Published in final edited form as:

J Early Adolesc. 2010 August 1; 30(4): 567–592. doi:10.1177/0272431609338177.

Neighborhood Disadvantage, Stressful Life Events, and Adjustment Among Mexican American Early Adolescents

Mark W. Roosa, Ginger L. Burrell, Rajni L. Nair, Stefany Coxé, Jenn-Yun Tein, and George P. Knight

All authors were affiliated with Arizona State University and its Prevention Research Center. Roosa, Burrell, and Nair were in the School of Social and Family Dynamics; Tein, Coxé, and Knight were in the Psychology Department.

Abstract

This study examined a stress-process model in which stressful life events and association with delinquent peers mediated the relationship of neighborhood disadvantage to Mexican American early adolescents' mental health. We also proposed that child gender, child generation, and neighborhood informal social control would moderate the relationship of neighborhood disadvantage to children's experiences of stressful life events. With data from 738 Mexican American early adolescents, results generally provided support for the theoretical model although the relationships of neighborhood disadvantage to stressful life events and adjustment were weaker than expected. Additional research is needed to corroborate these results and determine why neighborhood disadvantage may have different relationships to adjustment for Mexican American early adolescents than for others.

Child internalizing and externalizing problems are public health concerns with significant and far reaching consequences for families, society, and mental health service delivery. In addition, children with clinical levels of internalizing and externalizing symptoms are at increased risk for criminal behavior, habitual drug use, and serious mental illness in adulthood (e.g., Gacono, Nieberding, Owen, Rubel, & Bodholdt, 2001; Lewinsohn, Rohde, Seeley, Klein & Gotlib, 2003). Both internalizing and externalizing problems disproportionately affect Mexican American youth (youth of Mexican origin living in the United States), who are more likely than non-Latino Whites to have clinical levels of these disorders (e.g., Bird et al., 2001; Roberts, Roberts, & Chen, 1997). Further, several recent studies suggest that neighborhood quality plays a distal yet significant role in the development of youths' internalizing and externalizing problems (e.g., Deng et al., 2006; Lambert, Brown, Phillips, & Ialongo, 2004; Roosa et al., 2005). Neighborhood characteristics are hypothesized to impact development indirectly through their effects on more proximal aspects of youth's environment (e.g., stressful life events, parental depression; for a review, see Roosa, Jones, Tein, & Cree, 2003). In this study, we examined a mediation model of processes through which neighborhood quality may relate to internalizing and externalizing symptoms in a sample of Mexican American early adolescents, a population rarely included in research on neighborhood effects.

A stress-process approach is useful in understanding how a distal contextual factor like neighborhood quality can impact children's development through more proximal processes (e.g., Pearlin, Menaghan, Liberman, & Mullan, 1981). Neighborhood quality is a contextual

influence that may either increase or reduce youths' exposure to stressful events, which, in turn, may influence social and mental health functioning (Attar, Guerra, & Tolan, 1994; Deng et al., 2006; Roosa et al., 2005). A stress process model may be particularly useful in studying the relation of neighborhood quality to adjustment in Mexican American children. Many Mexican American children experience heightened exposure to stressors such as substandard living conditions and pressure from delinquent peers because their families are disproportionately represented among those living in poverty and in disadvantaged neighborhoods (Gonzales, Tein, Sandler, & Friedman, 2001; U.S. Census Bureau, 2004; U.S. Department of Housing and Urban Development, 2006). However, because of the economic diversity within the Mexican American population, differences between the ways immigrant and US-born Mexican Americans view their neighborhoods, and even differences within families (e.g., boys versus girls) in children's exposure to neighborhood conditions, a stress process model of the relations of neighborhood disadvantage to adjustment in early adolescents is likely to be complex.

The Present Study

Guided by a stress process framework, we proposed two mediators of neighborhood influences: stressful life events and associations with delinquent peers (Figure 1). These potential mediators were chosen because of research primarily with other populations of youth of similar (i.e. 9-11 years) and younger ages demonstrating their salience for child internalizing and externalizing problems and their potential for mediating the relations of neighborhood quality to child mental health (Caughy, Nettles, & O'Campo, 2008; Deng et al., 2006; Grus, 2001; Mrug, Hoza, & Bukowski, 2004; Roosa et al., 2005). Researchers often operationalize neighborhood disadvantage or risk using objective indicators from sources such as the census (e.g., percent unemployed males) or police or civic records (e.g., crime rates; Elliott et al., 1996; Ingoldsby et al., 2006). These kinds of indicators represent either a chronic stressor or a source of stressors that everyone in the neighborhood must deal with (Attar et al., 1994). Because of the increased stressful life events commonly associated with living in disadvantaged neighborhoods, youth may feel a greater need to seek support from peers as a way of coping with mounting stressors (Ayers, Sandler, West, & Roosa, 1996; Chassin, Curran, Hussong, & Colder, 1996). This strategy of coping with adversity is a normative behavior for older children and adolescents. For children living in disadvantaged neighborhoods, however, the wider availability and elevated status of delinquent peers often includes an increased likelihood of affiliations with these youth (see Ingoldsby & Shaw, 2002 for a review). For example, children experiencing significant family hassles such as conflict and unstable household membership may seek support from high status peers within their neighborhoods. These peers, who may have achieved status by engaging in antisocial or unconventional behaviors, provide a social context that may compromise children's functioning.

Indeed, substantial evidence indicates that association with delinquent peers is positively linked to externalizing problems (See Granic & Patterson, 2006 for a review). Those who affiliate with delinquent peers are more likely to engage in antisocial behaviors than those who associate with prosocial peers. Research on the relation between delinquent peer affiliations and internalizing, however, is less developed. Even so, cross sectional and longitudinal studies have reported a positive relation between delinquent peer associations and depressive symptoms among children and adolescents (Brengden, Vitaro, & Bukowski, 2000; Connell & Dishion, 2006; Fergusson, Wanner, Vitaro, Horwood, & Swain-Campbell, 2003; Simons, Whitbeck, Conger, & Melby, 1991). However, these studies focused almost entirely on European American youth, leaving the nature of these relations among other ethnic/racial groups, including Mexican Americans, one of the largest and fastest growing ethnic minority groups, unexamined.

Members of different racial or ethnic groups (i.e., African Americans and European Americans) respond differently to neighborhood quality (Brooks-Gunn, Duncan, Klebanov, & Sealander, 1993; López-Turley, 2002; South & Crowder, 1999) although the reasons for these differences are not clear. The relationship of neighborhood disadvantage to Mexican American early adolescents' mental health may be different from that of either African Americans or European Americans. In particular, we believe that two important characteristics of the Mexican American population (e.g., positive characteristics of ethnic enclaves, generation in the U.S.) may moderate the relation between neighborhood disadvantage and children's stressful life events thereby producing a different relation between neighborhood disadvantage and mental health in this population than is common in other groups. For instance, a large percentage of Mexican Americans are both low-income and immigrants (U.S. Census Bureau, 2004) and many live in ethnic enclaves dominated by low-income immigrants (Suárez-Orozco & Suárez-Orozco, 2001). While these communities may exhibit many characteristics of disadvantage (e.g., high percent of families in poverty), socially these communities may reflect culturally influenced patterns of relations among neighbors because of similarities among residents (e.g., ethnicity, social class, ability to speak Spanish, values; De Vos, 1992; Sampson et al., 1997). Because of these similarities and a collectivist orientation (Marin & Marin, 1991), informal social control (i.e., shared responsibility for children's behavior) tends to be relatively high and problems associated with disadvantage relatively low in Mexican immigrant enclaves (Moore & Pinderhughes, 1993, Sampson, 1997; Sampson et al., 1997). Children in such neighborhoods may experience fewer hassles from peers than if they lived in other neighborhoods. In addition, these neighborhoods may have been strong sources of support for families experiencing hard times making economic difficulties less apparent to children. Thus, we proposed that the relationship between neighborhood disadvantage and children's experiences of stressful life events would be moderated by informal social control; we expected the relation would be weaker in neighborhoods high on informal social control.

The only two neighborhood studies that we can identify that included significant numbers of Mexican Americans provided evidence that the mechanisms by which neighborhood quality relates to child adjustment might differ significantly for immigrants and non-immigrants (Deng et al., 2006; Roosa et al., 2005). One possible explanation for this difference may be that immigrants evaluate neighborhood conditions differently than non-immigrants because they compare their current circumstances with those they left behind (Suárez-Orozco, 1989). Because of this dual cultural perspective, immigrants may evaluate low-income neighborhoods less harshly than non-immigrants and/or react less negatively to neighborhood conditions. Similarly, immigrants and early generation Mexican Americans may not have acquired the skill sets for dealing with neighborhood disadvantage in the U.S. that later generation Mexican Americans have developed. To test whether generation status affected the relation between neighborhood disadvantage and stressful life events, we included child generation as a moderator of this relation (see Figure 1).

In addition, we considered the role of gender as a possible moderator of the relation between neighborhood quality and stressful life events. Research suggests that boys and girls relate differently to their neighborhoods with boys spending more time outside and traveling farther from their homes than girls (Greenberg, Lengua, Coie, & Pinderhughes, 1999; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996). Thus, boys may be more intensely exposed to negative aspects of disadvantaged neighborhoods such as antisocial peers. Moreover, gender differences in exposure to negative neighborhood stimuli may be more pronounced for Mexican American children; Latino parents tend to be more protective with girls than boys (e.g., Halgunseth, Ispa, & Rudy, 2006) further contributing to potential differences in neighborhood exposure. Therefore, child gender also was tested as a

moderator of the relation between neighborhood disadvantage and children's experience of stressful life events.

This study provided an opportunity to further understanding of the processes through which neighborhood quality influences mental health functioning in important ways. First, we believe this was the first study of the effects of neighborhood quality on the behavioral and emotional well being of a sample consisting entirely of Mexican American families. Therefore, the current study provided a unique addition to the neighborhood literature which has overlooked Latino populations in general and populations with significant numbers of immigrants. The results provided the opportunity to compare, albeit indirectly, the relations of neighborhood disadvantage to child adjustment for Mexican Americans with published results from studies primarily of African American and European American families. Secondly, because this study used an ethnic homogenous design, it provided an opportunity to explore the considerable variations within the Mexican American youth population in the relations between neighborhood disadvantage and early adolescent mental health (García Coll et al., 1996; Gonzales, Knight, Morgan-Lopez, Saenz, & Sirolli, 2002). Finally, the sample of Mexican American families in this study is more diverse on several important demographic characteristics (e.g., income, quality of neighborhoods, generation) than most studies of this population; studies of Mexican Americans typically are limited to samples that are low-income, English speaking, inner city residents (Gonzales, Knight et al., 2002). Thus, the results from this study are likely to be relevant to a larger portion of the Mexican American population than most previous studies.

Figure 1 presents the hypothesized stress process model. Neighborhood disadvantage was expected to be positively associated with stressful life events. Neighborhoods can enhance or diminish the stressors children experience depending on the extent to which they provide an environment that is safe and nurturing or dangerous and demanding (Sampson et al., 1997). Next, the relationship of neighborhood disadvantage to stressful life events was expected to vary depending on (i.e., be moderated by) child generation status and gender, such that the positive relation was stronger for later generation children and for boys. In addition, We also expected the residents of neighborhoods with many Mexican immigrants to have more shared values (Moore & Pinderhughes, 1993) and, therefore, higher informal social control than is common in disadvantaged neighborhoods. In turn, informal social control would moderate the relation of neighborhood disadvantage to stressful life events (Sampson et al., 1997). Research also has shown that U.S.-born Mexican Americans have more adjustment problems than their Mexico-born peers (e.g., Centers for Disease Control, 2004; Grant, et al., 2004; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005) and that there are differences between boys and girls in both internalizing (i.e., girls higher) and externalizing (i.e., boys higher) behaviors (e.g., Centers for Disease Control, 2006). However, we hypothesized that these differences would be accounted for by differences in stressful life events experienced by these groups (i.e., higher for boys and U.S. born Mexican Americans); thus, there were no direct paths in the model from these characteristics to association with delinquent peers, internalizing behavior, or externalizing behavior. On the other hand, we did hypothesize a direct relationship between neighborhood disadvantage and association with delinquent peers in addition to the mediated path through stressful life events. Delinquent peers are more common in disadvantaged neighborhoods increasing youths' likelihood of interacting with them.

We also predicted that stressful life events would be positively linked with delinquent peer affiliations. When stressful life events accumulate to a point of compromising coping ability, children may attempt to fulfill their need for social support by seeking friends who engage in antisocial activities which offers an escape from their daily hassles (Ayers, et al., 2001; Barrera et al., 2001). We expected that these associations with delinquent peers, in turn,

would be positively linked to both internalizing and externalizing problems. Several studies have demonstrated a link between delinquent peers and externalizing (e.g. Brendgen et al., 2000; Roosa et al., 2005) and internalizing problems (Connell & Dishion, 2006; Fergusson et al., 2003) although these relations rarely have been tested with Mexican Americans.

Method

Data for this study came from a study investigating the role of culture and context in the lives of Mexican American families in a large southwestern metropolitan area (Author cite). Participants were 750 Mexican American students in 5th grade and their families who were selected from schools that served ethnically, linguistically, and economically diverse communities. Families were eligible if (a) both mother and child agreed to participate; (b) the child attended 5th grade in a sampled school; (c) the mother was the child's biological mother, lived with the child, and self-identified as Mexican or Mexican American; (d) the child's biological father was of Mexican origin; (e) the child was not severely learning disabled; and (f) no step-father was living with the child.

Twelve families were excluded from analyses due to incomplete data. Among the remaining 738 families, 571 (77%) were two-parent families. The average age of children was 10.9 years (range 9-12) and there were 366 girls (49.6%) and 372 boys (50.4%). Given the choice of completing the battery in English or Spanish, 82.5% of children chose English. With regard to nativity, 70.3% of children but only 25.7% of mothers were born in the U.S. Average family income was between \$25,001 and \$30,000 but ranged from less than \$5,000/year to greater than \$95,000/year. On average, mothers were about 36 years old and had completed 10 years (range 1-20 years) of education.

Procedures

Sampling and recruitment—Using random and purposive sampling, 47 public, religious, and charter schools were identified from throughout the metropolitan area to represent the economic, cultural, and social diversity of the city (author cite). Recruitment materials were sent home with all 5th grade children in these schools. Over 85% who returned recruitment materials were eligible for screening (e.g., Latino), and 1,028 met eligibility criteria. Computer Assisted Personal Interviews lasting about 2 ½ hours were completed with 750 families, 73% of those eligible. All research questions and response options were read aloud to participants by trained interviewers to avoid problems due to variations in literacy. Families received \$45 for each participating family member. All procedures were reviewed and approved by the Institutional Review Board at the first author's university and conformed to APA ethical standards.

Measures

Neighborhood disadvantage—The measure of neighborhood disadvantage was created using Census data at the level of the census block (the smallest census unit available as recommended for research with this age group by Roosa et al., 2003, in their review) for these variables: percent of female headed households with children, percent of families with incomes below the poverty line, and percent of unemployed males. The census block group as a definition of neighborhood maximizes heterogeneity between neighborhoods in a replicable way (Cook, Shagle, & Degirmencioglu, 1997; Weiss, Ompad, Galea, & Vlahov, 2007) and has predicted child mental health in African American and European American populations (Caughy et al., 2008; Caughy, O'Campo, & Muntaner, 2003; Caughy, O'Campo, & Muntaner, 2004; Vanderbilt-Adrianne & Shaw, 2008). Because the range and distribution of percentages varied greatly across variables (i.e., the percent of unemployed males ranged from approximately 0% to 40% across the metropolitan area while proportion

of ethnic minority individuals ranged from 0% to 100%), all census variables were standardized before compositing. These standardized scores were then averaged to create a single variable in which higher scores represented more disadvantaged neighborhoods (e.g., Deng et al., 2006). This scoring procedure recognizes the multidimensional nature of neighborhood quality and that it is the combination of conditions that is most likely to place people at risk rather than any single neighborhood condition (e.g., Duncan, Connell, & Klebanov, 1997; Roosa et al., 2003). Because this is a block group-level variable, all individuals who lived in the same block group had the same value.

Informal social control—Mothers reported on informal social control in their communities using a 5-item measure from Sampson et al (1997). Informal social control includes monitoring of children's spontaneous play, willingness to intervene to prevent acts of truancy, hanging out by teens, or confrontation of persons who are exploiting or disturbing public space (e.g., "How many of your neighbors could be counted on to do something if children were skipping school and hanging out on a street corner?"). Because this is a neighborhood level variable, the score is aggregated at the block group level. Reliability was .89.

Generation—This variable represented the generation of immigration and was determined by asking parents where they, their child, and the child's maternal and paternal grandparents and great grandparents, were born. This was an ordinal variable ranging from 1, all family members were born in Mexico (i.e., the family immigrated after the child was born) to 4, all of these family members were born in the U.S. Generation was treated as continuous for the purposes of this analysis.

Delinquent peers—The Peer Delinquent Behavior scale is a 14-item measure that assesses the degree of antisocial activity among the adolescent's peers and was based on measures from Thornberry et al., (1994), Nye and Short (1957) and Dishion, Patterson, Stoolmiller, and Skinner (1991). Items from the measure evaluate peers' antisocial behavior (e.g., "How many of your friends have sold drugs?") as well as their antisocial influence (e.g., "How many of your friends have suggested that you should sell drugs?"). Children responded on a 5-point Likert-type scale ranging from "None of them" to "All of them". Reliability for this scale was 0.79.

Stressful life events—The stressful life events score was a count across three subscales of the Multicultural Events Scale for Adolescents (Gonzales et al., 2001). This inventory was developed specifically to fit the lifestyle and experiences of culturally diverse, urban adolescents. The items address "hassles" more than major life events, the sort of events that adolescents experience on a more or less regular basis. Children are asked whether each event happened to them over the past three months. For this study we used the peer hassles (e.g., "Other kids said mean or bad things to you"), economic hassles (e.g., "Your parent(s) talked about having serious money problems"), and family conflict (e.g., "You had a serious disagreement or fight with a parent.") groupings, which consist of 14-, 10-, and 9-items, respectively. Gonzales et al. provided evidence for validity in general and for cross-language validity. Similar to most life events assessments, this set of questions represents an inventory checklist, not a construct, so reliability figures are not appropriate (Sandler & Guenther, 1985).

Mental health symptoms—Mental health symptoms were assessed using the Diagnostic Interview Schedule for Children (DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) which has been successfully translated into Spanish (Bravo, Canino, Rubio-Stipec, & Woodbury-Fariña, 1991; Bravo, Woodbury-Fariña, Canino, & Rubio-Stipec, 1993). We

summed child reported symptoms across mood and anxiety disorder modules to obtain a total internalizing symptom count. We summed child reported symptoms across the following modules to obtain a total externalizing symptom count: attention deficit/hyperactivity disorder, oppositional defiance disorder, conduct disorder, and alcohol abuse/dependence, nicotine dependence, marijuana abuse/dependence, and other substance abuse/dependence. This scoring approach is consistent with prior work (e.g., Ge, Brody, Conger & Simons, 2006).

Analyses

Structural equation modeling with full-information maximum likelihood estimation was used to test the hypothesized model using Mplus (Muthen & Muthen, 2005). The multi-level nature of the data (i.e., children nested in neighborhoods) was accounted for by specifying the census block group as the cluster variable. All variables, including binary variables such as gender, were standardized to have a mean of 0 and a standard deviation of 1. This was done in order to obtain the appropriate standardized path coefficients for interaction terms (Cohen, Cohen, West, & Aiken, 2003). Interaction terms were created by calculating the product of the two (standardized) variables of interest and using the resulting product as a manifest variable in the model (Tein, Sandler, MacKinnon, & Wolchik, 2004). For example, the neighborhood disadvantage by gender interaction term was created by multiplying the centered neighborhood disadvantage score by the centered gender score for each individual. Hypothesized mediation effects were tested using the product of coefficients method with the multivariate delta method of deriving the standard error (Sobel, 1982). This test is a commonly used method of testing for significant mediation effects and has excellent power in samples of this size (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Good model fit is reflected by a non-significant chi-square test (i.e., $p > .05$), CFI greater than .95, RMSEA less than .05, and SRMR less than .05 (Hu & Bentler, 1999). Multiple fit indices are used because no single indicator is unbiased in all analytic conditions.

Results

Table 1 shows correlations between the variables included in the model as well as means and standard deviations for all study variables. Neighborhood disadvantage was significantly correlated with associations with delinquent peers, child generation, and gender in the anticipated directions; greater neighborhood disadvantage was related to more friendships with delinquent peers, more recent generations of immigration, and being female. The level of externalizing symptoms was significantly correlated with gender, such that boys displayed more externalizing symptoms than girls. Delinquent peers, externalizing symptoms, and internalizing symptoms were positively correlated with one another. Intraclass correlations (ICCs) for individual-level variables were calculated to assess the proportion of variation in these variables that was attributable to the neighborhood clustering. About 22% of the variation in generation status and about 42% of the variation in family income was attributable to neighborhood; all other individual-level variables had ICCs of 4% or less.

The initial fit of the hypothesized model was fair ($\chi^2(20) = 61.334, p < .0001$; CFI = .94; RMSEA = .052; SRMR = .027). Only informal social control and the interaction of child generation and neighborhood disadvantage predicted stressful life events. The hypothesized path from neighborhood disadvantage to association with delinquent peers was not significant. All other hypothesized paths between the remaining variables in the model were significant and in the direction predicted. Stressful life events were significantly positively related to delinquent peer relationships, internalizing symptoms, and externalizing symptoms. Delinquent peer relationships also were significantly positively related to internalizing and externalizing symptoms. However, results showed several large

modification indices of which three were theoretically important; these paths were added before retesting the model. Essentially, the modification indices showed that our hypotheses that gender differences in associations with delinquent peers, internalizing, and externalizing behaviors would be explained by mediated paths through stressful life events were not supported by the data. Instead modification indices suggested gender had a direct effect on these three variables that should be included for correct model specification. No other changes were made to the hypothesized model.

Figure 2 shows the results for this second model. The overall fit was excellent ($\chi^2(17) = 20.624, p > .05$; CFI $> .99$; RMSEA = .017; SRMR = .016) and the results were virtually the same as the initial test of the model except for the new paths from gender. Only informal social control and the interaction of child generation and neighborhood disadvantage predicted stressful life events. On average, there was not a relationship between neighborhood disadvantage and stressful life events. The pattern of the interaction (Figure 3) was such that there was a negative relation between the two variables for 1st and 2nd generation children (i.e., children born in Mexico or whose parents were born in Mexico; $z = -1.81, p < .10$; $z = -1.00, NS$, respectively), while there was a positive relation for 3rd and 4th generation children ($z = .76, NS$; $z = 1.60, NS$, respectively). Although the simple slopes were not significant for any generation, the slopes for generations 1 and 4 were significantly different from one another ($t = 2.11, p < .05$). The direct path from neighborhood disadvantage to delinquent peer relations was not significant. Gender was positively related to delinquent peer relationships and externalizing symptoms; boys reported more delinquent peer relationships and externalizing symptoms. The added path from gender to internalizing symptoms was not statistically significant. As predicted, stressful life events was significantly and positively related to delinquent peer relations, internalizing symptoms and externalizing symptoms. Delinquent peer relations were significantly and positively related to both internalizing and externalizing symptoms. The four dependent variables in this model, stressful life events, delinquent peer relations, externalizing symptoms, and internalizing symptoms, had 2%, 31%, 17%, and 19% of their variance explained, respectively. As hypothesized, association with delinquent peers mediated the relations of stressful life events to both internalizing ($z = 3.194, p < .01$) and externalizing ($z = 3.101, p < .01$).

Because family economic status and neighborhood disadvantage often are confounded (Jencks & Meyers, 1990; Tienda, 1991), we added family income as a control variable to the model in a post hoc analysis. Family income was significantly correlated only with children's association with delinquent peers. With this added path, the results shown in Figure 2 remain virtually unchanged; the new path was not significant. Another potential concern for neighborhood studies is whether families or children have lived in the neighborhood long enough for any neighborhood effect to show up. The relations of neighborhood disadvantage to stressful life events and association with delinquent peers remained nonsignificant after removing the 256 families who had lived in their neighborhoods for less than 2 years.

Additionally, following the lead of earlier research on a similar population and to make sure critical information was not overlooked, in a *post hoc* analysis we included mothers' perceptions of neighborhood danger in the final model in order to account for subjective evaluations of neighborhood characteristics (Caughy et al., 2008; Roosa et al., 2005). This variable was added as an independent variable and multiplied to form interaction terms with gender, generation status, and informal social control in the same manner as the objective neighborhood disadvantage variable. This model fit the data well, $\chi^2(29) = 30.50, p > .05$; CFI = .99; RMSEA = .008; SRMR = .015, but the explanatory power of this new model was worse than the original neighborhood disadvantage model as indicated by the substantial

increase in the Bayes Information Criterion (BIC) from 22,170.39 to 25,947.60 (a smaller BIC indicates better fit; Schwartz, 1978).

Discussion

This study tested a stress process model of the role of neighborhood disadvantage, stressful life events, and association with delinquent peers in the adjustment of Mexican American early adolescents. The model hypothesized that neighborhood disadvantage would be positively related to children's stressful life events. In turn, stressful life events was expected to be related to internalizing and externalizing symptoms both directly and indirectly through the mediation of association with delinquent peers. Neighborhood disadvantage was related to children's stressful life events differently for first and fourth generation Mexican American adolescents providing some support for the contention that those with ties to the country of origin may see and/or evaluate their neighborhoods differently, or have a different skill set for coping with neighborhood disadvantage, than those who have been in the country for generations (Suárez-Orozco, 1989). The ability and willingness of adults in a community to intervene when children other than their own were misbehaving (i.e., informal social control) provided some reduction in the amount of stressful life events children experienced but did not moderate the relation between neighborhood disadvantage and stressful life events as hypothesized.

Parental protectiveness might have contributed to the complex relationship between neighborhood disadvantage and stressful life events in this sample of Mexican Americans compared to the relations found in studies with other ethnic groups. Latino parents, particularly immigrants, are more protective of their children than non-Latino parents (Halgunseth et al., 2006). Thus it is possible that those immigrant and early generation children living in the most disadvantaged neighborhoods may not have been given much opportunity to experience any negative influences of their neighborhoods without the presence and protection of their parents. For instance, in the current study when parents were asked about what happened when their child went out of the house alone (i.e., part of a measure of parental monitoring), it was not uncommon for parents to respond: "It never happens." Parental protectiveness also may explain the lack of differences in stressful life events for boys and girls in this study, particularly at this age, although immigrant parents generally are more protective of girls than boys (Suárez-Orozco & Suárez-Orozco, 2001). Perhaps a gender difference in the experience of stressful life events does exist in Mexican American youth, but at a later age than for many other ethnic groups if, as expected, boys are given more and earlier access to the neighborhood in subsequent years. The possible role of parental protectiveness was supported by the interaction between child generation and neighborhood disadvantage; immigrant children experienced fewer stressful life events as disadvantage got worse while fourth generation children experienced more stressful life events as disadvantage got worse, the more commonly expected relationship. However, if heightened parental protectiveness were the explanation for this interaction, protectiveness did not eliminate the direct, significant, and positive relationship between neighborhood disadvantage and children's association with delinquent peers. Perhaps, much of the association with delinquent peers took place in schools beyond the reach of parental protectiveness.

As hypothesized, children's experiences of stressful life events was related to their adjustment both indirectly, through association with delinquent peers, and directly. Consistent with previous research (Ayers et al., 1996; Chassin et al., 1996; Roosa et al., 2005), children who experienced higher amounts of stressful life events had more associations with delinquent peers. Children experiencing stressful life events due to financial problems, conflicts at home, and/or problems with their peers may have felt that

they had no other means of coping with these hassles than reaching out to peers for support. Although Mexican American parents may be more protective of children than non-Latino parents and their children may feel very strong connections with their families (Halgunseth et al., 2006), children may not feel that they can discuss family problems with their parents (e.g., this might be seen as being disrespectful and in violation of traditional Mexican values; Marin & Marin, 1991). Similarly, these children might not have felt that their parents would be open or helpful if peer problems were brought home.

The relations of stressful life events to children's internalizing and externalizing symptoms were consistent with research with other ethnic groups. The relationship between association with delinquent peers and externalizing behavior is one of the most common in the literature including in other studies with Mexican Americans (e.g., Brengden et al., 2000; Dishion et al., 1994; Roosa et al., 2005) so it is no surprise that this path was significant in this sample of Mexican American early adolescents. Associating with delinquent peers provides opportunities, role models, and encouragement to engage in antisocial or delinquent behaviors that is too strong for many to resist (Granic & Patterson, 2006). The results also support the much more rarely reported link between associations with delinquent peers and internalizing symptoms, a link that has been reported almost exclusively in studies with few, if any, minority youth (e.g., Brengden et al., 2000; Connell & Dishion, 2006; Fergusson et al., 2003; Simons et al., 1991). The increase in internalizing symptoms that seems to accompany associating with delinquent peers may be due to a number of processes including pressures to conform to antisocial role models, the tension of potentially getting caught in antisocial behaviors, and/or increases in other stressors (Fergusson et al., 2003). Future studies should examine the mechanisms that mediate the relation between associating with delinquent peers and internalizing symptoms.

The fact that neighborhood disadvantage was modestly and indirectly related to children's experience of stressful life events in this study may suggest that the theoretical models used to explain neighborhood and poverty effects in African American and European American samples may not be as useful for Mexican American early adolescents. Future research with Mexican Americans in this age group needs to determine if neighborhood disadvantage is related to mental health symptoms and crime in high density Mexican American neighborhoods to the same degree as in high density African American or European American neighborhoods, whether traditional models of neighborhood effects are useful for this population, and if new models need to be developed that better reflect their neighborhood experiences.

Conclusions

This study supported the utility of a stress process model for understanding variations in mental health among a diverse sample of Mexican American early adolescents living in a diverse set of neighborhoods. Though there was not a direct effect of neighborhood disadvantage on stressful life events for the full sample, the interaction between neighborhood disadvantage and generation status raised some interesting questions about the specific effects for youth of varying generation statuses. Does something about being an immigrant (e.g., dual perspective) or living in a predominantly immigrant neighborhood (e.g., social cohesion) help mitigate at least some problems associated with neighborhood disadvantage? Do many Mexican American parents provide such an effective protective cocoon around their children that variations in neighborhood quality add little to the stressors experienced by this age group? Are there other neighborhood, family, or cultural factors that are the primary determinants of exposure to stressful life events or that moderate the effects of stressful life events on mental health for Mexican American youth? Will

neighborhood disadvantage emerge as more of a risk factor for older Mexican American adolescents, particularly boys, when parental protectiveness may diminish?

Because the lack of a direct relation between neighborhood disadvantage and child stressful life events was unexpected and inconsistent with some of our earlier work albeit with a somewhat older sample (Deng et al., 2006; Roosa et al., 2005) we considered several explanations for this aberrant finding. For instance, the literature on neighborhood disadvantage has provided no standard for operationalizing this term nor any analyses that demonstrate that one operationalization is better than another (Roosa et al., 2003). The indicators used in this study (i.e., percent female headed households, percent families living in poverty, and percent unemployed males) are commonly, but far from exclusively, used to operationalize neighborhood disadvantage as is the method of adding or averaging such indicators (e.g., Deng et al., 2006; Elliott et al., 1996; Kowalski-Jones, 2000; Roosa et al., 2005). In addition, because of the importance of individuals' perception of their neighborhoods, we also explored the use of mother's reports of neighborhood danger in addition to neighborhood disadvantage but this variable had no impact on the results. Nevertheless, it is always possible that the results may have differed from those reported if we had used a much different set of indicators of disadvantage than those chosen. Research on effects of neighborhood disadvantage on adolescent mental health would benefit greatly from systematic studies of the best methods for operationalizing neighborhood disadvantage (e.g., Roosa et al., 2003).

In any study that includes participants who were surveyed in different languages, there is the possibility that measurement problems can occur because of either poor translations or because concepts do not have similar meanings across languages or cultures (Knight, Roosa, & Umana-Taylor, 2009). Although our research team has systematically examined the cross language and cross cultural equivalence of measures used in our research over the years (e.g., Kim, Nair, Knight, Roosa, & Updegraff, 2009; Knight, Virden, Ocampo, & Roosa, 1994; Nair, White, Knight, & Roosa, in press), there is always the possibility that equivalence problems could have introduced bias into the current study. However, *post hoc* analyses (i.e., Box's M) showed that the relations among study variables did not differ by child language at least somewhat reducing the likelihood of this possibility.

The current study used a relatively large and heterogeneous sample of Mexican American families who resided in very diverse neighborhoods thus providing the foundation for a strong test of the hypothesized model. However, this study was cross sectional so correlations among variables do not necessarily represent causal relations and the arrangement of variables in the model should not be confused with their temporal order. Longitudinal applications of the stress process model to the relationship of neighborhood disadvantage to mental health in this population will increase confidence in the results reported. In addition, almost all the variables linked by significant paths were from child self-reports (exceptions were informal social control and generation). Confidence in the results would be stronger if there were multiple sources of data for important variables in the model. On the other hand, the strong results for the direct and indirect relations of stressful life events to Mexican American children's adjustment mirrored results of similar models with children from other ethnic groups. Similarly, the results showed that association with delinquent peers was a significant risk factor for the mental health of Mexican American youth. Association with delinquent peers made a significant contribution to the explained variance of both internalizing and externalizing symptoms and mediated a significant portion of the influence of stressful life events on children's mental health.

These results provide at least a few hints about possible foci for programs to reduce or prevent mental health problems among Mexican American youth. First, many Mexican

American youth probably would benefit from interventions designed to both reduce their exposure to negative life events and provide them with more positive ways of coping with stressful events. Equally important, these children might benefit from training that would help them choose more prosocial peers and resist peer pressure to become involved in antisocial activities. Neighborhood level interventions also might be used to strengthen ties among neighbors and increase the level of collective informal social control exercised by adults to guide and control children's behaviors. These neighborhood level interventions might be more important in neighborhoods dominated by later generation Mexican Americans as opposed to new arrivals. Replication of these results particularly with longitudinal data would strengthen arguments in support of these approaches.

Acknowledgments

Work on this paper was supported, in part, by NIMH Grant RO1 MH68920 (Culture, context, and Mexican American mental health) and by the Cowden Fellowship program of the School of Social and Family Dynamics. The authors are thankful for the support of Delia Saenz, Nancy Gonzales, our Community Advisory Board, our staff and interviewers, and the families who participated in the study.

References

- Attar BK, Guerra NG, Tolan PH. Neighborhood disadvantage, stressful life events, and adjustment in urban elementary-school children. *Journal of Clinical Child Psychology* 1994;23:391–400.
- Ayers TS, Sandler IN, West SG, Roosa MW. A dispositional and situational assessment of children's coping: Testing alternative models of coping. *Journal of Personality* 1996;64:923–958. [PubMed: 8956518]
- Barrera M Jr, Prelow HM, Dumka LE, Gonzales NA, Knight GP, Michaels ML, Roosa MW, Tein J. Pathways from family economic conditions to adolescents' distress: Supportive parenting, stressors outside the family, and deviant peers. *Journal of Community Psychology* 2002;30:135–152.
- Bird HR, Canino GJ, Davies M, Zhang H, Ramirez R, Lahey BB. Prevalence and correlates of antisocial behaviors among three ethnic groups. *Journal of Abnormal Child Psychology* 2001;29:465–478. [PubMed: 11761281]
- Bravo M, Canino GJ, Rubio-Stipec M, Woodbury-Fariña M. A cross-cultural adaptation of a psychiatric epidemiologic instrument: The Diagnostic Interview Schedule's Adaptation in Puerto Rico. *Culture, Medicine, and Psychiatry* 1991;15:1–18.
- Bravo M, Woodbury-Fariña M, Canino GJ, Rubio-Stipec M. The Spanish translation and cultural adaptation of the Diagnostic Interview Schedule for Children (DISC) in Puerto Rico. *Culture, Medicine, and Psychiatry* 1993;17:329–344.
- Brendgen M, Vitaro F, Bukowski WM. Deviant friends and early adolescents' emotional behavioral adjustment. *Journal of Research on Adolescence* 2000;10:173–189.
- Brooks-Gunn J, Duncan GJ, Klebanov PK, Sealand N. Do neighborhoods influence child and adolescent development? *American Journal of Sociology* 1993;99:353–395.
- Caughy MO, O'Campo PJ, Muntaner C. When being alone might be better: Neighborhood poverty, social capital, and child mental health. *Social Science and Medicine* 2003;57:227–237. [PubMed: 12765704]
- Caughy MO, O'Campo PJ, Muntaner C. Experiences of racism among African American parents and the mental health of their preschool-aged children. *American Journal of Public Health* 2004;94:2118–2124. [PubMed: 15569963]
- Caughy MO, Nettles SM, O'Campo PJ. The effects of residential neighborhood on child behavior problems in first grade. *American Journal of Community Psychology* 2008;42:39–50. [PubMed: 18607720]
- Centers for Disease Control and Prevention. Health disparities experienced by Hispanic - United States. *MMWR Weekly* October 15;2004 53(40):935–937.
- Centers for Disease Control and Prevention. Surveillance Summaries, June 9. *MMWR* 2006;55(No. SS-5)

- Chassin L, Curran PJ, Hussong AM, Colder CR. The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. *Journal of Abnormal Psychology* 1996;105:70–80. [PubMed: 8666713]
- Cohen, J.; Cohen, P.; West, SG.; Aiken, LS. *Applied multiple regression/correlation analysis for the behavioral sciences*. Lawrence Erlbaum; Mahwah, NJ: 2003.
- Connell AM, Dishion TJ. The contribution of peers to monthly variation in adolescent depressed mood: A short-term longitudinal study with time-varying predictors. *Development and Psychopathology* 2006;18:139–154. [PubMed: 16478556]
- Cook, TD.; Shagle, SC.; Degirmencioglu, SM. Capturing social process for testing meditational models of neighborhood effects. In: Brooks-Gunn, J.; Duncan, GJ.; Aber, JL., editors. *Neighborhood poverty: Context and consequences for children*. Vol. 2. Russell Sage Foundation; New York: 1997.
- Deng S, Lopez V, Roosa MW, Ryu E, Burrell G, Tein J, Crowder S. Family processes mediating the relationship of neighborhood disadvantage to early adolescent internalizing problems. *Journal of Early Adolescence* 2006;26:206–231.
- DeVos, G. *Social cohesion and alienation: Minorities in the United States and Japan*. Westview; Boulder, CO: 1992.
- Dishion, TJ.; Patterson, GR.; Griesler, PC. Peer adaptations in the development of antisocial behavior: A confluence model. In: Huesmann, LR., editor. *Aggressive behavior: Current perspectives*. Plenum Press; New York: 1994. p. 61-95.
- Duncan, GJ.; Connell, JP.; Klebanov, PK. Conceptual and methodological issues in estimating causal effects of neighborhoods and family conditions on individual development. In: Brooks-Gunn, J.; Duncan, GJ.; Aber, JL., editors. *Neighborhood poverty: Vol 1. Context and consequences for children*. Russell Sage Foundation; New York: 1997. p. 219-250.
- Elliott DS, Wilson WJ, Huizinga D, Sampson RJ, Elliott A, Rankin B. The effects of neighborhood disadvantage on adolescent development. *Journal of Research in Crime and Delinquency* 1996;33:389–426.
- Fergusson DM, Wanner B, Vitaro F, Horwood LJ, Swain-Campbell N. Deviant peer affiliations and depression: Confounding or causation? *Journal of Abnormal Child Psychology* 2003;31:605–618. [PubMed: 14658741]
- Gacono, CB.; Nieberding, RJ.; Owen, A.; Rubel, J.; Bodholdt, R. Treating conduct disorder, antisocial, and psychopathic personalities. In: Ashford, JB.; Sales, BD.; Reid, WH., editors. *Treating adult and juvenile offenders with special needs*. American Psychological Association; Washington, DC: 2001. p. 99-130.
- García Coll C, Lamberty G, Jenkins R, McAdoo HP, Crnic K, Wasik BH, García HV. An integrative model for the study of developmental competencies in minority children. *Child Development* 1996;67:1891–1914. [PubMed: 9022222]
- Ge X, Brody GH, Conger RD, Simons RL, Murry VM. Contextual amplification of pubertal transition effects on deviant peer affiliation and externalizing behavior among African American children. *Developmental Psychology* 2002;38:42–54. [PubMed: 11806701]
- Gonzales, NA.; Knight, GP.; Morgan-Lopez, A.; Saenz, D.; Sirolli, A. Acculturation, enculturation and the mental health of Latino youths: an integration and critique of the literature. In: Contreras, JM.; Kerns, KA.; Neal-Barnett, AM., editors. *Latino children and families in the United States*. Greenwood; Westport, CT: 2002.
- Gonzales NA, Tein J, Sandler IN, Friedman RJ. On the limits of coping: Interactions between stress and coping for inner-city adolescents. *Journal of Adolescent Research* 2001;16:372–395.
- Granic I, Patterson GR. Toward a comprehensive model of antisocial development: A dynamic systems approach. *Psychological Review* 2006;113:101–131. [PubMed: 16478303]
- Granic I, Patterson GR. Toward a comprehensive model of antisocial development: A dynamic systems approach. *Psychological Review* 2006;113:101–131. [PubMed: 16478303]
- Grant BF, Stinson FS, Hasin DS, Dawson DA, Chou SP, Anderson K. Immigration and lifetime prevalence of DSM-IV psychiatric disorders among Mexican Americans and non-Hispanic whites in the United States. *Archives of General Psychiatry* 2004;61:1226–1233. [PubMed: 15583114]

- Greenberg MT, Lengua LJ, Coie JD, Pinderhughes EE. Predicting developmental outcomes at school entry using a multiple risk model: Four American communities. *Developmental Psychology* 1999;35:403–417. [PubMed: 10082011]
- Grus CL. Pubertal transition, stressful life events, and the emergence of gender differences in adolescent depressive symptoms. *Journal of Developmental and Behavioral Pediatrics* 2001;22:404–417.
- Halgunseith LC, Ispa JM, Rudy D. Parental control in Latino families: An integrated review of the literature. *Child Development* 2006;77:1282–1297. [PubMed: 16999798]
- Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 1999;6:1–55.
- Ingoldsby EM, Shaw DS. Neighborhood contextual factors and early-starting antisocial pathways. *Clinical Child and Family Psychology Review* 2002;5:21–55. [PubMed: 11993544]
- Jencks, C.; Mayer, SE. The social consequences of growing up in a poor neighborhood. In: Lynn, L.; McGeary, M., editors. *Inner city poverty in the United States*. National Academy Press; Washington, DC: 1990. p. 91–117.
- Kim SY, Nair R, Knight GP, Roosa MW, Updegraff KA. Measurement equivalence of neighborhood quality measures for European American and Mexican American families. *Journal of Community Psychology* 2009;37:1–20. [PubMed: 19183709]
- Knight, GP.; Roosa, MW.; Umaña-Taylor, A. *Studying Ethnic Minority and Economically Disadvantaged Populations: Methodological Challenges and Best Practices*. APA Books; Washington, DC: 2009.
- Knight GP, Virden LM, Ocampo KA, Roosa MW. An assessment of the cross-ethnic equivalence of measures of negative life events and mental health among Hispanic and Anglo American children. *American Journal of Community Psychology* 1994;22:767–783. [PubMed: 7639202]
- Lambert SF, Brown TL, Phillips CM, Ialongo NS. The relationship between perceptions of neighborhood characteristics and substance use among urban African American adolescents. *American Journal of Community Psychology* 2004;34:205–218. [PubMed: 15663207]
- Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DEH. Acculturation and Latino health in the United States: A review of the literature and its sociopolitical context. *Annual Reviews of Public Health* 2005;26:367–397.
- Lewinsohn PM, Rohde P, Seeley JR, Klein DN, Gotlib IH. Psychosocial functioning of young adults who have experienced and recovered from major depressive disorder during adolescence. *Journal of Abnormal Psychology* 2003;112:353–363. [PubMed: 12943014]
- Lopez-Turley RN. When do neighborhoods matter? The role of race and neighborhood peers. *Social Science Research* 2003;32:61–79.
- MacKinnon DP, Lockwood CM, Hoffman JM, West SG, Sheets V. A Comparison of Methods to Test Mediation and Other Intervening Variable Effects. *Psychological Methods* 2002;7:83–104. [PubMed: 11928892]
- Marin, G.; Marin, BV. *Research with Hispanic populations*. Sage Publications; Thousand Oaks, CA, US: 1991.
- Marin, G.; Marin, BV. *Research with Hispanic populations*. Sage Publications; Thousand Oaks, CA, US: 1991.
- Moore, J.; Pinderhughes, R. *In the barrios: Latinos and the underclass debate*. Russell Sage Foundation; New York: 1993.
- Mrug S, Hoza B, Bukowski WM. Choosing or being chosen by aggressive-disruptive peers: Do they contribute to children's externalizing and internalizing problems? *Journal of Abnormal Child Psychology* 2004;32:53–65. [PubMed: 14998111]
- Muthén, LK.; Muthén, BO. *Mplus user's guide*. Muthén and Muthén; Los Angeles: 2005. Nair RL, White RMB, Knight GP, Roosa MW. Cross-language measurement equivalence of parenting measures for use with Mexican American populations. *Journal of Family Psychology*. In press.
- Nye FI, Short JF Jr. Scaling delinquent behavior. *American Sociological Review* 1957;22:326–331.
- Pearlin LI, Menaghan EG, Lieberman MA, Mullan JT. The stress process. *Journal of Health and Social Behavior* 1981;22:337–356. [PubMed: 7320473]

- Roberts RE, Roberts CR, Chen YR. Ethnocultural differences in prevalence of adolescent depression. *American Journal of Community Psychology* 1997;25:95–110. [PubMed: 9231998]
- Roosa MW, Deng S, Ryu E, Burrell G, Tein J, Lopez V, Crowder S. Family and child characteristics linking neighborhood context and child externalizing behavior. *Journal of Marriage and Family* 2005;67:514–528.
- Roosa MW, Liu F, Torres, Gonzales N, Knight G, Saenz D. Sampling and recruitment in studies of cultural influences on adjustment: A case study with Mexican Americans. *Journal of Family Psychology* 2008;22:293–302. [PubMed: 18410216]
- Roosa MW, Jones S, Tein J, Cree W. Prevention science and neighborhood influences on low-income children's development: Theoretical and methodological issues. *American Journal of Community Psychology* 2003;31:55–72. [PubMed: 12741689]
- Sampson RJ. Collective regulation of adolescent behavior: Validation results from eighty Chicago neighborhoods. *Journal of Adolescent Research* 1997;12:227–244.
- Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science* 1997;277:918–924. [PubMed: 9252316]
- Sandler, IN.; Gunther, R. Assessment of stressful life events. In: Karoly, P., editor. *Measurement strategies in health psychology*. Wiley; New York: 1985. p. 555–600.
- Schwartz G. Estimating the dimensions of a model. *The Annals of Statistics* 1978;6:461–464.
- Shaffer D, Fisher P, Lucas CP, Dulcan MK, Schwab-Stone ME. NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry* 2000;39:28–38. [PubMed: 10638065]
- Simons RL, Johnson C, Beaman J, Conger RD, Whitbeck LB. Parents and peer group as mediators of the effect of community structure on adolescent problem behavior. *American Journal of Community Psychology* 1996;24:145–171. [PubMed: 8712184]
- Simons RL, Whitbeck LB, Conger RD, Melby JL. The effects of social skills, values, peers, and depression on adolescent substance use. *Journal of Early Adolescence* 1991;11:466–481.
- Sobel, ME. Asymptotic confidence intervals for indirect effects in structural equation models. In: Leinhardt, S., editor. *Sociological methodology* 1982. American Sociological Association; Washington, DC: 1982. p. 290–312.
- South SJ, Crowder KD. Neighborhood effects on family formation: Concentrated poverty and beyond. *American Sociological Review* 1999;64:113–132.
- Suarez-Orozco, MM. Central American refugees and U.S. high schools: A psychosocial study of motivation and achievement. Stanford university Press; Stanford, CA: 1989.
- Suarez-Orozco, C.; Suarez-Orozco, MM. *Children of immigration*. Harvard University Press; Cambridge, MA: 2001.
- Tein J-Y, Sandler IN, MacKinnon DP, Wolchik SA. How did it work? Who did it work for? Mediation in the context of a moderated prevention effect for children of divorce. *Journal of Consulting and Clinical Psychology* 2004;72:617–624. [PubMed: 15301646]
- Thornberry TP, Lizotte AJ, Krohn MD, Farnworth M, Jang SJ. Delinquent peers, beliefs, and delinquent behavior: A longitudinal test of interactional theory. *Criminology* 1994;32:47–83.
- Tienda, M. Poor people and poor places: Deciphering neighborhood effects on poverty outcomes. In: Huber, J., editor. *Macro-micro linkages in sociology*. Sage; Newbury Park, CA: 1991. p. 244–261.
- U.S. Census Bureau. We, the people: Hispanics in the United States. U.S. Department of Commerce; Washington, DC: 2004. Census 2000 Special reports
- U.S. Department of Housing and Urban Development. Affordable housing needs: A report to Congress on the significant need for housing. 2005. Available: <http://www.huduser.org/Publications/pdf/AffHsgNeedsRpt2003.pdf>
- Vanderbilt-Adriance E, Shaw DS. Protective factors and the development of resilience in the context of neighborhood disadvantage. *Journal of Abnormal Child Psychology* 2008;36:887–901. [PubMed: 18288604]
- Weiss L, Ompad D, Galea S, Vlahov D. Defining neighborhood boundaries for urban health research. *American Journal of Preventive Medicine* 2007;32:S154–S159. [PubMed: 17543706]

Figure 1.
Hypothesized model of the relations between neighborhood disadvantage and internalizing and externalizing symptoms for Mexican American youth.

Figure 2.
Results for final model showing standardized path coefficients.
Note. Non-significant paths have been removed for clarity.

Figure 3.

Graph of interaction between Child Generation Status, Neighborhood Disadvantage and Child Report of Total Life Events

Note: G=Generation; Groups that do not share the same subscript have slope coefficients that are significantly different from each other; All slope coefficients are not significantly different from zero.

Correlations among variables (N=734)

Table 1

	Neighborhood Disadvantage	Informal Social Control	Stressful Life Events	Delinquent Peers	Externalizing	Internalizing	Generation	Gender
Neigh. Disadvantage		-0.20**	-0.02	0.04	-0.04	-0.03	-0.13**	-0.10**
Informal Social Con.			-0.07	0.00	0.00	-0.04	0.18**	0.06
Stressful Life Events				0.55**	0.35**	0.42**	0.05	-0.07
Delinquent Peers					0.32**	0.34**	-0.01	0.05
Externalizing						0.56**	0.05	0.14**
Internalizing							-0.02	-0.03
Generation status								0.02
Gender								
Mean (SD)	0.08 (0.76)	3.04 (0.60)	5.82 (4.69)	1.22 (0.30)	6.11 (6.41)	20.81 (13.80)	2.16	1.51
Range	-1.15-4.51	1.00-5.00	0.00-24.00	1.00-3.71	0.00-39.00	0.00-84.00	1-4	1-2

* p<.05
** p<.01