The Association between Neighborhood Factors and Mexican Americans' Mental Health Outcomes: A Systematic Review

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This systematic review seeks to elucidate the association between neighborhood factors and Mexican American mental health outcomes. We searched PsycINFO and Academic Search Premier for studies related to neighborhood factors and mental health. Google Scholar was used to identify additional studies, followed by a manual inspection of the related work. Eleven studies were identified. Nine studies found that neighborhood factors had a significant impact on mental health among this group. Neighborhood compositional factors influenced mental health directly, among which minority concentration was found to be protective for Mexican American mental health. Neighborhood contextual factors influenced mental health directly and indirectly through the mediation of family cohesion. This study reveals the protective effects of minority concentration and calls for further investigation on the cross-level interaction effects of neighborhood and individual/family factors on Mexican American mental health.

Keywords: neighborhood context, mental health outcomes, Mexican American, systematic review.

Introduction

The Mexican American population is the largest Hispanic group in the U.S. (64%) and continues to grow (U.S. Census Bureau, 2013). From 1960 to 2013, the number of immigrants from Mexico increased from 600,000 to 11.6 million (Pew Research Center, 2015), with more than half (52%) living in the west (Gonzalez-Barrera & Lopez, 2013). This population primarily lives in homogeneous neighborhoods in which the majority of their neighbors share the same ethnicity, and these neighborhoods generally experience high rates of poverty (Eschbach, Ostir, Patel, Markides, & Goodwin, 2004). Many theories have been advanced to understand this dynamic, with an interest in explaining the effects of neighborhood characteristics on mental health outcomes.

Earlier studies that investigated neighborhood characteristics mainly focused on socioeconomic status (SES) and racial/ethnic composition at the neighborhood level (Macintyre, McKay, & Ellaway, 2005; Shaw, Criss, Schonberg, & Beck, 2004; Sooman & Macintyre, 1995). These studies indicated the negative impact of disadvantaged neighborhoods on mental health outcomes (Macintyre, MacIver, & Sooman, 1993; Sooman & Macintyre, 1995). More recent studies have expanded their scope to include protective neighborhood factors on mental health, such as the strength of social cohesion (Sampson, Raudenbush, & Earls, 1997). These recent studies may be particularly relevant to Mexican Americans, given the potential protective role of social environment that may exist in the homogeneous neighborhoods which experience socioeconomic disadvantage (Blair, Ross, Gariepy, & Schmitz, 2014; Sampson, 2012; Wu, Prina, & Brayne, 2015). A review of prior studies can provide insights for the competing theoretical perspectives regarding the effects of neighborhood characteristics on Mexican American mental health.

Background

Ethnic enclaves develop in response to structural barriers to mobility, socioeconomic opportunity, and resident choice (Sampson, 2012) for Mexican Americans and recent Mexican immigrants, who frequently live in homogeneous neighborhoods

(Herrera, Lee, Nanyonjo, Laufman, & Torres-Vigil, 2009). In 2012, there were 53 million Latinos living in the U.S. Of these, 33.7 million were of Mexican origin, including 24 million native-born and naturalized citizens, 3.7 million Mexico-born permanent residents, and 6 million Mexico-born unauthorized immigrants (Gonzalez-Barrera & Lopez, 2013). In total, 8.5 million people of Mexican origin were concentrated in just four metropolitan areas, with 3.8 million living in the Los Angeles area alone (Gonzalez-Barrera & Lopez, 2013). In 2010, there were 13 metropolitan regions with at least 100 Latino neighborhoods (neighborhoods in which at least 50% of the population is Latino) (Onésimo Sandoval & Jennings, 2012).

The residential settlement style, referred to as *hyper barrios* by Massey and Denton, exhibits a minority concentration effect (Massey & Denton, 1992; Sandoval & Jennings, 2012; Wilson, 2012). This minority concentration has been theorized to have both negative and positive effects on mental health outcomes. Minority concentration can reinforce economic disadvantages, which is related to adverse mental health outcomes (Shaw & McKay, 1942). It can also promote social cohesion, which is related to positive mental health outcomes (Roberts, Roberts, & Chen, 1997; Sampson, 2012). Homogeneous neighborhoods may help maintain traditional norms and values, such as familism and gender roles, both of which can protect Mexican Americans from adverse mental health outcomes (Campos, Ullman, Aguilera, & Dunkel Schetter, 2014; Keeler, Siegel, & Alvaro, 2014). Because of the growth of the Mexican American population, it is important to understand both the positive and negative effects of minority concentration.

Social Disorganization Theories and Mental Health Outcomes

Living in a disadvantaged neighborhood (defined as 30-40% of the population living below the poverty line) has consistently been associated with psychological distress beyond that of individual SES (Massey & Denton, 1992; Mirowsky & Ross, 2003; Wilson, 2012). This social phenomenon has frequently been referred to as an upstream social determinate of distress (Braveman, Cubbin, Egerter, Williams, & Pamuk, 2011); the impact of individual-level psychological changes comes from the direct and indirect effects

of neighborhood-level factors. Social disorganization theory has been advanced to explain the relationship between neighborhood disadvantages and mental health outcomes.

The classic social disorganization theory, which is one of the foundational theories in the study of neighborhood effects, suggests that concentrated disadvantages, homogeneous ethnic groups (that include large concentrations of immigrant groups), residential instability, and weak social ties are associated with increased crime and violence (Sampson, 2012; Shaw & McKay, 1942). Feeling unsafe in a neighborhood may directly and indirectly influence residents' mental health outcomes by affecting individuals' stress levels (Booth, Ayers, & Marsiglia, 2012), as well as social processes, such as social cohesion, that occur within the neighborhood (Macintyre et al., 1993; Sooman & Macintyre, 1995). Ross (2000) found that neighborhood disorder, which is characterized by general signs of crime (e.g., graffiti, broken windows, and noise), fully mediated the relationship between neighborhood disadvantages and distress (Ross, 2000).

Modern studies of social disorganization theory have found strong evidence for the protective effect of *collective efficacy* (Sampson et al., 1997), wherein "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (p. 918). *Collective efficacy* reduces violence in a neighborhood by creating social norms that communicate intolerance of criminal behavior and the ability to enforce that norm. Recent studies have found support for this hypothesis. For example, Burchfield and Silver (2013) found that collective efficacy may reduce the robbery incidents in disadvantaged neighborhoods with large concentrations of immigrant groups.

The classic social disorganization theory and the more modern introduction of collective efficacy lead to differing hypotheses that associate living in a neighborhood with a high concentration of immigrants (important when discussing Mexican Americans) and mental health outcomes. Classical disorganization theory hypothesizes that a high concentration of immigrants in a neighborhood is associated with more crime, and therefore poorer mental health (Sampson et al., 1999; Sampson et al., 1997). In contrast, the collective efficacy perspective hypothesizes that a high concentration of immigrants is associated with increased social cohesion, which protects against elevated rates of crime (Nielsen,

Lee, & Martinez, 2005; Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003; Sampson, Morenoff, & Raudenbush, 2005), and consequently has a positive effect on immigrants' mental health. The concentration of Mexican Americans in neighborhoods may aid in the creation of collective efficacy by facilitating a shared identity (Milbrath & DeGuzman, 2015) that reinforces traditional norms and values which place a strong emphasis on family interdependence and family-wide supportiveness (familism) (White, Roosa, & Zeiders, 2012c).

These dynamics raise questions about the mechanisms within neighborhoods that affect mental health. Previous systematic reviews have summarized the association between neighborhood context and mental health outcomes in the general population (Blair et al., 2014; Cutrona, Wallace, & Wesner, 2006; Mair, Roux, & Galea, 2008; Paczkowski & Galea, 2010; Truong & Ma, 2006). However, no studies have reviewed the relationship between neighborhood factors (e.g., ethnic composition) and Mexican American mental health outcomes. This systematic review seeks to fill this gap and elucidate the association between neighborhood factors and mental health outcomes among this group.

Deconstructing Neighborhood Factors

Since the introduction of the social disorganization theory, many concepts have been introduced in the study of neighborhood factors. To guide this systematic review and add depth to the discussion of neighborhood effects, this study examines neighborhood factors in greater detail by deconstructing two important categories of neighborhood measure: neighborhood compositional factors and neighborhood contextual factors (Wu et al., 2015). *Neighborhood compositional factors* are created by aggregating the individual characteristics (Wu et al., 2015) of neighborhood SES and racial/ethnic composition (Sampson, 2012; Wilson, 2012). Indicators of SES include income, education, and percentages of unemployed male-headed households, female-headed households with children, and families on assistance (Massey & Sampson, 2009). Measures of the racial/ethnic composition describe the homogeneity or heterogeneity of the racial/ethnic make-up of neighborhoods (Wilson, 2012).

Neighborhood contextual factors are related to the social, service, and physical characteristics of a neighborhood (Robert, 1999). Social characteristics include social cohesion (neighborhood cohesion and neighborhood familism), informal control between neighbors and within families (collective efficacy) (Sampson et al., 1997), and social capital (trust between neighbors) (Valencia-Garcia, Simoni, Alegría, & Takeuchi, 2012). Service characteristics include health service facilities, fitness centers, religious organizations, supermarkets, and schools (Longest, 2002; Robert, 1999). Physical characteristics include the safety and afforestation (the coverage of green areas) of neighborhoods (Longest, 2002; Schaefer-McDaniel, Caughy, O'Campo, & Gearey, 2010). *Mental health outcomes* refer to positive and adverse mental health, such as anxiety, depression, attention deficit disorder, and cognitive function decline.

This review uses these deconstructed neighborhood factors as a framework to summarize studies linking neighborhood factors to Mexican American mental health. This study specifically examines: (1) The association between neighborhood compositional factors and mental health outcomes among this group; and (2) the association between neighborhood contextual factors and their mental health.

Method

Inclusion Criteria

Studies were included using several criteria. First, the studies were required to be peer-reviewed journal publications. Second, *at least* 70% of the study participants were required to be Mexican Americans. Third, the studies were required to examine the effect of *at least* one neighborhood factor on mental health outcomes. The studies excluded in the review process were unpublished manuscripts, editorials, and opinion pieces.

Search Strategy

Studies were identified using PsycINFO and Academic Search Premier databases and Google scholar (see Figure 1). In phase one of the search, we applied English-language search

Figure 1. A flow chart[1] for identifying the 11 eligible studies.
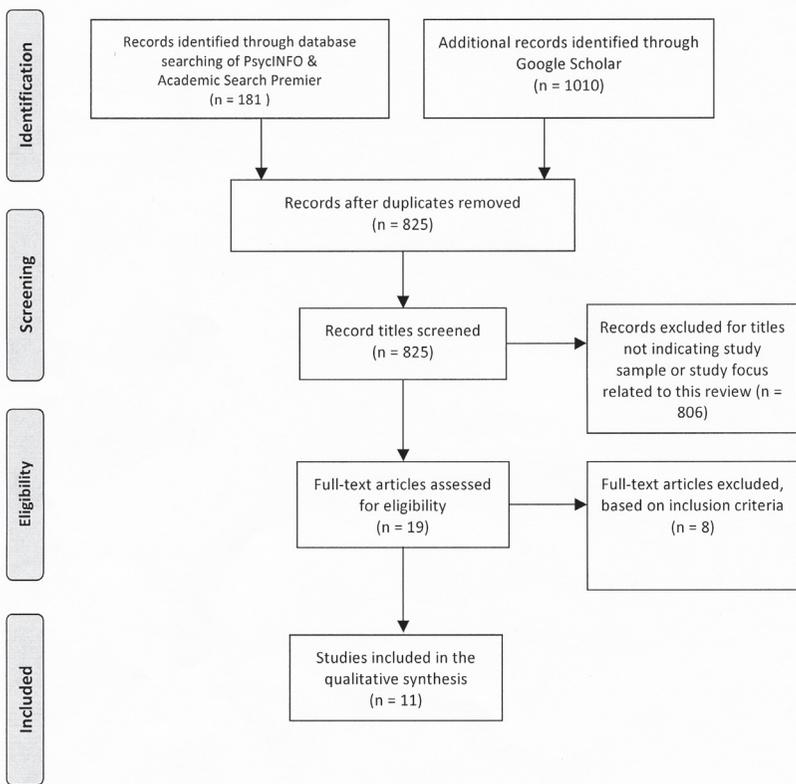
Records identified through database searching of PsycINFO & Academic Search Premier (n = 181)

Additional records identified through Google Scholar (n = 1010)

Records after duplicates removed (n = 825)

Record titles screened (n = 825)

Records excluded for titles not indicating study sample or study focus related to this review (n = 806)

Full-text articles assessed for eligibility (n = 19)

Full-text articles excluded, based on inclusion criteria (n = 8)

Studies included in the qualitative synthesis (n = 11)

Identification

Screening

Eligibility

Included

terms to PsycINFO and Academic Search Premier. Search terms were used to select articles whose abstracts contained "Mexican American" and included *at least one term* from each of these sets: Neighborhood compositional factors = ["neighborhood", "community"]; Neighborhood contextual factors = ["social", "cohesion", "service", "environ*", "safety", "facility, "health care", "disorganization", "collective efficacy"]; and Mental health outcomes = ["psych*", "mental", "stress", "emotional"]. These search terms were constructed to match articles concerned with the effects of neighborhood factors on Mexican American mental health. This search returned 181 articles, all of which were published between 1966-2014 (with 51 from PsycINFO and 130 from Academic Search Premier). Based on the inclusion criteria,

11 articles were identified, among which were four duplicates, leaving seven articles for full-text review.

In phase two of the search, Google Scholar was used to identify additional articles that were missed in the first search. Previous studies have indicated that Google Scholar has a larger number of publication records than PsycINFO (García-Pérez, 2010) and Academic Search Premier (Holman, 2011) and a higher recall than PsycINFO (Jean-François, Laetitia, & Stefan, 2013). We used Google Scholar's *related article* feature for each of the seven identified articles. This feature of Google Scholar retrieves articles using author names and self-selected keywords extracted from the article (Falagas, Pitsouni, Malietzis, & Pappas, 2008). The search resulted in 1,010 related articles. After removing duplicate articles and conducting title and abstract reviews, four additional articles were identified through Google Scholar. As a result, a total of 11 articles were selected for full-text review.

In phase three of the search, we manually examined the reference lists of the 11 articles. No additional articles were found. Through these three phases, we identified a total of 11 studies.

Results

Table 1 summarizes the study samples, neighborhood compositional factors, neighborhood contextual factors, mental health outcomes, key findings, and proposed mechanisms of the 11 studies. Among the studies, eight examined the association between neighborhood compositional factors and Mexican Americans' mental health (Gerst et al., 2011; Gonzales et al., 2011; Ostir, Eschbach, Markides, & Goodwin, 2003; Roosa et al., 2010; Sheffield & Peek, 2009; White & Roosa, 2012; White, Roosa, & Zeiders, 2012b; White, Deardorff, & Gonzales, 2012a). Seven studies focused on the association between neighborhood contextual factors and mental health (Gonzales et al., 2011; Nair, White, Roosa, & Zeiders, 2012; Ornelas, Perreira, Beeber, & Maxwell, 2009; Roosa et al., 2010; Valencia-Garcia et al., 2012; White & Roosa, 2012; White et al., 2012b). Four studies were primarily interested in the indirect association between neighborhood factors and mental health (Gonzales et al., 2011; Nair et al., 2012; White et al., 2012c; White et al., 2012a).

Table 1. Summary of 11 articles on the effect of neighborhood factors on mental health outcomes of Mexican American

Authors (year)	Sample size (age)	Method	Compositional factors	Contextual factors	Mental health outcomes (scale)	Key findings	Proposed mechanisms
Ostir et al. (2003)	2710 (age ≥ 65)	Longitudinal	Neighborhood poverty, neighborhood ethnic group concentration	N/A	Depressive symptoms (CES-D scale)	1) Significant positive association between neighborhood poverty and the percentage of Mexican Americans in the neighborhood; 2) Significant negative association of the percentage of neighborhood poverty and the percentage of Mexican Americans with depressive symptoms among older Mexican Americans	Neighborhood poverty increases depressive symptoms, and neighborhood ethnic group concentration decreases depressive symptoms
Sheffield et al. (2009)	3050 (age ≥ 65)	Longitudinal	Neighborhood SES (education, occupational class, poverty, housing, income), Neighborhood components	N/A	Cognitive status (MMSE)	1) Significant positive association between neighborhood poverty and cognitive decline 2) Negative association of neighborhood ethnic homogeneity with cognitive decline 3) Neighborhood context is independent of individual-level risk factors regarding late-life cognitive function decline	Neighborhood poverty increases cognitive decline, and neighborhood ethnic group concentration decreases cognitive decline

Table 1. (continued)

Authors (year)	Sample size (age)	Method	Compositional factors	Contextual factors	Mental health outcomes (Scale)	Key findings	Proposed mechanisms
Ornelas et al. (2009)	20 (age ≥ 18)	Qualitative	N/A	Social isolation, community resources, churches	Depressive symptoms (frequency of using the word depression or related words including sadness, shame, loneliness)	1) Social isolation in the community is associated with depressive symptoms of Mexican American mothers 2) Accessing community resources and attending churches are strategies to reduce depressive symptoms of Mexican American mothers	1) Social isolation increases depressive symptoms; 2) Community resources and churches decrease depressive symptoms
Roosa et al. (2010)	750 (age 10-11)	Cross-sectional	Neighborhood SES (income, unemployed percentage of male-headed households, percentage of female-headed households with children)	Informal social control	Mental health internalizing and externalizing symptoms (DISC)	1) Neighborhood disadvantage did not directly lead to mental health symptoms of Mexican American early adolescents 2) Informal social control was negatively associated with mental health internalizing and externalizing symptoms	1) Neighborhood disadvantage does not lead to mental health symptoms; 2) Informal social support decreases mental health symptoms

Table 1. (continued)

Authors (year)	Sample size, (age)	Method	Compositional factors	Contextual factors	Mental health outcomes (Scale)	Key findings	Proposed mechanisms
Gonzales et al. (2011)	750 mothers and 5th graders, 467 fathers	Longitudinal	Neighborhood disadvantage (income, unemployment, education, percentage of female-headed households with children, percentage of families on assistance)	Perceived neighborhood danger, neighborhood familism	Mental health internalizing and externalizing symptoms (DISC)	1) The mediated effect of mothers' perceptions of neighborhood danger on early adolescence externalizing symptoms through warmth parenting was positive 2) Neighborhood familism had a negative direct association with early adolescence externalizing symptoms	1) Neighborhood familism decreases early adolescence externalizing symptoms; 2) Mothers' perceptions of neighborhood danger has a positive mediating effect on the association between early adolescence externalizing symptoms and warmth parenting
Gerst et al. (2011)	1,875 (age ≥ 75)	Cross-sectional	Neighborhood ethnic group concentration	N/A	Depressive symptoms (CES-D scale)	1) Significant negative association of the percentage of Mexican Americans in the neighborhood with depressive symptoms among older Mexican American men 2) The proportion mattered more for older Mexican American men than for women	Neighborhood ethnic group concentration decreases depressive symptoms
Valencia-Garcia et al. (2012)	205 (age ≥ 18)	Cross-sectional	N/A	Social capital, perceived access to services	Psychological distress (CIDI-SF)	1) Perceived access to community services was not directly associated with depression and anxiety 2) The barriers to access community services were low 3) Social capital was associated with fewer depression and anxiety symptoms	Social capital decreases psychological distress

Table 1. (continued)

Authors (year)	Sample size, (age)	Method	Compositional factors	Contextual factors	Mental health outcomes (Scale)	Key findings	Proposed mechanisms
White et al. (2012a)	344 girls (age 10-14)	Longitudinal	Neighborhood Hispanic composition, neighborhood disadvantage	N/A	Depressive symptoms (DISC)	1) Neighborhood Hispanic composition was positively associated with neighborhood disadvantages; 2) Neighborhood Hispanic composition moderated the pubertal timing and depressive symptoms of Mexican American girls	Neighborhoods with a high Hispanic group concentration decrease depressive symptoms
White et al. (2012b)	463 father and youth dyads (youth age 10-11)	Cross-sectional	Neighborhood disadvantage	Perceived neighborhood danger, neighborhood familism	Internalizing symptoms (DISC-IV)	1) Neighborhood disadvantages moderated the associated between paternal harshness and internalizing symptoms 2) Family cohesion mediated the association between fathers' perceived danger and Mexican American youth internalizing symptoms 3) Fathers' perceived neighborhood danger was not associated with youth internalizing symptoms	Neighborhood familism decreases youth internalizing symptoms

Table 1. (continued)

Authors (year)	Sample size, (age)	Method	Compositional factors	Contextual factors	Mental health outcomes (Scale)	Key findings	Proposed mechanisms
White et al. (2012c)	749 students and their families	Longitudinal	Neighborhood disadvantage	Perceived neighborhood danger, neighborhood familism	Mental health internalizing and externalizing symptoms (DISC)	1) Family cohesion decreases youth mental health symptoms 2) Neighborhood disadvantage moderates the association between family cohesion and youth's internalizing and externalizing symptoms	Family familisim decreases youth mental health symptoms, Neighborhood disadvantage moderates the association between family cohesion and internalizing and externalizing symptoms
Nair et al. (2013)	710 youth (age 10 - 14)	Longitudinal	N/A	Neighborhood cohesion, Family cohesion	Mental health internalizing and externalizing symptoms (DISC)	1) Family cohesion mediated the association between language hassles and externalizing symptoms of Mexico-born youth 2) Neighborhood cohesion moderated the association between cultural stressors and youth mental health outcomes	Neighborhood and cohesion moderate the association between cultural stressors and youth mental health symptoms

Study Characteristics

The examined studies varied both in sample size and in participant characteristics. The sample sizes ranged from 20 to 3050 participants. Three publications were specifically limited to older adults aged 65 and over (Gerst et al., 2011; Ostir et al., 2003; Sheffield & Peek, 2009). Six studies focused on youths and adolescents (Gonzales et al., 2011; Nair et al., 2012; Roosa et al., 2010; White & Roosa, 2012; White et al., 2012b; White et al., 2012a). Two studies restricted their participants to adult women (Ornelas et al., 2009; Valencia-Garcia et al., 2012). Three studies were limited to youths' parents (Valencia-Garcia et al., 2012; White & Roosa, 2012; White et al., 2012b).

These studies also varied in methodology. The majority of the studies (ten of the 11) used quantitative methods to examine the effects of neighborhood factors on mental health outcomes. Several conducted cross-sectional studies to investigate their associations with mental health (Gerst et al., 2011; Roosa et al., 2010; Valencia-Garcia et al., 2012; White & Roosa, 2012), and others conducted longitudinal studies to examine the casual effects (Gonzales et al., 2011; Nair et al., 2012; Ostir et al., 2003; Sheffield & Peek, 2009; White et al., 2012b; White et al., 2012a). Only one study used a qualitative method (semi-structured interviews) and identified neighborhood factors that influenced mental health from the conversations with participants (Ornelas et al., 2009).

Neighborhood Compositional Factors
and Mental Health Outcomes

Neighborhood compositional factors were found to directly affect mental health and to alter the strength of the relationship between individual-level factors and mental health outcomes. Some studies focused on the effects of neighborhood ethnic composition (Gerst et al., 2011), while others were interested only in the impact of neighborhood disadvantages (Gonzales et al., 2011; Roosa et al., 2010; White et al., 2012b). In addition to these studies, several included both ethnic composition and neighborhood disadvantage in their investigation of mental health among Mexican Americans (Ostir et al., 2003; Sheffield & Peek, 2009; White et al., 2012a).

The studies that examined the direct effect of these factors revealed that the negative effect of neighborhood disadvantage varied across age groups, and that the positive effect of ethnic homogeneity was consistent across age groups regardless of neighborhood SES. Some researchers found that low neighborhood SES, an indicator of neighborhood disadvantage, significantly increased the risk of cognitive decline among older adults (Sheffield & Peek, 2009). The same relationship was found between neighborhood disadvantage and depressive symptoms in the same population (Ostir et al., 2003). However, studies focusing on youth found that neighborhood disadvantages were not significantly associated with higher risk of adverse mental health outcomes, such as anxiety, mood disorder, and attention deficit disorders (Roosa et al., 2010). Neighborhood homogeneous ethnic composition, regardless of SES, was shown to significantly reduce depressive symptoms among both older adults and youth (Gerst et al., 2011; Ostir et al., 2003; White et al., 2012a).

Studies also found that neighborhood compositional factors moderated mental health outcomes through their interaction with individual-level factors, such as the time of puberty in teenage girls (White et al., 2012a), family relationship (White et al., 2012b), and parents' perception of a neighborhood (Gonzales et al., 2011). These cross-level interaction effects illustrated the complex dynamics within a neighborhood and their influence on mental health. For example, in neighborhoods with a low proportion of Hispanics, teenage girls experiencing puberty early had less depressive symptoms, while experiencing puberty late was associated with more depressive symptoms (White et al., 2012a). However, this relationship was reversed in neighborhoods with a high proportion of Hispanic concentration, with girls who experienced puberty late having significantly less depressive symptoms.

Studies also found that a more disadvantaged neighborhood was associated with mothers' higher sense of danger about their neighborhoods, which in turn increased maternal warmth and reduced incidents of behavioral problems among youth, such as antisocial behaviors and attention deficit disorder (Gonzales et al., 2011). Similarly, another study found that when the level of neighborhood disadvantages were high, supportive family

relationship (family cohesion) was associated with significantly fewer behavioral and emotional problems, such as attention deficit disorder, anxiety, and depression (White et al., 2012b). This association was not significant when the levels of neighborhood disadvantage were low. These last two studies suggested that family might buffer the negative effect of neighborhood disadvantages on Mexican American youths' mental health.

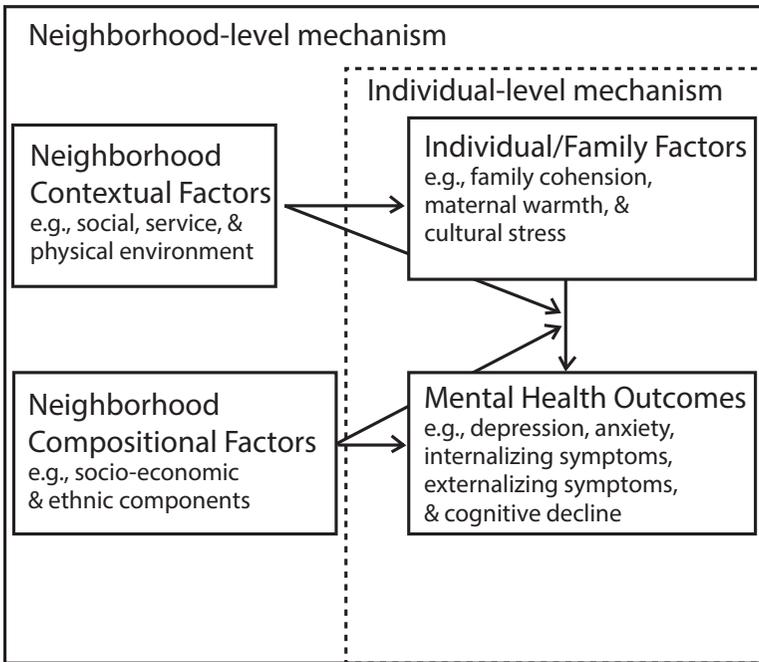*Neighborhood Contextual Factors*
and Mental Health Outcomes

Neighborhood contextual factors were found to have direct, indirect, and cross-level interaction effects on mental health outcomes among this group. Studies that examined the neighborhood social environment factors found that supportive relationships in a neighborhood had a significantly positive effect on mental health. For example, the increase of informal social control among neighbors was associated with significantly fewer behavioral and emotional problems among youth (Roosa et al., 2010). Neighborhood familism, a construct that incorporated family values of support and emotional closeness, also had a significant association with the reduction of these problems among youth (Gonzales et al., 2011; White & Roosa, 2012). Higher level of trust between neighbors was found to be associated with significantly fewer depressive and anxiety symptoms among adult women (Valencia-Garcia et al., 2012). In addition to these direct effects, one study also found cross-level interaction effects. In this study, higher rates of neighborhood cohesion, shared mutual values, goals, and trust buffered the effect of language hassles and discrimination on Mexican American youth's mental health (Nair et al., 2012).

In the domain of the neighborhood service environment, studies found that adult women had fewer depressive symptoms when they reported adequate services and low barriers to access these resources, such as child care in a neighborhood (Ornelas et al., 2009). Attending churches was also associated with lower rates of depression among adult Mexican American women (Ornelas et al., 2009). Within the category of the neighborhood physical environment, no direct association was found between parents' perception of neighborhood danger and adverse mental

health outcomes among youth, including antisocial behaviors, attention deficit disorder, anxiety, and depression (White & Roosa, 2012).

Studies that examined the indirect effect of neighborhood contextual factors found that family cohesion could alleviate the negative impact of contextual factors on mental health. The higher level of familism (family support, emotional closeness, and obligation to family) significantly reduced the influence of fathers' sense of neighborhood danger on behavioral problems among youths (White & Roosa, 2012). Family cohesion mediated the relationship between mothers' sense of neighborhood danger and youths' emotional problems (White et al., 2012b). Based on the findings, a conceptual model of neighborhood factors and their effects on mental health outcomes is presented in Figure 2.

Figure 2. A conceptual model for understanding how neighborhood factors affect Mexican Americans' mental health outcomes.

Discussion

This systematic review deconstructed neighborhood factors and summarized studies that examined the association between neighborhood factors and Mexican American mental health outcomes. This study examined neighborhood compositional factors and neighborhood contextual factors in terms of their direct, indirect, and cross-level interaction effects on mental health. The majority of the studies (nine of the 11) found significant direct associations between at least one of the neighborhood factors, such as neighborhood disadvantage, and mental health outcomes. Several studies also found that neighborhood factors could alter the association of individual-level factors and mental health, including ethnic composition and neighborhood cohesion.

This study contributes to our understanding of neighborhood-level mechanism and its effects on minority populations' mental health. As observed in our review, minority concentration may be a protective factor for Mexican American mental health, regardless of the level of neighborhood disadvantage. These findings lend support to the more recent conceptualization of neighborhood dynamics that go beyond the classic social disorganization theory. In early disorganization theory, neighborhood strength is not considered, one of which is the possible protective effect of cultural norms such as familism that may be retained in a neighborhood with large proportion of Mexican Americans. The theory assumed that a high concentration of immigrants was a sign of disorganization, and it dismissed the idea that immigrant neighborhoods with high poverty rates could have strong social ties, which in turn, could reduce the risk of having adverse mental health outcomes.

The more recent theoretical framework incorporates potential neighborhood strengths, such as collective efficacy, that may coexist with neighborhood disadvantage. The inclusion of this perspective illustrates the complexity of social dynamics underestimated by the earlier disorganization theory, and may be more suitable for the understanding of immigrants' experiences in neighborhoods. Its emergence addresses the limitations of early assumptions about immigrant concentration and

provides immigrant researchers with a theoretical framework to measure and test hypotheses regarding the protective effects that may occur in ethnic enclaves. For example, researchers began to examine protective effects on Mexican American mental health during the early 2000s, a few years after Robert Sampson and his colleagues developed the collective efficacy framework for social disorganization theory (Sampson, Morenoff, & Earls, 1999; Sampson et al., 1997).

This review also contributes to the understanding of cross-level interactions between neighborhood and individual/family factors on minority populations' mental health. The early disorganization theory underestimated the importance of individuals' characteristics, such as age and family relationship, and their interactions with neighborhood structures. This lack of consideration for cross-level interactions may explain the inconsistency found in the relationship between neighborhood disadvantages and Mexican American mental health. For example, some researchers found that neighborhood low SES was associated with higher rates of adverse mental health outcomes among older adults (Ostir et al., 2003; Sheffield & Peek, 2009), a relationship that was not observed among youth (Roosa et al., 2010). In this case, older adults may be at higher risk when living in a disadvantaged neighborhood, because they may be more isolated due to the lack of mobility or limited contact from family members. The low level of contact with family members may restrain the buffering effects of family cohesion.

The buffering effect of family factors may be particularly relevant to the studies of Mexican Americans due to the centrality of familism in traditional norms and values. Considering the interaction between individual-level characteristics and neighborhood-level factors allows researchers to fully understand the social processes in neighborhoods and their impact on the mental health outcomes among this group. Thus, it is important for future researchers to account for both neighborhood- and individual/family-level characteristics in conceptualizing neighborhood dynamics and their impact on mental health outcomes.

The conceptual model presented in this review may provide theoretical insights for neighborhood studies and interventions targeting immigrants and minorities (see Figure 2). Neighborhood-level factors can be categorized as neighborhood

contextual and compositional factors. Neighborhood contextual factors include social, service, and physical environments, and these factors can affect mental health directly and indirectly via individual/family factors. These contextual factors present a dynamic pattern and can be improved through intervention efforts such as the increase of collective efficacy and through strategies for community development, such as the increase of green areas coverage. Neighborhood compositional factors also affect mental health directly and through their interactions with individual/family factors. However, these factors are more static compared to contextual factors. While these compositional factors have been theorized as a risk to mental health in early stage of neighborhood studies, recent research has found support for their protective effects. Thus, it is important to be aware of this shift and to emphasize the strength of disadvantaged neighborhoods in future research on immigrants and ethnic minorities.

Limitations and Future Directions

Although this systematic review holds implications for mental health research and interventions, it is important to recognize the study's limitations. First, the limited number of articles examined in this study constrains the conclusions that can be drawn regarding neighborhood mechanisms and their effect on Mexican Americans' mental health. Second, the proposed neighborhood mechanisms might not explain the relationship between neighborhood factors and mental health outcomes among Hispanics in general, because of large variances in this group. Hispanics can be Hispanic immigrants or part of the U.S.-born Hispanic population. Hispanic immigrants overall have better mental health outcomes than the U.S.-born population; for example, they have lower rates of depression (Alegría et al., 2007; Burnam, Hough, Karno, Escobar, & Telles, 1987; Grant et al., 2004; Vega & Gil, 1998). In addition, the analysis of neighborhood mechanisms among Hispanic immigrants must be adjusted for demographic risk factors, such as the length of stay in the U.S. (Vega, Ang, Rodriguez, & Finch, 2011). The primary focus of our study is the Mexican American population, which falls in the scope of the U.S.-born Hispanic population; thus, our findings may not be generalizable to a larger population.

Our study assumes that the terms *neighborhood* and *community* refer to the same concept, "a person's immediate residential environment" (Diez Roux, 2001). However, neighborhood and community are not precisely defined in previous literature (Furstenberg & Hughes, 1997; Gephart, 1997). Future studies may need to distinguish between neighborhood and community and provide more precise definitions for both terms. In addition, this systematic review used pre-defined eligibility criteria to select studies. This approach might lead to the possible unintentional exclusion of articles. All of the identified studies were written in English, which was an unintended consequence of the search strategy. Some of the reviewed articles were cross-sectional studies, which can limit the understanding of causality between neighborhood factors and mental health outcomes among the Mexican American population. The self-reporting measures in the reviewed studies may also introduce a possible response bias among the participants.

Our review suggests the need for additional studies to further examine each component in the proposed conceptual model. One understudied area is the effect of deforestation and the presence of grocery stores, which are neighborhood contextual factors. Previous studies have found these factors to display a protective effect on psychological distress. Nielsen and Hansen (2007) indicated that shorter distances from resident dwellings to publicly accessible green areas, private gardens, or shared green areas was associated with less distress. Previous studies also found that a lower availability of grocery stores indirectly increases mental distress via an increase in body weight (Papas et al., 2007).

However, to what extent grocery store availability in neighborhoods affects Mexican Americans' mental health has not yet been examined. In addition, the mediation effect of neighborhood compositional factors on their mental health has also not been investigated. We suggest that future studies should be conducted to examine this effect using a longitudinal design. When exploring community-based mental health interventions for this group, future studies may also consider neighborhood compositional and contextual factors to advance the understanding of their effects on mental health outcomes. Finally, our study suggests that future research may need to further

investigate how neighborhood compositional factors interact with collective efficacy and how the interactions affect Mexican Americans' mental health.

Conclusion

This systematic review deconstructed neighborhood factors in detail and summarized the studies that examined the pathway from neighborhood factors to Mexican American mental health outcomes. This review identified neighborhood mechanisms that may explain the dynamic process between neighborhood compositional factors, neighborhood contextual factors, and their effects on mental health outcomes. The proposed conceptual model may offer insights for future researchers to examine the effect of neighborhood mechanisms on mental health outcomes. To better understand neighborhood effects, it is necessary for future studies to include both neighborhood compositional and contextual factors in the analysis of mental health outcomes among immigrants and minorities.

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