacement and providing benefit to the current residents.

Latino communities lack green spaces that are safe, accessible, functional, and culturally relevant. Green space initiatives that take community concerns, needs, and desires into consideration may be most effective at improving Latino physical and mental well-being.

Within urban, suburban, and rural communities, green space can be natural or maintained outdoor public space, such as parks, playgrounds, sporting fields, school yards, day care and early care yards, greenways/trails, tree-lined sidewalks, community gardens, nature conservation areas, forests, as well as less conventional urban "green alleyways," "pocket parks," and green walls or roofs [52]. Green spaces support public health in many ways—they filter air, remove pollution, attenuate noise, cool temperatures, replenish ground water, mitigate stormwater, and can provide food [53, 54]. Beyond these benefits, however, are the physical, mental, and emotional benefits of green space, as discussed below.

Unfortunately, access to and quality of green space is not equitably distributed. Compared with nearly half of all Whites, only one third of Latinos live within walking distance (usually defined as less than one mile) of a park, and the quality of that park is dependent upon the neighborhood in which it is located [52]. Lack of park access has been linked to mortality, and green cover has been shown to protect health [55, 56].

Importantly, a large number of studies have demonstrated a link between park proximity and physical activity [57–59]. A Trust for Public Lands report found that low-income neighborhoods populated by minorities and recent immigrants are particularly short of green space [60]. Due to this lack of recreation space, "minorities and low-income individuals are significantly less likely than whites and high-income individuals to engage in regular physical activity that is crucial to good health" [60].

This lack of activity may play a large role in the high rates of chronic disease we see in American Latinos. Rapid increases in obesity and diabetes suggest that individual behavior patterns, including low physical activity levels, appear to powerfully influence these chronic disease trends [61]. Roughly 42% of Latino adults and 22% of Latino children are obese, compared to 32% and 14% of their white counterparts; similarly, Latinos are 1.7 times more likely than whites to be diagnosed with diabetes [62]. Overall, it is estimated that Latinos are 30% less likely to engage in physical activity than Whites [63].

Latinos in general are less physically active than non-Latino whites [64], and rural residents are less active than urban and suburban residents [65, 66]. A recent study conducted by Perry et al. used a standardized Rural Active Living Assessment (RALA) to determine the environmental characteristics that impact the activity level of individuals living in four rural, predominantly Latino communities, and found that only half of road segments were rated as walkable; only 44% of segments had walkable shoulders, and only 32% of segments had sidewalks in good condition. Similarly, parks and playgrounds were ranked as "available," but of these, half were rated in poor condition and thus unusable. Furthermore, all four districts offered afterschool outdoor physical activity programming, but only two districts provided a late bus option, limiting the usefulness of these programs for the majority of Latino residents in these communities [67].

This study, and those cited below, highlight that a host of factors are associated with equitable access to green spaces in urban, suburban, and rural communities, including:

- connectivity of local street networks, [68, 69]
- the presence and condition of sidewalks, [70, 71]
- access to public transportation, [72]
- distance to parks or green spaces, [73, 74]
- and maintenance of these spaces [67].

Policies and programs that specifically work to improve these conditions in Latino communities will go a long way to increasing the use of green spaces present in those communities. Two studies by Floyd et al. have demonstrated that lower neighborhood income and higher concentration of Latino or African American residents are related to greater park-based physical activity, further suggesting that safe, functional, accessible parks in Latino communities are needed and would be used if available [75, 76]. Thus, while Latinos are less physically active than their White counterparts, this may be due to low access to green space. Access to and maintenance of green spaces are equally important to establishment of new green space.

In addition to physical health, green space has also been shown to have a profound effect on psychological wellbeing in both children and adults. In a major Dutch study, Van den Berg et al. demonstrated that individuals with more green space near their home (within a 3km radius) were less affected by stressful life events than those with low access to green space, suggesting that greenery can act as a "buffer" to stress [77]. Park experiences have been shown to directly reduce stress and provide a restorative effect that impacts health, by modulating the immune system and inflammatory factors [78, 79].

While providing a place for physical activity and social interaction, which alone have been shown to improve psychological well-being, there is something about interacting with nature itself that furthers increases these mental health benefits [80–82]. In numerous studies, subjects have undertaken the same social or physical activities in either a built environment or in a natural environment, and in each case those who spent time in nature emerged more restored, less stressed, and reporting less anxiety and/or depression than those who did the same activity, for the same duration, in a built environment [80–83].

For Latino children, access to green space is an especially important issue, as interaction with nature early in life has been associated with cognitive changes that improve behavioral development and emotional regulation [82]. In the United States, only 19% of Latino children have access to recreational spaces close to their neighborhoods, compared to 62% of their white peers [62], making this issue particularly pressing for Latino youth. Add to this the benefits of increased physical activity and decreased stress, and the need for green space in Latino communities cannot be overstated. Furthermore, as a greater number of Latino children are living in more crowded homes with less access to public transport, as described above, access to green spaces should be a priority.

It is important to note that geographic access alone does not fully capture the issue of Latino's lack of access to green space. Usage depends not only on physical accessibility to green space, but also on community perceptions of safety, ownership, and cultural relevance [51, 67, 84]. In several urban examples including Chicago and Los Angeles, race relations have kept Latinos

from using parks in their neighborhoods; a given space may be perceived as "belonging" to another group in the community [51, 84]. When properly designed, green spaces contribute to social cohesion, which can only occur when the needs and desires of the residents using the space are heard [85]. Green space can provide a sense of community and feelings of safety by creating vital neighborhood hubs for social interaction [85]. For residents of inner-city apartment buildings, urban green spaces have been linked to stronger ties with neighbors and a greater sense of safety [86, 87].

For green spaces to be accessible and used by Latinos, they must address the needs of the community in a culturally relevant manner. Several studies that directly asked Latino residents what they would like as green space in their communities uncovered needs and desires common to many Latinos regardless of place of origin [13, 14, 88, 89]. In each case, they highlighted the desire for:

- A central community park, or "plaza," to act as a hub for neighborhood events including cultural music and arts festivals, markets, and social events. This plaza could also serve as a center for educational or medical programs and services.
- Repurposing of vacant lots into spaces and playgrounds for children, to promote positive behaviors and to remove crime from the neighborhood.
- Complete, safe sidewalks throughout the neighborhood to support the Latino norms of walking to and from the town plaza, and of taking a walk after dinner to socialize with neighbors.
- Greenways as safe routes to school and as safe routes to public transport (which would be useful for adults as well). Many Latinos emphasized their interest in promoting more child-friendly communities that encourage physical activity.

By incorporating these characteristics into green space initiatives that impact communities with a large number of Latino residents, policymakers can maximize green space use and improve the physical and psychological well-being of Latinos in their communities.

Neighborhood development initiatives in Latino communities that rely upon "bottom-up" activism, a wide public-private partnership network, and "cultural brokers" have been effective at driving and maintaining long-term community change, especially in the context of environmental justice in Latino communities.

Over the past two decades, uneven access to green space has become an important environmental justice issue as awareness of its contribution to public health has become more widely recognized [33, 52]. In general, racial/ethnic minorities and low-income people have less access to maintained green spaces and recreational programs than those who are white or more affluent [90]. Studies of public and nonprofit funding for urban parks and recreation also show that low-income communities of color have far less to spend on parks and recreation, and have fewer non-profit resources as well [18, 91]. The smaller tax base in low-income communities has made it difficult for them to invest in these health-supporting environments,

services, and programs [3], and the need for community activism to gain nonprofit support for green initiatives is great [33].

As ChangeLab Solutions puts it:

> "State and local governments use capital improvement plans to decide which neighborhoods to prioritize for investments in the built environment and which transportation and open space improvement projects to fund. The prioritization decisions are typically made by elected officials and city staff. But the race and socioeconomic status of government officials are often not representative of the neighborhoods they serve. In addition, elected officials are often influenced by small groups of stakeholders with greater power and voice than the community at large. When the priorities of elected officials and interest groups are not representative of the broader community, decisions about capital improvement investments might be based on political influence and not on neighborhood need. Examples…are all too common…where the city's low-income neighborhoods and neighborhoods of color receive the least funding for transportation and recreation spending" [2].

Studies of Latino communities in which green space initiatives have been successful reveal that there has been a transformation in the way environmental justice issues are handled to overcome these challenges [33, 88]. There has been a move away from hyperlocal, vertical organizations that aim to change the legal, bureaucratic, and technical "regulatory route" of governance to diversified, city-wide networks that include environmental justice organizations, mainstream environmental groups, nonprofits, foundations, and a breed of "environmental entrepreneurs" who seek to invest in win/win revitalization projects [33].

In the past, environmental justice (EJ) movements were centered on reactions to environmental "bads" in marginalized communities, mainly in cities but also in rural areas [92, 93]. In classic EJ politics, EJ organizations would mobilize the grassroots at the neighborhood level to defend communities against present or imminent threats to health or well-being arising from industrial development, land-use change, (i.e. building of a prison or utility site, for example) or toxic contamination. Such movements relied upon legal strategies to force action from the government or the polluting industries, which had to comply with federal and state environmental regulations as well as environmental laws established in the 1960s and 70s. In many cases, EJ movements simply worked to delay or prevent undesirable land use, but did nothing to improve the communities, and the cost of the legal actions often used up the resources of grassroots EJ groups [33].

A more recent approach to EJ activism is one that instead of reacting to local, neighborhood-level hazards as they develop chooses to focuses on proactively restoring nature and producing

new environmental "goods" in marginalized communities [15, 33, 88]. Such "goods" include spatially fixed amenities such as parks, green spaces, bike paths, trails, and community gardens, but can also be tied to development of new job opportunities, program funding, and investment options that revolve around the green economy [33]. Environmental justice organizations using this model of EJ activism are able to work around the state by relying on networks of foundations, nonprofits, and small and large environmental NGOs; increasingly, green initiatives have taken the form of public-private partnerships that create new green space with shared governance [17, 52, 94]. As E. D. Carter [33] explains with an example in his study of current EJ movements in Latino communities of Los Angeles,

> "While the state parks agency, using funds from a special bond issue, ultimately purchased the land from a developer to create the park, the private Trust for Public Land brokered the deal and provided funds for environmental remediation, while coalitions of smaller organizations, some working within the Alianza de los Pueblos del Rio de Los Angeles coalition, provided legal expertise and grassroots support for the park."

When looking specifically into the EJ networks that have developed in Latino communities, we find some interesting characteristics. As again described by Carter in his analysis of the creation of urban state parks in Downtown L.A. and Northeast L.A. in the early 2000s [33], networks of mostly Latino professionals came together to accomplish the necessary transactions that made the parks possible:

> "Calling themselves the Alianza de los Pueblos del Rio de Los Angeles, the coalition was comprised of the Willie C. Velasquez Institute, which has strong connections with Latino political elites in the city; The City Project, which provided legal counsel; Mujeres de la Tierra, whose founder Irma Munoz, is well connected to mainstream environmental organizations; and the Anahuak Youth Soccer Association, whose leader, Raul Macias, as skillful at providing a grassroots 'presence' at planning meetings and demonstrations, mostly comprised of Latino children and parents from park-poor neighbourhoods of Northeast L.A."

An important aspect of this network is that these professionals were able to serve as "cultural brokers" between mainstream, professional organizations and the grassroots, working-class Latino community, especially young people and children of immigrants [33, 88]. These individuals serve as cultural "translators" between groups who may lack experience or competence in communicating across cultures; the role of the "cultural broker" is to make development projects acceptable to the community they serve *and* to the developers handling the project. The ability to pitch an environmental action within the right cultural frame for a specific audience has been crucial to achieving success for green space projects in Latino neighborhoods.

In addition to green spaces such as parks, there is a dire need for sustainable transportation routes in Latino communities. However, there is often backlash to greenways, trails, bike lanes, bike shares, and other green transportation infrastructural projects in low-income neighborhoods. The backlash occurs because these investments are frequently seen as not actually benefitting the current residents in the neighborhood, but instead as improving the

accessibility of these neighborhoods for more affluent populations and to spur gentrification [15, 95, 96].

Jose Lopez, a Puerto Rican immigrant who moved to Chicago, is a cofounder of the Puerto Rican Cultural Center, which has led efforts to maintain the Humboldt Park neighborhood's Puerto Rican identity. While overall public transport access isn't a major issue in greater Humboldt Park, Lopez describes the transition in the Latino community's acceptance of bike lanes in the area. In 2003, when the Chicago Department of Transportation first proposed extending bike lanes into Humboldt Park, the Puerto Rican Cultural Center "viewed the lanes as a symbol of gentrification and asked then 26th-ward alderman Billy Ocasio to veto the plan." But by 2012, several years after the opening of a bike-education center and retail outlet "Ciclo Urbano" in the neighborhood, educational and employment opportunities within the Latino community had changed the mindset enough that the Puerto Rican Cultural Center finally allowed the city to open the bike lanes. As Lopez said, "By then, it was not something that was being imposed, but something that had more community acceptance" [15].

Fear of displacement, gentrification, and loss of culture is real and has often delayed sustainable transport projects in Latino communities, as outlined above [15, 52, 97]. It will thus be essential to gain community support before beginning these projects in Latino neighborhoods, so that such changes feel desired instead of imposed. "Cultural brokers" may be the key to success in this endeavor. In these cases, cultural brokers serve the essential role of linking grassroots activist groups with governance groups such as politicians and developers. They help make sure the community understands how planned developments may serve the needs of community residents, and most importantly, they work to ensure that community desires are heard by the governing groups as well. Examples of neighborhood improvements that have taken place without displacement and to the benefit of the residents do exist, and have often been successful because cultural brokers ensured that the needs of the community were met.

One such example has taken place in the Figueroa district of Los Angeles, where residents have played an active role in asking the city to improve transit, biking, and walking accessibility in the Figueroa corridor in a way that will improve the lives of the working class residents of the community [97]. According to Nancy Ibrahim, who worked as the "cultural broker" with the residents of Figueroa for these changes, the 8-lane Figueroa Street corridor was zoned and developed for "affluent, transient students" to drive through in their cars, not for the families who live nearby and get around "by public transportation, by bicycle and by foot." As a result, Ibrahim helped push a plan through city council to dedicate three of Figueroa's eight traffic lanes to protected bike lanes, bump-out bus platforms, and a dedicated bus lane, the idea of which stemmed from a community open house in which residents asked the city to dramatically

improve transit, biking, and walking accessibility in the neighborhood [97]. The initiative nearly died due to push-back from large institutions including the University of Southern California, The National History Museum of Los Angeles, the California African American Museum, and a group of auto dealers who told local city council members they opposed the initiative due to worries over traffic congestion. However, two powerful local Latino business representatives joined over 60 locals, mobilized by the Los Angeles County Bicycle Coalition, to testify at city council to support the plan before federal funding expired. This multicultural grassroots surge made it impossible for opponents of the plan to claim it was something locals didn't want, and construction started in 2015. As Ibrahim said:

> "A lot of the development in this neighborhood has been going, so far, to separating—to making this community one where it's not particularly desirable or healthy to get out of your car. The Figueroa corridor has been dominated by gentrifying interests that have resulted in a fast-food swamp. …It is so important that community residents have a say. …The new Figueroa is putting in a new level of accessibility and connectivity to working folks, including working poor folks, who contribute profoundly to what's best about this neighborhood" [97].

Other examples include the transit-oriented development projects described in detail above at the MacArthur, Fruitvale, Boyle Heights, and Logan Heights locations, where huge amounts of community resident input resulted in significant change to the development plan, such that resident needs were heard and met [19, 51]. Affordable housing units were increased, and other amenities wanted by the community residents were added to the development plan at their request. Proactive, persistent grassroots activism with cultural brokers who had access to decision makers led to real change in these communities.

Civic engagement can take many forms, and there are many strategies for gathering residents for community activism. Forms of engagement that have proven successful in Latino communities include [18]:

- Ongoing meetings at a regular time and place
- Distributing informational flyers
- A community survey
- Door-to-door engagement
- Making presentations at churches, small businesses, or other community-based institutions
- Training on specific issues of interest
- Social media engagement

Community residents are often the most effective organizers, especially when teamed with content experts or individuals who hold political power in the area. In Lost Angeles, community-organizing and development of grassroots leadership is in integral component of the support provided by the East LA Community Corporation (ELACC), a nonprofit organization that works in the Boyle Heights and Unincorporated East Los Angeles. As part of their organization work, ELACC has developed an Affordable Housing 101 curriculum to train community members and

grassroots leaders on the economics of affordable housing development, and they make many resources available on their website [18, 98].

Finally, a few key methods for communicating with Latino community members have proven effective [8]. Because policymakers, nonprofit groups, and businesses interested in improving the lives of Latinos in these areas will want to effectively reach these communities, research has been conducted to determine how best to communicate with the modern American Latino population. Small businesses, banks, and real estate brokers in particular may want to reach out to these new communities. American Latinos are more likely than any other demographic to live in a multigenerational household, with 84% of Latino Millennials living in homes with children under 18. Latinos are increasingly bilingual by choice, with 81.4% speaking English well or exclusively, 54.2% identifying as bilingual, and only 18.2% Spanish-dominant. And finally, Latinos are huge consumers of mobile, and spend 25% more time on their mobile devices than do non-Latinos [8]. Therefore, to effectively reach the diverse Latino communities found across the United States, policymakers should attempt to use bilingual messaging, multigenerational targeting, and social media messaging.

Conclusions and Policy Implications

Conclusions

Latinos need affordable housing options, access to reliable, relevantly routed public transportation, and connected, safe, and maintained green spaces for transportation and recreational use. Many societal and economic factors are responsible for the inequitable distribution of funds to support these projects. For instance, it was beyond the scope of this review to fully discuss the historical legacy of disparities. However, with proper political will and community activism, change can be made to improve access to affordable housing, public transportation, and green spaces in all types of Latino communities.

A common theme across the research has been the need for community activism to ensure that development projects take the concerns and desires specific to Latino residents into consideration when implementing revitalization projects in Latino communities. Whether in urban, suburban, or rural communities, Latinos are dependent upon public transportation and affordable housing. In urban areas, transit-oriented development would benefit Latino communities if structured in a way that expands affordable housing options and limits the risk of gentrification, so that Latinos in the community can maintain their social and cultural networks while gaining access to high-quality public transportation. Addition of green space and sustainable transport options such as greenways and bike paths would further improve

connectivity of communities, increase recreational space for children and adults, and improve the physical and psychological well-being of all residents.

There is a dire need for more research into the needs of small town and rural Latino communities that are growing in the South and Midwest. These communities tend to be more segregated, isolated, and marginalized than urban Latino communities, and face unique housing, transport, and green space challenges. There is certainly a need for sidewalk maintenance and street connectivity to improve walkability in rural areas and small towns, and any improvement in public transportation access and coverage would benefit Latinos in these areas. Determining how to structure "public" transport from these isolated, rural Latino communities to places of employment as well as essential services and amenities is the new challenge that must be met with innovative, place-based solutions.

By employing the use of "cultural brokers" in wide networks of public-private partnerships, the voices of Latino residents can be heard and translated into action by developers that will take the Latino social and cultural context into consideration. Incorporating central "plazas" in design plans, making neighborhoods connected with sidewalks for transportation and social interaction, and limiting vacant space are all neighborhood characteristics that are important to Latinos.

Policy Implications

To address housing needs in Latino communities:
- Increase resources devoted to keeping renting families in their homes, such as:
    - Aid programs for renters who experience temporary loss of income
    - Publicly funded legal services for low-income families in housing court
- Increase the number of affordable housing initiatives using:
    - municipal, state, and federal initiatives
    - nontraditional partnerships that engage large local institutions as sponsors to address the social causes of health inequities (i.e., hospitals, universities, large local businesses investing in the community for long-term gain)

To address public transportation needs in Latino communities:
- Increase the number of transport routes that are distributed where the highest proportion of low-income individuals reside.
- Conduct community surveys to determine how to establish public transport routes to shorten commute times between the majority of residential neighborhoods and places of employment for low-income Latinos.
- Determine true transport affordability for low-income Latinos by region and establish reasonable prices as a percent of monthly income.
- Provide payment options that spread periodic lump-sum costs over time:
    - Convert daily payments into monthly passes

- Increase public awareness of transportation cost assistance offered by both public agencies and nonprofit organizations:
  - Supply information in grocery stores, children's schools, as well as television and mobile device ads, not just on transit vehicles
  - Supply information in Spanish and English
- Provide better support for the informal transportation networks that exist in Latino communities.

To address the need for affordable housing near public transportation:

- Bottom-up, community-based activism has proven essential for incorporating the needs and desires of Latino residents in development projects within their communities; this includes ensuring that enough affordable housing is made available during transit-oriented development projects.
- Organization strategies that are bilingual, multigenerational, and social-media based may be most effective at reaching a diverse Latino audience.
- Low-Income Housing Tax Credits (LIHTC), development incentives, and housing trust funds must be established in partnership with local businesses, banks, and government entities to ease developer maintenance and expansion of affordable housing units.
- Financial incentives for homeownership, and shared equity housing projects can provide existing residents asset building strategies in an improving neighborhood so they can gain financial benefit from neighborhood revitalization projects.

To mitigate the risk of displacement due to gentrification during Latino neighborhood revitalization projects:

- Increase the stock of affordable housing near the revitalized transport hub.
- Support culturally relevant Latino public spaces, such as plazas or central parks.
- Invest in community-based public arts using local artists.
- Get community activists to proactively guide the development process, ensuring that resident interests are met and that development occurs within the context of the neighborhood.

To address the transportation needs of Latino families:

- Construct affordable housing close to public transportation, ideally through transport-oriented development projects that limit displacement in Latino neighborhoods.
- In all communities, strive to provide complete streets with walkable sidewalks, full shoulders, protected bike lanes, and interconnected networks to be used for transport and for social cohesion.

- Ensure that public transport routes in all communities are accessible, sufficient, reliable, provide transport outside of regular work hours, and access locations where Latinos work, such as suburban office parks and industrial centers.
- Increase access to non-street dependent forms of transport such as greenways and trails to alleviate the legal and language concerns of immigrant Latinos. These could be used as safe routes to school and as safe routes to work and/or public transport.
- When developing sustainable transport programs (such as greenways and bike shares), solicit community feedback to gain resident support to limit fear of displacement and gentrification.

To increase Latino access to and use of green spaces:

- Develop a central neighborhood park for social cohesion and community events.
- Repurpose vacant lots into recreational spaces to promote positive behaviors and decrease crime.
- Construct sidewalks throughout the community to promote access to all green spaces and to support after dinner walks and neighborhood cohesion.
- Build greenways and trails as safe routes to schools and as safe routes to green spaces/public transport to increase physical activity in children and adults.

To drive community organization and engagement:
- Employ use of a "cultural broker," a local resident who has access to community members, grassroots organizations, as well as official decision-makers and who can mediate agreements.
- Do a community survey, and go door-to-door to get a sense of community composition.
- Bring residents together with ongoing, regular meetings at churches, community centers, or prominent local businesses.
- Distribute flyers and hold trainings to educate the community on specific issues of interest such as tenant rights, distribution of affordable housing in the area, etc.

To best communicate with modern Latinos of all generations, policymakers, businesses, and organizations should use:
- *Bilingual messaging*: not purely out of need, but to demonstrate cultural understanding. Avoid pure translations and instead focus on selection of imagery, strategic messaging, and cultural acuity in both English and Spanish.
- *Multigenerational targeting*: deliver the same message in several ways, to reach viewers/consumers of each generation.

- *Social media messaging*: develop a fully articulated social media engagement strategy applying the two previous tips, as well as:
    - Social media ads, online videos, and blogging to promote Latino-targeted brands and products including Latino-owned small businesses and banks with products beneficial to Latino consumers in the specific community served
    - Provide options for consumers who prefer all-virtual, non-traditional consumer experiences

Future Research Needs

Many of the policy suggestions and strategies highlighted in this review are based upon research performed within urban Latino communities. While many of the suggestions may be applicable to smaller Latino communities, it will be essential to determine if they will be successful when applied to the semi-isolated Latino communities of the "new Latino destinations." In one sense, because the majority of these policy recommendations hinge upon community activism and solidarity, it may be possible to translate them into the heavily Latino-majority communities found in these small-town and rural areas. However, activism builds upon political capital found in the community, and in many of these new destinations, the Latino communities are isolated and in fact marginalized, suggesting they lack political power. It will be essential to better understand the needs and strengths of these new Latino communities regarding housing, transportation, and green space so that equitable neighborhood development can be a reality for this new and growing segment of the U.S. Latino population.

Another challenge that requires more research is how to best organize activism within Latino communities that include native-born individuals "three generations removed from immigration" as well as "newly immigrated indigenous Central Americans for whom Spanish is a second language" [97]. Finding common ground across subpopulations within diverse Latino communities will be essential to successful activism efforts that support the policy work suggested in this review.

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