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**THE MENTAL HEALTH ADVANTAGE OF LATINO
NEIGHBORHOODS: INVESTIGATING THE ROLE OF SOCIAL
RESOURCES, STRESSFUL EXPOSURES, AND NEIGHBORHOOD
PERCEPTIONS IN THE LATINO COMPOSITION-MENTAL
HEALTH RELATIONSHIP AMONG MEXICAN-DESCENT
RESIDENTS IN HIGH AND LOW LATINO COMPOSITION
NEIGHBORHOODS OF TEXAS CITY, TEXAS**

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**The mental health advantage of Latino neighborhoods: Investigating
the role of social resources, stressful exposures, and neighborhood
perceptions in the Latino composition-mental health relationship among
Mexican-descent residents in high and low Latino composition
neighborhoods of Texas City, Texas**

by

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Dedication

This dissertation is dedicated to the many residents of Texas City who participated in this dissertation as informants and as facilitators of my research. Without the trust, patience, time, and honesty of these individuals, I could not have completed this dissertation. This dissertation is also dedicated to my many loved ones who compassionately allowed our relationship to be put on hold at various times throughout this process: my sweetest sweetheart, Neal; my brilliant mother, Lynn; my faithful siblings, Rebecca and Zach; my understanding father, Roger; my adoring grandmothers, Lorraine and Norma; my most loyal companion, Cisco—the best dog a girl could want, who forgoed many a walk on my behalf; and many other family and friends.

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The mental health advantage of Latino neighborhoods: Investigating the role of social resources, stressful exposures, and neighborhood perceptions in the Latino composition-mental health relationship among Mexican-descent residents in high and low Latino composition neighborhoods of Texas City, Texas

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This dissertation investigates the relationship between neighborhood Latino composition and mental health. Emerging evidence suggests that high Latino composition may protect Latino residents against a variety of negative physical and mental health outcomes.¹⁻³ This dissertation investigates the relationship between neighborhood Latino composition, social resources, stressful exposures, and mental health in two phases. In the first phase, the relationship between neighborhood Latino composition and depressive symptoms is estimated in a large, representative sample of Mexican-descent residents of Texas City, Texas. The role of foreign-born status, Spanish language, social support, discrimination and stress are investigated as potential mediators and moderators of the association between Latino neighborhood composition and possible depression. In the second phase, a mixed-methods study combining in-depth qualitative interviews and structured, systematic interviews explores neighborhood perceptions of a convenience sample of Texas City Mexican-descent residents stratified by high and low Latino neighborhood composition. Neighborhood perceptions and number of social and family ties are compared between residents of high and low Latino composition neighborhoods. Neighborhood Latino composition is defined using the proportion of Latino residents in the neighborhood based on 2010 U.S. Census data. Results from the first phase suggest that increased Latino composition is associated with fewer depressive symptoms for Latino residents. However, these beneficial effects may only apply to individuals who speak Spanish. Decreased perceived discrimination and stress and increased social support in high Latino composition neighborhoods may explain part of the protective effect associated with increased Latino composition. In addition, discrimination and

stress also moderate the Latino composition-depressive symptoms relationship such that only those with high discrimination or high stress exhibit reduced depressive symptoms in neighborhoods of high Latino composition. Results from the second study indicate that residents of high and low Latino composition neighborhoods may perceive neighborhood characteristics similarly, although residents of high Latino composition neighborhoods report more supportive social ties in the neighborhood. These findings suggest that increased neighborhood Latino composition may be associated with more neighborhood-based social support and that increased social support may promote better mental health.

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List of Abbreviations

UTMB	University of Texas Medical Branch
GSBS	Graduate School of Biomedical Science
TDC	Thesis and Dissertation Coordinator
SES	socioeconomic status
BMI	body mass index

Chapter 1|

Introduction

Latino populations in the United States exhibit comparable or lower rates of poor health outcomes relative to non-Latino whites despite their lower socioeconomic position, a pattern known as the Latino paradox.¹⁻⁴ This advantage, however, varies by neighborhood Latino composition—the proportion of individuals in a neighborhood who identify as Latino. Latino residents of neighborhoods with higher Latino composition exhibit lower rates of mortality,⁵ better self-rated health,⁶ and fewer depressive symptoms.⁷⁻⁹ This dissertation investigates the association between neighborhood Latino composition and mental health for Mexican-descent adults from two approaches. First, I examine the association between Latino composition and depressive symptoms for Mexican-descent residents of Texas City, Texas using population-level data from the Texas City Stress and Health Study.¹⁰ Three variables—social support, discrimination and stress—are investigated as possible mechanisms of this relationship, and immigrant status and Spanish language use are investigated as moderators.

Second, an in-depth study with Mexican-descent residents in high and low proportion Latino neighborhoods in Texas City investigates how neighborhood perceptions, experiences, and resources vary across neighborhoods of different Latino composition. In this way, a list of potential mechanisms linking neighborhood Latino composition and mental health are identified in a setting where this relationship exists on a population-level. The integration of population-level and in-depth mixed-methods research offers a stronger approach than either method alone: population-level research ensures representativeness of findings but usually sacrifices depth of knowledge. In

contrast, an in-depth mixed-methods approach yields deeper insight through more extensive and focused interviewing but sacrifices generalizability of findings. Combining both approaches takes advantage of each method's strengths while balancing their weaknesses. I anticipate that findings from this dissertation will guide future research efforts to explore mechanisms in the neighborhood composition-health relationship.

This introductory chapter frames the dissertation with a review of the literature on neighborhood ethnic composition and health. The focus is on neighborhood Latino composition and mental health. This chapter concludes with an overview of the dissertation, including the study purpose, aims, and major hypotheses. Chapter 2 delves deeper into the theory and literature on neighborhood ethnic composition and health. The second chapter aims to explain why neighborhoods, and Latino neighborhoods in particular, offer an important and interesting lens through which to study social patterns in health. The patterns observed in Latino neighborhoods are compared to those in other populations, and likely mechanisms are hypothesized and justified.

Chapter 3 explores the relationship between neighborhood Latino composition and depressive symptoms using population-level data from the Texas City Stress and Health Study baseline collected in 2004. Chapter 3 examines the role of increased social support, reduced perceived stress and reduced perceived discrimination as mediators of the Latino composition-depressive symptoms relationship.

Chapter 4 examines the Latino composition-mental health relationship using a mixed-methods study to explore neighborhood perception in the same locale, in Texas City, Texas. In this chapter, analyses of in-depth interviews with Mexican-descent residents of Texas City identifies differences in neighborhood perceptions between residents living in high and low proportion Latino neighborhoods.

Finally, Chapter 5 incorporates findings from the first four chapters in order to provide a comprehensive picture of Latino neighborhoods and the relationship between Latino composition and mental health. The chapter concludes with recommendations

regarding the application of findings for future research on neighborhood ethnic composition and mental health in Mexican-descent communities.

In the literature, the term “Latino” and “Hispanic” are frequently used to refer to individuals that trace their ancestry to a Spanish-speaking nation. However, many individuals who identify as either Latino or Hispanic prefer the term Latino.¹¹ Therefore, in this research, I use the term “Latino” in order to honor this preference. However, the primary independent variable investigated in this dissertation, neighborhood Latino composition, is captured using census-based data. The U.S. Census Bureau uses the term “Hispanic,” not “Latino.” Thus, I use the term “Hispanic” when describing the census-based operationalization, neighborhood percent Hispanic, but “Latino” when referring to the variable neighborhood Latino composition. Finally, the empirical work of this dissertation focuses on Mexican-descent individuals living in contexts of high and low Latino composition. Despite focusing on just Mexican-descent individuals, I still use the term neighborhood Latino composition because my measures of neighborhood Latino composition are not limited to Mexican-descent residents. Rather, neighborhood Latino composition, based on US Census data, includes all individuals who identify as Hispanic.

BACKGROUND

Sociologists have recognized a spatial element to mental health since the origin of the discipline.^{12–14} In 1939, Faris and Dunham published an investigation on the relationship between neighborhood social context and incidence of schizophrenia in Chicago.¹⁵ Their work yielded two main findings. First, areas of socioeconomic disadvantage were associated with the highest rates of hospital admissions for schizophrenia. Second, hospital admission rates were lower among whites than African Americans, except in African American neighborhoods, where the pattern was reversed. Concern over ecological fallacy (inaccurate estimation of individual-level characteristics

based on group-level factors) and selection bias (bias due to a systematic sample characteristic that predisposes individuals to participate in the study) has diminished the analytical value of their findings, but their work stimulated a stream of literature on neighborhood social context and mental health.¹⁶

Since Faris and Dunham, scholars have established the importance of area socioeconomic disadvantage and residential mobility for various mental health outcomes,^{16–19} but the contribution of neighborhood ethnic composition has received less attention. Over the past few decades, this construct has surfaced in relation to health outcomes. For example, neighborhoods with a larger proportion of Latino residents report better self-rated health,⁶ fewer depressive symptoms,^{7,9} lower rates of cancer,²⁰ slower cognitive decline,²¹ and lower adult mortality⁵ and years of life lost to heart disease²² for Latino residents.

These results are surprising because, usually, as the proportion of racial or ethnic minority individuals in a neighborhood increases, the rate of poverty increases, as well.^{23,24} Neighborhood poverty is associated with numerous poor health outcomes including depressive symptoms,^{16,17,25,26} psychosis,^{27–32} physical disability and chronic conditions,³³ and social issues like crime^{34,35} and low education.³⁶ Persistent discrimination and differential exposure to environmental toxins as well as financial and social resources would be expected to exacerbate risk of health problems.^{8,37,38}

African American neighborhoods demonstrate this overlap between racial concentration and socioeconomic status (SES) and health disparities. For example, neighborhoods with a larger proportion of African American residents exhibit increased adult mortality,^{39,40} infant mortality,^{41,42} tuberculosis⁴³ and heart disease for African American residents.⁴⁴ In contrast, concentrated Latino neighborhoods exhibit higher rates of poverty without increased rates of poor health outcomes. Even outside of high proportion Latino neighborhoods, Latino individuals paradoxically exhibit better than expected health outcomes. While lower SES is associated with greater morbidity and

earlier mortality for individuals of most racial/ethnic groups,^{45–47} Latinos exhibit rates of morbidity and mortality comparable to or better than non-Latino whites despite their lower socioeconomic level on average.^{1,3,4,48}

Understanding the relationship between neighborhood Latino composition and health may yield important insight into the way communities and neighborhoods can promote health. However, little research has formally explored mechanisms in the composition-health relationship for Latino populations. This project focuses on the relationship between neighborhood Latino composition and mental health as a case study of the Latino density advantage with several objectives: 1) to review the literature on neighborhood Latino composition and mental health in order to understand factors that may be important in understanding the relationship 2) to estimate the relationship between neighborhood Latino composition and mental health and explore possible mechanisms using a population-based sample for which this relationship has not yet been investigated, 3) to systematically investigate in-depth perceptions of neighborhood resources and experiences among Mexican-descent residents of high and low proportion Latino neighborhoods as possible mechanisms linking Latino composition and mental health, and 4) to incorporate my findings into the existing literature on Latino composition and mental health and to identify useful paths for future work in this field.

NEIGHBORHOOD LATINO COMPOSITION AND MENTAL HEALTH

Latino individuals tend to report fewer depressive symptoms as the proportion of co-ethnic individuals in their neighborhood increases. Little research has explored this relationship in other immigrant-based minority populations in the United States,⁸ but an expanded view that includes other countries and mental health outcomes yields substantial evidence of the benefits of individual-neighborhood ethnic alignment for mental health.^{49–53}

Table 1 summarizes the findings and design of nine studies since 2000 investigating the relationship between neighborhood Latino composition and depressive symptoms for Latino residents.^{7-9,36,54-57} In order from left to right, the table lists the data source, the measure and parameterization of depressive symptoms and neighborhood Latino composition, the direction and significance level of the association, and the following sample characteristics: sample size, sampling region/site, age range or inclusion criteria (mean), national heritage, proportion foreign-born, and mean (range or standard deviation) neighborhood Latino composition (as defined by the study), if provided. Of the nine studies available, five found a significant inverse (protective) association between neighborhood Latino composition and depressive symptoms,^{7-9,55,57} one found a significant direct (risk-enhancing) association,⁵⁸ and three found no significant relationship.^{36,54,56} Thus, while the majority support a significant protective effect associated with increased Latino composition, there is some inconsistency.

Based on the table, variation in measures of the main dependent (depressive symptoms) does not likely explain the inconsistent findings because most of the studies used the same measure: the Center for Epidemiological Studies Depression Scale (CES-D).⁵⁹ Only three of the nine studies used alternative measures of depressive symptoms (Vega and colleagues used a physician diagnosed depression,⁵⁵ Rios and colleagues used the Kessler Psychiatric Distress Scale,³⁶ and Lee used items from the Diagnostic and Statistical Manual of Mental Disorders III (DSM-III-R),⁵⁸ but this variation does not distinguish between studies with positive and negative findings.

However, variation in the main independent variable (neighborhood Latino composition) may explain why one study (Lee, 2009)⁵⁸ found a risk-enhancing effect of neighborhood Latino composition: this is the only study that defined neighborhood Latino composition at a scale significantly larger than a census tract—2.5 times larger, specifically. In contrast, seven of the nine studies measured neighborhood Latino composition as census tract percent Hispanic^{7-9,36,54,56} or census tract linguistic isolation

Table 1.1. Review of the literature on the relationship between neighborhood Latino composition and depressive symptoms: cross-sectional multi-level linear regression analyses published prior to June 2012

Data	Measure of Depressive Symptoms	Measure of Latino composition	Association / Odds	N	Region	Age(y) ^a	National Heritage	%Foreign-born	mean Latino composition
HEPESE (2000 census) Gerst et al., 2011	ln(CES-D) (0-60)	%MexAm/tract	Negative* (men only)	1,857	Southwest	75-109 (81.6)	Mexican	43	-
HEPESE (1990 census) Ostir et al., 2003	CES-D contin + cat (0-60)	%MexAm/tract	Negative*	2,710	Southwest	65 - ≥85	Mexican	44	-
SALSA Kwag et al., 2012	CES-D continuous (0-60)	perceived Latino density (1-5)	Negative*	1,267	Sacramento	60-94 (71.4)	^c 85% Mexican	₋ ^b	2.43 (low to 50% Latino)
LAFANS Vega et al., 2011	Physician diagnosis	Linguistic isolation	Negative* (US-born)	1,468	LA	≥18 (36.5)	Majority Mexican	73	26.0(13.0) ^d
MESA (2000 census) Mair et al., 2010	CES-D continuous (0-60)	%Latino/tract (10%)	Negative*	1,179	LA, NY, Minn	45-84	Unclear	60 (45% Mexican)	49.0(31.0)
AHEAD/HRS (1990 census) Aneshensel et al., 2007 Wight et al., 2011	CES-D 8 (0-8)	%Latino/tract	Not reported	144 354	Urban areas in U.S.	≥70(77.2) 52-63(57.4)	Mexican & Cuban	^c 10 (no adjustment)	12.0(20.9)
AHS (2000 census) Rios et al., 2012	Kessler Psychiatric Distress	%Latino/tract (10%)	Negative	405	Phoenix (county)	18-96 (56.0)	majority Mexican	55 (no adjustment)	22.4 (0.50-92.3)
MIDUS (1990 census) Lee, 2009	DSM-III-R	Latino isolation	Positive*	400	Chicago	21-83 (40.4)	Mexican , Puerto Rican	21.8	0.299 ^e (0.005-0.915)

* $p \leq 0.05$

^a Age is reported as a range or mean, depending on the data reported in the original study. If the range is reported, then the mean is included in parentheses. If the mean is reported, then the standard deviation is reported in parentheses.

^b Immigrant status not measured.

^c Extrapolated from data documentation

^d Mean percent (standard deviation) of households in the census tract without a fluent or near fluent English speaker

^e Mean neighborhood Latino isolation (range)

(the proportion of households in which no members can speak English “very well”) (Vega and colleagues).⁵⁵ Finally, one study measured Latino composition as perceived Latino composition, but subjective definitions of neighborhoods usually limit boundaries to 1-2 blocks surrounding a residence, much smaller than a census tract.⁶⁰⁻⁶² Different dimensions and scales of segregation may have different consequences for health.^{63,64} As such, the risk-enhancing effects of segregation may only emerge at large scales such as that used by Lee.

In addition, differences in sample size and sample characteristics may explain why some studies reported nonsignificant findings. Most notably, the samples vary greatly in size and three studies with small samples all found nonsignificant results. This pattern suggests that insufficient power may explain why three of the nine studies were unable to demonstrate a significant effect of census tract neighborhood Latino composition on depressive symptoms.

In addition, the samples vary by mean and range of neighborhood Latino composition (column 10). An appropriate level for identifying neighborhoods of high Latino composition has yet to be determined with scholars defining high Latino composition at cut-offs as low as 25%⁶⁵ and high as 95%.⁶⁶ Insufficient range of neighborhood Latino composition could preclude significant results if the important comparison is of very high and very low Latino composition. The two studies low means and small ranges (Wight and colleagues, 2011; and Aneshensel and colleagues, 2007)^{54,56} found nonsignificant results.

Two more prominent sampling variations could explain inconsistency of results across studies: composition by national heritage and foreign-born subjects. Prevalence and incidence of various health outcomes differ across distinct Latino populations⁶⁷⁻⁶⁹ and generational status,⁷⁰⁻⁷⁶ as do risk factors. Furthermore, research has shown that the effect of Latino segregation on physical health varies by national heritage,^{58,77,78} and immigrant status.⁷⁹⁻⁸⁶ Thus, variation in sample composition by foreign-birth and national

heritage could impact findings. In this case, two of the three studies finding nonsignificant results used samples with the lowest proportion foreign-born and the only samples to contain Cuban subjects (Aneshensel and colleagues, 2007; and Wight and colleagues, 2011).^{54,56} These variations could explain their negative results.

Finally, analysis of the relationship between ethnic composition and mental health may also be complicated by the selection of neighborhood boundaries. While census tracts are a convenient neighborhood unit for administrative reasons, they do not always match intuitive neighborhood boundaries that consider natural landforms, street patterns, and demographic patterns. Furthermore, most people conceptualize their neighborhood as a region substantially smaller than a census tract. Most people define their neighborhood as the block they live on or add several blocks in each direction,⁸⁷ a population of 10-100 compared to 1,200-8,000 in a census tracts.⁸⁸ Consequently, if neighborhood Latino composition operates through residents' perceptions and experiences of their neighborhood then the effect of neighborhood ethnic composition at the census tract level may manifest as null results. Research on neighborhood ethnic composition should consider calculating ethnic composition on a scale much smaller than a census block. This factor could explain the inconsistent findings across the eight studies that define Latino composition at the census tract level (all but Lee, 2009).

POSSIBLE MECHANISMS IN THE LATINO COMPOSITION—MENTAL HEALTH RELATIONSHIP FOR LATINO RESIDENTS

While higher Latino density may offer a protective effect for mental health, the mechanisms of this relationship remain unclear. Few studies have directly tested hypothesized mechanisms in the Latino composition-mental health relationship^{36,57} though several have attempted to identify what mechanisms might be important.^{55,84,89-91} Mechanisms linking neighborhood ethnic composition and mental and physical health

outcomes previously hypothesized or examined in Latino and multi-ethnic samples include discrimination,^{92,93} acculturation/generational status,^{55,57,80–82,84,86} social integration and social support,^{55,90,94,95} social cohesion,^{36,65} and stress (neighborhood exposures and social stress).^{34,66,96,97} Each of these are discussed below.

The relationship between neighborhood Latino composition and mental health may operate through exposure to discrimination. Racial residential segregation can largely be attributed to historical and contemporary institutional discrimination in economic and housing legislation based on race.^{98–102} Such segregation, many scholars claim, is the underlying force perpetuating racial disparities in health.^{100,102} To the extent that this model applies to Latinos in the United States, living in a Latino enclave may separate residents from discriminatory experiences outside the neighborhood. Thus, those who live in a neighborhood of high Hispanic composition may experience less discrimination than those living in more integrated areas. Compression theory^{103,104} posits that discrimination in housing and employment consolidates minority individuals into concentrated geographic areas. This compression results in less discrimination due to higher concentration of co-ethnic individuals. The relationship between experiencing discrimination and poor mental health^{105–109} identifies discrimination as a possible mediator of the neighborhood Latino composition-mental health relationship.

Exposure to racism and anti-immigrant sentiment may carry particular weight for second-generation immigrants who may be more integrated into social experience outside of the enclaves and thereby encounter increased discriminatory messages.⁹³ Second-generation individuals may also lack the optimism characteristic of first-generation immigrants^{93,110} thereby rendering second-generation Latinos more vulnerable to the negative consequences of discrimination. Regardless of generational status, the clear negative effects of discrimination on health for people of many race/ethnicities^{111–115} identifies variation in exposure to discrimination as a potentially important factor shaping the relationship between neighborhood ethnic composition and health.

At the same time, compression of Latino minorities into concentrated neighborhoods may result in increased access to culturally appropriate services such as Spanish-speaking church services or grocery stores. Living in an environment saturated with one's own culture may ease acculturation stress for both US- and foreign-born Latinos.^{81,116–119} Recent research demonstrates that acculturation may moderate the relationship between living in a Latino enclave and depressive symptoms for Latino individuals.^{55,57} Low Latino composition was risk-enhancing for low-acculturation respondents in one⁵⁷ and high Latino composition was protective for high-acculturation respondents in the other.⁵⁵ Shared neighborhood culture also allows residents to more openly express aspects of themselves, such as their values or ethnic identity, through the physical environment of their own home.^{120–122} Engaging with the neighborhood in this way promotes the development of a sense of community,¹²² which is associated with increased happiness and well-being.^{123–125}

The Latino composition-mental health relationship may also operate through perceived stress. Increased stress is strongly associated with poor mental health including depressive symptoms^{126–128} and psychosis,^{129–132} particularly among individuals vulnerable to mental illness^{130,133} or with repeated exposure.¹³² Ethnic homogeneity may reduce stress by providing opportunity for bonding capital (the exchange of social capital, resources accessed through social networks, with co-ethnic ties).¹³⁴ In contrast, ethnic heterogeneity facilitates bridging capital (the exchange of social capital between people of different races/ethnicities), which may be associated with reduced stress for whites only.¹³⁵ As described above, high neighborhood Latino composition may also be associated with less stress through shared norms—group beliefs about how group members should behave—and culture with neighbors,^{117,118} which help residents predict neighborhood experiences and devise solutions to neighborhood issues.^{122,136} Increased neighborhood Latino composition may also not carry the high rates of violent crime and ambient hazards characteristically associated with increased neighborhood disadvantage

and African American composition,^{34,66,96,97} though some of this effect may be due to individual-level ethnicity and immigrant status.¹³⁷ High Latino composition may also buffer against the effects of stress on mental health because ethnic homogeneity is associated with living in greater proximity to friends and family.^{104,138–140} In this way, living in a Latino neighborhood may reduce stress levels or buffer against the negative effects of stress on mental health.

Neighborhood solidarity and cohesion could mediate the relationship between Latino density and mental health, as well. Neighbors of the same ethnicity experience greater solidarity^{122,141} and a sense of belonging¹⁴² than those of different ethnicities. This is particularly true for minority individuals whose experiences of marginalization may facilitate the development of a common identity.^{143,144} Solidarity can also be conceptualized as social cohesion—having a common sense of identity and belonging associated with shared values and mutual trust.¹⁴⁵ Several scholars have hypothesized that social cohesion may explain better health outcomes for Latino residents of Latino neighborhoods.^{2,6,65} In addition, several studies have shown that social cohesion mediates the effects of neighborhood socioeconomic disadvantage^{36,146} and neighborhood Latino composition³⁶ on self-rated health.

Beyond the effects of perceived cohesion and solidarity, ethnic homogeneity may also be associated with more concrete forms of support through increased number of local social ties¹⁴² and greater proximity to family and friends,^{53,104,138–140} both of which are linked to increased social support.^{147–150} The exchange of social support between kin or friends usually involves four types of support including emotional (empathy and caring), instrumental (tangible aid and services), informational (advice and suggestions for problem-solving) and appraisal (feedback and affirmation) support.¹⁵¹ Similarly, neighboring—“the social interaction, the symbolic interaction, and the attachment of individuals with the people living around them and the place in which they live”¹²²—may involve the exchange of emotional, instrumental/functional, and informational support.¹⁵²

Such support accessed through social networks is often referred to as social capital^{117,153} and may not always exhibit balanced reciprocity across individual dyads.¹²² Both dyadic social support and network-based social capital are associated with improved mental health including reduced depressive symptoms and psychosis.^{154–157}

Latino neighborhoods may be particularly likely to provide residents with high levels of support and social capital compared to neighborhoods of other ethnic compositions. First, Latino persons may engage more regularly in neighborhood-based reciprocal exchange^{37,158–162} reflecting a core Latino value, “familism,” the exchange of social support across large networks composed of kin.^{65,163} Components of Latino familism include prioritizing living near family and intra-family exchange of emotional and instrumental support. For example, in the Southwest, Mexican-descent households frequently cluster spatially producing dense social networks among kin and kin-like co-ethnic ties.^{164,165} Latino social networks have also been shown to contain a larger proportion of local social ties than those of whites.¹⁵⁹

Second, Latino segregation is partially attributed to voluntary co-ethnic residential concentration as foreign-born Latinos travel along established migration paths built of co-ethnic (and often kin-based) network connections.^{166–168} By choosing co-ethnic enclaves, newly arrived migrants find cheap housing, employment, transportation, childcare^{1,5,169–171} and, most importantly, neighbors who speak Spanish.¹⁷² Ethnographic research suggests that local co-ethnic social ties provide the critical services to recently arrived immigrants with respect to arrival and settlement.⁹⁰ Furthermore, compared to similarly low-income African American neighborhoods, Latino neighborhoods are less racially segregated and experience lower rates of exodus of the middle-class to higher income neighborhoods.^{100,173,174} When these two factors are combined, Latino neighborhoods may retain relatively high levels of social capital in two dimensions: across co-ethnic kin and community networks and across socioeconomic classes. Social capital and support

from both kin and non-kin neighbors could contribute to the reduced depressive symptoms observed in Latino enclaves.^{95,104,157,175–178}

Contrasting evidence challenges the above hypothesis on Latino density and social support. Usually, neighborhoods with a high proportion of racial or ethnic minority individuals also have high rates of poverty,^{23,24} and neighborhood poverty is associated with less social support among neighbors,¹⁷⁹ though the evidence is not unanimous.¹⁸⁰ Furthermore, in one recent study, living in a neighborhood of high Spanish linguistic isolation was associated with increased family ties in the neighborhood but no difference in number of social interactions and sense of connection with neighbors.⁵⁵ Thus, there is justification to hypothesize that high-density Latino neighborhoods may exhibit less reciprocal exchange across local social networks.

Yet, other aspects of Latino neighborhoods are likely to downplay the poverty effect on social support, namely features of social organization such as residential stability. In contrast with comparably low-income neighborhoods of other racial/ethnic compositions, Latino neighborhoods exhibit greater levels of residential stability,¹⁸¹ employment,^{182,183} two-parent households,^{184–186} and home and car ownership,^{182–184,187} despite lower levels of education on average.¹⁸⁸ At higher levels of residential stability, lower neighborhood socioeconomic status may actually be associated with higher exchange of social support.¹⁸⁹ Thus, even high composition Latino neighborhoods of low socioeconomic status may still exhibit high levels of social capital exchange.

CONFOUNDERS AND MODERATORS OF THE LATINO COMPOSITION-HEALTH RELATIONSHIP

Several confounding variables must be considered with regard to neighborhood composition, mental health, and its mechanisms. First, the separate effects of Latino density and neighborhood socioeconomic status may be difficult to isolate. As explained

earlier, racial and socioeconomic concentration often coincide, and are associated with neighboring behavior. Neighboring refers to the social and symbolic interaction of individuals with the people who live around them and with the place in which they live.¹²² Neighborhood socioeconomic homogeneity is associated with higher levels of neighboring than socioeconomic heterogeneity.¹⁹⁰ Consequently, an observed relationship between Latino density and neighborhood social networks may simultaneously reflect the effect of socioeconomic homogeneity on social networks. While aspects of research design and statistical analysis can attempt to account for mild colinearity, if neighborhood ethnic and socioeconomic homogeneity are strongly associated, their isolated effects will be impossible to distinguish.

Second, neighborhood homogeneity with respect to home ownership may have a similar confounding effect through social networks. An owner's financial investment in the home simultaneously promotes investment in the neighborhood^{122,191} because owners want the neighborhood to provide a safe and clean environment for themselves, their household, and a hypothetical future buyer. This investment inspires the owner to maintain the property as well as contribute to neighborhood maintenance. Ownership also leads to residential stability, through which owners come to understand their neighborhood: the kinds of interactions they can expect and the kinds of events that may happen. As such, ownership helps residents anticipate local problems and brainstorm solutions.¹²² Owners who understand the neighborhood are more likely to engage in neighboring^{125,192} and to develop a sense of community,^{125,193} both of which have a positive effect on mental health. In contrast, some evidence suggests that ownership and residential stability lock residents into damaging and stressful situations.^{194,195} For example, residential stability in disadvantaged neighborhoods is associated with greater distress¹⁸ and feelings of powerlessness.¹⁷⁹ As described earlier, neighborhoods of high Latino density have higher rates of homeownership than non-Latino neighborhoods of similar socioeconomic status. Consequently, an observed relationship between Latino

density and neighborhood social networks could represent the influence of high residential stability.

Third, household composition may confound the Latino composition-mental health relationship, as well. Latino families tend to have higher numbers of children than non-Latino families. A high number of children in the neighborhood is associated with more integrated neighborhood social networks and greater parental investment in the neighborhood.^{62,191,192,196,197} Thus, like residential stability, neighborhoods with high Latino composition may exhibit better mental health because of the stronger social networks achieved through parenthood. Research on neighborhood Latino composition should control for confounding effects of neighborhood socioeconomic status, residential stability and household composition in design and analysis.

Fourth, as Latino composition increases, so does proportion foreign-born.^{169,198} High composition of foreign-born Latinos could exert a compositional effect on mental health as foreign-born Mexican-descent persons experience better health despite their lower socioeconomic status than US-born Mexicans^{71,75,199–201} including mental health.^{55,74} The mental health advantage of foreign-born Mexicans may relate to self-assessed social status. Foreign-born and Spanish speaking Mexican-descent individuals are more likely to compare their socioeconomic status to that of Mexicans in Mexico than US-born and English-speaking Mexican-descent individuals.^{202,203} Given that economic gain is one of the primary motivations for migration,^{204,205} Mexican-born individuals may be more likely to positively assess their social standing. Consequently, since Latino enclaves are frequently dominated by high proportion foreign-born, the health advantage observed among Latinos living in Latino enclaves could simply reflect the improved average health status of residents.

Foreign-born status may also moderate the effect of neighborhood Latino composition on health. Second generation Latinos may be particularly likely to negatively interpret their social status. US-born and English speaking Mexican-descent

individuals are more likely to compare their social status to that of US-born Latino and non-Latino white residents while foreign-born and Spanish speaking Mexican-descent individuals are more likely to compare their socioeconomic status to that of Mexicans in Mexico than US-born and English-speaking Mexican-descent individuals.^{202,203} In addition, some literature suggests that foreign-born persons in the US tend to express a psychological attitude predominantly characterized by optimism.^{93,110} As a result, US-born Latinos may have higher self-expectations than foreign-born Latinos,²⁰⁶ which may lead to greater disappointment and poor mental health.¹⁹⁹ In this sense, living in a Latino enclave may be perceived as economic failure by US-born Latinos only. If so, neighborhood Latino composition would have a negative effect on mental health for US-born Latinos only.

At the same time, living in a Latino neighborhood may provide unique benefits to both US- and foreign-born Latinos. For example, US-born Latinos may face greater acculturation stress—the stress associated with the psychosocial changes that occur when an individual from one culture comes in contact with another²⁰⁷—and pressure through more extensive interaction with broader society in educational and work settings. Living in a neighborhood with high ethnic homogeneity may buffer against this stress by reinforcing a sense of identity and ethnic pride to buffer against stressful experiences.^{90,208,209} In contrast, foreign-born Latinos face different types of challenges including language barriers, limited social ties, and various gaps in knowledge about how to navigate the local and broader American social context. In this sense, both US- and foreign-born Latinos may experience particular benefits from living in a Latino enclave.

In sum, the factors that pattern risk of mental health--social support, stress, and discrimination—may vary across neighborhoods of different Latino composition. Thus, varying levels of these factors could explain the Latino composition-depressive symptoms relationship, a mediation model. In addition, these factors may moderate the effect of Latino composition on depressive symptoms. In addition, foreign-born status

and Spanish language use could moderate the effect of neighborhood Latino composition on depressive symptoms. Thus, this paper tests the role of social support, stress and discrimination as mediators and moderators and foreign-born status and Spanish language use as moderators of the Latino composition-depressive symptoms relationship for Mexican-descent individuals.

STUDY PURPOSE AND AIMS

This study investigates the relationship between neighborhood Latino composition and mental health for Mexican-descent individuals in Texas City, Texas. Texas City was the chosen study site because Texas City was close to the researcher's home institution, University of Texas Medical Branch, and is the site of an existing population-level data set, the Texas City Stress and Health Study (TCSHS). These two features allowed population-level analysis of the Latino composition-mental health relationship followed by in-depth research. The project proceeded in two phases: 1) a test of the association in population-level data from the Texas City Stress and Health Study (TCSHS), and 2) a description of neighborhood perceptions and resources based on in-depth semi-structured interviews with residents of Texas City.

In Phase 1, data from the TCSHS baseline (2004) was used to explore the relationship between neighborhood Latino composition and depressive symptoms. The TCSHS contains individual-level sociodemographic and health information on adults 25 years and older with an emphasis on Latinos and Latino neighborhoods. This phase focused on a Mexican-descent subsample of respondents in the TCSHS. Several factors were examined as possible mechanisms including social support, perceived discrimination and perceived stress. Neighborhood Latino composition was defined as the percentage of Latino individuals in a neighborhood. (Neighborhood composition by

Mexican national heritage is unavailable at the census block level.) Neighborhoods were defined by boundaries set in the TCSHS. Depressive symptoms were measured using the Center for Epidemiologic Studies-Depression Revised (CES-DR).²¹⁰

Thus, Phase 1 had two aims: first, to study the Latino composition-depressive symptoms relationship for Mexican-descent residents of Texas City; and, second, to study the role of Spanish-language use, social support, perceived discrimination, and perceived stress in the Latino composition-depressive symptoms relationship. I expected that subjects in higher proportion Latino neighborhoods would report fewer depressive symptoms than subjects in lower proportion Latino neighborhoods. Specifically, I expected that this relationship might differ for Spanish- and English-language users. I also expected that social support, discrimination and stress would mediate and/or moderate the Latino composition-depressive symptoms relationship. Additional details on the methods of this phase are described in Chapter 3.

In a further exploration of possible mechanisms, Phase 2 aimed to identify neighborhood features that might explain the association between neighborhood Latino composition and mental health. In-depth qualitative interviews were conducted with Mexican-descent residents of high and low proportion Latino neighborhoods in order to identify differences in neighborhood perceptions between residents of high and low proportion Latino neighborhoods. Thus, this phase had one aim: to systematically compare perceptions of neighborhood resources and experiences between Mexican-descent residents of high and low proportion Latino neighborhoods. I expected that residents of high proportion Latino neighborhoods would report better resources and experiences than residents of low proportion Latino neighborhoods. Additional details of this phase are described in Chapter 4.

Finally, it is important to note that the insights garnered through this study can only speak to the experiences of Mexican-descent individuals in suburban Texas. Latinos are the largest ethnic minority in the US, but they are disproportionately Mexican

and disproportionately concentrated in the southwest, particularly in the four border states—Texas, New Mexico, Arizona, and California²¹¹. Consequently, Latino culture is pervasive in Texas and the region has a long history of migration from Mexico resulting in inter-ethnic tensions and socioeconomic challenges unique to the region. Latino ethnicity in Texas may carry different meanings and involve different experiences than being Latino in other parts of the country. Likewise, the characteristics of Latino neighborhoods in Houston suburbs differ from those of southwest border towns, Los Angeles enclaves, or migrant farm-worker communities in Georgia or the west coast. In suit, the ways in which Latino neighborhoods promote or challenge good health will likely vary by region, urbanicity, and socioeconomic context.

Chapter 2|

Latino neighborhoods and health: what we know and what we don't

INTRODUCTION

Chapter 1 reviewed research on the effect of high neighborhood Latino composition for mental health. This chapter broadens the review to incorporate scholarship on neighborhood social effects. The investigation of the relationship between neighborhood environments and health has significantly increased in recent decades.³⁵ Doubtless, some of this interest is carried by the appeal of a new field. However, a primary motivation for this research is to better understand the linkage between neighborhood residential segregation, inequalities in micro social environments, and the production of contemporary health disparities.¹⁰²

The popular story of segregation, resource deprivation, and poor health for disadvantaged minority groups fails to capture the diverse experiences of America's multi-ethnic population. For example, contrary evidence is demonstrated by the health advantages of Latino individuals despite their low socioeconomic status and education level on average.^{2,3,212,213} The Latino Paradox²¹⁴ challenges epidemiologic models linking poverty and health. A parallel paradox emerges at a neighborhood level. Some evidence suggests that increased neighborhood Latino concentration is associated with lower rates of a number of poor health outcomes such as low birth weight,⁸⁵ mortality,²¹⁵ and poor mental health.⁹

These findings call for increased attention to the assets, skills, and knowledge that low-income communities use to maintain health in the face of limited resources. Few studies investigate the social processes underlying the health promoting effects of Latino

neighborhoods.^{57,65} Fewer still directly test these mechanisms in neighborhoods of high Latino composition.^{55,84} The expanse of recent neighborhood effects literature provides a wide variety of leads.²¹⁶ However, the majority of this work has focused on neighborhood effects in African American communities. While both African American and Latino communities face similar challenges related to discrimination and poverty, the unique historical and contemporary sociopolitical contexts of segregation for these groups suggest that the mechanisms underlying neighborhood effects in each setting are distinct. As such, research on the processes hypothesized to shape health in Latino neighborhoods must start from the beginning: what do we know about Latino neighborhoods, and how might these characteristics promote health?

To this end, this chapter addresses five main questions in five sections. First, what motivates study of the relationship between neighborhood social-structural characteristics and health? Why are patterns in Latino neighborhoods of particular interest? Second, what does it mean to refer to a neighborhood as a Latino neighborhood? What key characteristics do Latino neighborhoods share, and on what characteristics do they vary? Third, based on this depiction, what mechanisms may explain patterns of health in Latino neighborhoods? Fourth, to what extent are these mechanisms investigated in the literature? What gaps remain? Finally, what steps will guide the field of Latino neighborhood effects and health forward? In addressing these questions, I will identify the important themes that I believe should inform a research agenda investigating the mechanisms through which residence in a Latino neighborhood influences health.

SECTION 1: WHY STUDY NEIGHBORHOODS, AND LATINO NEIGHBORHOODS, IN PARTICULAR?

The value of neighborhood-level research

Since the mid-1990s, a surge in research has demonstrated that physical and social neighborhood context impacts health.^{35,216,217} Most of this work approaches neighborhood effects from a structural perspective using US census data or other administrative data to estimate the effect of neighborhood characteristics on individual health. The general framework describes how neighborhood disadvantage, measured by median household income or the poverty rate, is associated with poor social, physical and mental health outcomes.^{35,37,218,219} A smaller body of research looks at residential patterns by race or ethnicity^{37,96,184} using segregation indices such as isolation, dissimilarity^{98,220} or neighborhood ethnic composition.²¹⁵ This literature suggests that ethnic segregation may be a cause of the neighborhood concentration of disadvantage, by constraining the residential choices of many minority group members to relatively distressed neighborhoods. However, area-level health disparities cannot entirely be explained by concentrated disadvantage: the effects of minority ethnic concentration on health persist after statistical adjustment for area disadvantage.^{20,220}

These findings hint that some attributes of neighborhood context may be important parameters of interest for health. Thus far, the magnitude of the effect has been small; however, scholars have identified numerous challenges to estimating neighborhood contextual effects that may underestimate or overestimate the estimated effect. Among the most important of these are questions pertaining to overadjustment for observed individual-level characteristics and underadjustment of unobserved individual-level heterogeneity in statistical analyses.²²¹ Observed individual-level characteristics associated with health, such as educational attainment and behavioral norms,²²² reflect present and past experiences that are influenced by neighborhood factors such as public

education resources and labor markets. As such, adjustment for these characteristics could result in underestimation of neighborhood effects. Yet, numerous individual-level factors such as preferences, behavioral tendencies, and cognitive ability impact health, as well, but are sometimes difficult to measure. Here, failure to adjust for unobserved heterogeneity may result in overestimation of neighborhood effects and false attribution of health outcomes to neighborhood factors. A related problem is the issue of selection: the movement of individuals into neighborhoods may be patterned by factors related to health thereby confounding the health effects of neighborhood context.²²³ (For additional details on methodological issues, see work by Diez Roux, e.g. Diez Roux 2004, 2004,^{223,224} and reviews by Ellen and colleagues, e.g. Ellen et al., 1997, 2002^{217,225}). Overall, however, relative to individual-level factors such as ethnicity, age and income and education, the impact of neighborhoods on health seems fairly small.

Despite these weaknesses, several reasons support continued research on neighborhood effects. First, there are strong theoretical reasons to suspect that neighborhoods have a meaningful impact on health: ultimately physical and social context determines the resources, services and opportunities physically available to residents. Sociologists have intuited spatial patterns of social organization since the origins of the discipline.^{12,14} The influence of the neighborhood on daily life operates in numerous ways such as through tangible vectors—e.g., transportation infrastructure, environmental exposures, food environments, pedestrian safety, and quality of social relationships—and through symbolic processes that influence healthful lifestyles and psychological well-being, such as identity formation.^{144,192,226,227} These theoretical underpinnings of neighborhood research justify continued work in the field.

Second, persisting methodological challenges may artificially diminish published estimates of neighborhood effects as much as or more than they inflate them. For example, most analyses of neighborhood characteristics employ cross-sectional measures of neighborhood characteristics that may signal the presence of factors that influence

health, such as the poverty rate. Cross-sectional measures may underestimate the cumulative effect of factors with durable exposures. Similarly, the majority of studies on neighborhood effects on health in the U.S. use cross-sectional models, and the few longitudinal studies published are mainly limited to durations of less than ten years,^{228–231} with one exception.²³² Cross-sectional models likely underestimate neighborhood contributions to health, which may accumulate over time (“weathering”²³³) and/or exert unique effects at birth,²³⁴ adolescence,²³⁵ and old age.²³⁶ Though some factors (such as incomplete separation of neighborhood- and individual/family-level effects and inability to statistically control for neighborhood selection²³⁷) may artificially inflate estimates of neighborhood effects, it is just as likely that current techniques do not yet capture fully the effects of place on health.

Third, most studies of neighborhood effects focus on the association between socioeconomic disadvantage and health. However, these measures may not fully capture more complex neighborhood processes, such as the way neighborhoods influence childhood development,^{35,238,239} socialization,^{218,240–242} peer influences particularly in teenage years,^{243,244} and sense of self-efficacy.^{245,246} Only recently have scholars begun to address the complex processes and mechanisms by which neighborhood factors may impact health.^{35,94,96,247,248} Further investigation will likely demonstrate heightened importance of neighborhoods for health.

Finally, most importantly, spatial patterns in health highly correlate with spatial patterns in income suggesting that neighborhood characteristics may contribute to persistent disparities in health.^{216,249} Residential segregation by income has increased throughout the past three decades as a result of increasing income inequality.²⁵⁰ Neighborhood boundaries not only mirror societal stratification¹⁷³ but also perpetuate existing disparities through area-based resource deprivation that inhibits residents from making life changes to improve their own health and social circumstances. Moreover,

significant differences in opportunities for health and success persist, trends that demand attention to neighborhood factors if society aims to reduce health disparities.²³⁷

Latino neighborhoods: a unique and important case

An emergent pattern across most studies of neighborhood effects is that increasing concentration of ethnic minority individuals is associated with poor social and physical health outcomes.^{8,35,37,100,245} However, increasing minority concentration is not universally associated with poor outcomes. An emerging body of literature on Latino neighborhoods demonstrates that increasing neighborhood Latino composition may be associated with better physical and mental health for some outcomes.^{7,20,21,215} In contrast, literature on African American neighborhood segregation demonstrates that increasing concentration is associated with poor outcomes.^{8,39–42,251–253} To be fair, the advantages of Latino concentration have limits. Some studies with Latino populations link Latino segregation to limited access to care,²⁵⁴ obesity²⁵⁵ and certain poor health behaviors.⁸⁴ Yet, the overall trend is towards improved health in Latino enclaves, particularly when considering expected outcomes based on socioeconomic status.

The relationship between Latino composition and health not only contrasts findings in other ethnic communities, but also contradicts expectations based on social class. By social class, I mean “the social groups arising from interdependent economic relationships” based on the distribution of property, labor and information.²⁵⁶ Social class contains two components: actual resources (such as material resources and assets) and status (as in prestige or social rank).²⁵⁶ Both components of social class are reflected in aspects of socioeconomic well-being such as occupation, income, wealth, and education. Individuals of lower social class, for example, usually hold less prestigious jobs, earn lower incomes, own fewer assets, and achieve lower levels of education. As such, social

class explains an individual's ability to attain greater economic and social well-being.^{257–259}

Frequently, in health-related research in the U.S., social class is measured by aspects of socioeconomic well-being such as income (including wages, dividends, and federal and state transfer payments), income inequality, poverty (income below a defined threshold), material assets (such as homes and cars), and education.^{256,260}

Social class can also be measured at the household or neighborhood level. Common measures of household social class involve either extrapolating the class position of the most powerful household member to the entire household or creating a composite measure of the class positions of all heads of household.^{261,262}

At the neighborhood-level, most measures of neighborhood social class rely upon socioeconomic characteristics of area units defined and captured by the U.S. Census Bureau such as census tracts (4000 residents on average), block-groups (1000 residents on average), and blocks (85 residents on average).^{256,263} Some studies also use zip codes, which cover larger geographic areas (usually 30,000 residents or more).²⁶⁴ Census-based socioeconomic characteristics used to measure neighborhood-level social class include percent of the neighborhood population who occupy working class jobs, live below the poverty line, own their home, and have less than a high school degree.^{265–267}

The appropriate level (individual, household, or neighborhood) of social class measurement depends on the question of interest,²⁶⁸ though effective statistical control of social class may require the simultaneous use of complimentary socioeconomic variables at multiple time points and levels.^{260,268,269} This dissertation requires attention to both individual and neighborhood level social class because the primary outcome variable – mental health – and the primary exposure variable – neighborhood Latino composition – are associated with individual- and neighborhood-level social class. Mental health is associated with individual- and neighborhood-level social class. Generally, individual health increases with individual social class in a stepwise fashion.^{270–272} Specifically, low

socioeconomic status is associated with increased depressive symptoms^{273–276} largely due to increased exposure to stressful experiences, which increases vulnerability to the health-damaging effects of negative emotions and thoughts.^{277,278} Neighborhood social class is also associated with poor health outcomes such as increased depressive symptoms even after statistically controlling for individual-level social class.^{17,26,66,228,279,280}

Neighborhood Latino composition is associated with neighborhood social class. Neighborhoods of high Latino composition are more likely to have lower average social class than neighborhoods of low minority concentration, and poor Latino families are more likely to live in poor neighborhoods than poor white families.^{23,218} In addition, individual level Latino ethnicity is associated with social class. Generally, ethnic minority status is associated with greater socioeconomic disadvantage and this pattern characterizes foreign- and US-born Latinos.

The associations between mental health, individual and neighborhood-level social class, and neighborhood Latino composition would suggest that Latinos should experience worse mental health in neighborhoods of high Latino composition through the effects of individual and neighborhood social class. However, patterns of health among Latinos may depend less strongly on socioeconomic gradients than among non-Latino whites and African Americans.²⁷² Furthermore, in some cases, controlling for socioeconomic status exaggerates health advantages among Latinos who exhibit good health outcomes despite low socioeconomic status.^{2,214,281} Outcomes that do not exhibit a clear direct relationship in Latino populations between socioeconomic status and health include infant mortality, child activity limitations, child healthy eating behaviors and adult life expectancy and obesity,²⁷² and incidence of certain types of cancer.²⁸²

In sum, the positive correlation between neighborhood Latino composition and mental health is surprising given the relationship between individual- and neighborhood-level social class, health, and individual and neighborhood-level ethnicity. This contrast inspires investigation into what characteristics of Latino neighborhoods may explain

these unexpected findings. Investigation requires moving beyond associational models relating ethnic concentration and health towards more complex pathway models and longitudinal models that simultaneously address the role of race, class, citizenship⁹¹ and culture.²⁸³ Findings for Latino neighborhoods may demonstrate that segregation is not unilaterally bad for disadvantaged ethnic group outcomes,²⁸⁴ though the benefits may depend on outcome of interest or particular Latino ethnic subgroup.

Latino neighborhoods offer an important opportunity to investigate how residents stay healthy, particularly in the face of adversity. Concentrated disadvantage heightens the imperative for community collaboration and solidarity, both of which promote the formation of local social resources,²⁸⁵ a sense of self-mastery,²⁸⁶ and improved physical and mental well-being.^{123–125} Living well, staying healthy, and taking care of family and loved ones becomes challenging in the face of limited individual and neighborhood resources, and these difficulties may be heightened among immigrants with fewer social, financial, linguistic, and family resources.²⁸⁷ By considering the positive effects of neighborhood characteristics, scholars may identify new inlets for public health intervention while respecting the knowledge, skills, and tools that residents of disadvantaged neighborhoods wield to maintain health.²⁸⁵ Thus, natural neighborhood strengths may offer effective points of intervention of which health advocates can take advantage.

SECTION 2: CONTEXTUALIZING HEALTH: DEPICTING LATINO NEIGHBORHOODS

What does the term ‘Latino neighborhood’ mean? Within social epidemiology, there is no established scheme for the consistent classification of neighborhoods by race or ethnicity. Studies in this field have variably defined high Hispanic composition at levels as low as 24.5%⁶⁵ and as high as 95%,²⁸⁸ when reported at all.⁸⁰ Scholars in sociology and geography, however, have defined neighborhoods in which Latinos

comprise 50% or more of the population as Latino ‘barrios’ or enclaves.^{37,289} Yet, the character of a neighborhood reflects more than its make-up: “A neighborhood...is a defined area within which there is an identifiable subculture to which the majority of its residents conform.”²⁹⁰ As such, in this paper, the term Latino neighborhood (alternatively, barrio or enclave) refers to a neighborhood of high Latino composition that contains a high prevalence of Latino cultural symbols—such as Spanish language signs, churches, markets, and eateries—and which is easily recognized by residents within or nearby as Latino. While referring to a generalized neighborhood, however, I recognize that Latino neighborhoods vary substantially in character, size, durability, resident turnover, socioeconomic resources, and political climate. At the same time, understanding the way neighborhood Latino composition effects health requires attention to the common structural, sociopolitical and cultural factors that characterize Latino enclaves. To this end, this section aims to recognize important sources of variation and similarity across Latino neighborhoods in the United States.

Variation across Latino neighborhoods and health by region, urbanicity and nationality

The composition and characteristics of Latino neighborhoods vary substantially by density, urbanicity, and national heritage. For example, regional demographics vary by national heritage. The Latino population of the southwest is predominantly Mexican,²⁹¹ while concentrations of Latinos in the northeast (especially New York) and Southeast (especially Miami) are disproportionately Puerto Rican^{292,293} and Cuban,^{294,295} respectively. Regional variation by national heritage shapes the challenges and resources experienced at a neighborhood-level. Puerto Rican communities, for example, face far fewer barriers to political mobilization than Central American communities, which contain large populations of unauthorized and/or foreign-born residents. The culture of

Latino neighborhoods varies by national heritage, as well.^{296,297} For example, the culture of Latino neighborhoods in L.A. is shaped by Chicano preferences, trends, and norms, while the music and flavors of certain Latino neighborhoods in New York reflect the Caribbean origins of its residents.^{298,299}

However, even Mexican migrants differ in origin by US destination. Typically, Mexican migrants from the original sending regions of Mexico (west-central states) continue to migrate to the original migrant destinations in the U.S.: namely, the five southwest gateway states (California, Arizona, New Mexico, Texas and Colorado). In contrast, migrants from new sending regions in Mexico (Central and Southeast Mexico) tend to settle in new destinations in the U.S.³⁰⁰ These trends clearly impact the receiving communities because migrants from different regions of Mexico differ by documentation, gender, and educational attainment. For example, Central and Southern Mexico migrants are largely undocumented while border region migrants generally enter the U.S. with tourist visas.^{300,301} A larger proportion of migrants from southern Mexico are women compared to border region migrants, and both border and Southern Mexican migrants report lower levels of formal schooling than migrants from Central Mexico.

Latino population density varies by region, as well. While Latinos are the largest ethnic minority in the US, they are disproportionately concentrated in the southwest, particularly in the four border states—Texas, New Mexico, Arizona, and California.²¹¹ Latino (Mexican) settlement in these states preceded their annexation by the United States, and they were the major destination for Mexican migration throughout the 1900's along with the key metropolitan areas Miami, Chicago, New York and Los Angeles.^{302,303} Latinos still concentrate in these cities; however, contemporary migration has shifted away from the traditional gateway states and cities to new rural and small metropolitan destinations throughout the US.^{303–305} Changing demographics are particularly striking in rural regions where Latinos are the most rapidly growing demographic group.³⁰⁶ A large portion of this growth is occurring throughout the Southeast, Midwest, and Northwest

due to the arrival of migrants from rural regions of Mexico who speak little English and have little formal education.³⁰⁶

Choice of migration destination carries important implications for Latino experiences. Historically high Latino population density yields a very different sociopolitical climate for Latino residents than regions with small and/or new Latino populations.^{307,308} Areas unaccustomed to Latino migration are now dealing with emerging issues such as housing, healthcare, and education for low-income Spanish-speaking Mexican-born foreigners.³⁰³ Regional density compounds the effects of neighborhood density promoting the emergence of not just Latino grocery stores, restaurants and churches,³⁰⁹ but also political representation.

Varying population density and duration of migration history likely influences the character of individual interactions and the impact of Latino neighborhoods on resident individuals, as well. Foreigners' arrival to migrant-naïve regions may inspire new ethnic tensions as long-term non-Hispanic residents in receiving communities assess local changes associated with migration.^{303,308,310,311} Migrant population growth in nontraditional destinations has reduced county-level Latino-white residential, but increased neighborhood- and town-level segregation.³⁰⁶ As a result, co-ethnic neighborhoods may substantially impact immigrant experiences in these new destinations.

A number of neighborhood characteristics reflect the migration patterns described above. For example, regional variation in Latino homeownership reflects historical migration patterns. Recent immigrants are less likely to be homeowners than long-term immigrants or US-born Latinos. As a result, the traditional migrant destinations exhibit higher rates of Latino homeownership than the destinations with shorter duration of immigration, other things equal. In recent years, large metropolitan areas in California, Texas, Florida, the northeast and Chicago have seen gains in Latino homeownership while those of the south and Midwest have seen declines in Latino homeownership.³¹²

Other forms of household composition may vary by region, as well. Occupancy laws and overcrowding ordinances have specifically targeted Latino residents in a number of places such as Chicago.^{313–315} Such targeted monitoring may significantly alter the census-measured household structure and density data among Latinos in these cities.

Regional migration patterns also manifest in levels of neighborhood violence. Settlement of recently arrived Latino migrants into Latino enclaves is associated with reductions in violence in the enclave.^{316–318} However, Latino migration to areas outside of the traditional destinations mentioned above may actually be associated with increased violence.^{319,320} One hypothesis to explain this changing trend is that regions with longstanding traditions of Latino migration offer recent arrivals the advantages of established social structures such as bilingual employment and social networks. These networks promote social control and facilitate migrant settlement.^{321,322} In contrast, new receiving communities lack such extensive social structures^{319,320} resulting in high rates of homicide and violence^{319,320,323} In short, Latino neighborhoods in different regions likely exhibit a number of divergent characteristics. As such, the effect of neighborhood Latino composition on individual health and well-being may vary by region, as well.

Finally, the health of Latinos varies substantially by region and Latino national heritage. By region, Latino mortality is lower than non-Latino mortality in most of the southwest except Colorado.^{270,283} Nationally, Latino incidence of HIV/AIDS is higher than non-Latino white incidence but not in California or Texas where the rate among Latinos is 20% of that among Latinos in New York or Connecticut.²⁸³ Furthermore, the predominant mode of transmission in California is male-male sexual intercourse while the mode in the northeast is intravenous drug use. By national heritage, Latinos exhibit high variation in rates of mortality, chronic illness,^{324–328} low birth weight and access to care.^{270,283} Given diverging regional migration patterns by national heritage, these differences in risk factors translate into regional differences in health outcomes by national heritage. For example, Mexican-descent men in Texas have higher risk of cancer

than Cubans in Miami, Puerto Ricans in New York, or Latinos of any nationality (including Mexican) in California. This increased risk is due to higher rates of smoking, binge drinking, and obesity alongside lower rates of cancer screening.³²⁹ If the neighborhood-health relationship depends on the outcome of interest or the types of risk factors involved, then region and/or national heritage may impact the neighborhood-health relationship.

In sum, Latino neighborhoods likely vary in structure, social organization, and composition across different settings in the United States, reflecting differences in settlement history, composition, and relations to surrounding communities. These differences shape the challenges and resources experienced by residents of Latino neighborhoods. As a result, the way neighborhoods operate to promote health among Latinos may greatly depend on time and place.

Latino neighborhood commonalities and trends

Despite the variations described above, there are structural and cultural commonalities across Latino neighborhoods that contrast with features of other segregated neighborhoods. These commonalities reflect the unique sociopolitical forces underlying the formation and maintenance of Latino enclaves. Typifying Latino neighborhoods based on these commonalities provides a useful model for hypothesizing the social determinants of health in Latino neighborhoods. Furthermore, contrasting Latino and non-Latino neighborhoods facilitates focus on the features most relevant to Latino health advantages. The majority of work on neighborhood social effects has focused on African American communities.^{100,217,218,330,331} Consequently, this section describes Latino enclaves in comparison to the classic case of African American residential segregation.

FACTORS UNDERLYING LATINO RESIDENTIAL CONCENTRATION

The factors motivating residential segregation—namely discrimination, financial constraints and personal preferences³¹⁵—explain many characteristics of ethnic enclaves. Classically, residential segregation emerges through personal and institutional discrimination in housing, financing, and employment markets, avoidance by others of residential propinquity with members of minority groups, and is facilitated by a legal environment that tolerates or encourages discrimination based on skin color and ethno-cultural characteristics.^{98,100,102} Such discrimination influences access to different types of neighborhoods through wages, loan approval, and home sales. Throughout the history of the United States (and many other countries), the effects of discrimination have impacted many different minority groups,³³² and Latinos are no exception.^{333,334} However, there is some evidence that the consequences of discrimination impact African American communities more strongly than Latino communities.^{100,335–338} In comparably low-income areas, the extent of African American segregation far exceeds that of Latino segregation and the flight of white and middle-class minority residents from African American neighborhoods occurs at a much faster rate than from Latino neighborhoods.^{100,173,174,218}

Other differences characterize the factors underlying segregation for African American and Latino neighborhoods. Perhaps, most significantly, Latino segregation is more substantially attributed than is African American segregation to voluntary co-ethnic clustering. This pattern emerges as foreign-born Latinos travel along established migration paths built of co-ethnic (and often kin-based) network connections.^{166–168,339} As residents acquire socioeconomic resources and stability, they expand beyond the enclave and diffuse into broader society, a process called spatial assimilation.^{169,198} In other words, Latino concentration emerges in large measure through voluntary concentration,

while African American segregation is more influenced by processes including direct discrimination, restrictive covenants, racial steering, and neighborhood desertion.

To be sure, the purely voluntary character of Latino segregation should not be overstated. Some of the same processes of class-based avoidance that shape African American segregation also influence Latino segregation patterns. In addition, some of the same processes of class-based constraints on residential mobility contribute to both African American and Latino segregation patterns, as well.^{23,173,323} Limited financial resources, poor credit, and loan application denials limit the ability of poor African American, Latino and other ethnic minority individuals from moving into majority white, higher income neighborhoods. The impact of financial constraints may be diminishing slowly, however. For example, recent reductions in African American-White segregation^{340–342} are largely attributed to increased mobility through extension of mortgage credit to middle-income African Americans.³⁴³

Finally, the origins of African American and Latino segregation differ with respect to urban—suburban migration. One of the most classic models of contemporary urban African American segregation focuses on the deindustrialization of the urban core and the corresponding flight of middle-class residents of all races in search of better jobs in suburban settings.³⁴⁴ As the middle-class leaves, they draw out local social and economic institutions leaving behind a characteristically underemployed, undereducated, and to some extent socially deviant “underclass.”^{186,218} Historically, however, Latinos have not occupied city centers in major industrial regions that have seen major drops in inner city job markets such as those along the rust belt. In contrast, Latinos have typically occupied other types of niche employment sectors such as service, labor and agriculture.³⁴⁵ For this reason and others, many scholars have questioned the applicability of this concept to diverse regions and populations, including Latinos.^{184,186,187}

STRUCTURAL CHARACTERISTICS OF LATINO NEIGHBORHOODS

The unique factors underlying segregation in Latino and African American communities manifests in the similarities and differences characterizing Latino and African American neighborhoods. In many ways, neighborhoods of high Latino density exhibit expected socioeconomic characteristics: concentrated poverty and low educational attainment compared to low Latino density neighborhoods.^{37,346,347} Residents of Latino enclaves also experience increased levels of neighborhood stressors and reduced levels of neighborhood resources^{85,198,348} despite paradoxically low rates of poor health outcomes. For example, Latino immigrants living in Latino neighborhoods have lower rates of hypertension than those living in low Latino/immigrant composition neighborhoods. However, one study in Chicago reported that among those who have hypertension, living in a neighborhood of high Latino/immigrant composition is associated with lower rates of access to medical services and treatment.²⁵⁴ Given these negative consequences of living in an immigrant enclave, residence there may for many reflect social and financial immobility rather than individual preference.^{8,110}

However, compared to African American neighborhoods, Latino neighborhoods, on average, exhibit greater levels of residential stability, employment,¹⁸⁸ and home and car ownership.^{182–184,187} For example, urban centers of poverty such as McAllen and Brownsville contain a high proportion of owner-occupied households and residents experience longer average residential tenure^{181(p48)} than comparably low-income areas of different racial/ethnic composition.³¹² Employment, residential stability, and car ownership capture more than financial resources. Such forms of social stability also provide residents with social resources garnered through employment networks, neighborhood networks¹⁶⁸ and transportation autonomy that facilitate crisis management and resolution.

Moreover, Latino neighborhoods are not limited to inner-city areas. While 91% of Latinos lived in metropolitan statistical areas according to the 2010 census,³⁴⁷ Latinos are increasingly settling in co-ethnic neighborhoods and towns in suburban³⁴⁹ and rural areas outside of the traditional gateway states in the southern and eastern U.S.^{300,350,351} Latinos also continue to settle at high rates in the southwest borderlands,³⁰⁰ frequently in high poverty rural and smaller urban settings, rather than large metropolitan inner-city neighborhoods.^{302,352,353} Regardless of region, many Latino migrants assume jobs at low wages in industrial agriculture, construction or the service industry, not just manufacturing.^{186,187,308}

Latino household structures do not fit the classic “underclass” characterization. Mexican households have higher rates of two-parent family structures than African American households^{183,184,186,187} or Puerto Rican families.¹⁸⁵ In addition, on average, Mexican-descent single-mothers are middle-aged and divorced or separated rather than stereotypically unwed and teenage.³⁵⁴ Even in inner-city Chicago, unwed Mexican-descent women are more likely to marry after delivering their first child than similar African American women, and 45% of single Mexican-descent women marry the father of their first child compared to 18% of African American women.^{183,355} In part, these differences may reflect the cultural influences of conservative social values among immigrant Latinos, as well as differences in the availability of marriageable men between Latino and inner-city African American communities.^{356–358}

Latino immigrants also influence the structure of households in two other ways: high prevalence of household vertical extension, horizontal extension, and number of children. Vertical extension refers to the co-residence of individuals from more than one adult generation.³⁵⁹ Horizontal extension refers to the co-residence of adults members of the same generation.³⁶⁰ Extended family household structures are more common among many Latino sending countries compared to the United States.³⁶¹ Furthermore, extended family living has increased among Latino immigrants in recent decades.³⁶² Increased

vertical extension is due to increased return of adult children to their parental home.³⁶³ High rates of horizontal extension reflects the increase in immigrants from Mexico and Central America,³⁶⁴ who are typically young, single, undocumented and in search of employment^{365,366} Upon arrival, these migrants take up co-residence with kin of the same generation.³⁶⁷

The high proportion of immigrants in Latino neighborhoods also influences the proportion of families with children under 18. Latino immigrant women have higher fertility rates than other groups in the United States,^{163,368} but domestic birth rates contribute more to Latino population growth than even immigration.³⁶⁸ This trend is exaggerated in neighborhoods of high Latino composition.^{369,370} Similarly, Latino teens have higher birth rates than teens of any other race or ethnic group.

CULTURAL CHARACTERISTICS OF LATINO NEIGHBORHOODS

Latino neighborhoods can be described by social and cultural characteristics, as well. As the primary destination for newly arrived migrants, barrios serve as sources of companionship, sites of recreation and socialization, and venues for celebration.³⁷¹ Numerous scholars have recently criticized use of culture and acculturation—“the acquisition of the cultural elements of the dominant society”³²⁸—in immigrant health research.^{91,93,372–374} Most simply, they claim that inconsistent measurement criteria complicate interpretation of findings across studies.^{328,372} Perhaps more importantly, scholars criticize cultural approaches for distracting researchers from more important research on the sociopolitical context surrounding migration and settlement of foreign-born persons.^{93,372,375} Finally, unsophisticated cultural approaches risk stereotyping the immigrant experience without fully investigating the boundaries lying between immigrant and non-immigrant identity.³⁷²

Acknowledging these limitations, social and cultural factors constitute important intermediaries between social context and health.^{326,328,376,377} My interest therefore in using these concepts is not in collapsing the values, traditions, and preferences of Latinos into a singular Latino culture in opposition to “mainstream” society, but rather to highlight those sociocultural elements from both sides of the border³⁷⁸ that may explain the unique health advantages observed in Latino neighborhoods. Cultural factors may carry particular weight in Latino enclaves because concentration and isolation of ethnic populations reinforces cultural patterns by slowing acculturation.³⁷⁹ To this end, this discussion focuses on ‘familism,’ social networks and support and health behaviors.

Patterns of reciprocal support—the mutual exchange of support across social ties—vary across racial/ethnic and cultural groups,^{158,160,161} and Latino persons might be likely to engage in neighborhood-based reciprocal support.^{37,158–162} A core Latino value is “familism,”¹⁶³ which involves prioritizing living near family and engaging in intra-family exchange of emotional and instrumental support. For example, in the Southwest, Mexican-descent households frequently cluster to create spatially dense social networks of kin and kin-like co-ethnic ties.^{164,165}

Residents of Latino enclaves may engage in greater reciprocal support across neighborhood networks than Latinos in other types of neighborhoods. Generally, ethnically homogenous neighborhoods exhibit high levels of solidarity and trust,^{141,380,381} which is associated with increased co-ethnic ties among Mexicans in the U.S.²⁰² In addition, Latino enclaves frequently contain high proportions of foreign-born Latinos.¹⁹⁸ who may practice more neighborhood-based reciprocal support than US-born Latinos^{90,116,165,382–385} particularly across kin,³⁸⁶ though the literature is not unanimous.^{65,387–389} Foreign-born Latinos also frequently participate in extended and child-rearing household structures,^{390–393} which promote neighborhood social networks through increased connections to neighbors. Finally, foreign-born Latinos are particularly likely to need support because of all of the challenges involved in migration, settlement

and adaptation.^{111,394} In addition to size and strength, social networks in Latino neighborhoods may also contain more social and financial capital compared to African American neighborhoods because Latino neighborhoods are less segregated and experience lower rates of middle-class flight.^{173,174,218}

Unfortunately, comparisons of neighborhood social networks by ethnicity are difficult due to the large variety of outcome measures in literature on this topic.³⁹⁵ Studies suggest that Mexican-descent individuals may have more^{37,396} or fewer supportive social ties^{395,397-401} than African Americans or whites. Neighborhood ethnic composition is frequently left out of these analyses. One comparison of Latino and white social networks in California found that Latino social networks may contain a larger proportion of local social ties than non-Latino white social networks.¹⁵⁹

Latino immigrants may also import health behaviors from their origin culture thereby influencing the prevalence of these behaviors in the receiving community. Compared to US-born Latinos, the foreign-born exhibit lower rates of smoking,^{76,402} use of alcohol^{403,404} and other drugs,^{74,403,404} and consumption of unhealthy food.^{405,406} Generally, foreign-born Latinos lose their advantage with respect to health behaviors over time and with subsequent generations.⁴⁰⁷⁻⁴¹⁰ Neighborhoods with a high proportion of foreign-born Latinos may promote a healthier lifestyle through cultural maintenance, role-modeling and market demand for healthy features such as grocery stores and recreational areas at higher levels than would be expected in neighborhoods with low Latino density.

In sum, Latino enclaves exhibit several characteristics that distinguish them from dense African American neighborhoods including degree of segregation, aggregate indicators of sociodemographic composition (rates of employment, home/car ownership and household composition), diet/lifestyle and social networks. The next section uses this depiction of Latino neighborhoods to identify possible mechanisms of the Latino composition-mental health relationship and to identify major gaps in the literature. In this

way, the remainder of the chapter aims to provide a framework for moving forward in the field of neighborhood social effects for Latino neighborhoods by identifying useful paths for future inquiry.

SECTION 3: PATHWAYS TO HEALTH IN LATINO NEIGHBORHOODS

Hypothesizing mechanisms linking neighborhood context and health in Latino enclaves

A large body of research has emerged over the last few decades describing the pathways linking residential segregation and health. The majority of this work originally focused on African American and White residential communities^{99,100,217,218,225,330,331,411} while attention to Latino neighborhoods has increased more recently.^{7,20,37,215,219,412} Consequently, many of the mechanisms hypothesized in the neighborhood-health relationship (for example, racism,^{39,413,414} social cohesion,³⁴ social capital,^{415–417} social control,^{418,419} organizational participation,³³¹ social disorganization and disorder,^{218,331,418,420} and collective efficacy³⁴) were originally investigated in African American and white communities.

As attention to Latino neighborhoods increases, scholars are applying the original social organization concepts to Latino communities (for example, social capital^{92,421,422} and social cohesion^{36,65,423}). However, differences in cultural and structural characteristics of Latino and African American neighborhoods may limit the applicability of established concepts to Latino neighborhoods. For example, the last section described how a popular conception of the “underclass” fails to describe the rural and urban Mexican-descent poor. Consequently, the degree to which these concepts and their metrics translate to Latino populations is unclear.⁴²⁴ Indeed, much of this work seems to assert that several contemporary metrics of social organization concepts, namely social cohesion and

collective efficacy, may not capture relevant experiences for Latino neighborhoods with respect to the neighborhood context-health relationship.^{65,92,423}

These findings raise four important questions. First, given what we know about Latino neighborhoods, what are the likely mechanisms linking neighborhood social context and health in Latino neighborhoods? Second, what would a scale designed to measure social dynamics in Latino neighborhoods look like? Third, to what extent are the components of this scale represented in the literature on Latino neighborhoods and health? Similarly, what concepts are missing from or mistranslated in currently used scales? Finally, how do we move forward in understanding the effects of neighborhood social context on health for Latino communities? The remainder of this section addresses these important questions.

Possible mechanisms of the Latino composition—health relationship reflect the defining characteristics of Latino neighborhoods as described in the last section: 1) moderate segregation, 2) cultural factors such as ethnic identity formation, social network structure and resources, and diet and lifestyle, and 3) favorable indicators of sociodemographic composition (high rates of employment, home/car ownership, and residential stability, and distinctive household composition).

Possible mechanisms associated with moderate segregation

Residential segregation is usually associated with a variety of risk factors for poor health including concentrated poverty, deficient area resources, and social and physical disorder.^{8,35} However, residents of Latino neighborhoods may be at lower risk of these factors than residents of African American neighborhoods because Latino neighborhoods are generally less segregated. Integration into diverse society provides opportunity to climb in social status through the formation of weak ties^{395,425,426} and increases knowledge with which to navigate a complex world. Integration also distributes institutional resources such as public schools and libraries, parks, and other kinds of

infrastructure like health care facilities and city maintenance across more diverse communities, by diffusing information about and means to access these resources. Latino neighborhoods may experience greater access to these services and resources than is the case for segregated African American neighborhoods. As a result, residents of Latino neighborhoods may experience the benefits of local ethnic homogeneity without the sacrifices of extreme societal exclusion.

The benefits of local ethnic homogeneity include the availability of culturally appropriate services and lower exposure to discrimination. Types of culturally appropriate services might include prevalence of Spanish—English bilingualism, cultural sensitivity among service providers, culturally appropriate grocery stores, Latino churches with Spanish language mass and traditions, and other types of services both symbolic of and instrumental to Latino life. Culturally appropriate services support mental and physical health of residents by providing comforting symbols of ethnic identity and reducing the logistical hurdles of migration and settlement for new arrivals.

Living in a Latino enclave may separate residents from discriminatory experiences outside the neighborhood and offer support to those who have such experiences.^{90,209,427–430} The clear negative effects of discrimination on health for people of many race/ethnicities including Latinos^{112–115,385} identify discrimination as a potentially important factor linking neighborhood composition and health. Exposure to racial hierarchies may carry particular weight for second-generation immigrants who may encounter more discriminatory messages through interaction outside the enclaves and lack the buffer of optimism characteristic of first-generation immigrants.^{93,110}

Possible mechanisms associated with Latino culture

Ethnic homogeneity facilitates cultural maintenance and slows acculturation.³⁷⁹ Ways in which neighborhood Latino cultural orientation might protect health include 1) the direct benefits of acculturation, 2) neighborhood ethnic solidarity, 3) positive

subjective social status, and 4) access to co-ethnic networks. First, acculturation and time in the U.S. are associated with increased stress and depressive symptoms^{207,385} through factors such as family and personal cultural conflict^{431,432} and discrimination.¹¹³ Linguistic isolation and social integration may reduce the strain associated with assimilation.³⁸⁵ In this way, living in an ethnic enclave may reduce risk of poor mental health outcomes.

Second, neighborhood ethnic homogeneity is also associated with increased neighborhood solidarity and cohesion.^{141,433} Increased similarity between neighbors, such as similar race/ethnicity, is associated with increased interaction.⁴³⁴ Through the formation of neighborhood ties, residents acquire a sense of community and solidarity,¹²⁵ and the overlap of neighborhood and co-ethnic networks may reinforce the sense of connection between neighbors.^{141,202} As neighbors become familiar with each other, they realize the presence of shared values and develop supportive and trusting relationships.^{34,117,433} Such neighborhood level interconnectedness, referred to as social cohesion, is associated with a number of improved health outcomes including reduced depressive symptoms.^{435,436} Social cohesion promotes social control—collective enforcement of social norms—because network members are able to monitor each other and act towards common goals.^{34,416,418} Positive outcomes associated with social control include reduced neighborhood violence and crime^{35,437} and reduced individual-level stress and anxiety.^{26,438,439}

Third, neighborhood ethnic homogeneity may promote health through subjective social status. Ethnic and class homogeneity promote a sense of status equality, which can result in increased neighborhood social trust⁷⁸ and individual health.^{276,440,441} Residing in an ethnic enclave may also improve subjective social status by reinforcing ethnic identity.^{90,202} Among Mexican Americans, specifically, having co-ethnic ties is associated with greater ethnic solidarity and a stronger sense of ethnic identity.²⁰² A strong sense of self, ethnic identity, and ethnic pride can buffer against stressful experiences and in this

way promote mental health.^{90,208,209,442,443} Subjective social status may actually be a better indicator of health than objective status.^{444,445}

Ethnic homogeneity may also be associated with status stability. Movement of minority individuals into predominantly white neighborhoods—residential assimilation—is usually associated with economic mobility,¹⁹⁸ and may result in increased acculturation, stress, and depressive symptoms, as described above. In addition, the expense associated with living in a higher income neighborhood may trigger financial insecurity. As a result, residential assimilation may be associated with greater status instability and stress⁴⁴⁶ than remaining within the ethnic enclave.

Fourth, access to neighborhood co-ethnic social networks provides residents with numerous benefits within and outside of the neighborhood. Within the neighborhood, co-ethnic networks yield tangible and emotional support,^{90,117,147,152,153,447} and buffer against the negative effects of neighborhood deviance and disorder.^{17,448} By choosing co-ethnic enclaves, newly arrived migrants take advantage of dense social networks to find cheap housing, instrumental and financial support, companionship,^{164,165,169,171,449,450} and, most importantly, neighbors who speak Spanish.¹⁷² The support residents garner through co-ethnic neighboring contributes to reduced risk of depressive symptoms.^{95,177,178}

Co-ethnic ties within the enclave also impact life outside the neighborhood. The same neighborhood co-ethnic ties that provide emotional and instrumental support can provide information about job opportunities, health care and social services. High rates of employment among low-income Latinos, for example, have been attributed to strong co-ethnic networks.^{182,451} Access to income through employment significantly impacts health through reduced stress and increased resources to deal with crises.^{452,453}

Possible mechanisms associated with indicators of sociodemographic composition

Aggregate measures of sociodemographic composition such as rates of employment, home/car and ownership and household composition could also help

explain the effect of neighborhood Latino composition on health. Beyond income, employment confers the tangible benefits of social network resources,⁴²⁵ for example, as well as intangible psychological benefits such as self-esteem and sense of stability.⁴⁵⁴ Home and car ownership are also associated with health^{454,455} as both proxies of material resources and through psychological factors such as a sense of control and stability. Car ownership can also serve in daily task completion, crisis management and self-fulfillment for general well-being.⁴⁵⁶ Residential tenure and child-rearing household composition increase investment in the neighborhood through property maintenance and social ties. With time, investment translates into neighborhood attachment and a sense of belonging, both of which are associated with mental health. Child-rearing and owner households also exhibit stronger social cohesion, a greater number of social ties, and higher frequency of reciprocal support with their neighbors. Many of these ties develop over time and through local child play groups. Finally, the cultural characteristics of neighborhoods with high Latino composition may translate into health benefits. Health-promoting cultural characteristics include diet and lifestyle, values of familism that strengthen social networks, and neighborhood-based reciprocal exchange.

In sum, critical themes for understanding social dynamics in Latino neighborhoods include 1) access to culturally appropriate services and public resources; 2) limits to and resources to cope with exposure to discrimination and racism; 3) acculturation and cultural maintenance; 4) neighborhood solidarity, cohesion, and control; 5) subjective social status; 6) social resources (networks of family and neighborhood co-ethnic ties and the types of services—social capital—that these ties provide); and 7) aggregate features of sociodemographic composition. Together, the seven themes reviewed in this section can guide the development of a comprehensive survey that aims to explore neighborhood social effects on health in Latino neighborhoods. Components have already been undertaken in investigations of both Latino and other ethnic and racial neighborhoods. The remainder of this chapter reviews

the literature with respect to each theme in order to understand the state of current research on Latino neighborhoods and to identify gaps for future research. An important focus of this review is whether there is evidence that Latino neighborhood composition is itself a variable explaining the presence or absence of the variables identified by each theme, and whether these variables mediate or moderate the effects of Latino neighborhood density on health.

SECTION 4: MECHANISMS OF THE LATINO NEIGHBORHOOD HEALTH ADVANTAGE: EVIDENCE ON 7 THEMES

Theme 1, access to culturally appropriate services and public resources, requires the presence, affordability, and usability of institutions such as health care facilities, social service offices, day care programs, and grocery stores that meet the particular needs of individuals of Latino origin. These needs include Spanish translation services, Spanish masses that recognize Latino religious cultural traditions, Latino food items in grocery stores, Spanish language books and ESL courses at libraries, and even recreational facilities that offer culturally resonant activities.

Little research has focused specifically on the culturally specific nature of services in Latino neighborhoods. Furthermore, the majority of research on neighborhood resources without attention to cultural resonance demonstrates a resource deficit in Latino neighborhoods, not an advantage. With some exceptions,^{89,457,458} literature documents disparities in access to health care and treatment,^{89,254,459} welfare services,^{460,461} well-maintained roads and other public services,⁴⁶² healthy food^{84,458,463} and recreational areas.^{84,457,464–467} Latinos are more likely to lack nearby playgrounds and healthy food sources than other racial/ethnic groups.^{468–470}

Need for further research in this area is clear as lack of local resources^{471,472} and limited access to care^{473,474} can lead directly to poor health outcomes.^{435,468} In one recent

study, the built environment (defined as greenness, access to parks, and excessive commuting) in contexts of Latino isolation was linked to increased risk of obesity for men and women.²⁵⁵ Seemingly, access to resources likely does not explain the health advantage observed in Latino neighborhoods. The role that Latino-oriented businesses, services and recreational areas plays in these neighborhoods is unknown.

Substantial literature documents the central role of racial discrimination (theme 2) in the reproduction of health disparities^{475,476} for immigrant populations.^{113,477–486} An equally large body of work links discrimination to the lack of resources and environmental risks characteristic of racially segregated areas, with consequences for the health of residents of those areas.^{43,63,89,102,411,435,487–489} No study to my knowledge empirically investigates the influence of racism on health for residents of Latino neighborhoods. It is likely that racism contributes to the Latino neighborhood-health relationship. Ethnographic accounts highlight the racialized nature of first and second generation Mexican women's experiences in a highly diverse section of Detroit.²⁸⁷ Furthermore, levels of perceived racism vary with neighborhood racial/ethnic composition^{92,490} and increased perceived racism is associated with poor mental health⁴¹³ and well-being.^{92,414,491}

The centrality of race in health patterns in the US demands increased attention to the role of racism in research investigating the neighborhoods and health. With respect to Latinos, careful attention to the complexities imposed by immigrant status is required. Immigrants may experience both more^{481,492} and less^{385,482} discrimination than US-born peers and the strength of association between discrimination and health may vary with time in the United States.^{113,478,480,482(p200)} These variations may increase as Latino immigrants continue to disperse in new and frequently rural destinations.^{91,493}

Within (and in response to) the structural framework imposed by factors like race and poverty, cultural maintenance (theme 3) affects health in dynamic ways for both US- and foreign-born Latinos. Most cultural approaches to research on Latino health focus on

acculturation, “the psychosocial changes which occur when individuals originating from one culture immigrate to a new host culture.”²⁰⁷ Acculturation through residential assimilation into ethnically integrated settings has been well-described for immigrant-based populations such as Latinos,^{167,169,198,494,495} and living in an ethnic enclave may slow acculturation.³⁷⁹ Acculturation (often measured as Spanish language use⁴⁹⁶) is associated with obesity⁴⁹⁷ depressive symptoms,⁵⁷ time to first sex,²⁸⁸ risk of low birth weight,⁸¹ risk of perpetrating violence,¹³⁷ and consumption of unhealthy food and exercise.⁸⁴ The relationships between enclaves, acculturation and health suggest that the effect of neighborhood context on health may vary by individual-level place of birth, citizenship status, generational status, language proficiency, and other proxies for cultural adaptation.^{82,83,85,91} Future research should look more closely at this interplay between neighborhood context and individual socio-cultural processes.

Less work investigates neighborhood-level acculturation. Neighborhood linguistic isolation, a measure of non-English fluency by household from the U.S. Census Bureau, is associated with lower body mass index (BMI)⁴⁹⁷ and depression⁵⁵ among Latinos. Although a poor proxy for neighborhood-level acculturation, neighborhood proportion Latino immigrant is associated with lower rates of violence,^{137,316–318} low birth weight,^{81,85} respiratory conditions,⁸⁰ hypertension and lack of hypertension care and treatment²⁵⁴ though not in all cases.⁴⁹⁸ In addition, low-income immigrant families experience lower risk of adaptation problems (measured as depressive symptoms, anxiety and other mental health issues) when they live in neighborhoods dominated by low-income immigrants.⁴⁹⁹ In sum, both individual- and neighborhood-level cultural variation may help understand patterns in health. Future work should aim to develop a method for capturing the diverse dimensions and directions of cultural change that characterize experience from newly arrived Latino migrants to established generations.

Literature directly investigating social cohesion and social control, theme 4, as mediators of the Latino composition effect are sparse.^{65,84} However, a number of studies

explore the effect of neighborhood social cohesion, social control, and their integration as collective efficacy³⁴ on health while controlling for neighborhood Latino composition (social cohesion,^{36,66,500,501} social control,⁵⁰² and collective efficacy^{34,96,437,498,503–509}). Contrary to most scholars' expectations,^{1,7,48,184,187,510} the evidence suggests that increased neighborhood Latino composition is associated with less cohesion.^{36,65,84,501} However, the literature is not unanimous,⁶⁶ and some studies show that Latino neighborhoods exhibit more neighborhood cohesion and interaction than African American neighborhoods.⁵⁰⁰

Furthermore, the effect of social cohesion on health among Latinos is unclear with some literature demonstrating a positive effect of social cohesion on healthy behaviors,⁴⁶⁸ self-rated health and mental health³⁶ while others find no effect on these same outcomes.^{84,92,423} Further understanding could be gleaned if a number of these studies^{66,503,505} considered cross-level interactions between individual- and neighborhood-level ethnicity; perceptions of social cohesion and its effect on health may depend on the congruence between individual- and neighborhood ethnicity.

Even fewer studies investigate the role of social control on health in Latino neighborhoods. In one study, a nonsignificant interaction between individual- and neighborhood-level ethnicity precluded examination of mediation by social control.⁵⁰² In other work, neighborhood immigrant/Latino composition is significantly associated with increased robbery despite controlling for social disorder (lack of neighborhood social control).⁵¹¹ In contrast, a number of studies have demonstrated reductions in violence in association with increases in Latino (particularly Latino immigrant) composition.^{137,316,318} One explanation for decreased violence is that there may be lower levels of tolerance for youth deviance and less legal cynicism in Latino neighborhoods.⁵¹²

A larger group of studies investigate collective efficacy, the activation of social ties for social control.³⁴ As with previous themes, little research explicitly investigates collective efficacy as a mediator of neighborhood Latino composition and existing evidence is mixed. For example, collective efficacy may explain lower rates of

depression for longer residence immigrants⁵⁵ but not migrant use of sex workers⁵⁰⁹ in Latino neighborhoods. In addition, neighborhood Latino/immigrant composition and collective efficacy are inversely correlated^{34,437,507} and Latinos may make up for this loss through increased social ties.⁴³⁷ Studies controlling for neighborhood Latino composition in multiethnic samples show mixed results, as well. Collective efficacy partially mediates the effect of neighborhood proportion immigrant/Latino on teen births,⁵⁰⁷ perceived violence,⁹⁶ and risk of robbery victimization,^{34,437} though the effects on robbery and teen birth are much larger in non-Latino neighborhoods. Furthermore, collective efficacy does not mediate the effect of neighborhood Latino composition on number of short term sexual partnerships^{506,508} homicide^{96,504} or premature or cancer related mortality.⁵⁰⁴ Finally, among studies investigating collective efficacy but not neighborhood Latino composition, collective efficacy does not explain the relationship between Latino ethnicity and risk of breathing problems⁵¹⁰ or depressive symptoms.⁵¹³ This work suggests that, at best, collective efficacy may partially contribute to the protective effects of Latino enclaves.

Living in an ethnic enclave may also impact a person's perceived social status, (theme 5). A few studies have investigated the impact of neighborhood Latino composition for sense of self among Latinos. Living in a neighborhood with a high proportion of Latino peers may offer Latino residents a sense of pride in their cultural and national heritage.^{90,443} These findings recommend that future research address the gap in literature on identity formation and relative social status with respect to understanding patterns of health in Latino neighborhoods.

Theme 6, social networks and the services they provide, have been frequently hypothesized to explain the unexpected health advantage observed among Latinos.^{1,7,48,166,168,184,187,510} Relevant theories include social capital^{415,514} and social support.¹⁷⁷ A large body of work has explored the importance of these concepts for depressive symptoms and psychological distress,^{107,423,515,516} suicidal ideation,⁵¹⁷ low

birthweight,⁵¹⁸⁻⁵²⁰ cancer screening^{521,522} and survivor well-being,⁵²³ myocardial infarction survival,⁵²⁴ self-rated health,^{423,525} physical activity,⁵²⁶ and functional status⁵²⁷ among Latinos. However, only one has empirically investigated the role of social ties in the Latino composition-health relationship. Using crime rates and home ownership as proxies for social capital,^{528,529} Franzini and Spear²² found that social capital does not mediate the cardiac mortality advantage observed in Latino neighborhoods.

A second set of studies investigates social networks in the context of high proportion Latino neighborhoods without comparing findings to low proportion Latino neighborhoods. This work shows that social ties in Latino neighborhoods are associated with improved mental health,^{95,530} general well-being,⁹⁰ self-rated health,⁵³¹ and lower teen birth.⁵³² One reason for this discrepancy may be other sources of neighborhood-level variation. For example, high neighborhood linguistic isolation is associated with feeling less close with neighbors.⁵⁵ As a result, social ties may only mediate the Latino density effect in neighborhoods with a higher proportion of English speakers.

A third set of studies on social ties controls for Latino composition but does not directly investigate social ties as a mediator of the composition effect. This literature shows that neighborhood-based ties are important for risk of low birthweight,⁹⁴ number of short-term sexual partnerships,⁵⁰⁶ rates of robbery victimization,^{34,96,437} and self-rated health among adolescents.⁵³³ Unexpectedly, Morenoff⁹⁴ finds that Latino neighborhoods are characterized by lower levels of neighborhood ties exchange and voluntarism, a finding replicated by more recent work, as well.⁴³⁷

Finally, a number of studies consider the importance of neighborhood networks, social support and social capital among multi-ethnic samples but do not control for neighborhood Latino composition.^{92,395,423,468} These studies suggest that social ties variables do not account for the effect of Latino ethnicity on health outcomes. However, failing to consider the interaction of individual and neighborhood ethnicity may disguise important patterns as services and support provided by local co-ethnic peers may confer a

different effect on health than those provided by individuals of a different cultural background. A more thorough investigation of the role of social ties in Latino neighborhoods for Latino residents may reveal important insights into patterns of health as a number of studies have documented the role of co-ethnic ties in facilitating migration and ensuring logistic, financial and emotional stability for Latino migrants upon arrival.^{90,204,309,339,360,362,366,422,443,495}

Theme 7 refers to aggregate indicators of sociodemographic composition include employment rates, residential stability, two-parent households and educational attainment. A substantial body of literature demonstrates the role of co-ethnic ties in accessing employment opportunities in Latino residential enclaves.^{204,309,451,534–538} However, employment networks have not been investigated as a possible mediator of the effects of neighborhood Latino composition on health outcomes. This line of research warrants attention because employment can indirectly effect health through a number of different pathways including socioeconomic status,^{272,539} access to health insurance (though the employment sectors dominated by Latino workers, such as service, agriculture and manual labor, do not typically offer employee benefits,^{540–542}) reduced psychological distress,^{543–548} increased sense of security,⁵⁴⁹ morale,⁵⁴⁸ and sense of self-esteem.^{189,550} Employment can also extend the employee's social network thereby increasing social capital for the employee and the employee's affiliates such as kin and acquaintances.⁴²⁵ Less work has been devoted to other aspects of informal institutional resources. However, some work suggests that variables such as residential stability and proportion of married households do not account for the protective effect observed in high Latino composition neighborhoods on health.^{551,552}

Omitted mechanisms discussed in the literature on Latino neighborhoods and health: a note on formal social integration

Among the many neighborhood social processes investigated in recent years, social capital has received particular emphasis in recent years. Generally, social capital refers to the benefits acquired at an individual or community-level through social network connections.¹³⁴ These network ties may be made through informal connections to family, friends, and acquaintances (such as neighbors), or through formal organizations such as tenant associations, civic groups, religious institutions, and volunteer associations.⁵⁵³ In line with Swaroop and Morenoff,⁵⁵³ I refer to these two types of social network connections as informal and formal social integration, respectively.

However, participation in formal organizations poorly describes social life and collective problem-solving processes in Latino neighborhoods.⁴²¹ Latino individuals and communities tend to prefer informal sources of support and collaboration when dealing with most types of problems.^{421,554} Compared to other racial and ethnic groups, Latinos are less likely to participate in organized social activities, group recreational activities, or service, political and work-related organizations.⁵⁵⁵ This pattern applies to both English and Spanish-speaking new and long-time residents of the United States.^{554,555}

Literature investigating formal social integration in Latino neighborhoods demonstrates this lack of conceptual resonance by consistently demonstrating low engagement of Latino respondents with survey organizations.^{84,137,434,553} For example, Swaroop and Morenoff⁵⁵³ find that respondents in high proportion Latino neighborhoods report belonging to significantly fewer formal neighborhood organizations than other groups even after controlling for the number of organizations present in the neighborhood. In contrast, they find that proportion Latino is associated with increased belonging to informal organizations such as religious organizations.

Furthermore, absence of neighborhood organizations and low levels of formal social participation in Latino neighborhoods do not necessarily translate into poor outcomes in Latino neighborhoods as they do in other contexts.¹³⁷ One problem with typical measures of formal integration may be the *type* of institutions and organizations considered. In contrast with the organizations typically included in questionnaires on formal integration such as block clubs, political organizations, and community service groups,^{84,434,553} institutions such as churches, intergenerational community-owned businesses, convenience and hardware stores, credit unions and informal institutions such as extended family structures may be particularly important for understanding social organization in Latino neighborhoods.^{533,556-558} These types of institutions may not reflect civic participation, but they do provide community resources and may diminish the negative effects of area social disadvantage.^{533,556,557} The unique pattern of extended family structures, which increases the adult to child ratio, for example, may contribute to lower rates of child abuse among Latino residents compared to white residents of high proportion Latino neighborhoods.⁵⁵⁹ While there are clear cases of civic participation in Latino neighborhoods,¹⁸⁷ translating the concept of formal social integration to Latino neighborhoods may require a reassessment of what types of institutional resources are relevant to Latino neighborhoods.

MOVING FORWARD

Heretofore, I have provided evidence to suggest that scholars investigating the health advantages afforded residents of Latino neighborhoods should consider the role of seven themes: culturally resonant services and resources, discrimination, acculturation, social cohesion and social control, subjective social status, social networks, and indicators of sociodemographic composition. However, literature devoted to the investigation of these themes is variably insufficient or inconsistent. Of these themes,

literature most strongly supports the role of neighborhood employment networks in facilitating job acquisition among Latinos. Though, questions remain about the advantages of ethnic employment networks, as some scholars have suggested that ethnic enclaves can limit the opportunities to move up and out of the barrio.^{347,371} Given this work, future research should consider what other compositional features contribute to positive outcomes in Latino neighborhoods. Avenues of research likely to produce fruitful results include residential stability and household structures.

In contrast, perhaps the least work has investigated subjective social status in explaining the health advantages observed in Latino neighborhoods. In addition, less is known about the effect of subjective social status on health for Latinos compared to the other themes discussed here. As a result, the outcome of research on subjective social status as a mediator of the Latino neighborhood effect is unclear.

Similarly, it is unclear what role culturally resonant services might play in the Latino neighborhood—health relationship. The evidence demonstrates that Latino neighborhoods exhibit a strong resource deficit, but the resources that do exist may offer residents particular benefit due to cultural resonance and accessibility. Future research should consider the benefits residents receive from nontraditional resources such as Latino grocery stores, hair salons, recreational clubs, and other formal and informal organizations and services.

A stronger case can be made for both acculturation and discrimination as potential mechanisms of the Latino composition-health relationship. Both factors significantly impact the health and life experiences of Latino individuals; however, neither discrimination nor acculturation has been sufficiently investigated in this role. Future research will likely identify these variables as important mechanisms of the health advantages observed in Latino neighborhoods. It is important to recognize, however, that moving forward may require more sophisticated conceptualizations of the contextual-sociocultural processes involved in acculturation and identity formation.

Finally, substantial literature addresses issues of social ties, social cohesion and social control. Evidence suggests that social ties are likely more important than social cohesion or social control, but this work exhibits substantial inconsistency. Moving forward on these topics requires several points of caution. First, these concepts may poorly capture experience in Latino neighborhoods.⁴²⁴ Most studies investigating these concepts use metrics designed to investigate the causes and consequences of urban African American poverty,^{34,36,65,92,437,507,511,553,560} and they may not translate equally across different cultures or carry resonance in neighborhoods of other racial/ethnic composition, specifically. The evidence on social cohesion and social control suggests that these concepts either do not apply or must be revised for application to Latino neighborhoods. Second, investigation of social cohesion and social control may also exhibit bias due to cultural variation across Latino groups and between US- and foreign-born Latinos because these concepts depend largely on the shared values, beliefs and behavioral norms of network members. Third, family and co-ethnic clustering among Latino social networks, in combination with strong social norms of familism and reciprocal exchange, may bias comparisons of informal social integration, social capital and social support across Latino and non-Latino residents of diverse neighborhoods.^{533,561} The cross-cultural salience and comparability of scales should be established to ensure valid results in future research.

As demonstrated in this section, many questions remain regarding the relationship between neighborhood social organization and health in Latino neighborhoods. Future investigation of the seven themes discussed here will likely yield important insights for understanding patterns of health in neighborhoods of high Latino composition.

CONCLUSION

In sum, neighborhood context represents an important parameter of interest for health. In particular, Latino neighborhoods represent a unique and interesting lens due to the paradoxical health advantages afforded residents. Though these benefits seem qualified by outcome- and demographic-specific caveats, research on the health protective effects of Latino neighborhoods may reveal new inlets for public health intervention. Moving forward in the field requires identifying the concepts important for understanding health in Latino neighborhoods. To this end, this chapter presented a set of themes that may represent mechanisms of the Latino composition-health relationship: culturally resonant services and resources, discrimination, acculturation, social cohesion and social control, subjective social status, social networks and measures of sociodemographic composition. Review of the strengths and weaknesses of literature on each theme identified several important focal areas for future research. The next two chapters investigate several of the domains discussed here, namely discrimination, stress, social support and social integration. Thus, this chapter provides a useful framework for interpreting the findings in later chapters. While the remainder of this dissertation provides important insight into the social dynamics of Latino neighborhoods, much more work will be needed on the themes identified here to understand the complex relationship between neighborhood social context and health in Latino neighborhoods.

Chapter 3|

Multilevel investigation of neighborhood Latino composition, depressive symptoms and three mechanism variables

INTRODUCTION

Chapter 1 described and summarized the literature investigating the relationship between neighborhood Latino composition and depressive symptoms. In that discussion, several limitations of the literature emerged. Half of the studies appeared to indicate a Latino composition-depressive symptoms relationship^{9,55,57} and half suggested that increased Latino composition was not significantly associated with fewer depressive symptoms.^{36,54,56} The cause of the inconsistency was unclear and may relate to issues of small sample size and low statistical power, sample composition by national heritage or foreign-born status, mean and range of neighborhood Latino composition, and regional variation within the US. In addition, few studies have directly tested hypothesized mediators or moderators of the Latino composition—health relationship such as acculturation,^{55,57,36,57} social cohesion³⁶ or collective efficacy,⁵⁵ though several have attempted to identify what mechanisms may be important.^{55,84,89–91,386}

This chapter aims to address the limitations outlined in Chapter 1 through three main objectives. First, this chapter investigates the Latino composition-depressive symptoms relationship in a sample of US- and Mexico-born Mexican-descent residents of Texas City, Texas. Second, this chapter assesses whether the Latino composition-depressive symptoms relationship varies by country of birth (US or Mexico) and Spanish

language use. Third, this chapter aims to investigate the role of three possible pathway variables—social support, perceived discrimination and perceived stress—as mediators and moderators of the Latino composition-depressive symptoms relationship. To this end, this chapter briefly reviews the relevant literature on the neighborhood Latino composition-depressive symptoms relationship and the potential roles of country of birth, Spanish language use, social support, discrimination and stress.

Background

Neighborhood social context contributes to the development of health disparities.^{35,216} In particular, concentrated disadvantage is associated with poor social, physical and mental health outcomes, and contributes to health disparities among racial and ethnic groups.^{17,22,562} Disadvantage frequently clusters with contextual risk factors including social and physical disorder, residential turnover, and single parent households.³⁵ Spatial overlap of structural risk compounds the negative outcomes associated with these factors.²¹⁶

Concentrated disadvantage is also associated with racial concentration²³; however, the health effects of racial concentration vary by race/ethnicity. For example, African American residential concentration is associated with increased rates of poor outcomes such as mortality and infectious disease.^{40,43} In contrast, Latino residential concentration is associated with improvements in respiratory problems, mortality, cancer, self-rated health and birth outcomes despite similarly low socioeconomic status and educational attainment.^{3,20,80,215}

This chapter focuses on the Latino composition—depressive symptoms relationship. Recent studies investigating the relationship between Latino composition and depressive symptoms in the United States are equivocal. Some studies show that higher Latino concentration is associated with fewer depressive symptoms for older

and/or middle-aged Latino residents^{7-9,55,57} and others find no association^{36,54,56} or a significant positive association.⁵⁸ An increasing number of studies investigates mechanisms linking neighborhood Latino composition and better health^{55,84,90,93,386} though few have directly tested the mediating or moderating role of hypothesized mechanisms.^{36,57} This study contributes to this literature by investigating the role of social support, discrimination and stress in the relationship between neighborhood Latino composition and depressive symptoms.

Factors underlying Latino concentration

The complexity of ethnic concentration effects on Latino mental health may reflect the complex origins of Latino segregation. Latino residential segregation reflects both historical and contemporary processes of discrimination, exclusion and avoidance,³³⁴ financial constraints that limit residential mobility,^{23,100,173,563} and voluntary self-segregation that emerges as part of the process of chain migration.¹¹⁶ While residential patterns of any ethnic group derive in part from voluntary choices and external barriers, the balance of these influences was very different in the settlement history of African Americans and Latino individuals in the United States.¹⁷³

The diverse roots of Latino residential concentration lead to uncertain expectations about its effects. Discrimination, isolation and concentration of economic disadvantage may create barriers to social mobility and concentrate the impact of multiple stressors, just as they do for African Americans. However, concentrated Latino neighborhoods, even when poor, exhibit evidence of stable social organization, including high rates of residential stability, employment, two-parent households, and home and car ownership.^{182,184,187} These complex origins also may contribute to the inconsistent study findings on Latino composition and mental health.

SOCIAL CLASS IN RELATION TO NEIGHBORHOOD LATINO COMPOSITION AND MENTAL HEALTH

Social class is an important factor contributing to both the concentration of ethnic minority individuals and to health outcomes such as depressive symptoms. Social class refers to the categorization of populations into interdependent groups based on the distribution of property, labor, information, and social status.²⁵⁶ Social class is frequently operationalized at the individual, household, or neighborhood-level using measures of socioeconomic status such as occupational category, income, wealth and assets or educational level.^{256,260}

Neighborhoods of high Latino composition generally have higher aggregate levels of socioeconomic disadvantage.^{218,564,565} Latino individuals also frequently occupy a lower social class level due to lower average levels of education, lower income and wealth, lower status occupations, and as an ethnic minority in a society with persistent institutional and interpersonal ethnic discrimination.^{112,333}

Both neighborhood and individual-level measures of social class are associated with mental health. For example, low individual socioeconomic status is associated with increased depressive symptoms^{273–276} and neighborhood socioeconomic disadvantage is associated with increased psychiatric distress and depressive symptoms even after statistically controlling for individual-level social class.^{17,26} The interrelationships between social class, Latino ethnicity, neighborhood Latino composition and mental health make social class an important variable in this investigation.

Hypotheses about mediators of Latino concentration effects

Exposure to stress, discrimination, and low social support are important factors associated with risk of depressive symptoms.^{113,126,154} If exposure to these factors varies with neighborhood Latino composition, then they could mediate, or explain, the Latino

composition-depressive symptoms relationship. Here, we consider evidence and hypotheses on mediators and moderators of the ethnic composition effect on mental health.

SOCIAL SUPPORT

Access to social support improves mental health.¹⁵⁴ Ethnic homogeneity may increase social support by increasing neighborhood solidarity, trust and local social ties.^{78,381} Dense social networks in Latino neighborhoods provide members with instrumental, financial and emotional support.^{165,566} Latino cultural patterns of reciprocal exchange³⁸⁶ further increase the likelihood of support networks in Latino enclaves.

STRESS

Living in a neighborhood of high Latino composition may reduce exposure to stressful experiences. Disadvantaged Latino neighborhoods exhibit relatively high social organization and socioeconomic stability indicated by high employment rates, two-parent households and residential stability. Ethnically homogenous neighborhoods also frequently share language and social norms.^{116,118} These factors increase neighborhood stability and provide residents with financial and social resources, which may reduce exposure to stressful experiences in the neighborhood.^{117,118,136}

DISCRIMINATION

Discrimination plays a role in disparities^{93,476} including mental health.^{113,209,477} Perceived racism varies with neighborhood demographics⁵⁶⁷, and Latino concentration may reduce exposure to discriminatory experiences.⁹³ Ethnographic accounts of Mexican

women's experiences in a diverse community highlight discriminatory experiences.⁹³ Low experience of discrimination in high percentage Latino neighborhoods could reduce depressive symptoms in those neighborhoods.

Hypotheses about moderators of Latino concentration effects

SOCIAL SUPPORT, STRESS, AND DISCRIMINATION

Social support, stress and discrimination also may moderate the effect of Latino composition on depressive symptoms. That is, the effect of composition on depressive symptoms may be greater for individuals with lower social support, higher stress, or more discrimination. For example, neighborhood solidarity in Latino neighborhoods could buffer against low support or high stress and discrimination by providing a sense of connection and ethnic pride despite the absence of supportive ties.^{90,209} Increased local social ties in Latino neighborhoods may buffer the effects of neighborhood disorder on depressive symptoms.⁴³⁸ Individuals who have experienced ethnic discrimination may perceive neighbors in co-ethnic neighborhoods to be more understanding than neighbors in ethnically diverse settings. Thus, Latino concentration may influence depressive symptoms not by changing the distribution of stress, discrimination and social support, but by ameliorating their depressive effects.

NATIVITY AND LANGUAGE

The effect of ethnic concentration on depressive symptoms may vary by nativity, language or by acculturation.⁵⁵ Latino concentration may buffer challenges in the migration experience by increasing access to co-ethnic ties.^{81,116} Alternatively, instrumental assistance in immigrant networks may not depend on spatial proximity.^{322,566} For U.S.-born Latinos, Latino concentration may mitigate acculturation stress by

reinforcing a sense of ethnic identity and pride.^{90,209} At the same time, for U.S.-born Latinos, residence in ethnic enclaves may impact perceived social status and reflect limited social mobility.^{199,203} However, Cook and colleagues found that change in social status did not predict risk of psychiatric disorder among Latino adults.³⁸⁵

Decreased use of Spanish language is a marker of assimilation and acculturation.⁵⁶⁸ Linguistic isolation may protect against the risk-enhancing effects of time in the US for both immigrants and U.S.-born Latinos.⁵⁶⁹

Summary and Hypotheses

From this review, I generated four hypotheses about the relationship between Latino neighborhood composition, mediators, moderators, and depressive symptomology, in a cross-sectional dataset in a mixed native and immigrant Mexican-descent population in Texas:

H1: Higher neighborhood Latino composition will be associated with fewer depressive symptoms than lower neighborhood Latino composition.

H2: Social support, perceived discrimination, and perceived stress will mediate the effect of neighborhood Latino composition on number of depressive symptoms.

H3: The relationship between Latino composition and depressive symptoms will vary by Spanish language use.

H4: Social support, perceived discrimination, and perceived stress will moderate the effect of neighborhood Latino composition on number of depressive symptoms.

METHODS

Setting

Texas City is a medium-sized port city about 45 miles southeast of Houston on the Gulf Coast of Texas. The city boasts a diverse population of around 45,000 residents; in 2010, only 40% of the population was non-Latino white while around 30% were non-Latino black and 27% were Latino. Texas City also offers residents consistent employment opportunities through the presence of petroleum refinery and petrochemical manufacturing facilities. Texas City lies within the Houston metropolitan statistical area, which placed fourth on Forbes' America's Fastest-Growing Cities list in 2012.⁵⁷⁰ Despite proximity to Houston and steady employment opportunities, the population of Texas City grew only 8.62% from 2000-2010, compared to the state average of 20.59%.⁵⁷¹

Data

Data are from the Latino subjects in the 2004 baseline of the Texas City Stress and Health Study.⁵⁷² The TCSHS was designed to assess neighborhood social and environmental effects among individuals with high exposure to petrochemical processing in Texas City, Texas. The TCSHS reflects the ethnic diversity of Texas City with a large sample of Mexican- and US-born Mexican-descent individuals age 25 and over. The TCSHS also contains neighborhood-level data matched to each respondent. The large sample of geocoded Latino individuals makes the TCSHS a good data set for estimation of the relationship between neighborhood Latino composition and depressive symptoms. This study includes U.S.-born and Mexico-born Latinos of Mexican-descent (n=1,238).

Data collection has been described in detail in prior work.¹⁰ Eligible subjects were identified through a listing of all household units in 12-square mile area encompassing around 75% of the city's population. Following enumeration, stratified sampling based on age and race/ethnicity proceeded in 3 strata: Latinos ages 25 – 64 years old, Latinos

ages 65 years or more, and non-Latinos (not used in this study). All Latino housing units were eligible to participate. In each Latino household, one Latino adult between the ages of 25 and 64 and all Latino adults age 65 years or more were selected for interview. Researchers obtained informed consent from all participants prior to home-based interviews (82% response rate at baseline; 80% of eligible subjects consented).

Neighborhood-level data were generated by matching US Census 2000 block level data with TCSHS neighborhood boundaries. Neighborhood boundaries (n=48) were defined by the socio-spatial neighborhood estimation method (SNEM), which incorporates 1) street patterns, 2) residential patterns including housing types and densities, 3) nonresidential land use, 4) landforms including barriers to passage and interaction, and 5) geographic spread.¹⁰

Measures

The primary outcome of interest is number of *depressive symptoms*, measured by the Center for Epidemiologic Studies Depression Revised scale (CES-DR) ($\alpha = 0.92$).^{573,574} In this scale, higher scores suggest more depressive symptoms.⁵⁹ The CES-DR shows good validity when compared to similar anxiety and affect scales.⁵⁷⁵ The CED-DR was transformed to its natural log due to positive skew.⁵⁷⁶ The CES-DR has occasionally shown minimal non-equivalence by ethnicity in cross-ethnic samples; however, risk of misclassification is small, particularly for Mexican-descent persons.⁵⁷⁷

Neighborhood Latino composition is measured as the percentage of people in the neighborhood who identified as Hispanic in the US Census 2000, in 6 groups ($\leq 16\%$; $>16\%$ to $\leq 20\%$; $>20\%$ to $\leq 25\%$; $>25\%$ to $\leq 35\%$; $>35\%$ to $\leq 45\%$; $>45\%$) (reference: level 1, $\leq 16\%$). (We used Latino composition as a close proxy for Mexican-descent composition because of its availability in block data, and hence use the more general term.)

Neighborhood social class is measured by *median house value*, using data from the 2005 Galveston County Central Appraisal District Geographic Information System parcel data file. Residential stability is measured as neighborhood *percent owner* from the Census.

Social support is measured with the Social Support Survey from the Medical Outcomes Study.⁵⁷⁸ The survey addresses four support domains—emotional, tangible, affectionate, and positive social interaction—as well as an overall index. The overall scale and subscales demonstrate high reliability ($\alpha = 0.97$ and $\alpha > 0.90$, respectively),⁵⁷⁸ and has been used with samples of multiple races and ethnicities.^{579,580} We combine the four subscales (range: 0-100), where higher values indicate higher levels of support.

The *Perceived Stress Scale* (PSS) is a 10-item scale (range: 1-40) measuring the degree to which life situations are considered stressful. Higher scores on the PSS indicate higher levels of perceived stress. The full scale has high reliability ($\alpha = 0.85$) and good validity⁵⁸¹ and is appropriate for use in Latino samples.⁵⁸² We dichotomized at the mean to address negative skew.

Perceived discrimination (PD) is a scale composed of 3 items—feeling unaccepted, been treated unfairly, and seen others treated unfairly due to being Spanish or Latino. The first item was developed in-house while the latter two items ($\alpha = 0.76$) come from an existing scale developed in a Mexican-descent sample. The full three-item scale has good reliability in this sample ($\alpha = 0.72$). A summary scale was generated in which higher scores reflect higher levels of perceived discrimination (1-4) and then dichotomized (1/2+) due to positive skew.

Spanish language. Use of Spanish language is dichotomized as use of Spanish mostly or only at home. The high correlation of Spanish language and foreign-birth in the sample made it impossible to estimate effects of each variable independently. Thirty percent of the sample was foreign-born, including 85% of the primary Spanish language users. In unreported models, immigrant status showed similar relationships with

depressive symptoms, percent Latino, and the pathway variables. We chose to use Spanish language use as the theoretically more-robust indicator of the relevant characteristics shared by foreign-born and Spanish speaking U.S. native populations.⁵⁵

Multivariable models include individual-level covariates: age (years), gender, marital status (married or unmarried), and social class. Social class is measured as education (< high school, high school, > high school) and annual income (low (<\$25,000), middle (\$25,000 to \$49,999), high (>\$50,000), and missing (n=144)). We used two domains of stressors: a self-reported count of major stressful life events (0-30 coded as 0, 1, or 2+) and chronic conditions (0-6: stroke, cancer, diabetes, hypertension, arthritis, heart attack coded as 0, 1, or 2+).

Analysis

Descriptive statistics reporting the distribution and central tendencies of variables and covariates were calculated using SAS 9.2 software. All models were estimated using two-level random-coefficient regression models in HLM 6, in which the level-1 equation estimates the effect of individual-level factors on depressive symptoms, and the level-2 equations estimate the contribution of neighborhood-level factors on the individual-level intercept and coefficients.

We first estimate three bivariate regressions and three multi-level models to assess whether social support, discrimination or stress mediate the effect of percent Latino on depressive symptoms. To investigate whether these variables moderate the effect of percent Latino on depressive symptoms, we add the pathway variables and their interaction with percent Latino, and add interaction terms of percent Latino and Spanish language. We also present mean depressive symptoms across levels of the pathway variables and Spanish language for respondents in high and low Latino composition

neighborhoods). High and low Latino composition is defined as $\leq 35\%$ and $>35\%$, respectively, based on the distribution of neighborhood Latino composition in the sample.

In addition, two sensitivity analyses were completed. First the models described above were reestimated in HLM using a continuous measure of percent Hispanic. Second, similar analyses were completed using generalized linear modeling (GLM). Use of GLM aimed to assess the presence of bias associated with residual skew of the outcome variable, depressive symptoms, after log transformation. The logarithm link function in GLM is an exponential estimation conditional on the mean of the raw data that avoids bias due to skew.⁵⁸⁴

RESULTS

Sample characteristics are presented in Table 3.1 for all explanatory variables and covariates. The mean depressive symptoms score is 8.5 (standard deviation=12.4) and the majority of subjects live in a neighborhood composed of between 15 and 45% Latino. Just under one-quarter of the sample predominantly use Spanish inside the home (23.1%). On average, Mexico-born subjects have lived in the U.S. for just over 20 years (standard deviation: 14.9).

Hypothesis 1: Effect of percent Latino on depressive symptoms

Results from multilevel linear regression of depressive symptoms on neighborhood Latino composition, pathway variables, and individual- and neighborhood-level covariates are presented in Table 3.2. Models 1 and 2 address hypothesis 1 (higher Latino composition will be associated with fewer depressive symptoms); Models 3a, b, and c address hypothesis 2 (the pathway variables social support, stress, and discrimination will mediate the Latino composition-depressive symptoms relationship).

Table 3.1. Descriptive analysis: individual- and neighborhood level variables of Mexican-descent individuals from the Texas City Stress and Health Study, (n=1,238)

Variable	Percentage or Mean
Female (%)	42.7
Age (yrs) (mean, SD)	46.4 (15.2)
Education (% dist)	
Less than high school	51.2
High school	26.3
More than high school	22.4
Income (% dist)	
Low	39.7
Middle	30.7
High	19.0
Missing	11.6
Spanish language (%)	23.1
Married (% dist)	61.3
Life events (mean, SD)	
None	36.6
Low	20.3
High	43.1
Chronic conditions (mean, SD)	
None	50.7
Low	25.5
High	23.2
Discrimination (%) (Ref: never/sometimes)	
Often/Always	24.0
Support (%) (Ref: low)	
High	65.7
Perceived Stress (%)	
Low	27.3
Moderate	46.1
High	26.6
Depressive symptoms (mean, SD)	8.5 (12.4)
Percent Latino (%)	
≤16%	10.3
>16 to ≤20%	14.6
>20 to ≤25%	16.5
>25 to ≤35%	29.2
>35 to ≤45%	19.7
>45%	9.8
Median House Value	
Mean, Range (\$)	55,920.0 (12,490-160,310)
Percent Owner	
Mean, Range (%)	62.3, (0-100)

In model 2, higher percent Latino is associated with lower depressive symptoms score while adjusting for individual- and neighborhood-level controls, as hypothesized. While the relationship is monotonic, only the highest percent Latino level compared with the lowest is significantly associated with lower depressive symptoms score. Model 2 also shows that Spanish language is associated with fewer depressive symptoms, paralleling previous reports of the effect of acculturation on depressive symptoms.²⁰⁰ Individual-level social class emerges as an important concept in understanding depressive symptoms in this sample. In both Model 1 and Model 2, low education and low income are associated with increased depressive symptoms in reference to high education and high income, respectively. In contrast, neighborhood social class is not associated with depressive symptoms. In bivariate analyses (not shown), median house value is inversely associated with neighborhood Latino composition ($r = -0.50$, $p < 0.01$). High inverse collinearity may explain the non-association between median house value and depressive symptoms.

Hypothesis 2: Mediation by social support, discrimination and stress

Models 3a, b, and c (Table 3.2) serially add social support, perceived discrimination and perceived stress to Model 2. Each variable has a significant effect on depressive symptoms in the expected direction; greater social support is associated with fewer depressive symptoms while greater perceived discrimination and stress are associated with more depressive symptoms. Each variable removes the significance of the contrast between high and low categories of percent Latino reported in Model 2.

Table 3.2. Results from hierarchical multilinear regression of depressive symptoms on individual- and neighborhood-level covariates from the Texas City Stress and Health Study (n=1,238)

	1	2	3a	3b	3c
Intercept	0.52**	0.6**	0.83**	0.51**	0.43**
<i>Level 1</i>					
Female	0.37**	0.36**	0.39**	0.37**	0.24**
Age (yrs)	-0.01**	-0.01**	-0.01**	-0.01**	-0.01*
Education (Ref: high)					
Low	0.24**	0.24**	0.22**	0.25**	0.13
Moderate	0.03	0.04	0.03	0.04	0.05
Income (Ref: high)					
Low	0.38**	0.39**	0.35**	0.41**	0.20*
Moderate	0.05	0.07	0.03	0.08	-0.01
Missing	-0.10	-0.06	-0.04	-0.04	-0.08
Married	-0.14*	-0.14*	-0.09	-0.12	-0.10
Spanish language	-0.21**	-0.19*	-0.18*	-0.19*	-0.12
Life events (Ref: none)					
Low	0.21*	0.21*	0.23**	0.22**	0.20**
High	0.80**	0.80**	0.80**	0.75**	0.61**
Physical health (ref: none)					
Low	0.23*	0.23*	0.20	0.22*	0.20*
High	0.59**	0.59**	0.57**	0.57**	0.53**
Social Support			-0.38**		
Discrimination (Ref: never/sometimes)					
Often/Always				0.34**	
Stress (Ref: low)					
High					1.10**
<i>Level 2</i>					
% Latino (ref: <=16%)					
>16 to <=20%		0.04	0.04	0.04	-0.14
>20 to <=25%		-0.08	-0.06	-0.10	-0.23
>25 to <=35%		-0.14	-0.12	-0.13	-0.24
<35 to <=45%		-0.14	-0.07	-0.14	-0.27
>45%		-0.30*	-0.25	-0.26	-0.26
Residential stability		-0.08	-0.1	-0.1	0.06
Median house value		0	0	0	0
σ^2_e	1.329	1.329	1.295	1.302	0.989
$\sigma^2_{\text{intercept}}$	0.006	0.007	0.011	0.007	0.021
$\sigma^2_{\text{social support}}$			0.014		
$\sigma^2_{\text{discrimination}}$				0.019	
$\sigma^2_{\text{stress - moderate}}$					0.078
$\sigma^2_{\text{stress - high}}$					0.071

* $p \leq 0.05$, ** $p \leq 0.01$

Notably, social class remains a significant parameter in the models testing mediation by social support and discrimination (Models 3a and 3b). However, when statistically controlling for stress (Model 3c), the effect of low education (reference: high education) on depressive symptoms disappears and the effect of low income (reference: high income) on depressive symptoms reduces by half.

Hypothesis 3: Effect of percent Latino on depressive symptoms by Spanish language use

The interaction of neighborhood Latino composition and Spanish language (Model 4) or discrimination (Model 5) is presented in Table 3.3. Model 4 shows a weak interaction between Spanish language and high neighborhood percent Latino, with adjustment for individual- and neighborhood-level covariates except the pathway variables. Descriptive statistics in Table 3.4 show difference in mean depressive symptoms for respondents who speak Spanish or English in neighborhoods of high and low Latino composition. Spanish and English speakers significantly differ in number of depressive symptoms ($p < 0.05$). Speaking English and living in a low Latino composition neighborhood are both associated with more depressive symptoms. Specifically, English-speaking respondents report 7.85 depressive symptoms in high Latino composition neighborhoods and 9.27 depressive symptoms in low Latino composition neighborhoods. In contrast, Spanish-speaking respondents report 6.24 symptoms in high Latino composition neighborhoods compared to 7.45 symptoms in low Latino composition neighborhoods.

Table 3.5 further explores the interaction effects of neighborhood Latino composition with Spanish language use in stratified analyses. Highest neighborhood percent Latino is significantly associated with reduced depressive symptoms for English

speakers, only. English speakers living in neighborhoods with the highest Latino composition report 7.85 depressive symptoms on average while Spanish speakers living in neighborhoods with the highest Latino composition report 5.85 depressive symptoms on average. In contrast, percent Latino exhibits no significant relationship with depressive symptom for Spanish speakers.

Table 3.3. Multilevel regression of depressive symptoms on percent Latino interactions with discrimination and Spanish language use, Texas City Stress and Health Study (n=1,238)

% Latino (ref: <16%)	<u>Model 4</u> Spanish language	<u>Model 5</u> Discrimination
>16 to ≤20%	0.45	-0.19
>20 to ≤25%	0.22	-0.42
>25 to ≤35%	0.11	-0.24
>35 to ≤45%	0.29	-0.14
>45%	0.42 €	-0.50**

Models adjust for all individual- and neighborhood-level variables from Model 3

€ p=0.065

** p<0.01

Hypothesis 4: Moderation by social support, discrimination and stress

Multilevel regression of depressive symptoms on the interaction of discrimination and high percent Latino compared to low percent Latino is significant ($\beta=-0.5$, $p\leq 0.05$) (Table 3.3, Model 5). Stratified analyses (Table 3.5) show that only respondents with high discrimination exhibit a protective effect of highest (>45%) versus lowest (≤16%) percent Latino on depressive symptoms ($\beta=-0.83$, $p<0.01$). Differences in mean depressive symptoms among respondents with reporting high and low discrimination in neighborhoods of high and low Latino composition are shown in Table 3.4. Respondents with high discrimination in low Latino composition neighborhoods report the most

depressive symptoms while respondents with low discrimination in high Latino composition neighborhoods report the fewest depressive symptoms.

Table 3.4. Mean depressive symptoms among respondents in neighborhoods of high, low and all Latino composition by language use and high and low discrimination, stress, and social support, Texas City Stress and Health Study (n=1,238)

	Latino Composition			
<i>Variable</i>	<u>High</u>	<u>Low</u>	<u>Total</u>	<u>p</u>
Language				
English	7.85(11.53)	9.27(13.24)	8.93(12.87)	<0.05
Spanish	6.24(9.35)	7.45(11.50)	6.85(10.49)	
Discrimination				
high	10.99(13.42)	12.67(15.86)	12.26(15.29)	<0.01
low	6.30(9.78)	7.69(11.57)	7.25(11.06)	
Stress				
high	11.22(12.77)	14.25(15.13)	13.38(14.54)	<0.01
low	3.02(5.65)	2.98(5.75)	3.00(5.72)	
Social support				
high	6.45(9.96)	7.22(11.36)	6.97(10.92)	<0.01
low	9.27(12.44)	11.91(14.91)	11.29(14.39)	

A similar pattern emerges for stress. In the parameterization reported, there is no significant interaction between stress and Latino composition. However, in supplementary analyses, the interaction of stress and a continuous measure of percent Latino approaches significance ($\beta=-0.01$, $p<0.06$). In the stratified analyses (Table 3.5), only respondents reporting high levels of stress exhibit a protective effect of neighborhood Latino composition on depressive symptoms ($\beta=-0.56$, $p\leq 0.05$). Neighborhood Latino composition is not significantly associated with depressive symptoms among respondents with low levels of stress. Differences in mean depressive

symptoms among respondents with high and low stress are shown in Table 3.4. Respondents with high stress in neighborhoods of low Latino composition report the most depressive symptoms. Respondents with low stress in neighborhoods of high and low Latino composition report similarly low levels of depressive symptoms.

Table 3.5. Effect of Percent Latino on depressive symptoms stratified by high and low discrimination, high and low stress, and Spanish or English language use, Texas City Stress and Health Study (n=1,238)

% Latino (ref: <16%)	<u>Discrimination</u>		<u>Stress</u>		<u>Spanish language</u>	
	High	Low	High	Low	Spanish	English
>16 to ≤20%	-0.08	0.09	0.14	-0.38	0.61	-0.01
>20 to ≤25%	-0.40	0.02	-0.27	-0.23	0.36	-0.12
>25 to ≤35%	-0.39	-0.05	-0.19	-0.29	0.30	-0.14
>35 to ≤45%	-0.38	-0.05	-0.25	-0.29	0.40	-0.21*
>45%	-0.83**	-0.13	-0.56*	-0.09	0.34	-0.40*

Models adjust for all individual- and neighborhood-level variables from Model 3

* p<0.05

** p<0.01

The interaction of social support and percent Latino is not significant and results are not shown. However, differences in mean depressive symptoms for respondents with high and low social support are shown in Table 3.4. The pattern is similar to the findings for language, discrimination and stress but inverted. Respondents with high social support in neighborhoods of high Latino composition report the fewest depressive symptoms while respondents with low social support in neighborhoods of low Latino composition report the most depressive symptoms.

Sensitivity Analyses

Sensitivity analyses generally supported the findings above. In both HLM models (in which Latino composition is parameterized as a continuous measure of percent

Hispanic) and GLM models (in which neighborhood categorical Latino composition is transformed using the log-link function), neighborhood Latino composition is significantly associated with fewer depressive symptoms in fully adjusted models (HLM continuous Latino composition: $\beta=-0.01$, $p\leq 0.01$; GLM: log-link transformed Latino composition: $\beta=-0.34$, $p\leq 0.06$). However, none of the three pathway variables significantly mediate the effect of Latino composition on depressive symptoms in either HLM or GLM models.

In addition, in HLM models, only the interaction of Latino composition and stress approaches significance ($\beta=-0.01$, $p=0.109$). In contrast, in GLM models, only the interaction of discrimination and Latino composition (level 6, reference: level 1) is significant ($\beta = -0.53$, $p<0.05$). The interaction of Latino composition and Spanish language or country of birth is not significant in either sensitivity model.

DISCUSSION

This study explores the relationship between neighborhood Latino composition and depressive symptoms for Mexican-descent residents with attention to three factors—social support, discrimination, and stress—as mediators and moderators of the composition-depressive symptoms relationship. We find that increased Latino composition significantly reduces depressive symptoms. These findings are concordant with theories linking increased neighborhood Latino composition and decreased depressive symptoms. Specifically, we find an advantage among residents living in neighborhoods of very high compared to very low Latino composition.

We also find that the effect of neighborhood Latino composition depends on several individual characteristics—language spoken at home and level of discrimination and stress. Finally, this study shows that the protective effect of high neighborhood

Latino composition is mediated by higher levels of social support and lower levels of discrimination and stress.

The interaction between primary language use is particularly important in view of evidence that acculturation may be accompanied by increased stress among immigrants and their descendants. Possible sources of this stress include negative perceived social status and discrimination. Acculturation can inspire internal and external conflict that may manifest as stress, anxiety, depression or substance abuse.^{200,207} English fluency may also raise expectations about social mobility, which can cause strain for individuals unable to move out of low income neighborhoods.^{199,385} Finally, acculturation and generational status is associated with increased discrimination.¹¹³

Living in a neighborhood of high Latino composition may buffer against these stressors by reinforcing a sense of identity and ethnic pride.^{90,209} Our results parallel one recent study in which neighborhood linguistic isolation protected against depressive symptoms for long-term migrants and US-born Latinos only.⁵⁵

Spanish speakers appear to receive less benefit of high Latino composition. Speaking Spanish—as a measure of and barrier to acculturation⁵⁶⁸— may itself protect against depressive symptoms thereby dulling the effect of high Latino composition. A similar pattern with respect to acculturation and generational status has been observed for outcomes such as adult and adolescent behaviors.^{288,402}

Spanish language may represent more than acculturation, however. Language barriers may limit the extent to which Spanish speakers can interact with neighbors resulting in fewer supportive relationships or lower access to health-promoting information.⁵⁵ In this way, speaking Spanish may limit the benefits individuals can gain from high Latino composition neighborhoods. Spanish language may also proxy social class differences that limit solidarity between English- and Spanish-speaking neighbors.⁷⁸ Finally, Spanish speakers may anticipate discrimination from English speakers regardless of Latino ethnicity diminishing the benefits afforded by Latino composition.^{93,585}

Social support, stress and discrimination each mediate the protective effect of Latino neighborhood concentration in these data. These findings suggest that residents of high Latino composition neighborhoods have increased social support but decreased stress and discriminatory experiences compared to low Latino composition neighborhoods. Increased social support may come directly from co-ethnic neighborhood ties¹⁵⁹ or through neighborhood ties to extra-neighborhood support. At the same time, ethnic homogeneity may promote the *perception* of support through increased neighborhood solidarity and trust.¹⁴¹ Alternatively, neighborhoods of high Latino composition may attract individuals with preexisting social support such as immigrants who frequently migrate through existing co-ethnic networks.

Stress mediates the effect of Latino composition, as well. Sources of reduced stress in high Latino composition neighborhoods include increased residential stability, high employment, two-parent households, and home and car ownership.^{184,187} Such stability provides residents with financial and social resources that can reduce stress.¹³⁶ Latino neighborhoods may also increase alignment between individual and neighborhood social norms and language, and reduce the stress associated with acculturation and migration.^{116,118}

Finally, mediation by discrimination suggests that residents of high Latino composition neighborhoods may experience lower rates of discrimination than residents of low Latino composition neighborhoods. These findings are supported by ethnographic work with Mexican-descent women in Detroit.⁹³ Previous research has demonstrated that levels of discrimination vary by neighborhood demographics,⁵⁶⁷ and discrimination has clear negative effects on mental health.¹¹³

Though the main exposure variable of interest in this study is neighborhood Latino composition, it is important to recognize the significance of social class for depressive symptoms. Through the models, education and income remained important predictors of depressive symptoms. Only the addition of stress minimized the effect of

social class on depressive symptoms. Social class is a powerful indicator of health that may operate directly by limiting resources for preventing and dealing with illness and indirectly by shaping exposures to health-damaging risks and exposures.^{277,278,586,587} The Latino sample in this study is of lower socioeconomic position, on average; over half report less than a high school education and over one-third report low income. Consequently, though neighborhood Latino composition seems to protect against depressive symptoms in this sample, social class continues to carry important implications for mental health.

Several limitations must be acknowledged. First, Latino composition has been substituted for Mexican-descent composition due to census limitations at the block level. This substitution is unlikely to have prompted spurious findings because the majority of Latino Texas City residents are of Mexican-descent.

Second, results do not account for possible differences in reporting or expression of depressive symptoms. Individuals with a Latino cultural orientation may express psychological distress through somatic complaints rather than mood.⁵⁸⁸ In addition, issues of mistranslation can lead to systematic bias.⁵⁸⁹ Reporting issues could contribute to observed differences in results by language use. However, somatization and mistranslation likely do not impact our findings given cross-cultural validity of the CES-D.

Third, issues of selection and residential mobility cannot be addressed in this study and are common challenges to neighborhood-effects research.²²³ Selection into Latino neighborhoods based on characteristics associated with depressive symptoms could confound study findings. Similarly, inability to move out of the neighborhood could confound findings if mobility is associated with depressive symptoms. These are valid limitations that future research should attempt to mitigate.

Other factors not tested here may contribute to the Latino composition-depressive symptoms relationship. For example, access to help-seeking avenues or increased

resources utilization could mediate the effect. However, Latino individuals tend to address problems through informal avenues for issues like employment and housing,^{322,566} emotional support,⁹⁰ and general problem solving.⁵⁵⁵ Furthermore, neighborhoods of high ethnic concentration frequently correlate with deprivation of formal resources.²¹⁶ These factors, therefore, are unlikely mediators.

Finally, it is important to note that the experiences of Mexican-descent individuals in Texas City, Texas do not necessarily mirror those in other parts of the US. Mexicans are disproportionately concentrated in the southwest,²¹¹ and there is a long history of Latino migration to the region. Many large Latino immigrant-based neighborhoods are well-established and offer residents the advantages of strong co-ethnic social organization such as Latino social and employment networks, grocery stores, small businesses, and other informal services.^{187,558} As a result, the characteristics of Latino neighborhoods in the Houston area may differ substantially from other regions.

In sum, this study finds that higher neighborhood Latino composition is associated with fewer depressive symptoms for Mexican-descent individuals in Texas City, Texas. Social support, discrimination and stress mediate the effect. In addition, Latino composition buffers the effects of high stress and discrimination on depressive symptoms. Finally, the advantages are observed among English-speaking respondents only. Our findings suggest that community life in ethnically homogenous neighborhoods carries important implications for individual well-being among Mexican-descent residents. Future research should focus on understanding pathways between Latino composition and mental health, which would allow health researchers and policy makers to tailor outreach programs to local dynamics and social structures. Understanding why Latino homogeneity supports health may offer insight into health promotion in non-Latino communities, as well. Such research would move us towards an understanding of community and individual well-being that would transcend race and ethnicity, a

possibility that carries important implications for preventive medicine and community health.

Chapter 4|

Investigating neighborhood characteristics and social ties in neighborhoods of high and low Latino composition

INTRODUCTION

The previous chapter demonstrated a protective effect of neighborhood Latino concentration for Latino residents' health, with a focus on mental health and depressive symptoms in particular. Though scholars hypothesize possible explanations for this effect,^{1,7,48,184,187,510} few studies directly^{36,57} or indirectly⁶⁵ test hypothesized mechanisms. In addition, many of these studies, with some exceptions,^{90,590} are based on aggregate data, so it is difficult to identify mechanisms for such an effect. This chapter aims to identify possible mechanisms of the Latino composition-mental health relationship by using exploratory in-depth interviews to determine the differences between living in a neighborhood of high and low Latino composition.

The primary hypothesis of this study is that residents in neighborhoods of high and low Latino composition will perceive their neighborhoods differently. Specifically, residents of Texas City will perceive characteristics of their own neighborhoods differently depending on the Latino composition of their neighborhood. Differences in neighborhood perceptions associated with Latin composition may provide clues about how neighborhood Latino composition protects health. The previous chapter focused on the Latino composition—mental health relationship. This chapter focuses on the neighborhood experience and does not attempt to link this experience directly to mental health nor ask respondents about mental health. However, given the association between

Latino composition and mental health, characteristics that differ between neighborhoods of high and low Latino composition may represent possible mechanisms of the composition-mental health relationship. Thus, this study contributes evidence toward explaining the protective effect of high Latino composition.

To allow consideration of all possible mechanisms, this chapter initially uses in-depth qualitative interviews to elicit neighborhood descriptions. Responses are not limited to domains previously hypothesized in the composition-mental health relationship. Rather, open-ended questions are used to elicit descriptions of the experiences of living in high and low Latino composition neighborhoods. Chapter 2 demonstrated that the majority of work on neighborhood sociostructural effects had focused on African American and White residential communities^{99,100,217,218,225,330,331,411} and many of the scales used to examine hypothesized mechanisms of these effects on health may not be relevant to Latino populations.⁴²⁴ In a new field such as this, exploratory methods are often more appropriate because they can elicit relevant information. Consequently, this study uses a sequential qualitative-quantitative mixed-methods approach where respondents identify relevant neighborhood characteristics and structured interview methods are used to validate emergent themes.

A second hypothesis of this study is that residents of high Latino composition neighborhoods will report more neighborhood supportive social ties than residents of low Latino composition neighborhoods. By comparing social ties, this study aims to investigate differences in neighborhood social integration and social capital between neighborhoods of high and low Latino composition. Social integration refers to the network of formal ties made through organizational participation and informal ties with neighbors, friends, and kin.^{418,424,438} Social capital refers to the actual or potential resources accessed through a network of social ties.^{117,514} Thus, social capital is the activation of ties made through social integration. The decision to investigate social integration is based on evidence of the relationships between neighborhood composition

and social integration,^{104,138–142,147–150} and between social integration and mental health.^{154–157,591} Specifically, increased social capital is associated with improved mental and physical health^{154,155,532,592–594} among Latino populations.^{92,532} These relationships suggest that several domains and outcomes of social integration, such as social capital, are likely mechanisms of the composition-mental health relationship, especially because exchange of social capital may constitute a large portion of social interactions in Latino neighborhoods.^{92,421,422,531}

Neighborhood social integration can also lead to social control (also called social order; the ability of a group to maintain social order by regulating its members according to collective principles^{33,34,438,595}) and social cohesion (having a shared mutual trust and sense of belonging¹⁴⁵). However, the second hypothesis focuses on social integration and social capital but not social control or social cohesion as the latter concepts are more difficult to quantify because they are less concrete. Also, evidence supports the role of social capital for mental and physical health^{154,155,532,592–594} among Latino populations^{92,532} and in Latino neighborhoods^{92,421,422,531} while evidence for cohesion^{36,65,423} and control^{34,437,502,507,511} in Latino communities is more mixed.

The third hypothesis of this study is that residents of high Latino composition neighborhoods will report more nearby family ties (family ties within 30 minutes of the home) than residents of low Latino composition neighborhoods. By comparing nearby family ties between residents of high and low Latino composition neighborhoods, this study investigates social integration through family networks. Familism is a core value among multiple Latino cultures¹⁶³ and kin constitute a large portion of Latino social support networks.^{382,386} In addition, a number of prior studies demonstrate that extended family networks facilitate migration to the United States by supporting new arrivals with housing, information, transportation and employment opportunities.^{168,186,339} In this way, access to a family-based resource network could transform into health benefits by reducing stress, increasing income, facilitating day to day activities and providing

information about health resources. This study, therefore, investigates whether proximity to family differ between respondents of high and low Latino composition neighborhoods.

While neighborhood Latino composition is the primary exposure of interest, this study also investigates the role of three secondary constructs captured as three concepts (six variables): household composition (children or no children in the home); residential stability (residential tenure and home ownership); and migration factors (foreign-birth, duration of US residency, and Spanish language interview). As explained in Chapter 1, the proportion of homes in the neighborhood that contain children^{62,192,196,197,596} and long-term residents^{18,122,125,191–195} could confound the Latino composition-mental health relationship because neighborhoods could systematically vary on these characteristics, which could translate into more extensive and/or more intimate social networks and better health outcomes. Thus, an apparent association between high Latino composition and improved mental health could actually reflect varying levels of home ownership and child-rearing households.

A high proportion of foreign-born residents in a neighborhood also could confound the Latino composition-health relationship because foreign-born individuals import distinct cultural features such as healthy diet and lifestyles^{70,73,76,405} and better reciprocal support systems^{170,309,597–600} that may affect health. Similarly, foreign-born individuals with a short duration of residency in the US (short-term migrants) might exhibit cultural beliefs or lifestyle behaviors that contrast long-term migrants (migrants with a long US residency duration) or US-born individuals. Longer duration of residency also increases risk of certain poor health outcomes such as obesity^{497,601} and substance use.⁵⁶⁹ Linguistic isolation strongly structures social interaction and has been shown to be a good marker of acculturation.⁴⁹⁶ Linguistic isolation is also the primary reason individuals of ethnic backgrounds choose to live in co-ethnic neighborhoods.¹⁷² The last chapter demonstrated the importance of English language use in moderating the effect of

neighborhood Latino composition on depressive symptoms. As such, this study considers language use and country of birth.

Foreign-born status (and residency duration or linguistic isolation) may moderate the Latino composition-mental health relationship^{79–81,83–85} in two possible and opposing ways. First, foreign-born individuals may experience more extreme cultural isolation^{376,602} through distance from family and language barriers^{118,486,603,604} that may increase the importance of neighborhood social context. In this way, the effect of neighborhood Latino composition may be greater for foreign-born individuals. In contrast, US-born individuals may experience greater stress from negotiating the boundary between Mexican and American ethnic identities.^{525,605,606} In this way, the effect of neighborhood Latino composition may be greater for US-born individuals by reaffirming a sense of ethnic identity and ethnic pride.^{90,209,443}

Finally, social class is an important correlate of both individual and neighborhood-level ethnicity and mental health. Ethnic minority individuals tend to have fewer socioeconomic resources and face greater challenges to upward socioeconomic mobility.^{607–610} Socioeconomic disparities concentrate on a neighborhood-level, as well, particularly in areas of high ethnic minority composition.^{23,218} Individual^{273–275} and neighborhood-level socioeconomic disadvantage^{17,26,66} is associated with increased depressive symptoms and other mental health outcomes such as anxiety. The correlation of social class and ethnicity demands attention to this variable in investigation of the Latino composition—mental health relationship. Thus, this study considers social class as an important confounder of the effect of Latino composition on mental health.

The study site, Texas City, Texas, is the site of the Texas City Stress and Health Study where prior analysis in the last chapter suggests an association between neighborhood Latino composition and depressive symptoms at a population-level in Texas City. An in-depth qualitative investigation in Texas City will help identify possible neighborhood-level mechanisms involved in the association between neighborhood

Latino composition and mental health found in Texas City. Triangulation through a multi-method approach can increase validity of findings. Population-level data provide information on a representative sample, but sacrifice depth in exchange for brevity. In contrast, qualitative methods usually allow great depth but are often implemented with a smaller non-representative sample. The strongest approach, therefore, involves a combination of both qualitative and systematic data collection as executed in this project.

Summary and hypotheses

In sum, this study compares neighborhood perceptions and access to supportive social and family ties across individuals who differ by neighborhood Latino composition. These comparisons are also made across individuals who differ by household tenure and ownership, household composition (children in the home), and country of birth, duration of residency and Spanish language use in order to determine whether these variables explain the Latino composition-mental health relationship.

Hypothesis 1:

- a) Residents of Texas City will categorize perceptions of neighborhood characteristics similarly.**
- b) Residents of high and low Latino composition will attribute neighborhood characteristics to their own neighborhoods differently.**

Hypothesis 2: Residents of high Latino composition neighborhoods will report more neighborhood supportive social ties than residents of low Latino composition neighborhoods

Hypothesis 3: Residents of high Latino composition neighborhoods will report more nearby family ties (family ties within 30 minutes of the home) than residents of low Latino composition neighborhoods.

METHODS

Setting

Texas City lies roughly 37 miles southeast of Houston⁶¹¹ on the Gulf Coast. In 2010, Texas City contained a population of about 45,000 residents, of whom roughly 40% were non-Latino White, 30% were non-Latino Black and 27% were Latino.⁶¹² This population includes a large foreign- and US-born Mexican-descent population due to its proximity to Houston, which is a major port of entry for Mexican-born persons to the United States.¹⁰ The city's demographics hint at this large foreign-born population: almost 15% of persons 5 years or older speak a language other than English at home and nearly 8% are foreign-born.⁶¹² Many of the city's inhabitants are employed at one of several local oil refineries or with outfits in the deep-sea port industry. The Port of Texas City is Texas' third largest cargo port and sponsored over 15,000 jobs in 2005.⁶¹³ The prevalence of local job opportunities and the city's natural physical boundaries (the coast and its inland waterways) make Texas City an ideal site to study neighborhood effects since these factors likely limit the time that residents spend outside of the city.

Subjects

Subjects were identified through convenience sampling using diverse recruitment methods aimed to increase representativeness. Respondents were recruited from public places including churches, grocery stores, laundromats, athletic events, employees at small businesses, and city parks, as well as through respondents' social networks and

signs posted at local organizations and churches. In the second phase, respondents were compensated for their time with a \$5 gift card to a local grocery store or Walmart. At grocery stores and laundromats, the author recruited respondents by standing in front of the store with a flyer in English and in Spanish advertising the study and the \$5 compensation. Two of the four main grocery stores in Texas City, including one Latino grocery store, permitted subject recruitment in front of the store in exchange for using gift cards to their store as compensation for study participation. At churches, the pastor or priest announced the study and invited attendees to approach the author to participate in the interview. At other sites, the author approached individuals (with the approval of the store or business owner where applicable) and explained the project. Only individuals who expressed interest or asked follow-up questions were invited to participate.

Two sequential samples were interviewed in this study. The first sample was interviewed to elicit themes for the development of semi-structured interview materials for use in Phase 2 interviews (Phase 1 and 2 interview described below). In the first phase interview method, individuals may respond differently to different questions and probes depending on characteristics of the individual such as vocabulary differences and discussion style preferences. These differences in questioning and response style are characteristic of open-ended interviews. However, these factors can result in response bias issues. Thus, a second sample was used in the Phase 2 interview to verify the importance of themes and to better understand residents' perceived similarity among themes by asking all participants the same questions in the same manner and order.

To participate in either sample, respondents must have lived in their current neighborhood for at least one year and within Texas City city boundaries for at least five years (reduced to four years in second sample to accommodate sample size without loss of validity). All respondents must have been at least 21 years old and have been born in either the United States or Mexico and be of Mexican-descent. Mexican-descent was defined as having at least two maternal and/or two paternal generations born in Mexico

prior to residence in the United States. Participants were not asked to report documentation status.

The ultimate size of the first sample was based on thematic saturation.⁶¹⁴ Thematic saturation occurs when few new ideas are introduced with each additional respondent. Usually 15-20 people per group is sufficient to achieve saturation when using an interview technique called free-listing (see *Development of interview materials* below). In this study, 32 interviews were collected and saturation was reached at n=30 [high density (>35% Latino in the neighborhood): n=15; low density (\leq 35% Latino in the neighborhood): n=15]. Two of the interviews were discarded because the respondents' residences did not correspond to neighborhoods for which neighborhood Latino composition could be calculated. The final first sample used to develop interview materials was based on interviews with 30 individuals.

The size of the second sample was determined by two factors. First, the technique used in this study to estimate group perceptions of neighborhood characteristics is cultural consensus modeling. A sample size of 28 people per subgroup is sufficient to estimate group perceptions if the average Pearson correlation coefficient of perceptions is 0.25 or greater and validity of findings is greater than or equal to 0.95.⁶¹⁴⁻⁶¹⁶ Second, according to traditional sample size calculations, a sample size of 35 per group is enough to detect a moderate effect size ($r \geq 0.35$) between neighborhood Latino composition and number of social ties when using a t-test. Thus, sampling aimed for n=70 in order to achieve 30-35 subjects per subgroup for the main comparison of interest, high/low Latino composition. The final sample in Phase 2 contained 68 respondents.

Phase 1 and Phase 2 sampling achieved diversity across: residence location in Texas City, gender, country of birth, interview language, employment status, parent status, and age (Table 4.1). All participants interested in the study were invited to participate if they met the study's inclusion and exclusion criteria.

Phase 1: Development of interview materials

Phase 1 aimed to elicit salient characteristics about respondents' neighborhoods. Roughly two-thirds of the sample were women with a mean age of 47 years (Table 4.1). Around one-third chose to complete the interview in Spanish and just over one-third was born in Mexico. Two-thirds of the sample lived with a child under 18. Just over half were homeowners.

Table 4.1. Phase 1 Sample Characteristics by neighborhood Latino composition

<i>Variable</i>	<u>Neighborhood Latino composition</u>		
	All <i>N</i> =30	High <i>N</i> =15	Low <i>N</i> =15
% Latino			
≥35% (%)	50.0	100.0	0.0
% Latino (mean(std))	49.8(0.1)	49.8(0.1)	25.2(.1)
Spanish interview (%)	43.4	53.3	33.3
Mexican-born (%)	36.7	53.3	20.0
Time in US < 10y (%)	16.7	33.3	0.0
Female (%)	66.7	53.3	80.0
Age (mean(std))	47.0	40.3(12.7)	49.5(-11.1)
Homeowner (%)	56.7	33.3	80.0
Lives with child <18y (%)	66.7	80.0	53.3
Occupation (%)*			
business owner	20.0	20.0	20
self-employed	6.7	6.7	6.7
homemaker	13.3	26.7	0.0
business owner	20.0	20.0	20.0
service	43.3	20.0	73.3
manual/mechanic	13.3	13.3	0.0
retired	6.7	6.7	6.7
unemployed	3.3	0.0	3.3

*Overlapping categories between business owner and self-employed and the other categories results in a distribution that does not sum to 100.

In order to identify salient neighborhood features and resources, the Phase 1 in-depth interview elicited things respondents liked and disliked about their neighborhood and advantages and disadvantages of living in a neighborhood with many or few Latino residents. (See Appendix A for the complete interview.) Specifically, a technique called

free-listing was used. In free-listing, respondents are asked to list all of the items (things, types, concepts, themes) in a domain, in this case neighborhood perceptions.^{614,617} Using the free-listing technique, respondents were asked questions such as “What do you like about your neighborhood?” and “What do you dislike about your neighborhood?” (A full list of root questions are provided in Table 4.2. Prompts such as “What is comfortable about living in this neighborhood?” and “Why did you choose to live here?” followed the root questions in order to get an exhaustive list from each informant. Example prompts are included in Table 4.2. For a full list of prompts, see Appendix A. In addition, the Phase 1 interview asked respondents about relationships they had with others in the neighborhood and the kinds of things that connect them to and disconnect them from their neighbors (Table 4.3). Finally, respondents were asked about sources of stress and social support, including resources available specifically in the neighborhood and in Texas City (Table 4.4).

Types of free-listing techniques used included non-specific prompting, reading back the list of items, and using free-listed items as cues for further listing of items within the domain.^{614,618} These techniques effectively elicit comprehensive recall of items in a variety of fields of inquiry and across multiple cultures.^{618–620} The advantage of collecting an exhaustive list of items from each person is that thematic saturation is often reached upon interviewing a smaller number of people. To determine the point of saturation, the lists of items are tabulated and compared as the sample size increases. Saturation is reached when few new items are mentioned with each subsequent interview.

Table 4.2. Phase 1 interview root questions about the respondent's neighborhood

What is a neighborhood?
What do you like about your neighborhood?
<i>Example prompts: What do other people like about this neighborhood?</i>
<i>Why did you choose to live here?</i>
What do you dislike about your neighborhood?
Have you thought about moving? Why?
Why is living in a Latino neighborhood different from living in a non-Latino neighborhood?
What are the advantages about living in a Latino neighborhood?
What are the disadvantages about living in a Latino neighborhood?
What are the advantages about living in a non-Latino neighborhood?
What are the disadvantages about living in a non-Latino neighborhood?
What are the differences between a neighborhood in Mexico and a Latino neighborhood in the United States? What things are similar?
What are the differences between a Latino neighborhood and a White neighborhood? What things are similar?
How would your life be different in a Latino (non-Latino) neighborhood?

Table 4.3. Phase 1 interview questions about things that connect and disconnect neighbors

How did you meet the people in your neighborhood?
How did you get to know them better?
When do you usually see people in the neighborhood?
In what ways are you and your neighbors similar?
In what ways are you and your neighbors different?
What values are the same between you and your neighbors?
What values are different?

Table 4.4. Phase 1 interview questions about sources of stress and social support

What are the other sources of stress in your life, apart from things in the neighborhood?
What do you do to control or reduce your stress?
What do you do to deal with the stressful things in your neighborhood?
What kinds of things make these issues not so bad?
When you are having a hard time who can you count on?
Where can you go in Texas City when you are having a hard time?
When you're having a hard time, who can you count on in the neighborhood

Tables 4.5.1 through 4.5.4 present the complete set of tabulated items in four domains collected in Phase 1 of this study at a sample size of $n=10$ per group (total=20) and $n=15$ per group (total=20). Table 4.5.1 presents the 44 most frequently mentioned themes on neighborhood social characteristics at a sample size of $n=10$ and $n=15$ for respondents in low and high Latino composition neighborhoods. Table 4.5.2 presents the 13 most frequently mentioned themes on neighborhood physical characteristics at a sample size of $n=10$ and $n=15$ for respondents in low and high Latino composition neighborhoods. Table 4.5.3 presents the 26 most frequently mentioned themes on neighborhood social interactions at a sample size of $n=10$ and $n=15$ for respondents in low and high Latino composition neighborhoods. Finally, Table 4.5.4 presents the 9 most frequently mentioned themes on meanings of neighborhood at a sample size of $n=10$ and $n=15$ for respondents in low and high Latino composition neighborhoods.

Phase 1 interviews identified many salient neighborhood characteristics across respondents. Tables 4.5.1 through 4.5.4 present the complete set of tabulated items at $n=10$ and $n=15$. The items are divided into four domains: social characteristics (Table 4.5.1), physical characteristics (Table 4.5.2), types of social interactions (Table 4.5.3), and neighborhood meanings (Table 4.5.4).

Table 4.5.1. Phase 1 Tabulated Neighborhood Perceptions: Neighborhood social characteristics at low (N=10 and N=15) and high (N=10 and N=15) density

<u>Latino composition</u>				Statement
Low		High		
N= 10	N= 15	N= 10	N= 15	
5	9	1	1	A neighborhood where the cops help you and keep you safe
6	8	7	10	A neighborhood that doesn't have violence or other problems like drugs or prostitution. A calm neighborhood has only a reasonable number of problems.
3	8	3	4	A neighborhood where stuff doesn't get stolen or damaged
7	8	3	3	A neighborhood where the neighbors are hard-working
3	7	3	6	A neighborhood with few visitors/nonresidents and cars passing through
5	7	4	5	A neighborhood where residents take care of their property
1	2	2	2	A neighborhood where residents take care of themselves and their families; they present themselves well
1	1	1	1	A neighborhood where residents take care of their pets
6	6	3	5	A neighborhood where kids and adults are safe from cars
5	6	0	1	A neighborhood where the people are older so the neighborhood is quieter and more calm

4	6	4	6	A neighborhood where everyone is the same race so people are more comfortable together and trust each other more.
4	5	7	10	A neighborhood that is quiet
4	5	3	5	A neighborhood where people can enjoy being outside
3	5	4	5	A neighborhood where there is racism
5	5	3	3	A neighborhood that is family-oriented and has lots of families
5	5	1	1	A neighborhood where people watch out for each other's kids
4	5	2	2	A neighborhood that is good for kids because of the culture that they are exposed to
2	5	4	5	A neighborhood where you have good memories
2	3	4	5	A neighborhood with long term tenants so you know your neighbors and you know what is going on with them and their houses
1	3	4	5	A neighborhood that is affordable because the price was right for me
2	3	3	4	A neighborhood with responsible/reasonable parties and drinking behaviors
2	3	0	0	A neighborhood with local events where everyone is invited and it's free
2	2	5	6	A neighborhood there are lots of parties and loud music

2	2	4	6	A neighborhood where kids are safe because dangerous people (like drug dealers, sex offenders, and kidnappers) do not live here
2	2	4	4	A neighborhood with few rentals so there are fewer problems like visitors, drugs, violence or noise
2	2	2	2	A neighborhood where you have privacy
1	2	2	2	A neighborhood where no one tries to do something to you
0	2	2	2	A neighborhood with a bad reputation
2	2	1	2	A neighborhood where I can go walking
2	2	1	1	A neighborhood with few rentals so there people take care of their property
2	2	0	0	A neighborhood with a lot of public resources
1	2	0	0	A neighborhood where I know who I am because I live with people from my country
1	1	2	3	A neighborhood where people spend time together because they are all from the same background
1	1	0	3	A neighborhood where race doesn't matter. You can't know a person until you know them.
1	1	5	5	A mixed race neighborhood where people spend time together and are able to learn about other cultures and religions
1	1	0	1	A neighborhood where my family lives and jobs are available. We have everything we need.

0	1	0	0	A neighborhood that promotes community services
0	0	3	3	A neighborhood with a convenience store where problems are, like drugs and prostitution and fights
0	0	1	2	A neighborhood without gangs
0	0	1	1	A neighborhood where adults push children to have ambition
0	0	1	1	A neighborhood where you get typed because of your race or ethnicity
1	2	1	2	A neighborhood where parents don't supervise their children
0	1	0	1	A neighborhood where I can work on cars
0	0	0	1	A neighborhood where everything is Mexican. Everyone talks Mexican, the restaurants are Mexican, the stores are Mexican, and the people are Mexican

Table 4.5.2. Phase 1 Tabulated Neighborhood Perceptions: Neighborhood physical characteristics at low (N=10 and N=15) and high (N=10 and N=15) density

<u>Latino composition</u>				Statement
Low		High		
N= 10	N= 15	N=10	N=15	
7	9	4	6	A neighborhood with well-kept yards, pretty homes, and clean streets
5	9	5	6	A neighborhood far from the plants that doesn't smell bad and has no contamination
6	8	4	6	A neighborhood that is close to the places that I go
3	5	3	3	A neighborhood in the lower street numbers near the plants
3	4	7	8	A neighborhood close to outdoor areas like parks and the water
3	4	4	4	A neighborhood with open space between houses
3	4	3	3	A neighborhood that doesn't flood
4	4	1	1	A neighborhood with newer/older homes
3	3	3	3	A neighborhood with enough street lights
3	3	1	2	A neighborhood that is close to a good school
2	3	2	2	A neighborhood near a major employer, which is good for our economy
2	3	1	1	A neighborhood where the streets are well-maintained
1	1	0	0	A neighborhood with bigger homes
0	0	2	2	A neighborhood with few abandoned homes

Table 4.5.3. Phase 1 Tabulated Neighborhood Perceptions: Neighborhood social interactions at low (N=10 and N=15) and high (N=10 and N=15) density

<u>Latino composition</u>				Statement
Low		High		
N= 10	N= 15	N=10	N=15	
8	11	7	12	A neighborhood where people help each other with things around the house and other favors like giving rides or lending tools or sugar
7	8	9	10	A neighborhood where kids play and run around together
7	8	6	7	A neighborhood where everyone knows each other and people gather regularly for things like meals and parties. It's like a community.
4	7	1	2	A neighborhood where there are no fights among neighbors, everyone gets along
5	7	4	7	A neighborhood where people help each other by keeping an eye on each other' stuff – house, kids, property – to make sure everything is normal
5	7	6	7	A neighborhood where everyone says hi
3	6	2	3	A neighborhood where people help each other by offering advice or emotional support
3	6	2	4	A neighborhood where people spend time outside to talk to each other. It's more than just hi.
5	6	10	13	A neighborhood where I can live the way I want to live and no one complains to me about it
4	5	1	1	A neighborhood where people help each other in emergencies

5	5	0	0	A neighborhood where people parent together
3	5	2	3	A neighborhood where people help each other by caring for each other when they're sick or hurt
3	4	0	0	A neighborhood where neighbors know each other
2	4	1	2	A neighborhood where people talk about neighborhood things
3	4	3	5	A neighborhood where people show respect to each other
2	3	0	1	A neighborhood where people work together to deal with a neighborhood problem
0	3	5	9	A neighborhood where other people may do things I don't like but I don't complain
2	2	4	5	A neighborhood where people help each other by lending money or water when I can't pay the bills
2	2	4	4	A neighborhood where people gossip
1	1	0	0	A neighborhood where there are neighborhood meetings to talk about local issues
1	1	1	2	A neighborhood where people welcome newcomers and introduce themselves
1	1	3	3	A neighborhood where people keep to themselves
1	1	5	5	A mixed race neighborhood where people spend time together and are able to learn about other cultures and religions

0	0	0	1	A neighborhood where people help each other out of obligation
0	0	2	2	A neighborhood where people wave to each other
1	1	2	4	A neighborhood where people share food

Table 4.5.4. Phase 1 Tabulated Neighborhood Perceptions: The meaning of neighborhood at low (N=10 and N=15) and high (N=10 and N=15) density

<u>Latino composition</u>				Statement
Low N= 10	N= 15	High N=10	N=15	
5	9	4	5	A neighborhood is where a lot of people live together, in a way that is meaningful for each other
5	6	5	8	My neighborhood is not more than my block or my corner
1	3	3	5	A neighborhood is where a lot of people live
2	2	0	0	A neighborhood is an apartment building where lots of people live
1	1	2	2	A neighborhood is the people around me, it's who I live with
0	1	0	0	My neighborhood is a clearly defined area several blocks wide and several blocks long
1	1	0	0	A neighborhood is the area around my house
0	1	0	0	The neighborhood effects me because it's what I know, they're a part of who I am
1	1	0	0	A neighborhood is the area around my house

In general, there was high agreement about the kinds of themes describing neighborhoods; there were few themes mentioned only by respondents in either high or low Latino density neighborhoods. Highly salient social characteristics of neighborhoods (4.5.1) included the presence or absence of bad things like violence, drugs and prostitution, which made a neighborhood unsafe and also exposed children to bad role models. Respondents also described sources of noise such as street noise from cars or people passing through, from the industrial plants, or from neighbors. Respondents of high Latino density neighborhoods tended to describe noise from parties and loud music more frequently than residents in low Latino density neighborhoods, but not necessarily as a negative feature of the neighborhood. For example, respondents often explained that they did not mind the noise because they knew that they made similar noise during their own family gatherings. In contrast, members of low Latino density neighborhoods more frequently described the presence of police and whether there was stealing in the neighborhood. Salient social characteristics also included distance from family and whether people in the neighborhood spend time outside.

Respondents frequently described several physical characteristics (4.5.2) of neighborhoods including the condition of homes and yards and of public services such as streetlights and streets. Respondents also reported the geographic distance of the neighborhood from important places such as the plants, outdoor recreational areas, and frequent destinations like grocery stores and Texas City schools.

With respect to neighborhood interactions (Table 4.5.3), people in high and low Latino composition neighborhoods described types of favors exchanged between neighbors such as giving rides or watching each other's houses. However, respondents in low Latino density neighborhoods more frequently described exchange of support in neighborhoods from past phases of their lives such as when they were growing up and living in predominantly Latino neighborhoods. Respondents also reported how they knew their neighbors (such as through a coworker, family member or church) and where and

when they usually saw them. One particularly salient barrier to knowing neighbors was work. Many respondents, particularly those born in Mexico, described busy work schedules that inhibited neighbor relationships because of long hours away from home and little energy to socialize once home. In contrast, the presence of other children in the neighborhood frequently formed the basis for relationships between neighbors. For example, respondents with children often described which neighborhood children formed play groups in the neighborhood. Respondents with children would often differentiate between neighbors who had children and those who did not.

Respondents of both high and low Latino density neighborhoods commented on disagreements between neighbors from two main perspectives. First, many respondents highlighted the importance of living where neighbors don't complain. Residents often mentioned this value in the context of comparing their neighborhood to wealthier neighborhoods or gated communities with strict regulations about home and yard aesthetics. A second theme described by respondents focused on whether there were fights between neighbors. Fights usually arose due to issues such as noise, street parking, dogs or yard maintenance. Some respondents would qualify these descriptions with concerns about gossip among neighbors.

Finally, respondents described the meaning of neighborhood (Table 4.5.4). Generally, definitions of neighborhood fell into one of three categories: a geographic meaning, a symbolic meaning, and a compositional meaning. Respondents tended to define their neighborhood by specific geographic boundaries, usually the span of a few blocks. The dominant symbolic meaning described the connection that neighbors shared as members of the same neighborhood. Compositional definitions of neighborhood described the number and/or kind of people in the neighborhood.

The most salient items from Phase 1 interviews were used in the development of more focused interview materials (Table 4.6). Tabulation of items across interviews identified the most salient neighborhood characteristics. Items mentioned by a large

proportion of respondents were considered more salient than items mentioned by just 1 or 2 respondents.⁶²¹ This process resulted in a final list of 31 salient items from across all respondents. The items were transformed where necessary into positive neighborhood characteristics with few negative words (e.g., no, not, without, never) in order to minimize misinterpretation. This list represents shared knowledge about neighborhoods in Texas City.⁶²² Items in Table 4.6 were used in Phase 2 structured interviews with the second sample discussed below.

Phase 2: Procedure

Structured interviews (Appendix B) used the salient neighborhood characteristics from Phase 1. Structured interviews served three purposes: first, to determine whether respondents from high and low Latino composition neighborhoods perceive neighborhood characteristics similarly (Hypothesis 1a) and if they relate neighborhood characteristics to their own neighborhoods differently (Hypothesis 1b); second, to compare social resources between neighborhoods of high and low Latino composition (Hypothesis 2); third, to compare family resources between neighborhoods of high and low Latino composition neighborhoods (Hypothesis 3). Though neighborhood percent Latino was the primary variable of interest, structured interviews also allowed assessment of effects for the following additional individual-level factors: country of birth, Spanish language use, US residency duration, children in the home, home tenure and home ownership.

The structured interview contained three parts that generated four kinds of data: similarity data, rank-order data, social ties data and family ties data. Similarity data was collected to understand how respondents think about neighborhood characteristics (Hypothesis 1a). Rank order data was collected to see if respondents in high and low Latino composition neighborhoods perceive their neighborhoods differently (Hypothesis

1b). Social integration data was collected to assess whether respondents in high and low Latino composition neighborhoods differ in number of neighborhood social ties (Hypothesis 2) and nearby family ties (Hypothesis 3).

Table 4.6. The 31 most salient items from Phase 1 (n=30)

code	Frequency (%)	<i>A neighborhood where:</i>
No gossip	90	No one complains or gossips
Favors	83.3	Neighbors do favors for each other like giving rides or lending tools or sugar
Outside	80	People spend time outside
Trust	73.3	Neighbors trust each other
No racism	73.3	Neighbors treat you the same no matter your race is
Meals	73.3	Neighbors get together for meals and parties
No drugs	70	There are no drugs, no gangs and no prostitution
Home+yards	66.7	People take care of their homes and yards so that they look nice
No partying	66.7	There is not too much partying or drinking
Play together	60	Kids play and run around together
Lived a while	60	People have lived there for awhile
Near family	56.7	You can be close to family
Cops	50	The cops help you and keep you safe
No contamination	50	That has no bad smell and no contamination
No noise	50	There is no noise from cars, construction, or the plants
Stolen	46.7	You can leave stuff outside and it won't get stolen
Watch homes	43.3	Neighbors keep an eye on each other's homes
Strangers	43.3	There are few strangers passing through
Parent together	43	Neighbors parent together
Safe	40	Kids can play outside safely
City maintained	40	That is well-maintained by the city
Advice	36.7	Neighbors give advice or emotional support
Want to help	33.3	Neighbors help you because they want to not because they have to
Sick	33.3	Neighbors take care of you when sick
Chat	30	Neighbors stop by to chat
Lend	30	Neighbors lend each other money
Affordable	30	The prices are right for me
Own home	26.7	Most people own their own home
Jobs	26.7	You can be close to good jobs
Raised well	26.7	People keep an eye on their children and raise them well
Planning	26.7	Neighbors get together to plan how to make the neighborhood better

The following sociodemographic variables were recorded: country of birth (US/Mexico), language of interview (English/Spanish), gender, age in years, social class measured as education in years (a count of years from 1-15 with 13 representing some college or a 2-year degree, 14 representing college, and 15 representing more than college,) home ownership status (rent, lease or own), home tenure in years, employment status (full time, part time, unemployed, homemaker, retired, disabled, student), household composition (yes/no: spouse/partner, children under 18 years, children over 18 years, parent, friend, extended family, or other) and language spoken at home (only English, mostly English, English and Spanish, mostly Spanish, only Spanish). Respondents also reported the ethnicity of their neighborhood as one of seven categories: (Mexican/Latino; White; Black; Mexican/Latino and White; Mexican/Latino and Black; White and Black; More than two races).

Hypothesis 1a: To understand how respondents categorize characteristics of neighborhoods

Similarity data allows respondents to categorize themes in ways important to them. In the pile-sorting task, respondents were given a stack of randomly ordered cards inscribed with items from Table 4.6. Respondents sorted the cards into piles of similar items. (Exact directions are provided in Appendix B.) The task allowed respondents to choose the number of piles and number of cards per pile. Upon completing the sorting, respondents interpreted the piles however they wanted such as with a short phrase or sentence describing the pile.

Hypothesis 2b: To assess whether respondents in high and low Latino composition neighborhoods attribute characteristics to their own neighborhoods differently

Rank-order methods allows respondents to systematically order items according to their own experience. In this task, respondents ordered the items as they related to their

own neighborhood. Specifically, respondents sorted the cards into 5 piles where pile 1 contained the cards most like their neighborhood and pile 5 contained the cards least like their neighborhood (Q-sort^{614(p24)}). The respondent then sorted the cards in each pile from most to least like the respondent's neighborhood yielding a full ranking from 1-31. Before finalizing the order, the interviewer and respondent reviewed the cards at the transitions between piles (for example, the cards least like the neighborhood in pile 1 and the cards most like the neighborhood in pile 2) to ensure correct ordering of cards. The 5 pile assignments as well as the full ranking from 1-31 were recorded. However, five respondents were unable to order cards beyond 5 piles. Responses for these individuals were recorded based on the average rank of the pile. For example, if 8 cards were placed in pile 1, each card was assigned a rank of 4.5 $[(1+2+3+4+5+6+7+8)/8]$.

Hypothesis 2 and 3: To assess whether respondents in high and low Latino composition neighborhoods differ in available neighborhood supportive social ties (Hypothesis 2) and nearby family ties (Hypothesis 3)

Reported social ties allow quantitative comparisons of social support resources between residents of high and low Latino composition neighborhoods. Questions on social integration produced counts of neighborhood supportive ties, counts of neighborhood formal integration ties, and counts (yes/no) of nearby family ties.

Questions on neighborhood supportive social ties aimed to assess respondents' access to social support and social capital in the neighborhood. Respondents were asked to report the number of people in the neighborhood that they could count on to provide instrumental support (7 scenarios), emergency support (2 scenarios), emotional support (2 scenarios), appraisal support (1 scenario) and positive social engagement (3 scenarios) (Table 4.7). For example, respondents were asked, "How many people in the neighborhood can you count on to lend you a cup of sugar or milk?" (Table 4.7). Most

questions on social support (Table 4.7) were worded based on the 31 items in Table 4.6 except for two (help in an emergency and spend time with you in your free time). These were taken from Table 4.5.3 because they are important opportunities for social support. They were excluded, however, from the 31 items used to gather similarity and rank-order data because they conceptually overlapped with other social support themes in Table 4.6 and were mentioned less frequently.

Table 4.7. Types of support included in Phase 2 interview questions on social capital and informal social integration

How many people in the neighborhood can you count on to:	
<i>Instrumental</i>	
	lend you a cup of sugar or milk
	give you a ride to the grocery store
	lend you \$30
	keep an eye on your house
	watch your kids as a favor*
	watch your kids regularly*
	watch your children when they are playing outside*
<i>Emergency</i>	
	help in an emergency
	care for you when sick or hurt
<i>Emotional support</i>	
	offer advice or emotional support
	stop outside to chat and see how things are going
<i>Appraisal support</i>	
	work with you on neighborhood issues
<i>Positive social interaction</i>	
	invite you over for meals and parties
	spend time with you in free time
	have kids who play with other children in the neighborhood

*questions left out of neighborhood supportive social ties scale

Respondents also reported the number of formal integration ties in the neighborhood made through organizations such as churches, volunteer clubs, and

recreational activities (Table 4.8). For example, respondents were asked, “How many people in the neighborhood do you know through work?” (Table 4.8). Formal integration data allow description of the types of formal social integration ties present in neighborhoods of low and high Latino composition.

Finally, respondents reported (yes/no) which family members (including family members through marriage) lived in the neighborhood or within 30 minutes from the home (Table 4.9). For example, respondents were asked, “Which of the following family members live in the neighborhood?” (Table 4.9) All questions are listed in the study instrument, Appendix B.

Table 4.8. Types of organizations and institutions included in Phase 2 interview questions on formal social integration

How many people in the neighborhood do you know through:
Work*
Church*
Recreational activities or groups*
Neighborhood watch groups
Neighborhood block clubs
Professional groups
Civic groups
Ethnic clubs
Political organizations
School PTO or other school activities
Community service organizations

*items included in principal components analysis

Table 4.9. Family members included in Phase 2 questions on proximity to family

Which of the following family members live
a) in your neighborhood?
b) within 30 minutes of your home?
Parent (yes/no)
Sibling (yes/no)
Child (yes/no)
Grandparent (yes/no)
Aunt/Uncle (yes/no)
Niece/nephew (yes/no)
Cousin (yes/no)
Godparent (yes/no)
Other family (yes/no)

ANALYSIS

Classification of neighborhoods as high or low Latino composition

Neighborhoods in this study are based on US census blocks, the smallest areal unit within a US census tract. The census block refers to an area surrounded on all sides by visible and invisible features such as streets, railroad tracks and political boundaries. In other words, two opposing block faces are actually part of two separate geographic units called the census block. Commonly, neighborhood-level correlates are measured at the census tract level due to easy availability of this data. However, larger units of analysis often contain higher heterogeneity.¹²⁵ Furthermore, preliminary interviews in Texas City suggest that local residents tend to define their geographic neighborhood as the pair of opposing block faces that contains their home residence. Some also include the homes on the other side of the nearest intersection. Other work on neighborhood perceptions has corroborated the small geographic scale of subjective definitions of neighborhood^{60–62} including in studies focusing on social cohesion and trust.⁶²³

Thus, to estimate neighborhood Latino composition in a way that is both feasible and valid to residents, this study defines neighborhood Latino composition as the average

percent Latino for the census blocks (usually 4) surrounding the respondent's nearest intersection. In this way, opposing block faces and homes across the nearest intersection are included in the definition of neighborhood while taking advantage of available US census data. While this spatial unit—four census blocks—is larger than residents' typical subjective neighborhood spatial definition (roughly one block face, or around 10 to 50 people), it is a better approximation of neighborhood Latino composition than existing alternatives such as the census block group or tract, which contain around 1,500 and 4,000 people, respectively.⁶²⁴

Neighborhood health effects literature offers no established threshold of high neighborhood Latino composition. However, in sociology and demography literature, census tracts with a Latino population comprising 50% or more of the total population have been termed *barrios*, the equivalent of African American ghettos.^{37,289} While such high Latino composition may best capture the characteristics of a high Latino composition neighborhood, an average of all block-level values of Latino composition in Texas City (N=977) is 32.73% \pm 24.87% (standard deviation) (median=30.21%), and just under 10% of census blocks in Texas City contain a Latino population of 66% or more (US Census 2010). Setting the cutoff for high Latino composition at 66% would both decrease study feasibility and increase the potential for bias by restricting data collection on high composition neighborhoods to just a handful of intersections. Consequently, this study compromises between the distribution of Texas City and the 66% used by Jargowsky and defines high Latino composition as >35% Latino.

To understand how respondents generally perceive characteristics of neighborhoods (H1a)

The aggregate pile-sort data was analyzed to illustrate the way respondents categorize characteristics of their neighborhoods. Respondents' perceptions of similarity across items were aggregated into a single matrix.⁶²⁵ The similarity data were then

analyzed using multidimensional scaling (MDS) and cluster analysis in Visual Anthropac, a component of Anthropac 4.0 software.⁶²⁶ MDS produces a spatial representation in which closer items are considered more similar than farther items; however the distances between items may be distorted. The level of distortion, measured as *stress*, depends on random measurement error and the ability of the matrix to be represented in a two-dimensional space. An acceptable amount of stress is generally considered to be 0.15 or less.⁶²⁵ Clustering produces a dendrogram of groups and subgroups of similar items. Clusters can be superimposed upon the MDS spatial solution to aid interpretability.

To assess whether respondents in high and low Latino composition neighborhoods perceive characteristics of their own neighborhoods differently (H1b)

Rank order data was analyzed to determine whether respondents of high and low Latino composition neighborhoods attributed neighborhood characteristics to their own neighborhoods differently. A cultural consensus analysis on subjects' rankings was used to estimate whether respondents shared perceptions of neighborhood characteristics.⁶¹⁵

The cultural consensus model was estimated using principal axis factor analysis without rotation of subjects. In the cultural consensus model, estimation of agreement is based on eigenvalues and factor 1 loadings. An eigenvalue ratio of 3:1 generally indicates a single response pattern among respondents. The average loading on factor 1 is called cultural competency, and represents the average correlation of each respondent's rank order with the overall shared model.⁶²⁷ High agreement indicates shared beliefs among subjects.^{615,628} The shared model is estimated with the first set of factor scores.

There were three steps to analysis of rank order data. First, the cultural consensus model was estimated for the full sample. Second, the primary variables of interest were correlated with Factor 1 loadings (cultural competency): neighborhood Latino

composition, the six confounding variables (child or no child), home ownership (owner or nonowner), home tenure (duration < 9 years or duration \geq 9 years), and relevant sociodemographic variables to see whether subgroups of the sample differed in their knowledge of the overall model. Third, the same primary variables of interest were correlated with Factor 2 loadings. Correlation of these variables with Factor 2 loadings indicated the presence of subgroup beliefs within the residual shared agreement. Consensus analyses were run for identified subgroups and the subgroup rank orders presented as deviations from the overall model. Significant difference on Factor 2 by neighborhood Latino composition addresses Hypothesis 1b.

To assess whether respondents in high and low Latino composition neighborhoods differ in available neighborhood supportive social ties (Hypothesis 2) and nearby family ties (Hypothesis 3)

Data on neighborhood social integration (questions in Tables 7, 8, and 9) were analyzed to determine if respondents in high and low density Latino neighborhoods differ in a) number of neighborhood supportive ties (Hypothesis 2) and b) presence of nearby family ties (Hypothesis 3). Principal components analysis (PCA) was used to create a social ties scale (based on questions in Table 4.7 and 4.8) and a family ties scale (based on questions in Table 4.9). PCA without rotation was used to determine which variables from Tables 7, 8, and 9 scaled together. All questions from Tables 7, 8 and 9 were included in the principal components analysis (PCA) with the following omissions and transformations. First, three questions on child care support were dropped due to roughly 50% missing data from respondents without children (Table 4.7, questions marked with an asterisk). Second, all questions on formal integration with less than 10% positive responses were dropped (retained questions marked with an asterisk, Table 4.8). Third, individual questions on family in the neighborhood had very sparse responses. However, 25% of the sample reported at least 1 family member in the neighborhood. Therefore,

individual questions on family in the neighborhood (Table 4.9) were combined into one variable—any family in the neighborhood (0/1). Finally, a number of variables demonstrated a Poisson distribution so the data were transformed in two steps to remove skew. First, all questions with response values of greater than 12 were capped at 12. Second, all social ties questions (Table 4.7) and 1 item from Table 4.8 (church) were transformed by adding 0.5 to each response value and taking the square root. This method is appropriate for data with response values less than 10 as described by Kirk.⁶²⁹

In total, data from 12 questions on supportive ties (Table 4.7), three questions on formal integration (church, work and recreational activities, Table 4.8), 1 question on any family in the neighborhood, and 9 questions on family within 30 minutes (Table 4.9) were included in the PCA. PCA revealed loadings on two main factors (Table 4.10) as indicated by the skree distribution. The first four eigenvalues and variance explained was 6.358 (25.432%), 2.836(11.344%), 1.910(9.326), 1.736(7.640%). Variables loading on factor 1 included the 12 support questions, 3 formal integration questions, and having a child residing within 30 minutes. In contrast, variables loading on factor 2 included all questions on family within 30 minutes (except child) and the summary variable on family in the neighborhood.

PCA results were used to determine which variables formed scales. All variables with loadings <0.2 (child within 30 minutes and recreational activity) were dropped. In addition, the variable work was dropped despite a factor loading of 0.306 because of low positive response (20%) and 50% non-employment in the sample. Remaining variables loading on factor 1 (12 supportive social ties and 1 variable on ties through church) were standardized and then summed to form the Neighborhood Supportive Social Ties scale (Table 4.11). Variables loading on factor 2 (8 variables on family within 30 minutes and 1 variable on any family in the neighborhood) were summed to form the Nearby Family Ties scale (Table 4.12).

Table 4.10. Eigenvalues and factor loadings from PCA of 25 social integration variables

	Factor loadings			
	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>
Borrow sugar	0.73631	-0.07368	0.29636	0.023
Give a ride	0.81082	-0.00977	0.3916	-0.01948
Lend money	0.62557	-0.05021	0.54997	0.01168
Take care of you when sick	0.72461	-0.0063	0.23224	0.08575
Watch your house	0.73871	0.25058	-0.18905	-0.29419
Help in an emergency	0.78971	0.06499	-0.18944	-0.18639
Give advice	0.75878	0.06811	0.03319	-0.03545
Plan together	0.60777	0.14382	-0.29211	-0.31892
Have dinner	0.69004	0.17549	-0.32744	0.29041
Stop to chat	0.78166	0.13421	-0.26339	-0.05976
Watch kids in the street	0.35004	0.04965	-0.18627	0.21216
Hang out	0.64395	0.06336	-0.31924	0.35158
Ties through work	0.35366	-0.1738	0.17027	0.2108
Ties through church	0.42829	-0.04278	0.40428	0.3584
Ties through recreation	0.18807	-0.01826	-0.57912	0.10279
Any family in the neighborhood	-0.05064	0.48485	0.14808	0.1518
Parent within 30 min	-0.05356	0.47908	0.22906	-0.38933
Sibling within 30 min	0.03546	0.25596	0.24193	-0.60729
Cousin within 30 min	-0.17418	0.68397	-0.05686	0.01503
Niece/nephew within 30 min	0.06137	0.66438	0.01528	-0.0068
Aunt/uncle within 30 min	-0.20945	0.61003	0.11828	0.38032
Grandparent within 30 min	-0.19152	0.69626	-0.00999	0.03022
Godparent within 30 min	-0.13149	0.39362	0.31355	0.39958
Other family within 30 min	-0.08059	0.43412	-0.16804	-0.16765
Child within 30 min	0.11862	-0.09248	0.19044	-0.43141

To test Hypothesis 2, mean Neighborhood Supportive Social Ties (NSST) score was compared across respondents of high and low Latino composition neighborhoods as both a continuous and dichotomous variable using Pearson's r and a t -test. The NSST scale met assumptions of normality according to the Kolmogorov-Smirnov test for normality ($p > 0.05$). The difference in NSST score between high and low Latino composition neighborhoods was also tested using the Mann-Whitney U test as a sensitivity analysis for issues of nonnormality. Finally, confounding by living with a

child < 18 years (child or no child), home ownership (owner or nonowner), home tenure (duration < 9 years or duration \geq 9 years), country of birth (US or Mexico), interview language (English or Spanish) and time in the US (duration <15 years or duration \geq 15 years) was assessed using multiple linear regression.

Table 4.11. Final questions (13) in the Neighborhood Supportive Social Ties Scale

<p>1. How many people in the neighborhood can you count on to:</p> <ul style="list-style-type: none"> a. lend you a cup of sugar or milk b. give you a ride to the grocery store c. lend you \$30 d. keep an eye on your house e. help in an emergency f. care for you when sick or hurt g. offer advice or emotional support h. stop outside to chat and see how things are going i. work with you on neighborhood issues j. invite you over for meals and parties k. spend time with you in free time l. have kids who play with other children in the neighborhood <p>2. How many people in the neighborhood do you know through church?</p>

To test Hypothesis 3, number of Nearby Family Ties (NFT) was compared across respondents of high and low Latino composition neighborhoods. Transformations did not normalize the distribution of the NFT scale as a continuous or dichotomous variable so difference in median score between high and low Latino composition respondents was assessed using the Mann-Whitney U test.

Table 4.12. Final questions forming the Family Ties Scale

<p>Which of the following family members live in your neighborhood? (any/none)</p> <p>Parent</p> <p>Sibling</p> <p>Child</p> <p>Grandparent</p> <p>Aunt/Uncle</p> <p>Niece/nephew</p> <p>Cousin</p> <p>Godparent</p> <p>Other family</p> <p>Which of the following family members live within 30 minutes from your home (0/1)?</p> <p>Parent</p> <p>Sibling</p> <p>Grandparent</p> <p>Aunt/Uncle</p> <p>Niece/Nephew</p> <p>Cousin</p> <p>Godparent</p> <p>Other</p>
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RESULTS

This study investigated differences in neighborhood perceptions across respondents in high and low Latino composition. The study proceeded in two phases with two samples. In the first phase, open-ended qualitative interviews were completed with 30 respondents to elicit themes on neighborhoods. These themes were then used to develop a structured interview. The second phase implemented the structured interview with 68 respondents. Results from the first phase of open-ended interviews were presented earlier in the analysis section. This section focuses on results from the second phase of structured interviews.

The three main hypotheses of this study are that respondents will 1a) categorize neighborhood characteristics similarly, 1b) differ in perceptions of how neighborhood characteristics relate to their own neighborhoods, 2) differ in available neighborhood supportive social ties by neighborhood Latino composition, and 3) differ in nearby family ties by neighborhood Latino composition. This section addresses these hypotheses sequentially.

First, I describe Phase 2 sample characteristics and compare the sample by high and low Latino composition. Second, I present results from analysis of the similarity data on neighborhood characteristics (Hypothesis 1a). Third, I present results from rank order analysis comparing high and low Latino composition (Hypothesis 1b) and assess the possibility of confounding by residential stability, children in household and country of birth. Fourth, I present results from analysis of neighborhood supportive social ties comparing number of ties between high and low Latino composition groups (Hypothesis 2) and assess the possibility of confounding or interaction with six variables representing three constructs: residential stability (measured as home ownership and home tenure), living with children < 18 years, and country of birth (measured as country of birth, interview language and time in the US). Fifth, I present results from analysis of nearby family ties comparing number of ties between high and low Latino composition groups (Hypothesis 3) and assess the possibility of confounding or interaction with the same six variables.

Sample characteristics

Sample characteristics for the second phase are provided in Table 4.13. The sample was 55.88% female, 39.67 years old on average, and 58.82% had a high school degree. Mean neighborhood percent Latino for the full sample was 37.43% \pm 15.29%

with range 16.20% to 85.10%. Among respondents living in high Latino composition mean percent Latino was 50.61% \pm 11.61% (range: 35.40% - 85.10%). Among respondents living in low Latino composition mean percent Latino was 25.71% \pm 5.29% (range: 16.20-39.60%) ($p < 0.003$).

Perceived Latino composition provides an interesting alternative to the census-based measures of Latino composition and validates the census-based definition of high/low Latino composition. About 50% of respondents in high Latino composition neighborhoods perceive their neighborhood to be mostly Latino compared to 20% of respondents in low Latino composition neighborhoods.

The secondary variables of interest include country of birth, US residency duration, Spanish language use, home ownership and home tenure, and living with a child under 18 years old. Differences in the distribution of these variables by high/low Latino composition that are either statistically significant or correlated at an association ≥ 0.20 may be considered meaningful due to small sample size. Just over one-third (35.29%) of the sample was born in Mexico. However, 30.30% of respondents in high Latino composition neighborhoods reported US residency duration of less than 15 years in contrast with 11.43% of respondents in low Latino composition neighborhoods ($p = 0.054$). In addition, 39.39% of respondents in high Latino composition neighborhoods chose to speak Spanish during the interview in contrast with 20% of respondents in low Latino composition neighborhoods ($p = 0.079$).

Distribution of home ownership, home tenure, and living with a child under 18 years old did not differ by neighborhood Latino composition. Just under half (48.53% of the sample owned their own home and the average home tenure was 9.38 years. Just over half (52.24%) of the sample was living with a child under 18 years old. Based on the distribution of these variables, meaningful differences were only observed by Latino composition for US residency duration and Spanish language use.

Table 4.13. Phase 2 sample characteristics by neighborhood Latino composition

<i>Variable</i>	All <i>N</i> =68	Hi <i>N</i> =33	Low <i>N</i> =35	Association	p
% Latino (mean(std))	37.43(15.29)	50.28(11.58)	25.32(4.80)	0.822*	<0.001
Perceived ethnic density (%)					
Mostly Latino	34.33	48.48	20.59		
Mostly Black	14.93	6.06	23.53	0.454	0.003
Mostly White	22.39	9.09	35.29		
Mixed	28.36	36.36	20.59		
Female (%)	55.88	63.64	48.57	0.152	0.211
Age (mean (std))	39.67(13.21)	40.11(13.17)	39.19(13.44)	-0.035*	0.777
HS or more (%)	58.82	51.52	65.71	-0.144	0.234
Country of birth (%)					
Mexico	35.29	42.42	28.57	0.145	0.232
Time in US <15y	20.59	30.30	11.43	0.233	0.054
Spanish interview (%)	29.41	39.39	20.00	0.213	0.079
Homeowner (%)	48.53	57.58	40.00	0.176	0.147
Home tenure (mean (sd))	9.38(8.67)	10.21(9.22)	8.57(8.20)	0.095*	0.444
Employment (%)					
Employed	59.70	54.55	64.71		
Unemployed	10.45	15.15	5.88	0.158	0.643
Homemaker	17.91	18.18	17.65		
Other	11.94	12.12	11.76		
Living with a spouse/partner (%)	61.76	51.52	71.43	0.205	0.091
Living with a child < 18y (%)	52.24	42.25	61.76	-0.163	0.184

*Pearson correlation for dichotomous and continuous variables

* Cramer's V for categorical variables

To understand and describe how residents categorize perceptions of neighborhood characteristics (H1a).

The pile sorting task aimed to summarize how Mexican-descent residents of Texas City categorize characteristics of neighborhoods. The similarity data were represented using multidimensional scaling and hierarchical clustering. Hierarchical tree clusters were redrawn as circles on top of the multidimensional scaling results. The clusters show which items respondents tended to sort together. The 31 items are labeled with short phrases to facilitate map interpretation. The labels are decoded in Table 4.6 and in a legend preceding each set of figures. The stress of the spatial solution for the full sample (0.161) (84% of variance explained), low composition group (0.173) (83% of variance explained), and high composition group (0.158) (84% of variance explained) were slightly above acceptable (acceptable stress range <0.15) for a two dimensional representation.

Loosely, two main clusters emerged in the full sample (Figures 4.1, 4.2, and 4.3): 1) environmental characteristics containing items about neighborhood annoyances (such as noise and parties) or threats (such as drugs and pollution), and 2) psychosocial characteristics containing items about social capital and support (such as advice and favors), residential stability (such as home ownership), and family (such as co-parenting, living near family, and raising children well).

Environmental characteristics contained four smaller clusters on neighborhood risks (NR) (e.g., no contamination and no noise), security (SEC) (e.g., cops and no stealing), residential stability (RS) (e.g., own home and lived a while), and financial issues (FI) (e.g., jobs and affordable). Psychosocial characteristics contained three groups: neighbor interactions (NI) (e.g., trust and favors), family activities (FA) (e.g., meals and parent together), and street behavior (SB) (e.g., safe outside and watch homes).

In addition to the main clusters, the MDS solution was analyzed by identifying theme dimensions across the horizontal and vertical axes. The MDS structure of items for the full sample showed a vertical dimension defined by geographic and emotional intimacy, and a horizontal dimension defined by stability. From top to bottom, items occurred farther outside of the home and involved fewer emotional risks. Items at the top of structure included personal interactions such as meals, lending money, offering advice, and child play dates. In contrast, items at the bottom included characteristics of the greater Texas City area.

From left to right, items increasingly symbolized stability. Items on the left include issues that make a neighborhood unsafe or uncontrolled like strangers, drugs and environmental contamination. In the middle are signs of stability such as swapping favors and maintaining one's yard. On the right are items about being near family or family-like relations and financial stability.

Separating the sample by high and low Latino composition yielded minimal variation in the cluster pattern or MDS solution. The similarity matrices between the two groups were highly similar (Spearman rho: 0.703, $p < 0.001$; Pearson r : 0.811, $p < 0.001$). The two similarity matrices were also highly similar to the matrix for the full sample (high composition: Spearman rho: 0.907, $p < 0.001$; Pearson r : 0.943, $p < 0.001$; low composition: Spearman rho: 0.933, $p < 0.001$; Pearson r : 0.959, $p < 0.001$) indicating that subgroup groups were well-captured by the combined aggregated results.

Two important variations emerged when comparing high (Figures 4.7, 4.8, and 4.9) and low (Figures 4.4, 4.5, and 4.6) Latino composition groups. First, the MDS solution and cluster pattern for high Latino composition respondents contained a larger cluster about social support and companionship in the neighborhood compared to low composition respondents. In the high composition group, the items about sharing meals, lending money, giving advice, trusting neighbors and all other items about favors

Key for Figures 4.1-4.3

No gossip	No one complains or gossips
Favors	Neighbors do favors for each other like giving rides or lending tools or sugar
Outside	People spend time outside
Trust	Neighbors trust each other
No racism	Neighbors treat you the same no matter your race is
Meals	Neighbors get together for meals and parties
No drugs	There are no drugs, no gangs and no prostitution
Home+yards	People take care of their homes and yards so that they look nice
No partying	There is not too much partying or drinking
Play together	Kids play and run around together
Lived a while	People have lived there for awhile
Near family	You can be close to family
Cops	The cops help you and keep you safe
No contamination	That has no bad smell and no contamination
No noise	There is no noise from cars, construction, or the plants
Stolen	You can leave stuff outside and it won't get stolen
Watch homes	Neighbors keep an eye on each other's homes
Strangers	There are few strangers passing through
Parent together	Neighbors parent together
Safe	Kids can play outside safely
City maintained	That is well-maintained by the city
Advice	Neighbors give advice or emotional support
Want to help	Neighbors help you because they want to not because they have to
Sick	Neighbors take care of you when sick
Chat	Neighbors stop by to chat
Lend	Neighbors lend each other money
Affordable	The prices are right for me
Own home	Most people own their own home
Jobs	You can be close to good jobs
Raised well	People keep an eye on their children and raise them well
Planning	Neighbors get together to plan how to make the neighborhood better

Figure 4.1. Multidimensional scaling of pile sort data from the full sample

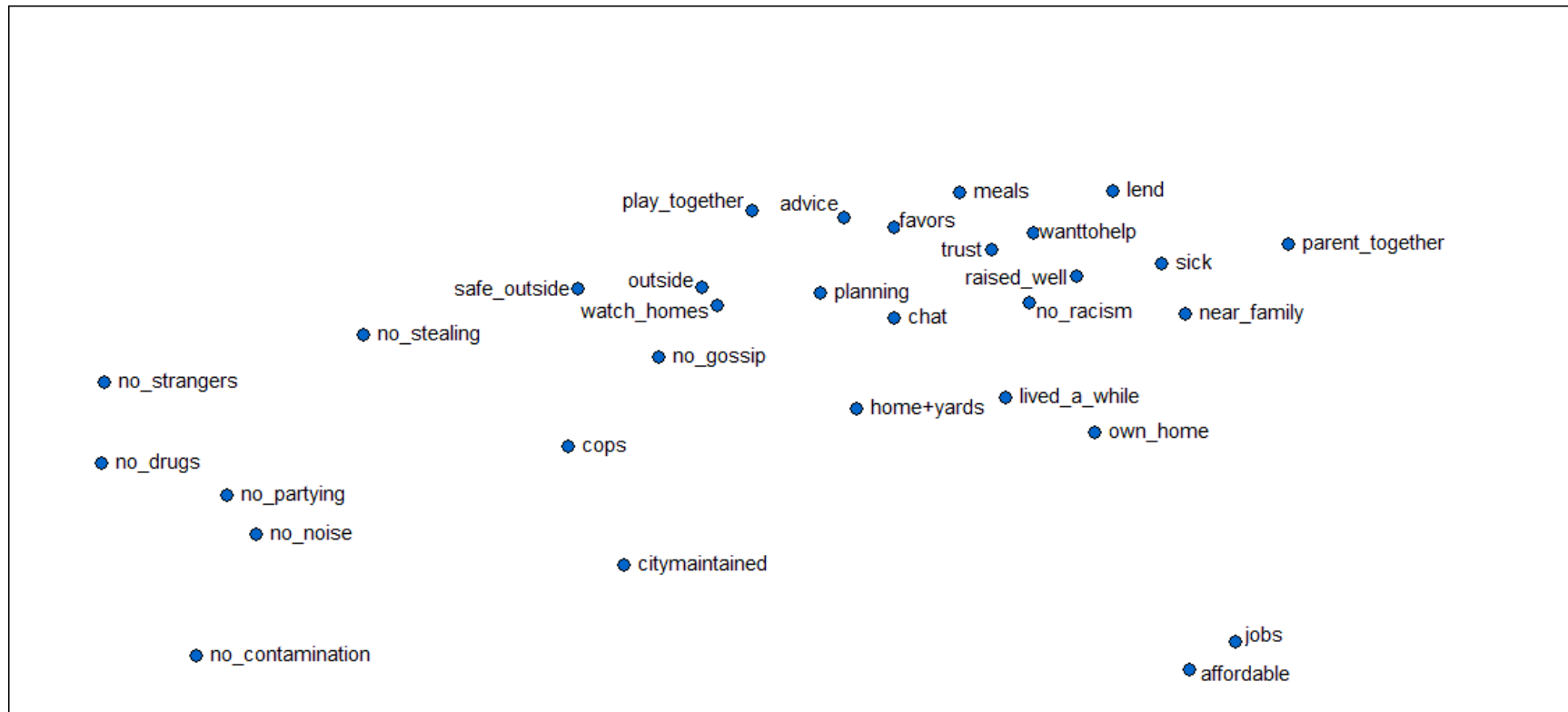


Figure 4.2. Tree diagram representing clusters from pile sort of items by full sample

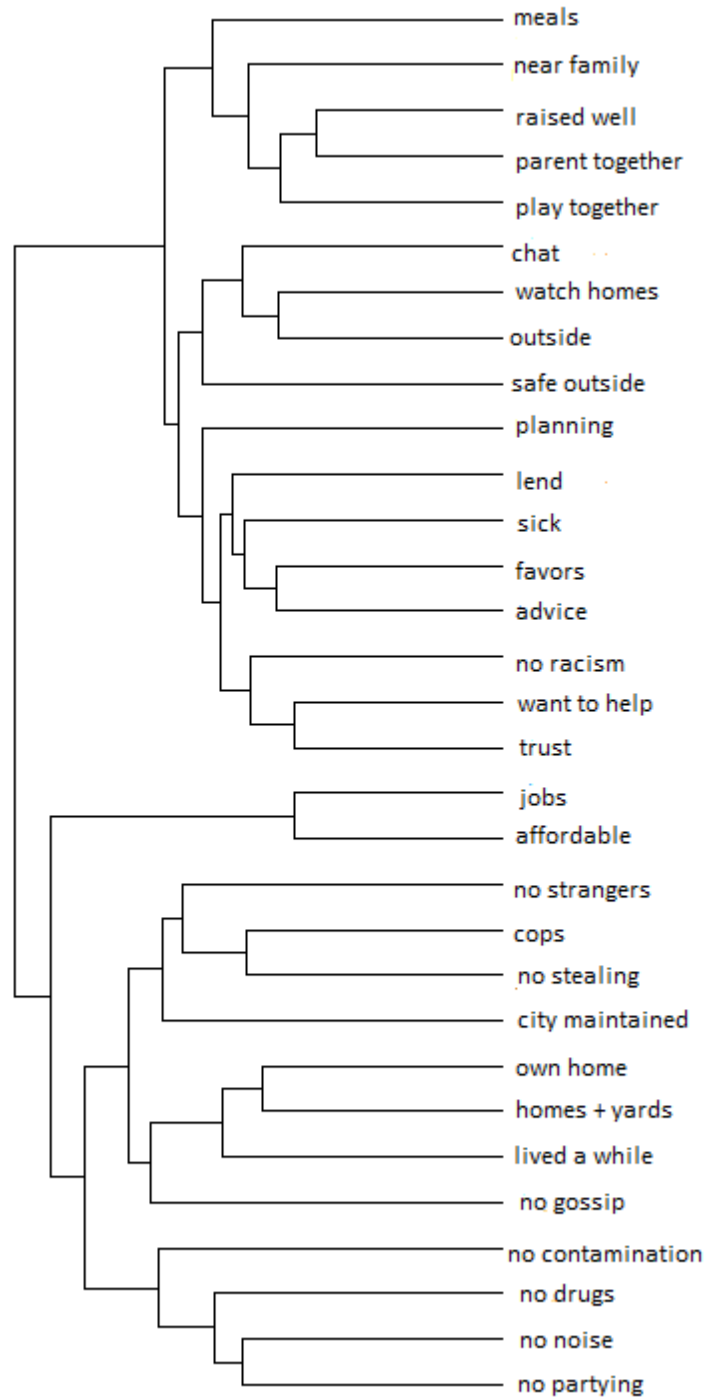
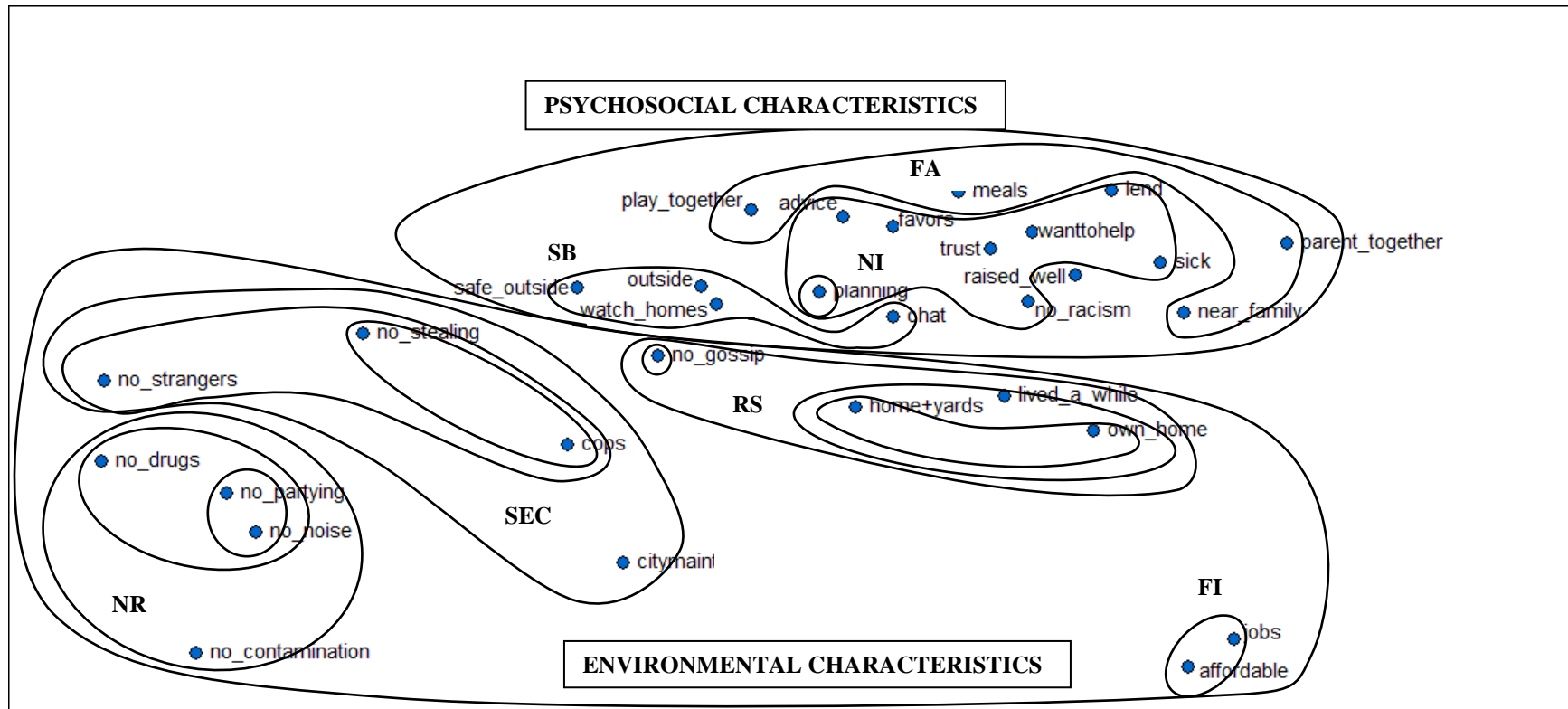


Figure 4.3. Multidimensional scaling spatial solution with cluster pattern of pile sort data from the full sample



grouped together (FAV, Figure 4.9). At the same time, this cluster demonstrated that neighborhood intimacy comes with a price—namely the risk of neighborhood gossip. A separate cluster captures items about family and contained no items about support except co-parenting (FAM).

In contrast, among low Latino composition respondents, the social support and companionship items were distributed across different clusters rather than forming a single group (Figure 4.6). For example, the items about shared meals, lending money and taking care of each other when sick clustered with the group about family (FAM). Items about trust, racism and favors, advice and planning were in a different group suggesting that certain types of interactions occur only within family rather than within the neighborhood.

Second, low Latino composition respondents sorted environmental issues into one larger group with multiple subgroups: city issues (CI), neighbor behaviors (NB), and security issues (SEC) (Figure 4.6). High Latino composition respondents, in contrast, sorted fewer items into the cluster about environmental characteristics (EC). Instead, they sorted several environmental items (no strangers, cops, and no stealing) into a cluster about neighborhood stability (NS) and the item about gossip into the cluster about neighborhood favors (FAV).

Conclusion: Respondents in neighborhoods of high and low Latino composition categorized neighborhood characteristics similarly (H1a). Both groups generally sorted characteristics into two groups containing items about 1) environmental characteristics and 2) psychosocial characteristics. Only slight differences emerged by neighborhood Latino composition including higher coherence of social support and companionship items and lower coherence of environmental items among the high Latino composition group compared to the low Latino composition group.

Key for Figures 4.4-4.9

No gossip	No one complains or gossips
Favors	Neighbors do favors for each other like giving rides or lending tools or sugar
Outside	People spend time outside
Trust	Neighbors trust each other
No racism	Neighbors treat you the same no matter your race is
Meals	Neighbors get together for meals and parties
No drugs	There are no drugs, no gangs and no prostitution
Home+yards	People take care of their homes and yards so that they look nice
No partying	There is not too much partying or drinking
Play together	Kids play and run around together
Lived a while	People have lived there for awhile
Near family	You can be close to family
Cops	The cops help you and keep you safe
No contamination	That has no bad smell and no contamination
No noise	There is no noise from cars, construction, or the plants
Stolen	You can leave stuff outside and it won't get stolen
Watch homes	Neighbors keep an eye on each other's homes
Strangers	There are few strangers passing through
Parent together	Neighbors parent together
Safe	Kids can play outside safely
City maintained	That is well-maintained by the city
Advice	Neighbors give advice or emotional support
Want to help	Neighbors help you because they want to not because they have to
Sick	Neighbors take care of you when sick
Chat	Neighbors stop by to chat
Lend	Neighbors lend each other money
Affordable	The prices are right for me
Own home	Most people own their own home
Jobs	You can be close to good jobs
Raised well	People keep an eye on their children and raise them well
Planning	Neighbors get together to plan how to make the neighborhood better

Figure 4.4. Multidimensional scaling of pile sort data from low Latino composition respondents

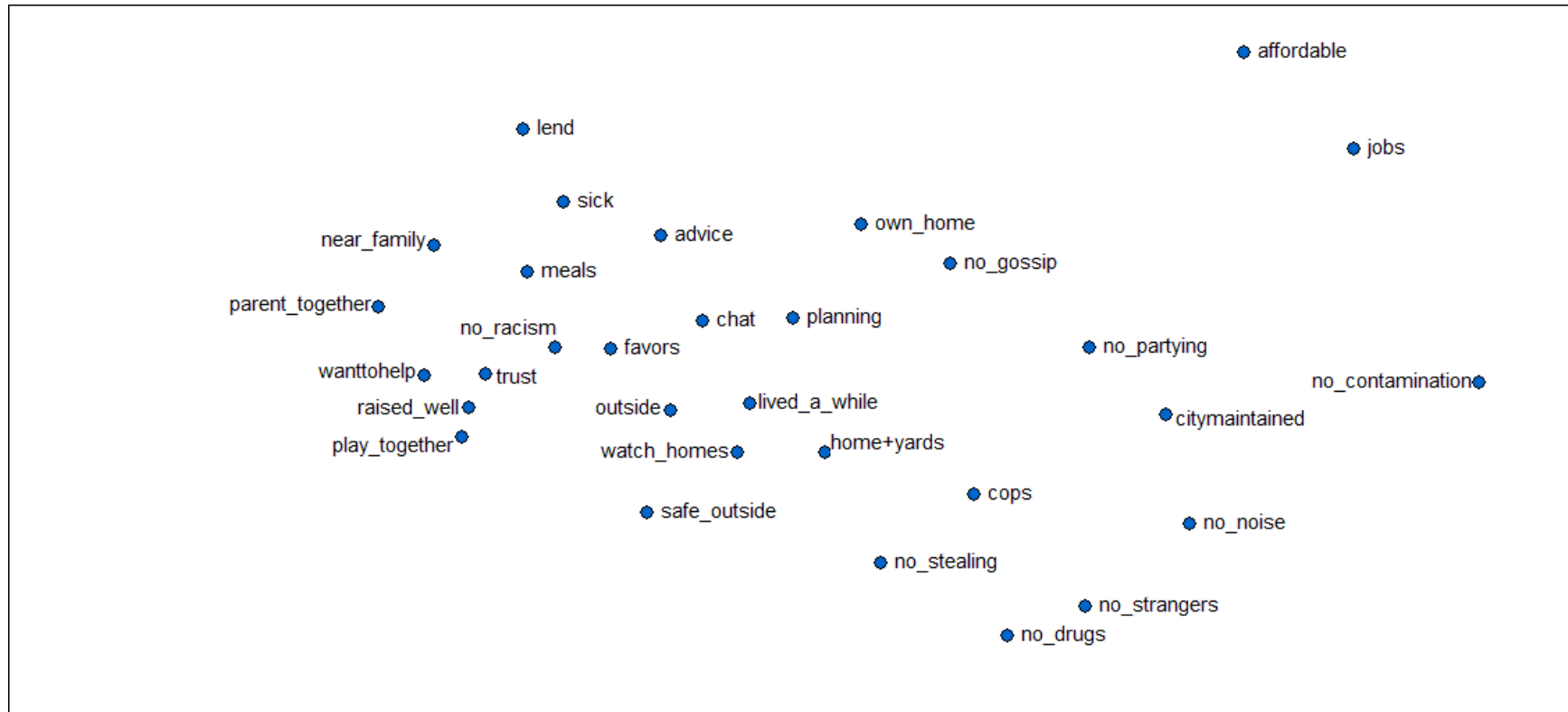


Figure 4.5. Tree diagram representing clusters of items from pile sort data from low Latino composition respondent

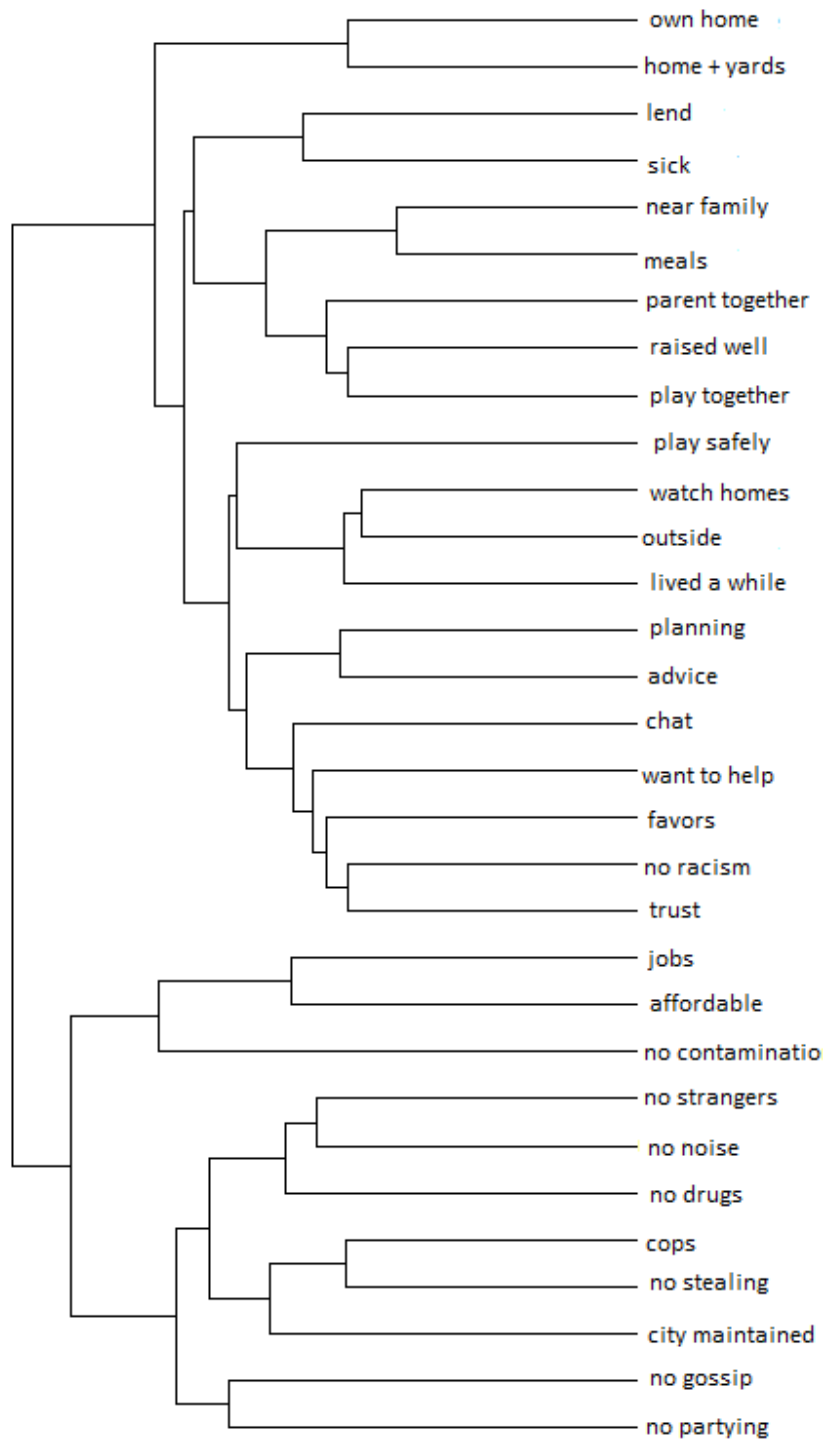


Figure 4.6. Multidimensional scaling spatial solution with cluster pattern of pile sort data from low Latino composition respondents

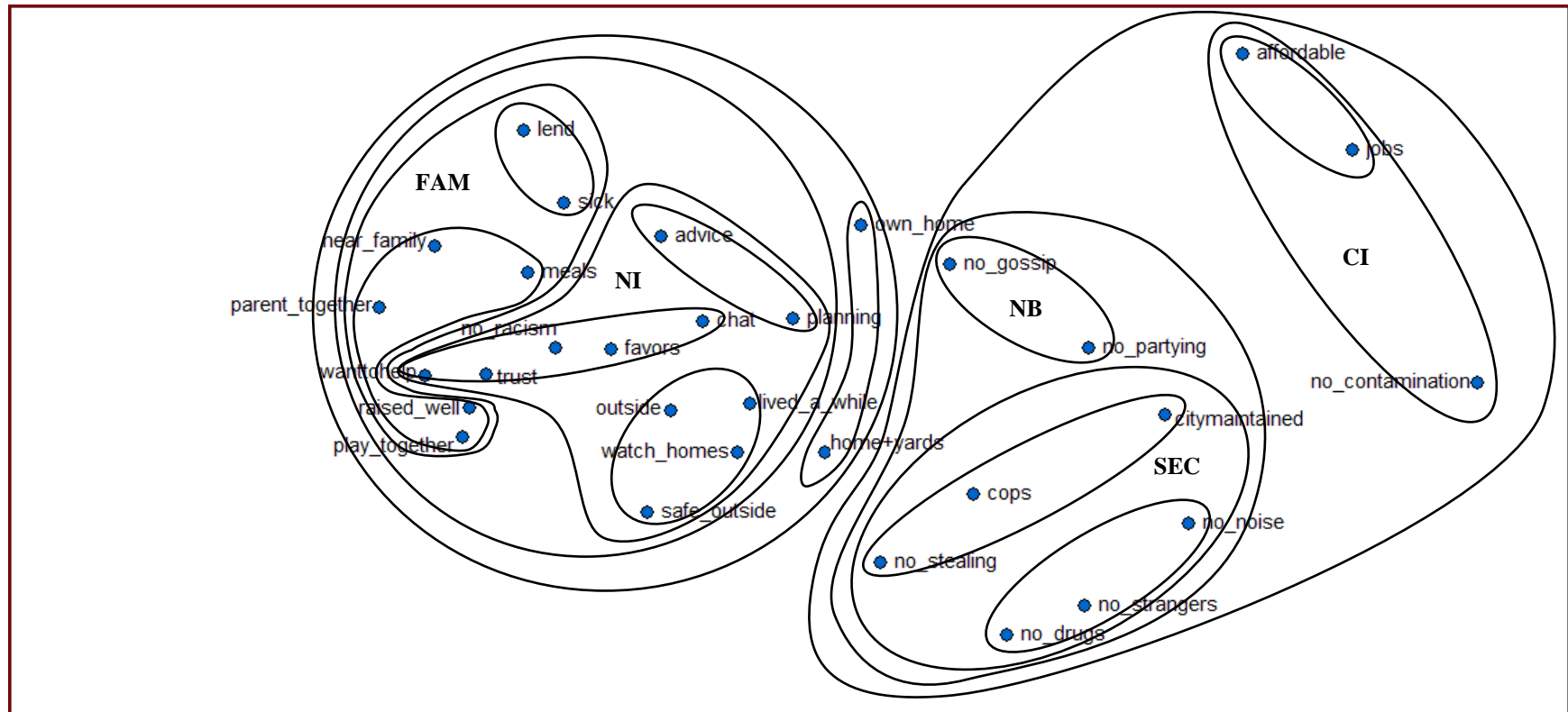


Figure 4.7. Multidimensional scaling of pile sort data from high Latino composition respondents

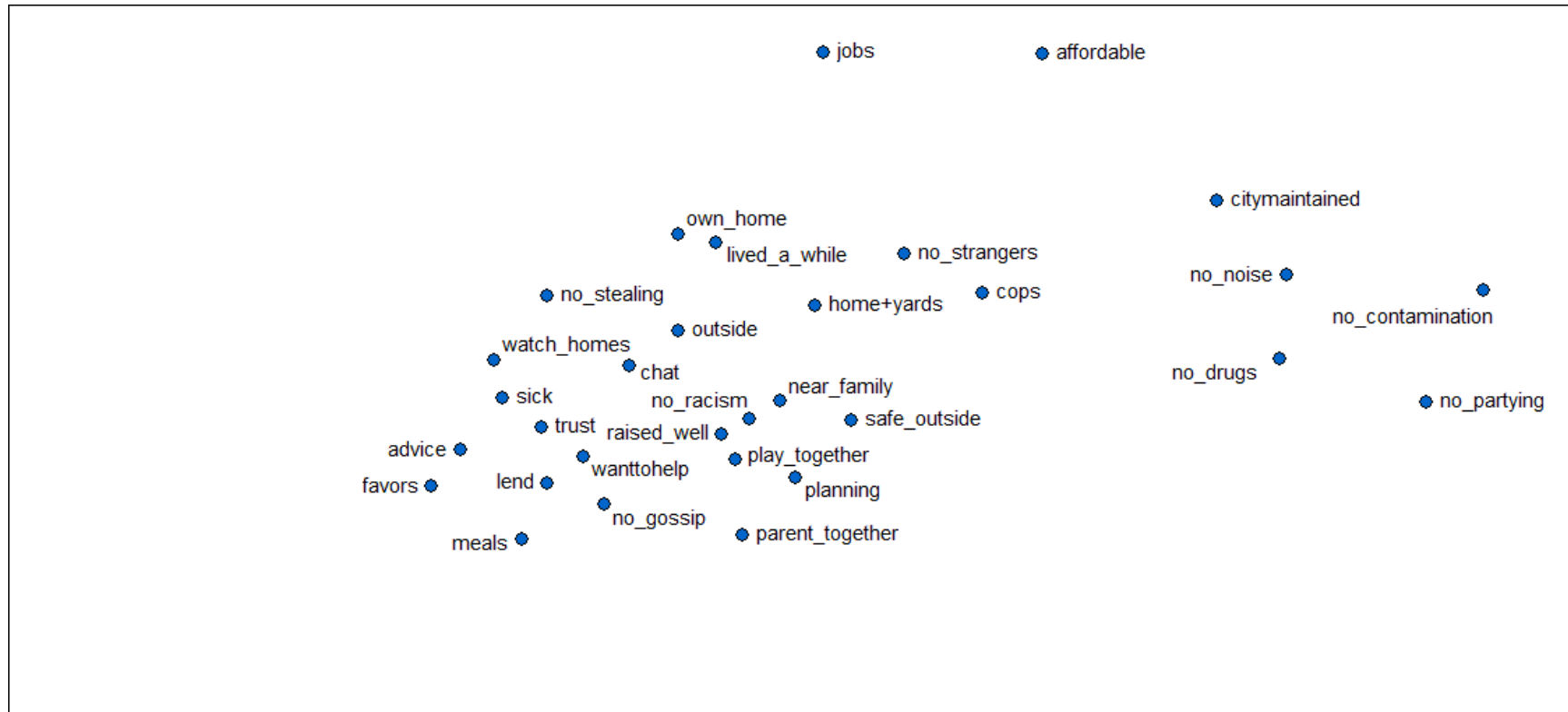


Figure 4.8. Tree diagram representing clusters of items from pile sort data from high Latino composition respondents

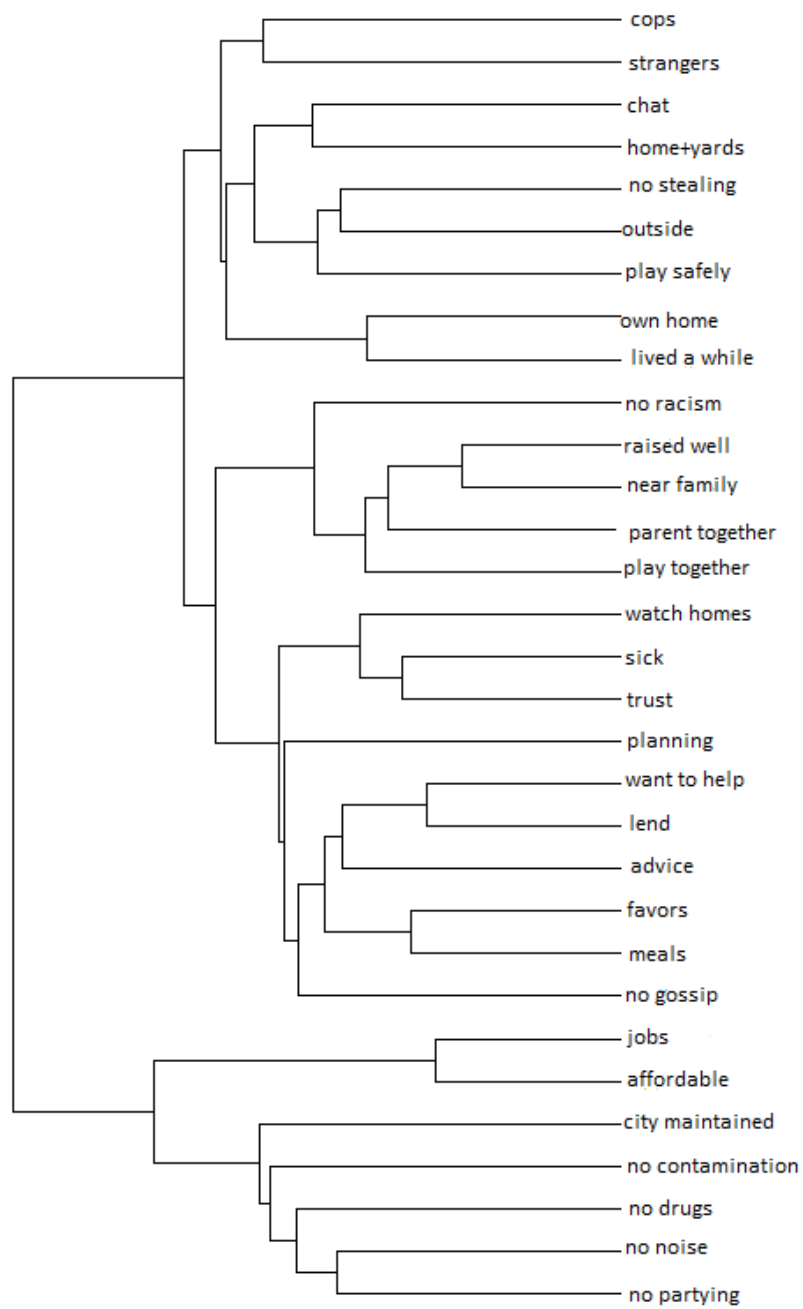
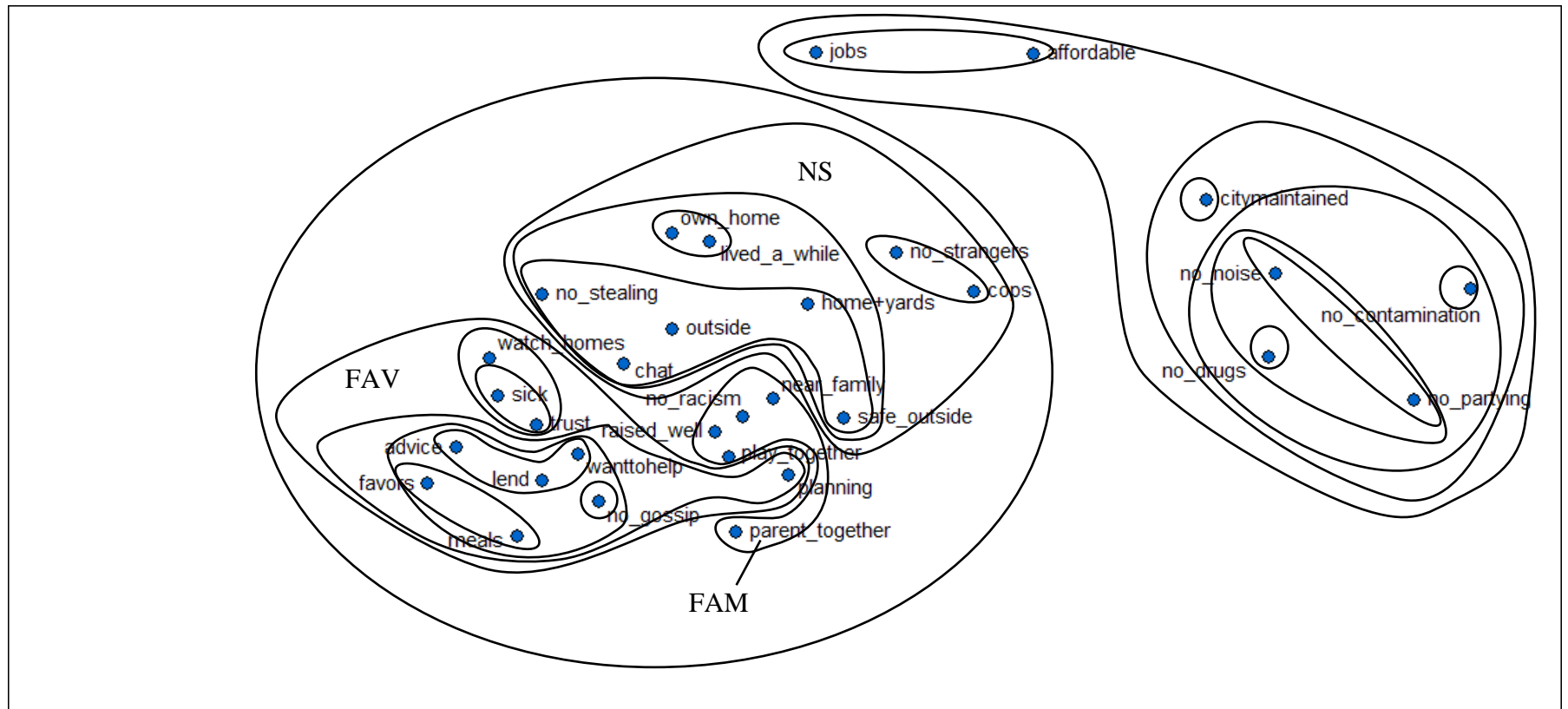


Figure 4.9. Multidimensional scaling spatial solution with cluster pattern from pile sort data from high Latino composition respondents



Respondents from high and low Latino composition neighborhoods attribute neighborhood characteristics to their own neighborhoods differently (H1b)

The primary objective of this study was to identify possible mechanisms of the neighborhood Latino composition-health relationship by investigating differences in how residents of high and low Latino perceive characteristics of their neighborhoods. The primary hypothesis is that residents of high and low Latino composition neighborhoods attribute characteristics their own neighborhoods differently. To address this hypothesis, respondents were asked to rank characteristics from most to least like their own neighborhood. This hypothesis was tested using the cultural consensus model.

An aggregate across people showed high reliability (0.95) and factor analysis yielded a moderate first to second factor eigenvalue ratio of 2.52 (16.90:6.72) (variance explained by the first and second eigenvalues were 25.61% and 10.17%, respectively). The average cultural competency of the full sample was 0.46 ± 0.21 (range: 0.04 – 0.82). The average Pearson correlation between respondents was 0.21 compared to an expected average Pearson correlation ≥ 0.25 .

Table 4.14 contains five numerical columns. The first three columns present the rank order of characteristics for the full sample (“All,” column 1), low Latino composition group (“Low,” column 2), and high Latino composition group (“High,” column 3). The fourth and fifth columns (“Low” and “High” under the heading “Deviation,” respectively) contain the difference in rank position for each item between All and Low Latino composition (column 1 – column 2) and All and High Latino composition (column 1 - column 3). These values represent the deviation in rank order between the full sample and the Low and High Latino composition groups. The overall ranking of characteristics based on factor scores indicated that on average, subjects perceived their neighborhoods to be places where people had lived for a while, took care of their homes and yards, kept an eye on each other’s homes, and kids could play outside

Table 4.14. Neighborhood perceptions of low and high Latino composition rank orders by deviation from the overall rank order

<i>Statement</i>	RANK			DEVIATION	
	All	Low	High	Low	High
people have lived there for awhile	1	1	2	0	-1
people take care of their homes and yards so that they look nice	2	4	1	-2	1
neighbors keep an eye on each other's homes	3	2	6	1	-3
kids can play outside safely	4	3	3	1	1
most people own their own home	5	5	5	0	0
kids play and run around together	6	7	4	-1	2
that is well-maintained by the city	7	8	8	-1	-1
people spend time outside	8	10	7	-2	1
you can leave stuff outside and it won't get stolen	9	9	10	0	-1
neighbors trust each other	10	6	18	4	-8
neighbors treat you the same no matter what your race is	11	13	12	-2	-1
there are no drugs, gangs or prostitution	12	12	14	0	-2
people keep on eye on their children and raise them well	13	15	13	-2	0
the cops help you and keep you safe	14	17	11	-3	3
there is not too much partying or drinking	15	13	15	2	0
you can be close to family	16	24	9	-8	7
there is no noise	17	14	22	3	-5
neighbors help you because they want to not because they have to	18	16	19	2	-1
the prices are right for me	19	19	21	0	-2
neighbors stop by to chat	20	18	23	2	-3
you can be close to good jobs	21	23	16	-2	5
no one complains or gossips	22	22	17	0	5
there are few strangers passing through	23	20	24	3	-1
neighbors do favors for each other like giving rides or lending tools or sugar	24	21	20	3	4
that has no bad smell and no contamination	25	25	27	0	-2
neighbors give advice or emotional support	26	29	25	-3	1
neighbors parent together	27	26	26	1	1
neighbors get together for meals and parties	28	27	30	1	-2
neighbors get together to plan how to make the neighborhood better	29	28	29	1	0
neighbors take care of you when sick	30	30	28	0	2
neighbors lend each other money	31	31	31	0	0
Average deviation				-0.06	0

safely (Table 4.14). In contrast, on average, respondents did not perceive their neighborhoods to be places where neighbors got together for meals and parties, neighbors took care of you when sick, neighbors parented together or lent each other money.

Correlation of variables with Factor 1 demonstrated whether subgroups of the sample had more knowledge and higher agreement about the overall rank order of neighborhood characteristics (Table 4.15). Knowledge of the answer key did not differ by high/low Latino composition; correlation of Latino composition and Factor 1 was nonsignificant (Pearson $r=-0.06$, $p=0.65$). The average cultural competency of low Latino composition respondents was 0.47 ± 0.21 (range: 0.03 - 0.82) while the average cultural competency of high Latino composition respondents was 0.45 ± 0.20 (range: 0.08 – 0.72).

Table 4.15. Correlations of main sociodemographic variables with Factor 1 and Factor 2

<i>Variables</i>	Factor 1		Factor 2	
	Correlation	P	Correlation	P
Latino composition	-0.06	0.65	0.06	0.62
Perceived mostly Latino	0.14	0.27	-0.01	0.95
Foreign-born	-0.31	0.01	0.04	0.77
Spanish interview	-0.26	0.03	0.19	0.14
Time in US ≤ 15 y	-0.23	0.06	0.10	0.43
Living with a child < 18yrs	0.9	0.50	-0.01	0.93
Home owner	0.37	0.00	-0.08	0.52
Tenure ≥ 9 years	0.09	0.47	0.03	0.84
Working	0.18	0.15	-0.13	0.30
Education	0.20	0.11	-0.22	0.07
Older	-0.07	0.59	0.17	0.17
Female	0.18	0.15	-0.06	0.65
Living with a spouse/partner	0.07	0.60	0.06	0.63

Immigrant status (as three variables: foreign-born, US residency duration, interview language), child in the home, residential stability (homeownership and home tenure less than 9 years), employment status, age, gender, and high school education were examined with respect to Factor 1. Only foreign-born status, US residency duration,

interview language, homeowner, and education correlation with Factor 1 ≥ 0.20 (foreign-born status: Pearson's $r = -0.31$, $p=0.01$; time in the US: Pearson's $r = -0.23$, $p=0.06$; Spanish interview language: Pearson's $r = -0.26$, $p = 0.03$; homeownership: Pearson's $r = 0.37$, $p<0.01$; high school education: Pearson's $r = 0.20$, $p=0.11$) indicating that subgroups defined by these variables differ in their knowledge of the shared model.

US-born respondents agreed more with the shared model (0.50 ± 0.21 average cultural competency, $n=44$) than Mexican-born respondents (0.39 ± 0.19 average cultural competency, $n=22$) ($p \leq 0.01$). Homeowners agreed more with the shared model (0.54 ± 0.16 , $n=32$) than non-homeowners (0.46 ± 0.21 average cultural competency, $n=34$) ($p < 0.01$).

Correlation of variables with Factor 2 demonstrated whether residual variation in the order of neighborhood characteristics could be explained by systematic differences in knowledge of the shared model by subgroups in the sample (Table 4.15). Latino neighborhood composition was not correlated with residual agreement ($r = 0.06$, $p=0.62$). In addition, Factor 2 was not correlated with any of the six confounding variables. However, the correlation of Factor 2 and education approached significance ($r = -0.22$, $p=0.08$). This finding suggested that high and low education groups (but not high and low neighborhood groups) may differ slightly in their perception of neighborhood characteristics.

Though only education suggested possible subgroup differences, the cultural consensus model was estimated for four subgroups: high and low Latino composition respondents and then for high and low education respondents. The model fit low and high Latino composition subgroups well. Low Latino composition respondents showed good subject-reliability ($0.91(0.90)$) and a moderate first to second eigenvalue ratio of 2.65 ($9.61:3.63$). Variance explained by the first and second eigenvalues was 27.43% and 10.38%, respectively. High Latino composition respondents showed similar result with good subject-reliability (0.88) and a moderate first to second eigenvalue ratio of 2.21

(7.81:3.54). Variance explained by the first and second eigenvalues was 25.19% and 11.41%, respectively.

The order of perceived characteristics for high and low Latino composition respondents are shown in Table 4.14. The Spearman correlation of the order of items was 0.86 ($p < 0.01$) and the Spearman correlation of the deviations was 0.50 ($p < 0.01$) with the majority of items deviating from the overall order by only a few positions. These correlations suggested high similarity in the order of characteristics among high and low Latino composition respondents. Eight items exhibited a deviation width of 5 positions or more (items 10, 14, 16, 17, 20, 21, and 22). Of these items, high composition respondents ranked items about support from the police, presence of nearby family, access to jobs, and absence of gossiping higher than low Latino composition respondents. In contrast, high composition respondents ranked items about presence of trust, absence of noise, and visits by neighbors lower than respondents of low Latino composition neighborhoods.

The model also fit groups defined by high and low education well. Respondents reporting high education showed strong subject-reliability (0.93) and a moderate first to second eigenvalue ratio of 2.96 (11.641:3.930). Cumulative variance explained by the first and second eigenvalues was 29.10% and 39.00%, respectively. Low education respondents also showed good subject reliability (0.86) but a lower first to second eigenvalue ratio of 1.88 (6.03:3.22). Variance explained by the first and second eigenvalues was 28.04% and 14.95%, respectively.

The order of perceived characteristics for high and low education respondents are shown in Table 4.16. Perceived characteristics differed by high and low education. The Spearman correlation of the order of characteristics by high and low education was 0.83 ($p < 0.01$) and the correlation of deviations was -0.60 ($p < 0.01$). These correlations suggested high similarity in the order of characteristics among high and low education respondents. Thirteen items exhibited a deviation width of 5 positions or more (6, 8, 11, 12, 13, 18, 19, 20, 21, 22, 23, 24, and 26). Low education respondents ranked the

following items higher than high education respondents: kids play together, no racism, children are raised well, neighbors help because they want to, no one complains or gossips, and neighbors give advice. In contrast, high education respondents ranked some items higher than low education respondents: people spend time outside, no drugs, gangs or prostitution; affordable prices; neighbors stop by to chat, access to jobs; few strangers passing through; and neighbors do favors for each other.

Conclusion: Respondents of high and low Latino composition neighborhoods did not perceive characteristics of their own neighborhoods differently. Instead, respondents' perceptions of their own neighborhoods differed by individual education level. Education seems more important than neighborhood composition in understanding how respondents perceive their own neighborhoods. However, even differences by education level are slight. Differences by education level included higher perceived levels of kids playing together, children raised well, neighbors helping because they want to, advice from neighbors and drugs, gangs and prostitution but lower perceived levels of neighborhood gossip, affordable prices, and access to jobs among low education respondents compared to high education respondents. Differences in neighborhood perceptions by Latino composition included lower perceived levels of trust and neighborhood visiting and gossiping but higher perceived levels of noise, police support, nearby family and access to jobs among high Latino composition respondents compared to low Latino composition respondents.

Table 4.16. Neighborhood perceptions of low and high education respondents by item rank and by rank deviation from the full sample rank order

<i>Statement</i>	RANK			DEVIATION	
	All	Low	High	Low	High
people have lived there for awhile	1	3	1	-2	0
people take care of their homes and yards so that they look nice	2	2	4	0	-2
neighbors keep an eye on each other's homes	3	4	3	-1	0
kids can play outside safely	4	5	2	-1	2
most people own their own home	5	6	5	-1	0
kids play and run around together	6	1	8	5	-2
that is well-maintained by the city	7	8	7	-1	0
people spend time outside	8	11	6	-3	2
you can leave stuff outside and it won't get stolen	9	10	11	-1	-2
neighbors trust each other	10	12	10	-2	0
neighbors treat you the same no matter what your race is	11	7	14	4	-3
there are no drugs, gangs or prostitution	12	18	9	-6	3
people keep on eye on their children and raise them well	13	9	21	4	-8
the cops help you and keep you safe	14	14	13	0	1
there is not too much partying or drinking	15	15	12	0	3
you can be close to family	16	16	16	0	0
there is no noise	17	19	19	-2	-2
neighbors help you because they want to not because they have to	18	13	23	5	-5
the prices are right for me	19	22	16	-3	3
neighbors stop by to chat	20	23	17	-3	3
you can be close to good jobs	21	26	15	-5	6
no one complains or gossips	22	17	24	5	-2
there are few strangers passing through	23	25	18	-2	5
neighbors do favors for each other like giving rides or lending tools or sugar	24	21	22	3	2
that has no bad smell and no contamination	25	29	25	-4	0
neighbors give advice or emotional support	26	20	28	6	-2
neighbors parent together	27	24	26	3	1
neighbors get together for meals and parties	28	28	27	0	1
neighbors get together to plan how to make the neighborhood better	29	27	29	2	0
neighbors take care of you when sick	30	30	30	0	0
neighbors lend each other money	31	31	31	0	0
Average deviation				0	0.13

Respondents from high Latino composition neighborhoods report a greater number of neighborhood supportive social ties (H2)

Analysis of social ties data aimed to investigate whether respondents of high and low Latino composition neighborhoods report different levels of supportive social ties in the neighborhood. Responses to 13 questions on neighborhood social support were transformed (capped at 12), standardized, and summed into a single standardized Neighborhood Supportive Social Ties (NSST) scale with high reliability (0.906) and mean score of 0 ± 8.808 (range: -13.830 – 34.012). The transformed scale met assumptions of the Kolmogorov-Smirnov test for normality ($p > 0.05$). The dichotomous high (1.941 ± 9.387 average score) and low (-1.883 ± 7.897 average score) Latino composition groups correlated 0.213 ($p = 0.080$) with NSST. A Mann-Whitney U rank-sum test was similar ($p = 0.11$). Continuous neighborhood Latino composition and NSST correlated 0.235 ($p < 0.060$).

The above results suggested that respondents who lived in high Latino composition neighborhoods had more neighborhood supportive social ties than respondents who lived in low Latino composition neighborhoods. However, this association may be confounded by three constructs—living with a child, residential stability and foreign-born status—and operationalized as six variables: living with a child under 18 years old, home ownership, home tenure, country of birth, time in the US less than 15 years and Spanish language interview. Of these variables, time in the US less than 15 years is the only variable with a meaningful effect across high and low Hispanic composition respondents (Table 4.14). None of these variables were meaningfully correlated (≥ 0.20) with NSST score suggesting that time in the US is not associated with neighborhood supportive social ties.

Multivariable linear regression investigated whether time in the US less than 15 years confounded the effect of Latino composition on social ties (Table 4.17). Time in the US less than 15 years was nonsignificantly associated with increased NSST ($\beta = 0.037$,

$p=0.770$, where β is the standardized slope from regression) while the effect of high Latino composition remained nearly significant ($\beta=0.213$, $p=0.095$). Repeating the analyses using a continuous variable for neighborhood Latino composition yielded similar results. Time in the US was nonsignificantly associated with increased NSST ($\beta=0.045$, $p=0.718$) while the effect of continuous neighborhood Latino composition approached significance ($\beta=0.229$, $p=0.069$). These findings suggest that the effect of neighborhood Latino composition is not confounded by time in the US.

Two interaction models were subsequently tested. First, a single interaction term between high/low Latino composition and time in US greater/less than 15 years was added to Model 1 (Model 2, Table 4.17). Addition of this term was associated with a reduction in magnitude and significance of the coefficient for Latino composition ($\beta=0.181$, $p=0.197$). In addition, neither time in US nor the interaction were significant (time in US less than 15 years: $\beta=-0.056$, $p=0.787$; interaction of time in US and Latino composition: $\beta=0.125$, $p=0.575$).

Table 4.17. Standardized multivariable linear regression of Neighborhood Supportive Social Ties on high/ low Latino composition and time in the US < 15 years

<i>Variable</i>	Model 1	p	Model 2	p	Model 3	p
Intercept	0.000	0.208	0.000	0.293	0.000	0.293
High % Latino	0.213	0.095	0.181	0.197		
Time in US <15y	0.037	0.770	-0.056	0.787		
High % Latino*Time in US<15y			0.125	0.575		
Time in US<15y*%Latino						
Ref: Time>15y*low %Latino						
Time < 15y, high %Latino					0.196	0.142
Time <15y, low %Latino					-0.035	0.787
Time≥15y, high %Latino					0.174	0.197

A second interaction model (Model 3, Table 4.17) added three dummy variables representing 1) foreign-born individuals with less than 15 years in the US in high composition neighborhoods, 2) foreign-born individuals with less than 15 years in the US

in low composition neighborhoods, and 3) US- or foreign-born individuals with more than 15 years in the US in high composition neighborhoods (reference: respondents with more than 15 years in the US in low composition). Results emphasized the relative importance of neighborhood Latino composition over time in the US. Both interaction terms capturing high composition were positively associated with NSST score regardless of time in the US (<15 years, high composition: $\beta=0.196$, $p=0.142$; >15y, high composition: $\beta=0.174$, $p=0.197$). In contrast, the interaction term for time less than 15 years in the US in low composition settings was nonsignificantly associated with fewer social ties ($\beta=-0.035$, $p=0.787$).

Conclusion: Respondents in neighborhoods of higher Latino composition report more neighborhood supportive social ties than respondents in neighborhoods of lower Latino composition. This relationship approaches statistical significance and has a moderate effect size particularly when using a continuous measure of Latino composition. The small sample size and low power of this study suggest a difference in number of neighborhood supportive social ties despite a lack of statistical significance. The effect of neighborhood Latino composition on neighborhood supportive social ties does not appear to be confounded by immigrant status, residential stability or living with a child.

Respondents of high Latino composition neighborhoods will report more nearby family ties (H3)

To address hypothesis 3, number of nearby family ties was compared across respondents of high and low Latino composition neighborhoods. Questions on family residing within 30 minutes (except child) and one question on any family in the neighborhood were summed to create the Nearby Family Ties (NFT) scale. The NFT

scale had good reliability (0.686) and a mean score of 2.231 ± 1.967 (range: 0 – 8.000). The correlation between percent Latino composition (continuous) and NFT score was -0.158 ($p = 0.207$). Mean NFT score was lower among high Latino composition respondents (1.875 ± 1.699) than among low Latino composition respondents (2.576 ± 2.166). In other words, respondents from low Latino composition neighborhoods reported more nearby family ties than respondents from high Latino composition neighborhoods.

NFT and Latino composition were correlated -0.158 ($p=0.207$). However, due to the skewed distribution of the NFT scale, the Mann-Whitney U test was used to compare high and low Latino composition respondents. Difference in median score was not significant ($p=0.260$).

Investigation of the relationship between NFT score and the six confounding variables yielded interesting results. NFT score significantly differed for foreign- and US-born respondents. US-born respondents reported more nearby family ties than foreign-born respondents ($p=0.02$). Interview language exhibited a similar pattern with Spanish speakers reporting significantly fewer nearby family ties ($p<0.01$). Surprisingly, the difference in NFT score between recently arrived migrants (<15 years) and long-term migrants or US-born respondents was not significant (two-sided $p=0.15$). There were no interaction effects between Latino composition and immigrant status in number of nearby family ties. NFT did not differ by any of the other potential confounders.

Conclusion: Contrary to Hypothesis 3, number of nearby family ties did not differ by neighborhood Latino composition. However, US-born respondents reported significantly more nearby family ties than foreign-born respondents. This relationship did not differ by high/low Latino composition.

DISCUSSION

This chapter aimed to identify possible mechanisms of the Latino composition-mental health relationship by investigating differences in neighborhoods of high and low Latino composition. There were four main findings of this work. First, respondents generally categorize perceptions of neighborhood characteristics similarly (H1a). Respondents of both high and low Latino composition neighborhoods tend to classify characteristics into groups of environmental and psychosocial characteristics. Second, respondents of high and low composition neighborhoods attribute similar characteristics to their own neighborhoods (H1b). However, respondents of different education levels perceive characteristics of their own neighborhoods differently. These findings suggest that individual factors, such as education, may be more important than neighborhood Latino composition for understanding how residents perceive their neighborhood.

Third, living in a neighborhood of high Latino composition was associated with increased number of neighborhood supportive social ties. Other predictors of social network size such as immigrant status, residential stability, and living with young children did not confound this relationship. Fourth, number of nearby family ties did not differ by neighborhood Latino composition. However, nearby family ties did differ by foreign-born status. Foreign-born migrants reported substantially fewer nearby family ties than US-born residents. These four findings make several important contributions to literature on neighborhood Latino composition. I discuss these in order.

Residents of high and low Latino composition neighborhoods categorize neighborhood characteristics similarly (H1a) and attribute characteristics to their own neighborhoods similarly (H1b)

Residents of high and low Latino composition neighborhoods categorized characteristics of neighborhoods similarly. Roughly, characteristics fell into two main

groups, namely environmental characteristics and psychosocial characteristics. Variations in these perceptions arose within subgroups of each category such as greater coherence of neighborhood social support items for high Latino composition residents compared to greater distinction between social support items that occur in the neighborhood and those that are similar with items about family for low Latino composition residents. In contrast, perceptions of high Latino composition residents showed greater distinction between environmental characteristics compared to low Latino composition residents.

In addition, residents of high and low Latino composition neighborhoods reported similar perceptions of their own neighborhoods. This finding contradicts Hypothesis 1b, that perceptions of neighborhood characteristics would differ by Latino composition, which suggests that neighborhood characteristics either do not differ by Latino composition or that residents do not perceive differences associated with Latino composition. With respect to the former explanation, factors such as neighborhood poverty level, White/non-White composition, and commercial zoning may be more important factors than Latino composition in identifying differences in neighborhood characteristics. This study could not control for these neighborhood-level variables and as such cannot determine whether these factors explain findings.

Alternatively, residents of high and low Latino composition neighborhoods may not perceive differences associated with Latino composition. Neighborhood perceptions may depend more on past experiences or personal preferences, values and opinions than objective contextual characteristics. For example, Mexican- and US-born subjects may have different expectations about neighborhood social norms resulting in different subjective perceptions of similar objective neighborhood characteristics.

While neighborhood perceptions did not differ by neighborhood Latino composition, they did differ by individual education level. This finding may suggest that neighborhood perceptions depend more on social class, and specifically, education level, than neighborhood Latino composition. Significantly, education level may impact life

experiences, preferences and values. In this way, education may impact how individuals perceive neighborhood characteristics. Differences in perceptions associated with education level included higher perceived levels of kids playing together, children raised well, neighbors helping because they want to, advice from neighbors and drugs, gangs and prostitution but lower perceived levels of neighborhood gossip, affordable prices, and access to jobs among low education respondents compared to high education respondents.

Respondents from high Latino composition neighborhoods report a greater number of neighborhood supportive social ties (H2)

While residents of high and low Latino composition did not perceive neighborhood characteristics differently, they did report different levels of neighborhood supportive social ties. This effect did not reach statistical significance. However, the moderate effect size, small sample size, and low power suggest that Latino composition is likely associated with access to support from neighborhood social ties. These findings align with prior literature demonstrating increased social networks in neighborhoods of high Latino composition^{159,164,165,309,360,390,566,630} The association between increased social ties and neighborhood Latino composition may carry important implications for health. Increased social support and social integration are strongly linked to improved health.^{154,631} Neighboring promotes a sense of community, which confers psychological benefits and increase sense of well-being.^{123–125} A sense of community also promotes community involvement and collaborative problem-solving, which can translate into improved neighborhood context.⁶³² As a result, increased social ties in Latino neighborhoods may explain some of the association between high Latino composition and good mental health.

Interestingly, respondents of high Latino composition neighborhoods reported higher levels of social ties but did not perceive higher levels of social ties compared to low Latino composition respondents. These findings suggest that the effect of Latino composition on mental health may not require that residents perceive higher levels of social support or social ties in their neighborhoods. Alternatively this incoherence may relate to foreign-birth. In this study, foreign-born subjects tended to live in neighborhoods of high Latino composition. Foreign- and US-born subjects may not interpret social interactions in the same way. Subjects born in Mexico may be accustomed to different levels of neighborhood interaction. In Phase 1 and Phase 2 interviews, foreign-born subjects frequently lamented the low frequency of social interaction between neighbors in the United States compared to their hometowns in Mexico. Due to this difference in expectations, foreign-born subjects may have tended to assign social interaction items to lower rank positions compared to US-born subjects given the same objective frequency of social interaction.

However, the role of social ties in the Latino composition—health relationship remains unclear for several reasons. First, supportive social ties has not been empirically tested as a mechanism linking Latino composition and health though recent work linked increased Latino composition with increased social ties despite decreased social cohesion.⁶⁵ Second, increased social ties in neighborhoods of high Latino composition could reflect a causal effect or a selection effect. For example, increased Latino composition could promote neighborhood supportive social ties through increased solidarity. In this case, Latino composition would causally promote health through increased solidarity, social integration and support.¹⁵⁴

But, neighborhoods of increased Latino composition could selectively attract or retain individuals predisposed to develop social ties such as low-income individuals and foreign-born migrants who face challenges to residential mobility and barriers to entry into more expensive majority white neighborhoods.^{23,198} People of limited financial

means in poor neighborhoods may call on neighbors for support more often than similar individuals in non-poor neighborhoods.⁴³⁴ In this case, neighborhood Latino composition would be a correlate, but not a cause, of improved health. Furthermore, the negative health effects of low individual²⁷² and neighborhood²¹⁶ socioeconomic status on health may override the advantages obtained through increased social ties.

Foreign-born status did not explain the relationship between increased composition and social ties, which is surprising in light of prior research linking chain migration—migration through migrant networks—to residential settlement and social networks in Latino communities.^{116,205} Possibly, migration networks may still explain why social ties do not depend on foreign-born status: if migrants arrive in the United States through established network connections, then migrants may make few new ties upon arrival, such as with neighbors.

Alternatively, the size of migrants' social networks may depend on English fluency more than Latino composition. Texas City is a suburban extension of a well-established migrant destination, Houston, with a steady employment market and growing population. As such, the Latino population of Texas City contains many later generation Latino residents who may not speak Spanish. This social context contrasts with migrant destinations in rural America where Spanish-speaking arrivals concentrate in highly segregated linguistically isolated neighborhoods.^{306,308,309} As such, in Texas City, Latino composition may rise without a concomitant increase in neighborhood bilingualism. Language barriers could significantly impact the development of neighborhood social networks for linguistically isolated residents.

Finally, the effect of neighborhood composition on social ties may not depend on foreign-born status because of time constraints. In phase 1 interviews, respondents frequently lamented the constraints placed on socializing by work obligations. After accounting for the time spent working, few hours remained for visiting with neighbors. Financial gain is the primary factor motivating migration,²⁰⁵ and migrants' commitment

to work may preclude sufficient variation in social networks to capture on effect of neighborhood composition in this population.⁹⁰

Respondents of high Latino composition neighborhoods report more nearby family ties (H3)

Surprisingly, I found no difference in number of nearby family ties for residents of high and low Latino composition. Descriptions of Latino culture emphasize strong family-orientation that can manifest as geographic proximity to family in Latino neighborhoods.^{55,159,163,386,633} I had expected that neighborhoods of high Latino composition would contain residents living in greater proximity to family than residents of low Latino composition neighborhoods. However, in this study, living in a neighborhood of high Latino composition was not associated with increased nearby family ties. This finding also contradicts respondents' perceptions of nearby family in neighborhoods of high Latino composition. One explanation for this paradox is that living in a co-ethnic neighborhood may strengthen ethnic identity and create the perception of connection to one's origins.

In contrast, foreign-born status was associated with fewer nearby family ties in neighborhoods of both high and low Latino composition. This finding contradicts research identifying kin as the primary ties facilitating migration and settlement.^{167,205,339} Again, as a long established migration destination, perhaps migrants to Texas City and the Houston area have larger networks beyond kin relations to facilitate the migration process.

Limitations

There are several limitations that should be acknowledged. First, the findings of this study cannot be considered representative of all Latino residents of Texas City. While sampling aimed to represent diverse experiences by recruiting at multiple sites across Texas City, the strategy of convenience sampling cannot produce a representative sample. As a result, findings cannot be generalized. However, results from convenience samples can still be useful when purposefully chosen as in this study.^{621,634}

Similarly, the findings of this study cannot necessarily be extrapolated to Latino communities outside of Texas City. Texas City, and Texas in general, has a long history of Latino migration and settlement such that aspects of Latino experience in this part of the country are likely substantially different from Latino experience in other regions. Furthermore, the pervasive influence of Latino culture in the southwest may minimize differences between neighborhoods of high and low Latino composition in the region. Repeating this study in an area with a shorter history of migration and settlement or greater Latino segregation may reveal more substantial differences in neighborhood characteristics.

Second, several factors of design may have precluded observation of differences in perception by neighborhood Latino composition. For example, absence of differences in neighborhood perceptions could also reflect confounding by neighborhood-level factors such as area socioeconomic disadvantage or residential stability due to issues of feasibility. Alternatively, observing differences in neighborhood perceptions between high and low Latino composition neighborhoods may require comparing very high and very low Latino composition neighborhoods. In the last chapter, the protective effect of Latino composition was strongest during a similar comparison. This study did not compare perceptions of residents from very high and very low Latino composition neighborhoods because the distribution of Latino composition in Texas City reduced the

feasibility of recruiting participants in neighborhoods of very high and very low Latino composition. In addition, foreign-born Latino composition may be more important than Latino composition with respect to neighborhood characteristics.^{80,84,85,635} If so, high and low foreign-born Latino composition may have proved a more useful comparison than high and low Latino composition for the purpose of identifying differences in neighborhood perceptions.

If these factors apply, then some of the observed differences in neighborhood perceptions by Latino composition may represent mechanisms of the Latino composition—mental health relationship. These differences included lower perceived levels of trust and neighborhood visiting and gossiping but higher perceived levels of noise, police support, nearby family and access to jobs among high Latino composition residents compared to low Latino composition residents. Increased perceived financial, emotional, and physical security in the form of police support, family or access to jobs could explain the positive association between Latino composition and mental health by reducing stress and increased financial resources. Increased financial insecurity,^{452,636} lack of social support,^{154,177} safety concerns^{66,436,637} and ambient hazards such as noise^{66,638} are all associated with poor mental health. Access to job opportunities, family networks, and police support, respectively, could reduce or buffer these sources of stress.

Third, the shared model of neighborhood perceptions was characterized by a lower-than expected average Pearson correlation and a moderate first to second eigenvalue ratio. This study may have been stronger with a slightly larger sample of about 35-40 subjects per subgroup. Variation in how respondents completed the rank order task could explain this lower than expected eigenvalue ratio and average Pearson correlation. Sources of this variation include issues with the task itself and respondent characteristics. For example, statements used in the structured interview may have generated confusion resulting in respondent error. Statements such as *without* noise and *with* respectful neighbors were phrased in order to avoid response bias associated with

statements describing undesirable situations. However, the negatives in phrases such as ‘no noise’ and ‘no drugs’ may have caused confusion. On occasion, when reviewing the rank order task with respondents, participants would reorder cards upon recognizing the negation, i.e., the ‘no’ in ‘no noise.’ However, this factor is unlikely to have impacted results because the rank order was reviewed in the same fashion with all respondents.

Education level and Spanish language interview may also have impacted the way respondents completed the tasks. Ranking 31 items can be cognitively taxing and some respondents, for example, were unable to rank the items beyond 5 piles from most to least like their neighborhood. However, only a handful of respondents fell into this category. In addition, mistranslation could have resulted in systematic bias among Spanish-speaking respondents. Mistranslation is more likely to have impacted Phase 1 than Phase 2 because Phase 2 interviews used wording directly from Phase 1 interviews. Validation of the interview questionnaire by an outside translator of Mexican-descent aimed to minimize mistranslation issues. However, mistranslation has resulted in bias in even well-established research tools such as self-rated health.⁵⁸⁹

Education level and Spanish language interview are unlikely to have significantly impacted study findings, however. Systematic respondent error in the rank order task would have manifested as a wide standard deviation and range in cultural competency among low education or Spanish language respondents. Yet, these respondents did not exhibit more dispersion in cultural competency than their high education or English language counterparts.

Conclusion

In sum, findings from this study suggest that residents of high Latino composition neighborhoods may have greater levels of neighborhood supportive social ties than residents of low Latino composition neighborhoods. In contrast, residents of high and low

Latino composition neighborhoods may not differ in number of family ties or perceptions of their neighborhoods. Perceptions of neighborhood characteristics may instead depend on education level and/or social class more broadly.

The findings of this study indicate several steps that may clarify the relationship between neighborhood Latino composition and mental health. Neighborhood social ties may promote mental health through social support and social integration, which are associated with improved mental health. As such, increased neighborhood social ties in Latino neighborhoods may contribute to the Latino composition-mental health relationship. Significantly, the relevance of this mechanism may be limited to the southwest or the Houston region. To investigate this possibility, future studies should investigate whether number of neighborhood support ties varies with Latino composition and whether variation in this factor mediates the Latino composition-mental health relationship. Research in this area may identify important ways in which neighborhoods operate to promote mental health in Latino communities.

Chapter 5|

Conclusions and Future Directions

BACKGROUND AND STUDY PURPOSE

This dissertation is primarily interested in the relationship between neighborhood Latino composition and mental health. Emerging evidence suggests that high Latino composition may protect Latino residents against a variety of negative physical and mental health outcomes including mortality, cancer, and cognitive decline among others.^{20,21,215} This pattern is paradoxical because increased residential concentration of ethnic minority individuals is frequently associated with increased levels of risk factors for poor health such as increased area poverty, environmental exposures, violence, and crime, and decreased levels of area resources such as grocery stores, health services, municipal services, and political representation.^{216,639} These challenges to health and well-being substantially contribute to high rates of poor health among residents of low-income segregated neighborhoods. Many of these challenges also characterize Latino neighborhoods.^{37,100,187} Yet, Latino residents exhibit improved health compared to Latino residents of non-Latino neighborhoods. These unexpected health patterns inspire investigation of the way neighborhood Latino composition protects health.

This dissertation addresses the Latino composition-health relationship by focusing specifically on mental health. Only nine studies have empirically tested the relationship between neighborhood Latino composition and depressive symptoms.^{7-9,36,54-58} Of these, only five^{7-9,55,57} found a significant protective effect of Latino composition on depressive symptoms, while three^{36,54,56} found no effect and one⁵⁸ found a significant risk enhancing effect. Possible explanations for the inconsistent findings include small sample size and

low statistical power, varying composition by national heritage and/or foreign-birth, mean and range of neighborhood Latino composition and regional variation of the Latino composition effect.

Though an increasing number of studies investigate the relationship between neighborhood Latino composition and health, few have directly tested possible mechanisms. Hypothesized factors of the Latino composition effect include acculturation, collective efficacy, social support, discrimination, and stress.^{53,55,57,65} The role of these factors, and other variables, remains unclear.

Thus, this study investigated the relationship between neighborhood Latino composition and mental health in three aims. First, the relationship between neighborhood Latino composition and depressive symptoms was estimated in a sample of Mexican- and US-born Latino residents in neighborhoods that vary by Latino composition in Texas City, Texas (Aim 1). Findings from this aim would facilitate interpretation of inconsistent findings on neighborhood Latino composition and depressive symptoms.

Second, the role of foreign-born status and Spanish language use, social support, discrimination and stress were investigated as potential mediators and moderators of the Latino composition-depressive symptoms relationship (Aim 2). Results from this aim would provide insight into how Latino composition may affect depressive symptoms.

Third, in-depth qualitative interviews were conducted with Mexican-descent residents of Texas City in order to identify differences in perceptions of high and low Latino composition neighborhoods and to compare number of social and family ties in high and low Latino composition neighborhoods (Aim 3). Results from this aim would provide insight into the factors specifically associated with neighborhood Latino composition in Texas City. These factors may represent possible mechanisms of the Latino composition-mental health relationship.

REVIEW OF FINDINGS

The three aims of this dissertation were addressed in three chapters. In Chapter 2, I justified study of Latino neighborhoods as a unique and important lens through which to study the effects of neighborhood social organization on health. Specifically, I recommended focusing on the role of seven themes – culturally resonant services and resources, discrimination, acculturation, social cohesion and social control, subjective social status, social networks and social capital, and indicators of sociodemographic composition – as potentially important factors linking Latino composition and health. A review of the literature demonstrated the strongest theoretical evidence for discrimination, acculturation, social networks, and sociodemographic composition, but only aspects of sociodemographic composition have received substantial attention in empirical investigation. Even less empirical literature investigates the role of the other themes in Latino neighborhoods. Understanding the Latino composition—health relationship will require further systematic investigation of these seven themes in population-level data sets.

Chapter 3 estimated the effect of neighborhood Latino composition on depressive symptoms and investigated the role of social support, discrimination and stress in the Latino composition-depressive symptoms relationship. I found that increased neighborhood Latino composition is associated with fewer depressive symptoms for Mexican-descent residents. The protective effect applied, however, to English-speaking respondents only. In addition, social support, discrimination and stress mediated this effect; the health protective effects of higher social support and lower discrimination and stress in neighborhoods of high Latino composition compared to low Latino composition explained some of the association between neighborhood Latin composition and depressive symptoms. Discrimination and stress also moderated the effect such that

increased neighborhood Latino composition was associated with fewer depressive symptoms for respondents reporting high discrimination or high stress, only.

Chapter 4 explored a wider range of possible mechanisms with particular attention to social integration and support in three ways. First, I described how residents of high and low Latino composition neighborhoods in Texas City perceived neighborhood characteristics, and then I investigated how they perceived these characteristics with respect to their own neighborhood. I found that, generally, residents of high and low Latino composition neighborhoods similarly perceived two main categories of neighborhood characteristics including environmental characteristics and psychosocial characteristics. Only slight differences in classification of perceptions emerged: the high Latino composition group tended to sort together a larger number of neighborhood social support items while the low Latino composition group tended to sort some of these support items with family items. In addition, I found that respondents of high and low Latino composition perceived similar characteristics about their own neighborhoods despite different Latino composition context. Instead, education was more important than Latino composition in identifying which characteristics residents perceived in their own neighborhoods.

Second, I compared number of neighborhood supportive social ties between residents of high and low Latino composition neighborhoods. I found that residents of high Latino composition neighborhoods reported more neighborhood supportive social ties than residents of low Latino composition neighborhoods. This association did not reach the 0.05 significance level. However the moderate effect size and low power of the small size of the sample suggest that there may be a positive relationship between neighborhood supportive social ties and neighborhood Latino composition. Foreign-born status did not explain this relationship. Third, I compared number of nearby family ties between residents of high and low Latino composition neighborhoods but found that number of nearby family ties did not depend on neighborhood Latino composition. Lack

of a significant difference in family ties was not due to confounding by foreign-born status.

LINKING FINDINGS AND THEORY

The findings of this dissertation make important contributions to the literature on neighborhood Latino composition and mental health. Few studies till now have directly tested mechanisms of the Latino composition—mental health relationship. Generally, findings affirm the importance of several factors – discrimination, stress, social networks and social support, and Spanish language – as mechanisms of this relationship. This section discusses each of these mechanisms within the context of existing theoretical literature on their role in the Latino composition-mental health relationship.

Theoretical implications of discrimination and stress as mediators and moderators

Chapter 3 demonstrated that low levels of discrimination and stress might explain part of the protective effect of Latino composition on mental health. These findings align with literature on the negative effects of both discrimination^{113,477} and stress¹²⁶ on mental health including depressive symptoms. Reduced exposure to these experiences would likely reduce risk of poor mental health outcomes. Discrimination and stress vary on a neighborhood level⁵⁶⁷ and may be present at lower levels in Latino neighborhoods for several reasons. Latino neighborhoods may expose Latino residents to lower levels of discrimination in the neighborhood because the majority of neighborhood social interactions occur among co-ethnic individuals. Mexican American women report lower levels of discrimination in their neighborhood than outside of the neighborhood.⁹³ Latino neighborhoods may also expose residents to lower levels of discrimination in the work place because of the close correlation between co-ethnic social and employment

networks.^{204,534,535} Furthermore, residents who have experienced discrimination may perceive greater support from co-ethnic neighbors who are more likely to have had similar experiences. In this way, Latino neighborhoods may protect residents from exposure to discrimination thereby promoting mental health.

Latino neighborhoods may expose residents to lower than expected levels of stress. High proportion minority neighborhoods are frequently characterized by concentrated disadvantage,^{23,565} social disorder and crime,²¹⁶ and environmental pollutants, which create a sense of instability and insecurity and promote stress and anxiety.^{17,26} However, characteristics of Latino neighborhoods suggest higher than expected levels of neighborhood sociodemographic stability for their socioeconomic status. These characteristics include relatively high rates of employment, home and car ownership, and marriage.^{183,184} Ethnically homogeneous neighborhoods also frequently share language and social norms.^{116,118} Such factors provide financial and psychosocial resources that reduce stress on an individual level. However, financial and social stability also help individuals deal with neighborhood-level stressors by providing tools and resources to solve or cope with neighborhood-level issues. Given the association between stress and poor mental health, high neighborhood Latino composition could operate to protect mental health through lower levels of stress.

Chapter 3 also found that the effect of Latino composition may only apply to those who experience high levels of discrimination or stress. This finding suggests that Latino neighborhoods may operate by buffering the negative consequences of discrimination and stress on mental health. How Latino neighborhoods buffer against discrimination and stress remains unclear. Possibly, living among ethnic peers bolsters residents' sense of ethnic solidarity, pride, and sense of identity thereby decreasing vulnerability to ethnic discrimination and other sources of stress.^{90,209} Alternatively, living among Latino peers may be associated with increased neighborhood-based support, as was found in Chapter 4, thereby providing emotional and instrumental

resources to deal with stressors. In both cases, living in a Latino neighborhood would reduce the effect of discrimination and stress on mental health.

Theoretical implications of social support and social networks as mediators

Chapter 3 also demonstrated that higher levels of social support in Latino neighborhoods might contribute to the mental health advantages observed among Latino residents. Increased social support promotes better mental health¹⁵⁴ and Latino neighborhoods may provide residents with increased levels of social support. Ethnic homogeneity is associated with increased solidarity and interaction within the neighborhood thereby creating opportunities to form supportive relationships with neighbors.^{78,381} Supportive social ties with neighbors can provide multiple kinds of support from instrumental support (such as sharing tools or childcare responsibilities) and emotional support (such as getting together on the weekends). Latino neighborhoods may be particularly likely to engage in neighborhood based social networks due to cultural values such as familism¹⁶³ and reciprocal exchange.^{159,164,382} Increased social support in Latino neighborhoods could explain the mental health advantage observed among residents.

Chapter 4 corroborated theories on social support by demonstrating increased levels of neighborhood supportive social ties among residents from neighborhoods of high Latino composition. Chapter 4 results do not confirm the role of social ties as a mechanism of the Latino composition effect on health, but they do provide preliminary evidence that social ties may be an important component of the Latino composition-mental health relationship. My findings contribute to literature on social ties and neighborhood Latino composition, which has demonstrated both a positive⁶⁵ and nonsignificant⁵⁵ association between Latino composition and social ties in recent years.

Interestingly, Chapter 4 results discounted foreign-birth as an explanatory factor of the positive association between Latino composition and social ties. This finding contradicts scholarship linking dense social networks in Latino neighborhoods to their composition by foreign-birth. This hypothesis is based on the presumed dependency of foreign-born individuals on the neighborhood for support due to language barriers outside of the neighborhood and isolation from friends and family in the origin country. However, in my research, residence in the US less than 15 years did not explain the positive association between social ties and neighborhood Latino composition. These findings suggest that the association between Latino composition and neighborhood social ties does not depend on foreign-birth of residents.

Theoretical implications of moderation by Spanish language

An important qualification to my findings relates to the role of Spanish language use. The protective effect of Latino composition on depressive symptoms observed in Chapter 3 only applied to English speakers. Moderation by Spanish language may represent a number of different factors. In this context, Spanish language may act as a language barrier, a source of isolation, or a cause of increased discrimination. As a language barrier, Spanish language use may represent a logistical barrier to integration and interaction with the neighborhood. Even in Latino neighborhoods, the majority of residents may not speak Spanish thereby limiting interaction. This may be particularly true in Texas City, which contains a large population of later generation Latinos due to its long duration as a migrant destination. If Latino composition operates through social support, as suggested in Chapter 3, or social ties, as suggested by Chapter 4, then language barriers may exclude Spanish speakers from receiving the benefits of neighborhood ethnic homogeneity.

Spanish language may also promote psychosocial isolation. Spanish-speaking Latinos may feel isolated from their English-speaking Latino neighbors because of perceived differences. Life in Mexico and the United States expose individuals to different cultures, challenges, and resources. In the US, US- and foreign-born individuals face different challenges, as well. Foreign-born Latinos are likely to have fewer socioeconomic resources, lower education, and less access to health care.^{640–643} They also have not experienced life as an ethnic minority prior to arrival in the US. Foreign-born Latinos may perceive these differences and feel isolated even in a context of ethnic homogeneity. Spanish-speaking Latinos are also less likely to have documentation due to the correlation of Spanish-language with foreign-birth and recent arrival to the US.^{497,644,645} Residents without documentation may fear exposure and deportation thereby inspiring reduced interaction and engagement with the neighborhood.^{646,647} In this way, increased isolation of Spanish-speaking Latinos from the neighborhood could limit the extent to which they benefit from Latino composition.

Finally, Spanish-speaking Latinos may be subject to greater levels of discrimination in the neighborhood than English-speaking Latinos because their language betrays their ethnic identity, foreign origins and role as a Latino migrant worker. Documented and undocumented Latinos alike experience high rates of discrimination in the US even from US-born Latinos.^{93,310,585} As such, living in a neighborhood of high Latino composition may not shield Spanish-speaking Latinos from the effects of discrimination to the same extent as English speaking Latinos. In this way, Latino composition may more effectively protect English speakers from poor mental health outcomes than Spanish speakers.

Spanish language as a communication barrier, as a source of isolation, and as a cause of discrimination could substantially limit interactions between Spanish- and English-speaking Latinos in Latino neighborhoods. As a result, use of Spanish language may limit the formation of supportive social ties. If Latino composition operates through

social ties, then Spanish speakers may be less able to benefit from high Latino composition.

However, the formation of social ties and neighborhood social support may not depend on Spanish language. Chapter 4 demonstrated that residency in the US less than 15 years was not associated with neighborhood social ties and did not moderate the association between Latino composition and social ties. These findings suggest that moderation of the Latino composition effect on depressive symptoms by Spanish language use may not be due to differences in number of social ties between English and Spanish speakers.

Two other explanations for moderation by Spanish language remain. First, Spanish-speakers may spend fewer hours in the neighborhood due to longer work hours than English limiting extension of health advantages to this population. In the first round of interviews during the Phase 2 qualitative study, migrants described their commitment to long work hours identifying earning money as a primary motivation to residence in the US. If Spanish speakers spend less time in the neighborhood because they spend more time at work, then they may experience fewer benefits from Latino neighborhood composition.

Second Spanish-speaking Latinos may have better mental health than English-speaking Latinos thereby dulling the effect of high Latino composition on health.^{74,207,384} One possible mechanism for the mental health advantage observed among Latinos is genetics. Language is a barrier to social interaction and as such language use is a source of endogamy, and consequently, genetic isolation.^{648,649} In the opposite direction, endogamy among Spanish-speaking individuals promotes language maintenance in subsequent generations.⁶⁵⁰ As a result, Spanish-speakers may differ in their genetic composition from English-speakers. As evidence, US-born Latinos are more likely to intermarry with non-Latinos than foreign-born Latinos.⁶⁵¹ Given the links between

mental health outcomes such as depression and genetics,^{652,653} Spanish speakers may be less likely to experience depressive symptoms than English speakers.

A more commonly cited explanation for the mental health advantages observed among Spanish-speaking and foreign-born Latinos is acculturation, the acquisition of cultural elements from the host society. Spanish language is frequently used as a proxy measure of acculturation because use of English language is a marker of time in the US and assimilation to English culture.⁵⁶⁸ The process of acculturation may be associated with increased stress,²⁰⁷ family and cultural conflict,^{431,432} and discrimination.¹¹³ Through acculturation, English-speaking Latinos may experience greater stress from acculturation than Spanish-speaking Latinos.³⁸⁵ If high Latino composition only benefits those with high levels of stress, then these benefits may only apply to English-speaking residents. In support of this hypothesis, high neighborhood linguistic isolation only protects US-born Latinos and long-term Latino migrants against depression.⁵⁵

The persistent importance of social class

While this dissertation primarily focused on the relationship between Latino composition and mental health, social class plays an important role as a correlate of individual ethnicity, neighborhood ethnic composition, and poor mental health. Individuals of minority ethnicities face greater obstacles to upward socioeconomic mobility due to institutionalized and interpersonal ethnic discrimination. Neighborhood Latino composition is also associated with concentrated socioeconomic disadvantage, as mentioned above. In addition, low social class promotes poor mental health outcomes such as depressive symptoms and anxiety due to the stress associated with socioeconomic instability.^{273,276} Consequently, the health advantages observed among Latino residents of Latino neighborhoods contrasts expectations based on social class.

However, even in Latino neighborhoods, lower social class is associated with worse health. For example, in Chapter 3, income and education were strongly associated with increased depressive symptoms even after statistically controlling for neighborhood Latino composition and other possible confounders including gender, marital status, physical health and major life events. Chapter 4 echoed the relevance of social class to the Latino composition—mental health relationship. In that chapter, I found no significant differences in perceptions of neighborhood characteristics by high/low Latino composition. Instead, differences depended on individual education level. These results suggest that social class may be a more important link between mental health and neighborhood context than neighborhood Latino composition. The value of research on Latino composition may, therefore, depend on the ability of health promotion programming to take advantage of neighborhood factors in cases where socioeconomic disparities cannot be directly alleviated.

CONTEXTUALIZING THE FINDINGS

Both phases of research in this dissertation took place in Texas City, Texas. Constraining data collection to a single site strengthens study findings, but also limits external validity and extrapolation to different types of locales. Texas City is a suburb residing 45 minutes outside of Houston. Despite the national economic crises of the past decade, Texas has maintained a steady population growth rate and employment rate. Over the last five years, Texas has ranked within the top 50% of states with the lowest unemployment rates.⁶⁵⁴ Many Texas City residents find employment at the local petroleum and petrochemical refinery, the fifth largest refinery in the United States,⁶⁵⁵ or at the Port of Texas City, ranked twelfth in 2011 in total cargo volume among ports in the United States.⁶⁵⁶ Furthermore, people who grow up in Texas City tend to reside in the

area during their adult life. This socioeconomic context contrasts much of the country, which has seen greater challenges related to employment and population retention.

At the same time, the region has experienced high rates of Latino in-migration since the early 1900s.^{302,303} As a result, the region is largely influenced by Latino culture even in areas of low Latino composition. Furthermore, the long duration of Latino migration and overarching presence of Latino culture promotes moderate residential integration among Latinos and non-Latinos. In Chapter 3, only 10% of the sample lived in neighborhoods of less than 16% Latino and 10% lived in neighborhoods of greater than 45% Latino. The pervasiveness of Latino culture is evident in the number of Latino restaurants, grocery stores and churches and other establishments unique to Latino migrant needs such as money wiring businesses. This context of moderate ethnic integration and prevalence of Latino cultural and service establishments contrasts rural areas in the Southeast, Midwest and Northeast where Latino migrants have settled in only the last two decades.³⁰³ Shifts in migration have resulted in increased neighborhood-level segregation despite decreased county-level segregation.³⁰⁶ In sum, the unique socioeconomic and cultural context of Texas City differs from many regions of the country. These differences limit extrapolation of findings to diverse Latino communities in the US.

Despite the above limitations, Texas City remains a good site for the investigation of the Latino composition—mental health relationship. Most simply, at the start of this dissertation, Texas City was accessible to the researcher and was the site of an existing population-level data set. This geographic overlap of the Phase 1 population-level investigation (Chapter 3) and the Phase 2 in-depth exploratory investigation (Chapter 4) made triangulation of research methods possible. Triangulation strengthens results by allowing deeper investigation of population-level patterns. In this way, Texas City provided a good opportunity to conduct a case study of the relationship between Latino neighborhoods and health.

In addition, the characteristics of Texas City that diminish external validity also strengthen internal validity. The moderate residential integration of Latino residents and the pervasiveness of Latino culture in Texas City may limit residents' dependency on the neighborhood for support and sense of identity. Consequently, models investigating the Latino composition—mental health relationship in Texas City are likely not to overestimate the effect of Latino composition. Thus, this conservative context strengthens my conclusion that high Latino composition protects Latino residents against depressive symptoms.

SIGNIFICANCE AND IMPACT

The findings of this dissertation guide future investigation of the neighborhood context of health in Latino communities. To this point, much of the research on the effect of residential ethnic segregation on health has focused on majority African American neighborhoods in opposition to majority White neighborhoods.^{100,218,225,330,331} This work has generated concepts such as social disorganization and disorder, formal social integration, social cohesion and collective efficacy.^{34,418,553} However, these concepts have shown limited applicability in Latino neighborhoods.^{65,92,137,423,424,434,437,506} In response, this dissertation reassessed the empirical evidence on Latino neighborhoods and identified seven potential mechanisms of neighborhood effects in Latino communities. Several of these themes were investigated in this dissertation – discrimination, stress, social support and social ties, and acculturation. Results affirmed that these factors play important roles in understanding the Latino composition-mental health relationship. In a similar fashion, future research that focuses on these themes will likely produce fruitful results on social determinants of health in Latino neighborhoods.

In addition, the in-depth exploratory work involved in Phase 2 of this project deepened understanding of the Latino composition-mental health relationship. Findings

from that phase suggest that future research efforts should keep three key points in mind. First, the effect of Latino composition on health may not depend on the perceptions of neighborhood characteristics among residents. If true, this finding suggests that the protective effects of Latino composition may operate directly on health, for example, by improving access to jobs, health information, instrumental support, or recreational activity. Second, increased supportive social ties in the neighborhood may contribute to the health benefits of living in a Latino neighborhood. Future research should explore the role of social ties in a representative sample. Third, social class remains an important risk factor of poor health and a correlation of neighborhood ethnic composition. The colinearity of neighborhood ethnic composition and socioeconomic disadvantage complicates measurement and interpretation of the Latino composition effect. Social class also impacts the way residents perceive their neighborhoods and may therefore be an important moderator of the Latino composition effect. As a result, social class remains an important variable for consideration in research on the Latino composition—mental health relationship.

The findings of this work also contribute to a larger conversation about Latino migrant health and Latino health in general. The Latino Paradox recognizes the health advantages observed among Latinos despite their low socioeconomic status on average.^{3,48} This dissertation suggests that the explanation for this paradox among English- and Spanish-speaking Latinos may be different. Living in a Latino neighborhood may contribute to health advantages for English-speaking Latinos but does not seem to benefit Spanish-speaking Latinos. Furthermore, this difference is not due to differences in neighborhood social networks. Sources of the health advantages among Spanish-speaking Latinos, therefore, remain unclear and may relate to other health promoting factors occurring prior to or during US residency.

CONCLUSIONS

This dissertation supports a growing body of literature on the protective effect of neighborhood Latino composition for Latino residents. Specifically, this dissertation focused on mental health and found that increased Latino composition was associated with reduced depressive symptoms. Evidence on the Latino composition-depressive symptoms relationship has been mixed and this finding lends support to those studies finding positive results. Until now, few studies have investigated mechanisms of the effect. Seven areas of research may prove important to understanding how Latino composition promotes health. These include culturally resonant services and resources, discrimination, acculturation, social cohesion and social control, subjective social status, social networks and social capital, and indicators of sociodemographic composition. Notably, this dissertation investigated several of these themes including social support and social networks, discrimination, and stress. Results suggest that all three of these factors may mediate the effect. In-depth research strengthened evidence related to social support and social networks by demonstrating greater social support resources in high Latino composition neighborhoods compared to low Latino composition neighborhoods. Future research should aim to clarify the role of these factors as well as investigate other potential mechanisms identified in this dissertation.

At the same time, results suggest that the protective effect of neighborhood Latino composition does not apply to all Latino residents. Instead, Latino composition may operate to protect mental health for individuals with high levels of stress or discrimination or those who speak English, only. Investigation of the Latino composition effect within these specific populations will likely lead to deeper understanding of the way neighborhood factors operate to promote health.

In sum, the findings of this study suggest that neighborhood Latino composition may promote health by enhancing exposure to health resources and minimizing exposure

to health risks. Many questions remain regarding how Latino composition operates and whom it benefits. Future investigation should aim to understand the relevant mechanisms identified in this dissertation and to understand why only segments of the Mexican-descent population may benefit. Continuing this research may provide important information for the promotion of community health.

Appendix A Phase 1 interview

Texas City Neighborhoods and Mental Health: Qualitative Interview, Phase 1

Interviewer: Regarding R: Male/Female

How old are you? *Cuantos anos tiene Ud?*

With what race or ethnicity do you identify? You may choose more than one. *Con que grupo étnico se identifica Ud.? Puede elegir mas de uno.*

Non-Hispanic White Hispanic Non-Hispanic Black Other

In what country were your parents born? *En qué país nacieron su padre y su madre?*

And your grandparents? *Y sus abuelos?*

With regard to your home, do you (and your partner/spouse/housemate)? *Con respecto a su casa o unidad,*

Own	Rent	Live rent free	Other
<i>tiene propiedad privada</i>	<i>alquila</i>	<i>prestada sin pago</i>	<i>otro</i>

Who currently lives or is staying at home with you? What is your relationship to each person? Who is under 18 years old? *Actualmente, con quién vive Ud.? Qué es su relacion con cada persona? Quién tiene menos de 18 anos?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

(If no children living at your home)

How often do you care for children at your home? Whose children? How old are they? *Con qué frecuencia cuida Ud. a niños en su casa? De quiénes son? Cuántos tiene menos de 18 anos?*

Daily	1-2 times per week	1-2 times per month	1-2times per year	Never
<i>Diario</i>	<i>1-2 veces a la semana</i>	<i>1-2 veces al mes</i>	<i>1-2 veces al año</i>	<i>Nunca</i>

How long have you lived in this house/apartment? *Cuánto tiempo lleva Ud. viviendo en esta/e casa/departamento en total?*

How long have you lived in Texas City? *Cuánto tiempo lleva Ud. viviendo en Texas City en total?*

How long have you lived in the United States in total? *Cuánto tiempo lleva Ud. viviendo en los Estados Unidos en total?*

What language do you speak at home? *Qué idioma habla Ud. en casa?*

Only Spanish Mostly Spanish Both Mostly English Only English
Solamente espanol Sobre todo espanol Ambos Sobre todo inglés Solamente inglés

What language do you speak with your parents? *Qué idioma habla Ud. con sus padres?*

Only Spanish Mostly Spanish Both Mostly English Only English
Solamente espanol Sobre todo espanol Ambos Sobre todo inglés Solamente inglés

Are you...? *Actualmente,*

Employed (full/part-time)/*Trabaja (a tiempo completo/parcial)*

Unemployed/*está buscando trabajo*

Retired /*está retirado*

Homemaker/*se dedica a los quehaceres de su hogar*

A student/*es estudiante*

Disabled/*discapacitado*

Other/*otro*

THE RESPONDENT'S NEIGHBORHOOD

What is a neighborhood? *Qué es un vecendario? Qué significa la palabra vecendario?*

What do you consider your neighborhood? *Qué es lo que Ud. considera su vecendario?*

What are the boundaries of your N? *Qué son los límites de su v?*

What is the closest intersection to your house? *Qué intersección es lo mas cerca a tu casa?* _____

What locations in your neighborhood and in Texas City are important to you? Why are they important to you? *Qué lugares en su vecendario y en TC le importan a Ud.? Por qué le importan?*

1. _____
2. _____
3. _____
4. _____
5. _____

Tell me about your neighborhood. *Digame sobre su vecendario.*

What do you like about your neighborhood? *Qué le gusta de este vecendario?*

When likes are exhausted: What do other people like about this neighborhood?

Qué le gusta otra gente de este vecendario?

When exhausted: What are the advantages of this neighborhood?

Cuáles son las ventajas de vivir en este vecendario?

When exhausted: Why did you choose to live here?

Por qué eligió Ud. vivir aquí?

When exhausted: Why would someone else choose to live here?

Por qué elegiría alguien vivir aquí?

When exhausted: What is comfortable about living in this neighborhood?

Qué le hace que se sienta comodo vivir en este vecendario?

When exhausted: What are some examples of things you like to do here?

Qué son algunos ejemplos de cosas que le gusta hacer aquí?

1. _____
2. _____
3. _____
4. _____

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What do you dislike? *Qué no le gusta a Ud. de este vecendario?*

When exhausted: What are the disadvantages of this neighborhood?

Cuáles son las desventajas de vivir en este vecendario?

When exhausted: What do other people dislike about this neighborhood?

Qué no le gusta a otra gente de este vecendario?

When exhausted: What is stressful about living in this neighborhood?

Qué de vivir en este vecendario le dan estrés a Ud.?

When exhausted: What kinds of things could be better in this neighborhood?

Qué cosas preferiría mejorar en este vecendario?

When exhausted: What would make this neighborhood more calm?

Cuáles cambios haría que este vecendario estuviera mas tranquilo?

When exhausted: What kinds of things make you annoyed about living here?

Qué tipo de cosas le hace que se sienta molesto por vivir aquí?

When exhausted: What kinds of things make you worried about living here?

Qué tipo de cosas le hace que se sienta preocupado por vivir aquí?

When exhausted: What kinds of problems are there in this neighborhood?

Qué tipo de problemas hay en este vecendario?

When exhausted: How is your neighborhood different from your ideal neighborhood?

Cómo compara su vecendario a su vecendario ideal?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

9. _____
10. _____

What do you do to deal with the stressful things in your N? *Qué hace para tratar de las cosas estresantes en su vecendario?*

When exhausted: What do other people do to deal with these things?

Qué hace otra genta para tratar de estas cosas?

When exhausted: How do you respond to the things you don't like about the N?

Cómo responde/reacciona a las cosas que no le gusta del vecendario?

When exhausted: How do other people respond to these negative things?

Cómo responde/reacciona otra gente a las cosas que no les gusta?

When exhausted: When these things happen day after day, how does it affect you?

Cuando estas cosas a pasar día tras día, cómo le afecta a Ud.?

When exhausted: How does it affect your children and family members?

Cómo les afecta a sus niños o miembros de la familia?

When exhausted: How does it affect your neighbors?

Cómo les afecta a sus vecinos?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What kinds of things make these issues not so bad? *Qué tipo de cosas hace que estos problemas no son tan malo?*

When exhausted: How do your neighbors help you deal with these problems better?

Cómo le ayudan a Ud. sus vecinos con sus problemas?

When exhausted: What about this neighborhood is calming?

Qué aspectos de este vecendario le hacen a Ud. que se sienta calma?

When exhausted: What about this neighborhood makes you feel happy or gives you joy?

Qué aspectos de este vecendario hacen que se sienta feliz?

When exhausted: What can you do in the neighborhood to feel less stressed?

Qué puede hacer Ud. en el vecendario para que se sienta menos estresado?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Have you thought about moving? Why? *Ha pensado en cambiarse de vecendario y por que?*

If yes, ask:

What neighborhoods in Texas City would you like to move to?

Why?

A cuáles vecendarios en Texas City le gustaría cambiarse?

Por qué?

What neighborhoods in Texas City would you avoid? Why?

Cuáles vecendarios en Texas City evitaría? Por qué?

Why don't you move? (Why don't you think about moving?)

Por qué no se cambia? (Por qué no piensa en cambiarse?)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

7. _____
8. _____
9. _____
10. _____

What are the other sources of stress in your life, apart from things in the neighborhood? *Cuáles son las causas de estrés en su vida aparte de las cosas del vecindario?*

When exhausted: what would need to be different to make these issues go away?
Qué tendría que cambiar para eliminar estos problemas?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What do you do to control or reduce your stress? *Qué hace Ud. para controlar o reducir el estrés?*

When exhausted: When you're having a hard time, what do you do to deal with it?

Cuándo la vida se pone difícil, qué hace Ud. para sobrellevar?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. _____
9. _____
10. _____

When you're having a hard time, who can you count on?

Cuándo la vida se pone difícil, en quién puede apoyarse?

For each person:

- a) What is your relationship with this person? *Qué es su relación con esta persona?*
- b) How far away do they live (miles)? *Qué tan lejos vive de Ud. en millas?*
- c) How do these people help you with the stress that you have? *Cómo le ayuda a Ud. con el estrés?*
- d) How would it be better if this person lived in the neighborhood? *En qué forma sería mejor si esta persona viviera en el vecendario?*
- e) How would it be worse if this person lived in the neighborhood? *En qué forma sería peor si esta persona viviera en el vecendario?*
- f) What are the advantages of having friends and family in the neighborhood? *Cuáles son las ventajas de vivir cerca de familiares y amigos cercanos?*
- f) What are the disadvantages of having friends and family in the neighborhood? *Cuáles son las desventajas de vivir cerca de familiares y amigos cercanos?*
- g) What aspects of your day-to-day life would be different? *Cuáles aspectos de su vida diario sería diferentes?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

10. _____

What about in Texas City? Where can you go in Texas City when you are having a hard time? Y qué de Texas City? A dónde puede ir uno cuando la vida se pone difícil?

When exhausted: Where can you go in Texas City to receive help?

Adónde puede ir en TC para recibir ayuda?

When exhausted: What kinds of services are there in Texas City?

Qué tipo de servicios hay en Texas City?

When exhausted: What kinds of services have you used in Texas City?

Qué tipo de servicios ha usado Ud. en Texas City?

When exhausted: Do you know other people who use services in TC? What types of services?

Conoce a gente quien ha usado servicios en TC? Qué tipo de servicios?

When exhausted: Where can you go to receive support en TC?

Adónde puede ir Ud. para recibir apoyo en Texas City?

When exhausted: Where can other people go to receive support in Texas City?

Adónde puede ir otra gente para recibir apoyo en Texas City?

When exhausted: What kinds of organizations or groups are there in Texas City to help you deal

with different problems?

Qué tipo de organizaciones hay para tratar de varios problemas en TC?

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

What about in your neighborhood? When you're having a hard time, who can you count on in the neighborhood? Qué de en su vecendario? Cuando la vida se pone difícil, en quién puede apoyarse?

How do they help you?

Cómo le ayudan a Ud.?

What kinds of things can you count on them for?

Para qué tipo de cosas puede apoyarse?

What are the differences between a good neighborhood and a good family member?

Qué son las diferencias entre un buen vecino y un buen miembro de la familia?

Who do you trust in the neighborhood?

De quién se fía Ud. en el vecendario? Por qué?

Who do you trust less in the neighborhood?

De quién no se fía Ud. en el vecendario?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

How did you meet the people in your neighborhood? *Cómo es que le conoce Ud. a la gente en su v?*

When exhausted: How did you meet people on the block?

Cómo es que le conoce Ud. a la gente en la cuadra?

When exhausted: How did you meet people around the corner?

Cómo es que le conoce Ud. a la gente alrededor de la esquina?

1. _____
2. _____
3. _____
4. _____
5. _____

6. _____
7. _____
8. _____
9. _____
10. _____

How did you get to know them better? *Cómo es que le conoce mejor a la gente en su vecendario?*

When exhausted: How did you get to know the people on your block better?

Cómo es que le conoce mejor a la gente en su cuadra?

When exhausted: How did you get to know the people around the corner better?

Cómo es que le conoce mejor a la gente alrededor de la esquina?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

When do you usually see people in the neighborhood?

What kinds of things you talk about with other people in the neighborhood?

De qué tipo de cosas hablar con la otra gente en el v?

What kinds of things do you do with other people in the neighborhood?

Qué tipo de cosas hace Ud. con la otra gente en el vecendario?

What kinds of things do your children do with other children in the neighborhood?

Qué tipo de cosas hacen sus niños con los otros niños en el vecendario?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

In what ways are you and your neighbors similar? What things do you have in common? *En qué manera son similares Ud. y sus vecinos? Qué cosas tienen Uds. en común?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

In what ways are you different? *En qué manera son diferentes?*

1. _____
2. _____
3. _____
4. _____

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Think about the values that are most important to you, the kinds of things you hope to teach your children. *Piensa en los valores que le importan a Ud, las cosas que espera enseñar a sus niños (que uno enseña a niños).* What values are the same between you and your neighbors? *Cuáles valores son los mismos entre Uds.?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What values are different? *Cuáles valores son diferentes?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. _____
9. _____
10. _____

Some people say that living in a Hispanic neighborhood is different from living in a non-Hispanic neighborhood. Why do you think they say that? *Alguna gente dice que vivir en un vecendario Hispano es diferente que vivir en un vecendario no Hispano. En su opinion, por qué dicen ésto?*

What are the advantages of living in a Hispanic neighborhood? *Cuáles son las ventajas de vivir en un vecendario Hispano?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What are some of the disadvantages of living in a Hispanic neighborhood? *Cuáles son las desventajas de vivir en un vecendario Hispano?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

8. _____
9. _____
10. _____

What are some of the advantages of living in a non-Hispanic neighborhood? *Cuáles son las ventajas de vivir en un vecendario no Hispano?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What are some of the disadvantages of living in a non-Hispanic neighborhood? *Cuáles son las desventajas de vivir en un vecendario no Hispano?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

(If R is immigrant) What are the differences between a neighborhood in Mexico and a Hispanic neighborhood in the United States? *Qué son las diferencias entre un vecendario en Mexico y un vecendario Hispano en los EEUU?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What things are similar? *Cuáles cosas son similar?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What are the differences between a Mex N and a white N? *Qué son las diferencias entre un v Mex y un v Americano?*

1. _____
2. _____
3. _____
4. _____

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What things are similar? *Cuáles cosas son similar?*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What ethnicity or race is your neighborhood? *Qué grupo étnico es su vecindario?*

White(*Blanco*) Hispanic(*Hispano*) Black(*Negro*) Mixed(*Mixto*)

How would your life be different in a Hispanic (non-Hispanic) neighborhood? *Cómo sería diferente su vida en un vecindario Hispano?*

Read as above if person lives in low proportion Hispanic neighborhood. Replace 'low' with 'high' if person lives in low proportion Hispanic neighborhood.

When exhausted: How would things be different with your neighbors?

Cómo serían diferentes con sus vecinos?

When exhausted: How would your social life be different?

Cómo sería diferente su vida social? Quién sería sus conocidos y familiares?

When exhausted: What kinds of events happen in Hispanic neighborhoods that do not happen in non-Hispanic neighborhoods?

Qué tipo de actividades sociales ocurren en vecendarios Hispanos que no

ocurren en vecendarios no Hispanos?

When exhausted: How would it be different for your kids?

Cómo sería diferente para sus niños? Cómo pasarían el tiempo por la tarde y en los fines de semana?

When exhausted: What kinds of things would you do differently in your house?

Qué tipo de cosas haría Ud. en su casa?

When exhausted: What kinds of things would you do differently in your house the yard?

Qué tipo de cosas haría Ud. en el yard?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

What else would you like to tell me about your neighborhood and why it is important to you? *Hay algo más que le gustaría decirme de su vecendario y por qué es importante para Ud.?*

Appendix B

PERCEPTIONS OF NEIGHBORHOODS STUDY

We are trying to understand how people think about their neighborhood. To do that, I am going to ask you about things other people in Texas City have said about their neighborhood. There are no right or wrong answers, we only want to know what you think.

ID#: _____

INTERVIEW SITE: _____

INTERVIEW LANGUAGE: 1. English 2. Spanish

First, I would like to ask a few questions about you:

- 1) **How old are you?** *Cuántos años tiene Ud.?* _____
- 2) What is your gender?
 - 1) Male 2) Female Other _____
- 3) In what country were you born? *En qué país nació Ud.?*
 1. US 2. Mexico 3. Other
- 4) What is your ethnicity? *Es Ud. ...?*
 - 1) White 2) African American 3) Hisp/Mex descent 4) Other _____
- 5) If born in Mexico, how long have you lived in the US? *Cuánto tiempo tiene Ud. en los EEUU?* _____
- 6) How long have you lived in Texas City? (≥ 4 yrs) *Cuánto tiempo en Tx Cty?*

- 7) How long have you lived in your current home? (≥ 1 year) *Cuánto tiempo tiene en su casa?* _____
- 8) Do you rent, lease, or own your home? *Renta, paga a comprar o tiene propiedad privada?*
 1. Rent 2. lease 3. own
- 9) What street do you live on and what is the closest corner? *En qué calle vive, y qué es la esquina lo más cerca?* _____
- 10) What is the highest grade that you have completed? *Cuál es el grado más alto que ha completado Ud.?* _____
- 11) Completed in Mexico or the United States? *Completado en Mexico o los EEUU?*
 1. Mexico b. United States
- 12) Who lives with you? Circle all that apply *Con quién vive Ud.?*

1. Spouse/partner:	1. Yes	2. No
2. Child(ren) < 18y:	1. Yes	2. No
3. Child(ren) ≥ 18 y:	1. Yes	2. No
4. parent(s):	1. Yes	2. No
5. sibling(s):	1. Yes	2. No
6. extended family:	1. Yes	2. No
7. friends:	1. Yes	2. No

8. other 1. Yes 2. No
- 13) What language do you speak at home? *Qué idioma habla en casa?*
1. Spanish only
 2. Spanish mostly
 3. Both English and Spanish
 4. English mostly
 5. English only
- 14) Are you: *Es Ud. ...?*
1. employed full-time *empleado tiempo completo?*
 2. employed part-time *empleado tiempo medio*
 3. unemployed *desempleado*
 4. homemaker *ama de casa*
 5. retired *retirado*
 6. disabled *descapacitado*
 7. student *estudiante*
- 15) What ethnicity is your neighborhood? *Qué raza es su vecindario?*
1. Mexican/Hispanic
 2. White
 3. Black
 4. Mostly White and Mexican/Hispanic
 5. Mostly White and Black
 6. Mostly Black and Mexican/Hispanic
 7. More than two races

Social Capital/Social Networks

Not including your household, how many people in the neighborhood can you count on to... *Afuera de su casa, cuántas personas en su vecindario se puede apoyar en para*

_____	lend you a cup of sugar or milk <i>prestar una taza de azúcar o leche</i>
_____	drive you to the grocery store <i>llevarte al mercado</i>
_____	lend you \$30 <i>prestar \$30</i>
_____	care for you if you were sick or hurt <i>cuidarte si está enfermo</i>
_____	keep an eye on your house <i>vigilar en su casa</i>
_____	help you in an emergency <i>ayudarse en una emergencia</i>
_____	provide advice or emotional support <i>darse consejo o apoyo personal</i>
_____	work with you to deal with a problem in the neighborhood <i>trabajar con Ud. para tratar de un problema en el vecindario</i>
_____/no kids	watch your kids as a favor <i>vigilar sus niños como un favor</i>
_____/no kids	watch your kids regularly

	<i>vigilar sus niños regularmente</i>
____/no kids	keep an eye on your children when they're playing outside <i>vigilar sus niños cuando juegan afuera</i>

Not including members of your household, how many people in the neighborhood:
Aparte de las personas en su hogar, cuántas personas en su vecindario

____ invite you to their home for things like meals, barbeques, or parties? <i>Se invitan a su casa para cenar, hacer carne, o convivir?</i>
____ stop outside to talk and see how things are going? <i>Paran afuera para charlar?</i>
____ have kids who play with other children in the neighborhood? <i>tienen hijos que juegan con otros niños en el vecindario?</i>
____ spend time with you in your free time? <i>Pasan tiempo con Ud. en el tiempo libre?</i>

How many people in the neighborhood do you know through
Cuántas personas el vecindario conoce Ud. por

- Work *trabajo* _____
- Church *iglesia* _____
- recreational activities or groups *actividades o grupos recreativos* _____
- organized neighborhood watch *un grupo de vigilancia de la vecindad* _____
- neighborhood block clubs *clubs del vecindario* _____
- professional groups *grupos profesional* _____
- civic groups *grupos cívicos* _____
- ethnic clubs *clubs étnicos* _____
- political organizations *organizaciones políticas* _____
- School PTO or other school activities *grupos de la escuela* _____
- Community service organizations *organizaciones de servicio a la comunidad* _____

Which of the following family members/in-laws live in your neighborhood?

- | | | | | |
|-------------------------------------|--------------------------------|---------------------------------------|---|-------------------------------|
| 1. Parent
<i>padre/madre</i> | 2. Sibling
<i>hermano/a</i> | 3. Child
<i>hijo/a</i> | 4. Grandparent
<i>abuelo/a</i> | 5. Aunt/Uncle
<i>tio/a</i> |
| 6. niece/nephew
<i>sobrina/o</i> | 7. Cousin
<i>primo</i> | 7. Godparent
<i>compadre/madre</i> | 8. Other family
<i>otro familiar</i> | 9. None
<i>nadie</i> |

Which of the following family members/in-laws live within 30 minutes from your home?

- | | | | | |
|-------------------------------------|--------------------------------|---------------------------------------|---|-------------------------------|
| 1. Parent
<i>padre/madre</i> | 2. Sibling
<i>hermano/a</i> | 3. Child
<i>hijo/a</i> | 4. Grandparent
<i>abuelo/a</i> | 5. Aunt/Uncle
<i>tio/a</i> |
| 6. niece/nephew
<i>sobrina/o</i> | 7. Cousin
<i>primo</i> | 7. Godparent
<i>compadre/madre</i> | 8. Other family
<i>otro familiar</i> | 9. None
<i>nadie</i> |

Now I would like to ask you about things other people in Texas City have said about their neighborhood. Please read the cards and put them into piles so that the cards that are **related** are in a pile together. You can make as many piles as you like.

Ahora, me gustaría a preguntarle acerca de cosas que otras personas en Texas City han dicho sobre su vecindario. Por favor, ponga las cartas en pilas para que las tarjetas que son relacionados se encuentran en una pila junto.

1.
2.
3.
4.
5.
6.
7.
8.

Why are these cards together? *Por qué están juntas estas tarjetas?*

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Now I would like to ask you about which ones are more like your current neighborhood and which ones are less like your current neighborhood. Please organize the cards into 5 piles from most to least like your neighborhood where pile 1 has the cards most like your neighborhood and pile 5 has the cards least like your neighborhood.

Ahora me gustaría preguntarle acerca de cuáles son más parecidos a su vecindario actual y cuáles son menos como su vecindario actual. Por favor, organiza las cartas en 5 pilas de más a menos como tu vecindario donde la pila 1 tiene las cartas más como su vecindario y la pila 5 tiene la cartas menos como su vecindario.

NOW PLEASE RANK EACH PILE FROM MOST TO LEAST LIKE YOUR NEIGHBORHOOD. *AHORA, POR FAVOR, ORDENA LAS PILAS FROM LO MAS A LO MENOS COMO SU VECINDARIO.*

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Harvard University, Cambridge, MA 2002-2005
A.B. in Social Studies, magna cum laude; cum laude overall
Certificate in Health Policy

Duke University, Durham, NC 2001-
2002
(Freshman year, transfer student)

EMPLOYMENT HISTORY:

Close Concerns, Inc., Medical journalist 2006-2008
Submitted articles on emerging practices and therapeutics in diabetes care

RESEARCH ACTIVITIES:

Area of research: epidemiology, neighborhood effects, health disparities, health promotion

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Undergraduate medical anthropology thesis research

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Title: Cultural competence in health care in Santiago, Chile
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Research:

Neighborhood ethnic composition and mental health, ongoing
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Reasons for patient non-attendance at a student run free clinic
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Performance measurement of FQHC clinics in New Jersey
Research assistant, Division of Policy and Research
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COMMITTEE RESPONSIBILITIES:

St. Vincent's Student Clinic	2008 – 2012
Student director (2011-2012) and student doctor volunteer	
Patient care, student education, budget management, office management	
AMSA Chapter, UTMB	2009-
2010 Humanistic Medicine Officer	
Students for Integrated and Alternative Medicine, UTMB	2009
President	

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Who's Who Among Students in American Universities & Colleges	2013
Don W. Micks Scholarship in Preventive Medicine and Community Health	2012
Peyton and Lydia Schapper Endowed Scholarship in health promotion and professional leadership	2012
United States Public Health Services Excellence in Public Health Award	2012
Gold Humanism Honor Society	2011
St. Vincent's House Student Clinic Director	2011-2012

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Dean's List, Duke University 2001

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Workshop Houston 2012
Volunteer in the earn-a-bike program overseeing youth work on bicycles.

2011 Bridging Responsibility and Independence Through Exercise (BRITE) 2009-
Director and Co-Founder
Galveston afterschool program teaching bicycle mechanics and fitness

Seneca, Inc., Cambridge, MA 2004-present
PR Committee 2004-2006; Active member Fall 2004 – present
The Seneca, Inc. aims to make the Harvard undergraduate experience more rewarding for women.

Response Peer Counseling 2003-2005
Co-Director, counselor
An anonymous student-run counseling hotline at Harvard University specializing in sexual assault and relationship violence

2004 Rediscovery House Tutoring Program 2002-
Director, mentor, tutor
Tutoring program run and staffed by Harvard University undergraduates in collaboration with Rediscovery House, a transition house for troubled adolescent males in Watertown, MA. Tutors help Rediscovery House clients address educational needs such as GRE preparation, school work, and resume development.

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ABSTRACTS

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