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Social Competence in Late Elementary School: Relationships to Parenting and Neighborhood Context

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Abstract

Despite evidence that neighborhoods confer both risk and resilience for youth development, the existing neighborhood research has a number of methodological limitations including lack of diversity in neighborhoods sampled and neighborhood characteristics assessed. The purpose of this study was to address these methodological limitations of existing research and to examine the relationship of neighborhood structural and social characteristics to family-level social processes and teacher-reported social competence during early adolescence . The study sample of 3624 fifth graders (51% girls) was ethnically diverse, including roughly even proportions of non-Hispanic White, non-Hispanic Black, and Hispanic youth. Neighborhood measures included economic disadvantage derived from the U.S. Census, physical and social disorder obtained by direct observation, and social capital from parental reports. Family-level social processes included parent reported family cohesion and youth reported maternal and paternal nurturance. We found that neighborhood factors significantly associated with youth social aggression and social competence but not social withdrawal, after controlling for individual demographic characteristics and parenting factors. There was limited evidence of moderation of family influences by neighborhood characteristics as well as the moderation of neighborhood effects by children's gender. Neighborhood physical disorder was associated with increased social aggression among boys but with increased social withdrawal among girls. Implications of the study's findings for research on neighborhoods and adolescent development and the development of preventive interventions are discussed.

Keywords

neighborhoods; parenting; social competence; middle childhood

There is growing empirical evidence that neighborhood structural characteristics (e.g., concentrated economic disadvantage, physical disorder, and crime) as well as social characteristics (e.g., collective efficacy, social cohesion, and social capital) can confer both risk and resilience for youth development over and above characteristics of youth or their families. Youth who live in neighborhoods characterized by high levels of concentrated economic disadvantage, disorder and crime are more likely to experience symptoms of depression and anxiety as well as display conduct problems and violent behavior (Paschall and Hubbard 1998; Simons et al. 1996; Xue et al. 2005; Aneshensel and Sucoff 1996; Colder et al. 2000; Dorsey and Forehand 2003) and are also at higher risk for academic failure (Schwartz and Gorman 2003; Bowen et al. 2002; Thompson 2002). Higher levels of neighborhood social capital/collective efficacy are associated with better mental health (Xue et al. 2005) and less delinquency (Sampson et al. 1997). These findings suggest efforts to support healthy youth development should include a consideration of community-level factors.

One of the likely mechanisms by which neighborhoods affect youth development is the effect of neighborhood conditions on parenting and other family level processes. There is robust empirical evidence indicating that parenting behaviors as well as the broader environment of the home are related to variations in children's well-being from infancy through adolescence. During adolescence, parenting characterized by involvement, warmth, and clear guidelines for behavior and monitoring, and home environments characterized by high levels of cohesion and low conflict, are associated with the most optimal outcomes in a range of domains (see e.g., Barber et al. 1994; Conger et al. 1994; Dornbusch et al. 1987; Simons et al. 1994; Steinberg et al. 1992). The degree to which neighborhood environments support or hinder these parenting and family processes will indirectly affect the well-being of adolescents. There is evidence that economically disadvantaged, distressed neighborhoods are associated with higher levels of parental stress, higher levels of harsh/inconsistent parenting, and higher levels of family dysfunction (Bowen et al. 2002; Rankin and Quane 2002; Simons et al. 2005)

Another theme in the emerging literature on neighborhood effects is one of cross-level interactions. That is, the relationship between neighborhood characteristics and youth development is often indirect in that neighborhood factors may moderate more proximal factors such as parenting or other family process. Roche and Leventhal (2009) describe different ways that neighborhoods might moderate parenting and family processes. For example, neighborhoods may amplify the disadvantages present in the family such that risks imparted by poor parenting practices may be magnified in high risk neighborhoods. Alternatively, neighborhoods may amplify the advantages at the family level such that effective parenting practices are more important in neighborhoods with structural and social disadvantages. In both cases, the neighborhood is seen as modifying the influence of family level processes on youth outcomes. Empirical support for the moderation of parenting by

neighborhood conditions as it relates to adolescent outcomes has been reported in the neighborhood literature (see e.g., Natsuaki et al. 2007; Roche et al. 2007; Simons et al. 2005; Vanderbilt-Adriance and Shaw 2006).

Developing a better understanding of how neighborhoods confer risk and resilience for youth development has important implications for the development and implementation of preventive interventions. For example, if evidence suggests that high risk neighborhoods can undermine the role of sensitive and supportive parenting, then interventions that are focused on teaching effective parenting skills should be combined with community-based efforts to reduce neighborhood risks and enhance neighborhood strengths. Unfortunately, the extant research on neighborhoods and youth development has a number of methodological limitations that hamper our ability to make effective policy recommendations for neighborhood-level intervention efforts. First, existing research has been limited in terms of the diversity of neighborhoods as well as the neighborhood measures employed. Neighborhoods can be characterized in terms of a range of features including both structural features, such as economic and physical conditions, as well as social characteristics, such as social cohesion, collective efficacy, and collective socialization of youth. Both structural features and social characteristics have been cited as contributing to neighborhood differences in rates of juvenile delinquency (see e.g., Sampson 1991; Sampson 1992; Sampson et al. 1997; Shaw and McKay 1942).

Although social factors are recognized as important by many, there is a trade-off between the kinds of neighborhoods measured and the variety of contexts included in a single study. A wide range of variability in neighborhood conditions is important when examining neighborhood effects, and the best way to maximize neighborhood variability is to include data from multiple geographic locations (Duncan and Raudenbush 1999). However, the majority of neighborhood studies and youth outcomes using large national data sets are limited in neighborhood measures, relying exclusively on U.S. Census measures of neighborhood context (Cleveland and Gilson 2004; Ge et al. 2002; Harding 2003; Leventhal and Brooks-Gunn 2003; Vazsonyi et al. 2006; Wickrama et al. 2006). Relying on census measures of neighborhood characteristics is insufficient for guiding policy because such global indices often mask variation in social and other structural characteristics which are important to consider when designing community-based interventions (Caughy et al. 1999). For example, neighborhoods may be similar in terms of demographic characteristics derived from the census while at the same time very different in terms of their social characteristics such as social cohesion or collective efficacy. Neighborhood studies that rely on large national data sets and are limited to census measures to characterize neighborhood environments cannot examine the potential role of neighborhood social processes for supporting youth development.

Another methodological limitation of the research on neighborhoods and youth development is same-source bias. Same-source bias emerges when assessments of neighborhood conditions and youth outcomes are based on the same reporter, most often either the parent or the youth (Duncan and Raudenbush 1999). For example, although several studies have included measures of neighborhood social characteristics, the same individual reported both on neighborhood characteristics and youth outcomes (Bowen et al. 2002; Ceballo and

McLoyd 2002; Jones and Lynam 2009; Meyers and Miller 2004; Seidman et al. 1998). Such a mono-method approach makes it difficult to separate variation due to shared measurement from that due to systematic differences among neighborhoods. As a result, it is not possible to determine whether neighborhoods are related uniquely to youth outcomes or whether so called "neighborhood effects" are merely an artifact of shared measurement bias.

Another limitation of the existing neighborhood research has been an emphasis on predictors of risk rather than resilience. The vast majority of research on neighborhoods and youth development has focused on maladaptive youth behaviors such as conduct disorders, depression, sexual risk taking, substance use, juvenile delinquency, and academic failure. The sole exception is the work of Rankin and Quane (2002), which included assessments of youth prosocial competence and problem behaviors in a study of African American adolescents in low income Chicago neighborhoods. Although findings indicated similar relationships for these different types of outcomes, one cannot assume that a similar pattern would be found in other geographic settings and/or with other race/ethnic groups. More research is needed to determine if adaptive and maladaptive outcomes develop similarly in a range of neighborhood and family contexts. Such research has important implications for the development of positive youth development initiatives (Catalano et al. 2002).

The Present Study

The CDC-sponsored Healthy Passages study provides a unique opportunity to further our understanding of how youth development unfolds within the context of both family and neighborhood influences and to address a number of the methodological limitations of existing research. With a large, ethnically and economically diverse sample of youth from three different U.S. cities assessed in fifth grade, Healthy Passages includes both prosocial and maladaptive youth outcomes assessed by multiple reporters and methods. Healthy Passages also included assessments of neighborhood conditions based on census data as well as parental reports and direct observation. The conceptual framework for the study is presented in Figure 1, with the specific research questions we will be addressing identified by number. First, we will examine whether the social adjustment of the youth differed by neighborhood structural and social features. Consistent with prior research, we hypothesize that neighborhood economic disadvantage and disorder will be associated with lower social competence and that neighborhood social capital will be associated with greater social competence. Secondly, we hypothesize that these neighborhood influences will be mediated partially by more proximal family processes (e.g., family cohesion, parenting characteristics). The third research question addressed is whether neighborhood conditions moderate the association between family level processes and indices of social adjustment in this sample. Because there is empirical evidence supporting both, we do not have a priori hypotheses regarding whether risky neighborhood conditions will undermine or magnify the relationship of supportive parenting to youth competence. Finally, we will examine whether the associations between neighborhood conditions and youth social competence differ by the child's gender. Several researchers have reported gender differences in neighborhood influences on adolescent outcomes, although the pattern of these gender differences is not consistent regarding whether boys or girls are more strongly influenced by neighborhood conditions (Simons et al. 2005; Cleveland and Gilson 2004).

Method

Participants

The sample was drawn from Healthy Passages, a longitudinal study of adolescent health (Windle et al. 2004). The sampling frame included all fifth graders enrolled in a public school with ≥25 enrolled fifth graders from one of three geographic areas: 25 contiguous public school districts in Los Angeles County, CA; 20 contiguous school districts in and around Birmingham, AL, and the largest public school district in Houston, TX. A two-stage sampling procedure was used by which schools were randomly selected in each geographic area, and all students were invited to participate in the second stage. The 106 schools selected yielded a potential pool of 11,532 fifth-grade students. Students returned 10,294 (89%) forms, and 5,752 (56%) students gave written permission to be contacted about the study. Schools were not permitted to provide information regarding the 4,542 students who did not give permission to be contacted. A total of 5,147 families (90%, with similar participation rates across sites) completed interviews in Wave 1 from 2004 to 2006. Wave 1 is the only Healthy Passages data available for analysis at this time. Because one of the primary predictor variables is parental nurturance, the eligible sample was limited to those for whom the primary caregiver was the mother, father, stepparent, or grandparent of the target child (N = 4993, 97.0%). Institutional review board (IRB) approval was obtained from all three sites (University of Alabama at Birmingham, University of California at Los Angeles/RAND, and University of Texas Health Sciences Center, Houston) and the Centers for Disease Control and Prevention. Written consent from the primary caregiver and written assent from the youth were obtained at the time of the home visit.

Data sources for Healthy Passages included youth report, parental report, teacher report, and neighborhood observational data. The outcome for this analysis, social competence, is based on teacher-reported items described more fully below. A total of 3624 (72.6%) participants had data available for the teacher-reported outcomes and constitute the sample for this analysis. The average age of participants at the time of the interview was 11.07 years (sd = . 54, range 9 to 14). Parental consent for teacher report was obtained prior to collecting teacher report data. Participants interviewed during the summer months before the beginning of the next school year (e.g., between June and September) were substantially less likely to have teacher report data collected due to difficulty accessing teachers. Less than 6% of Houston participants were interviewed during these months, while 22% of Birmingham and 25% of Los Angeles participants were interviewed during these months. Compared to those who had teacher data, participants excluded from this analysis were more likely to come from the Los Angeles or Birmingham sites. In addition, those excluded were more likely to be non-Hispanic Blacks or Hispanic, more likely to be living below the federal poverty level, and more likely to live in neighborhoods characterized by high levels of disorder and economic impoverishment. Characteristics of the study sample of 3624 are displayed in Table 1. Approximately two-thirds were either non-Hispanic Black or Hispanic, with slightly more than a quarter being non-Hispanic White. The majority of primary caregivers were the mother of the target child (89.7%), with fathers constituting 7.3%. Most of the primary caregivers (58.0%) had at least some college education. Characteristics of the neighborhoods in which study participants lived based on 2000 Census data are also

displayed in Table 1. For this study, the neighborhood was defined as the census block group.

Data collection methods

The three research sites used standardized data collection materials and protocols, including training and field manuals, and validation procedures. Two trained field interviewers met the parent and child at their home. Each completed (in English or Spanish) a face-to-face computer-assisted personal interview (CAPI) and an audio computer-assisted self-interview carried out without the interviewer present. Two trained observers simultaneously completed a structured neighborhood observation of each participating child's face-block (both sides of the street between two consecutive intersections) on which the child lived. Scores by the two observers were averaged to produce analytic variables. Additionally, each participant address was geocoded and linked to 2000 U.S. Census data.

Measures

Youth behavioral outcomes—The primary outcome measure was youth behavioral outcome based on teacher report of social competence using the Teacher Evaluation of Student Behavior (TESB), a measure developed specifically for the Healthy Passages study. The TESB includes 26 items adapted from several different teacher report measures of classroom behavior including the Interpersonal Competence Scale (Cairns et al. 1998), the Teacher Observation of Classroom Adaptation (Werthamer-Larsson et al. 1991), and the Social Behavior Questionnaire (Tremblay et al. 1991). Items were selected to reflect a range of classroom behaviors including both negative and prosocial behaviors while maintaining a short administration time. Teachers rated each item as to whether it described the target child on a five-point scale ranging from Almost Never to Almost Always.

Fifty percent of cases, stratified by site, were selected randomly from the study sample for use in an exploratory factor analysis of the TESB items. An initial extraction using principal axis factoring indicated five factors with eigenvalues exceeding 1.0. Only three factors were retained based on an examination of the scree plot as well as lack of factor loading salience on the fourth and fifth factors. Items loading significantly on more than one factor, as indicated by multiple loadings of .30 or greater, were excluded from the model. Factor loadings for the 17 remaining items are displayed in Table 2. The three-factor solution explained 61.8% of the item variance. Confirmatory factor analysis of the three-factor solution utilizing the remaining 50% of cases indicated an adequate fit, CFI = .92, RMSEA = .072. The three factors were labeled Social Aggression (8 items), Social Competence (3 items), and Social Withdrawal (6 items). The internal reliability coefficients for these subscales were .93, .77, and .74, respectively.

Parental nurturance—Mother and father nurturance were assessed with the Barnes Parental Nurturance scale (Barnes et al. 1987; Barnes and Windle 1987). The measure included five youth-report items, each asked separately in reference to the youth's mother and father, regarding the youth's perception that s/he was approved of and accepted and loved by his/her parents. The five items included: receiving praise/encouragement, relying on the parent for advice, getting hugged/kissed, doing things together, and making joint

decisions. Items were rated on a 4-point Likert scale ranging from Almost Never to Almost Always. Items were summed separately for total measures of mother and father nurturance ranging from 5 to 20. The internal reliability of the scales was .74 for mother nurturance and .81 for father nurturance.

Family cohesion—Family cohesion was assessed based on parent report using the 10-item cohesion scale of the Family Adaptability and Cohesion Evaluation Scales (FACES III) (Olson 1993). Each item is rated on a 5-point rating scale ranging from Strongly Disagree to Strongly Agree and taps the feelings of closeness between family members and the frequency with which they do things together. The internal reliability for the FACES score in this sample was .82.

Neighborhood economic disadvantage—Concentrated economic disadvantage of the neighborhood in which the youth resided was based on the work of Sampson and colleagues (Sampson et al. 1997; Sampson et al. 1999; Morenoff and Sampson 1997). Data were obtained from the 2000 Census on each study block group regarding proportion of vacant housing units, proportion of single-headed households, proportion unemployed, proportion on public assistance, and proportion living below the federal poverty level. The means and standard deviations of these variables are displayed in Table 1. These four census variables were standardized and averaged to create a composite measure of concentrated economic disadvantage. In this data set, the internal reliability of this measure was .86.

Neighborhood social capital—Neighborhood social capital was assessed using two scales from the community survey of the Project for Human Development in Chicago Neighborhoods (PHDCN) (Earls 1999). The informal social control scale includes five items rated on a 5-point Likert scale ranging from Very Unlikely to Very Likely to assess the likelihood that neighborhood residents would intervene if neighborhood children were skipping school, defacing a local building with graffiti, or showing disrespect to an adult; if there was a physical fight in front of one's house, or a local fire station was threatened with closure. The internal reliability of the informal social control scale was .83. Five items from PHDCN's neighborhood exchange scale were included asking the respondent to rate the frequency with which neighbors did favors for one another, watched each other's home, asked for advice from neighbors, have parties or get-togethers with neighbors, or visited neighbors in their homes or on the street. Items were rated on a 4-point Likert scale ranging from Never to Often. Internal reliability of the neighborhood exchange scale was .85. The two scales were averaged as an estimate of neighborhood social capital.

Neighborhood physical and social disorder—Neighborhood physical and social disorder was assessed using systematic observations of the face block on which youth lived. Physical disorder included seven items: abandoned vehicles, litter, bottles, cigarettes, graffiti, painted over graffiti, and peeling paint on residences, each rated on a 4-point Likert scale ranging from None to Many. The internal reliability of the neighborhood physical disorder scale was .84. Neighborhood social disorder was the summation of a series of binary variables indicating the presence of the following on the face block: drug paraphernalia, gangs, adults loitering, homeless persons, persons selling drugs, persons

drinking alcohol, persons who appeared drunk, and/or loud music. Internal reliability of the social disorder scale was .62. Of the 3624 children in the study sample, 751 (20.7%) lived on a face block on which at least one social disorder indicator was present, and 124 (3.4%) lived on a face block with three or more such indicators.

Covariates—Covariates included family income-to-needs ratio, caregiver's education, and child's gender. Family income-to-needs ratio was calculated by dividing the family's household income by the federal poverty level for families of the same size. Caregiver's education was a dichotomous variable indicating if the child's primary caregiver had less than a high school education or GED certificate.

Missing data and analysis methods—For all multivariate analyses, multiple imputation using Stata v. 11 (StataCorp 2009) was used to account for missing data. Independent variables that had more than 2% missing cases were imputed. Missing outcome data were not imputed. In addition, missing father nurturance data were not imputed because such data were usually structurally missing, that is, missing because there was no father or father-figure in the household. Models were estimated with father nurturance both excluded (N = 3566) and included (N = 3289) to examine whether inclusion of father nurturance altered the interpretation of other variables in the model. Because no differences were detected, only models including father nurturance are reported. Multivariate linear regression within Stata's multiple imputation module was used to pool estimates from the imputations for the purpose of hypothesis testing. All regression models included sampling/non-response weights to adjust for the multi-stage and multi-site sampling design of Healthy Passages. In addition, all models were adjusted for the clustering at the school-level that was a function of the complex survey sampling design.

Models were fit to systematically address the study questions. In our first set of models, we included the main effects of neighborhood conditions as well as individual characteristics to address whether variations in neighborhoods were associated with variations in youth competence after adjusting for differences in individual characteristics between neighborhoods. Next, we added family level variables and test whether these factors mediated any associations between neighborhood factors and youth outcomes identified in the first set of models. Finally, we systematically tested for interactions between neighborhood conditions and family variables to address our third research question and between neighborhood factors, family variables, and child's gender to address our fourth research question.

Results

A correlation matrix for the study variables is displayed in Table 3. Parental nurturance was associated more strongly with youth social competence (positively) and youth social withdrawal (negatively) than with youth social aggression. Family cohesion was associated negatively with social aggression and moderately positively with social competence. The strength of the bivariate associations for neighborhood factors were modest to moderate. Neighborhood economic disadvantage and physical disorder were associated positively with

social aggression and negatively with social competence. Neighborhood physical disorder had a modest positive association with social withdrawal.

Results of multivariate linear regression models using multiple imputation are displayed in Table 4. In the first model for each outcome, the main effects of neighborhood factors were evaluated adjusting for family demographic differences between neighborhoods. After adjusting for demographic differences, neighborhood economic disadvantage was associated with significantly higher levels of teacher-reported social aggression but was unrelated to social competence and social withdrawal. Neighborhood social capital was associated with significantly lower levels of social aggression and marginally higher social competence. Neighborhood physical disorder was associated with significantly lower teacher-reported social competence.

In the second set of models, we added family-level processes (mother nurturance, father nurturance, and family cohesion) to examine whether these processes mediated the relationships of neighborhood factors to youth social adjustment outcomes. As can be seen in the top panel of Table 4, once family-level processes were included in the model, the relationship between neighborhood economic impoverishment and teacher-reported social aggression was no longer significant. It appears the effects of neighborhood economic impoverishment were mediated completely by declines in family cohesion, Sobel test = 3.06, $p < .01$. The effects of neighborhood social capital were mediated partially by increases in family cohesion, Sobel test = −3.12, $p < .01$. For teacher-reported social competence, the negative association of neighborhood physical disorder and social competence was mediated partially by declines in mother nurturance, Sobel test= −2.41, $p < .05$.

To examine whether neighborhood context moderated the association between parent/family factors and youth social adjustment, we estimated four different regression models. In each model, we entered interaction terms between one of the four neighborhood factors (economic disadvantage, social capital, physical disorder and social disorder) and each of the three family-level factors. Of those 36 interactions, 7 (19%) were significant. However, six of those 7 significant interactions involved the physical or social disorder observed in the neighborhood. Neighborhood physical and social disorder appeared to undermine the protective effects of higher family cohesion for reducing levels of social aggression, $b = .012$, se(b) = .004, $t = 3.33$, $p = .001$; and $b = .008$, se(b) = .003, $t = 2.73$, $p < .01$, respectively. A similar pattern of interactions were seen between observed neighborhood physical disorder and family cohesion for teacher-reported social competence, $b = -.012$, se(b) = .005, $t = -2.49$, $p < .01$, as well as between observed social disorder and family cohesion for teacher-reported social withdrawal, $b = .005$, se(b) = .002, $t = 1.98$, $p < .05$. There were also two significant interactions between observed neighborhood disorder and father nurturance for teacher-reported social competence, although the interpretation of these interactions were inconsistent with one another. Observed physical disorder appeared to increase the importance of father nurturance for youth social competence, $b = .015$, se(b) = .006, $t = 2.57$, $p < .05$, whereas observed social disorder appeared to undermine the importance of father nurturance for youth social competence, $b = -.012$, se(b) = .005, $t = -2.35$, $p < .05$.

Next, we examined whether the association between neighborhood factors and youth adjustment differed by child's gender by entering interaction terms between child sex (coded 1 for girls) and each of the four neighborhood factors (economic disadvantage, social capital, physical disorder, and social disorder) into the model. Of these 12 interactions, five (42%) were significant. Child sex moderated the association between neighborhood economic disadvantage and social aggression and social competence and between observed physical disorder and all three outcomes. The positive association between economic disadvantage and social aggression appeared to be stronger for girls, $b = .126$, se(b) = .055, $t = 2.29$, $p < .05$. Likewise, the negative association between neighborhood economic disadvantage and social competence was stronger for girls, $b = -.166$, se(b) = .070, $t = -2.39$, $p < .05$. In contrast, the positive association between observed physical disorder and social aggression was weaker for girls; $b = -.255$, se(b) = .038, $t = -6.70$, $p < .001$; as was the negative association between observed physical disorder and social competence; $b = .254$, se(b) = .043, $t = 5.88$, $p < .001$. The negative effects of observed physical disorder on girls appeared to be limited to social withdrawal. Although physical disorder was not significantly associated with social withdrawal among boys, a significant positive interaction indicated physical disorder was associated with increased social withdrawal among girls, $b = .077$, se(b) = .030, $t = 2.55$, $p < .05$.

In a final set of analyses, we examined whether there were any three way interactions between child's gender, neighborhood characteristics, and family-level processes, but none of these interactions was significant.

Discussion

Despite the growing empirical evidence that neighborhood conditions can both support and hinder healthy youth development, drawing meaningful conclusions from the extant literature is challenging. Often, there is a trade-off between the need for rich information on neighborhood characteristics and the need for sampling a range of different neighborhoods to maximize the variability in observed conditions. Studies that incorporate comprehensive assessments of neighborhood conditions are limited often to one city or geographic location, such as the Project for Human Development in Chicago Neighborhoods (PHDCN) (Browning et al. 2005; Zimmerman 2010). In contrast, neighborhood studies of large national samples such as Add Health are limited often in the range of neighborhood conditions that can be considered, relying primarily on measures drawn from the census (Cleveland 2003; Cleveland and Gilson 2004; Wickrama et al. 2005). The Healthy Passages study has the advantage of combining data from three very different areas across the U.S. along with rich data on neighborhood structural and social characteristics, allowing us to address the most significant limitations of the neighborhood research literature to date.

The first research question we addressed was whether neighborhood structural characteristics (economic disadvantage, physical/social disorder) and/or social characteristics (social capital) were associated with differences in teacher-reported social competence in fifth grade (average age 11 years). We found neighborhood factors significantly associated with youth social aggression and social competence but not social withdrawal. Consistent with our hypothesis, bivariate results indicated neighborhood

economic disadvantage was associated with greater social aggression as well as lower social competence. However, only the relationship with social aggression was significant after adjusting for differences in family demographic characteristics between neighborhoods. This suggests the relationship of neighborhood economic disadvantage with lower social competence is an artifact of the composition of different neighborhoods. The relationship between neighborhood economic disadvantage and neighborhood social capital with teacher-reported social aggression and between neighborhood physical disorder and social competence remained significant after adjusting for between neighborhood differences in families.

An important issue for studying neighborhood effects during the period of adolescence is whether effects differ according to age. The youth in the current study were relatively young (11 years). Studies of neighborhood effects during adolescence have varied widely with regard to the age of their study population, ranging from studies focused on early adolescence to studies focused on later adolescence, as well as studies that included participants across the entire age range of adolescence. An examination of study results by participants' age did not reveal a consistent pattern of results. Only two studies could be identified that explicitly examined whether neighborhood effects during adolescence differed by age. Bowen et al. (2002) hypothesized younger adolescents would be more vulnerable to experiencing academic problems in relation to risky neighborhood conditions, but their hypothesis was not supported. Seidman et al. (1998) included youth from age 10 to 18 years in their study of neighborhood effects on antisocial behavior and reported effects were stronger for older adolescents. Clearly, there is a need for longitudinal research across the span of adolescence that not only incorporates information on youth outcomes in a wide range of domains but also includes rich contextual measures of neighborhood and family context.

In our second research question, we examined whether neighborhood effects on youth social adjustment were mediated by family-level processes. Consistent with other studies that report neighborhood effects are mediated by parenting and family cohesion/conflict (Bowen et al. 2002; Meyers and Miller 2004; Paschall and Hubbard 1998; Simons et al. 1996; Simons et al. 2005), we found the negative association between neighborhood economic disadvantage and social aggression was mediated fully by lower levels of family cohesion in economically disadvantaged neighborhoods. In contrast, the negative association between neighborhood social capital and social aggression and between neighborhood physical disorder and social competence were explained only partially by differences in family level processes. It may be that other, unmeasured parent or family factors were important for mediating the effects of neighborhood physical disorder and/or social capital.

Our third research question examined whether neighborhood characteristics moderated the association between family processes and youth adjustment. In our sample, the relationship of family-level processes with youth social competence differed by neighborhood context, but these differences were limited primarily to neighborhood physical disorder. Interactions between family processes and neighborhood physical disorder supported an amplified disadvantages model of neighborhood effects (Roche and Leventhal, 2009) in that more

physical disorder in the neighborhood most proximal to the youth's residence attenuated the protective effects of high family cohesion as well as father nurturance.

It is unclear why interactions between the other neighborhood factors (economic disadvantage, social capital, social disorder) and family processes were not detected. For economic disadvantage and social capital, this may have been due to differences in unit of measurement for these neighborhood factors. Economic disadvantage was based on census variables measured at the census block level, whereas physical disorder was assessed for the face block on which the participant lived. The differences in findings across neighborhood variables measured at different levels of resolution highlights a significant methodological challenge in studying neighborhood effects, namely, the challenge of determining the geographic area that most appropriately reflects the neighborhood of influence for the outcome being studied and then obtaining objective measures available for that area. Census data are not available for geographic areas smaller than census block groups due to confidentiality issues, but census block groups may not reflect a demographically homogeneous area. Observations of neighborhood conditions can be assessed for a variety of geographic areas, and the utilization of neighborhood observational data in the research literature has varied widely from observations conducted only around the residence such as in this study to observations aggregated across census block groups or larger geographic areas. This lack of consistency across studies has limited our ability to draw conclusions regarding the relationship of observed neighborhood conditions with individual health and well-being (Schaefer-McDaniel et al. 2010). Furthermore, there is evidence that different levels of aggregation of observed neighborhood conditions are differentially related to indicators of individual health and well-being (Leonard et al. 2011).

The measurement issues associated with assessing neighborhood social capital are different. In this study, neighborhood social capital was measured based on perceptions of the parent, so there is the potential of same source bias if the neighborhood factors, family level processes, and youth outcomes were derived from the same reporter (Duncan and Raudenbush 1999). One of the strengths of this study was that family level processes were based on youths' report while youth outcomes were based on teachers' report, thereby reducing problems of same source bias with measurements of neighborhood social capital based on parental report. However, there remains the issue of geographic unit differences in that respondents were not asked to define the geographic area of reference when answering questions regarding neighborhood social capital. As a result, it is quite possible that measures of neighborhood social capital were based on a different geographic area than were measures of neighborhood physical disorder, although quantifying this difference cannot be determined from the available data.

Our final research question focused on the issue of moderation by gender. We did find limited evidence of moderation of neighborhood effects by the child's sex, with most of the interactions observed between child's sex and the observed physical disorder in the neighborhood. The pattern of results suggested that physical disorder was associated with higher social aggression and lower social competence among boys but not girls. Among the girls in our sample, neighborhood physical disorder was related to higher levels of social withdrawal but unrelated to social withdrawal among boys. These results are consistent with

those who have reported gender differences in neighborhood effects (Browning et al. 2005; Cleveland and Gilson 2004; Cubbin et al. 2005; Simons et al. 1996). However, the evidence of gender differences in the Healthy Passages sample was limited and did not generalize across neighborhood measures.

One of the advances of this study for research on neighborhoods has been the combination of large and diverse sample with rich neighborhood data. Of the previous studies on neighborhoods and mental well-being among children and youth, the contexts included varied widely by number of cities included, degree of economic diversity, and degree of racial/ethnic diversity. Many focused on a single urban area (Browning et al. 2005; Caughy et al. 2006; Caughy et al. 2004; Gorman-Smith et al. 2000; Rankin and Quane 2002; Silk et al. 2004; Vanderbilt-Adriance and Shaw 2006). Of those that included participants from more than one city, five were based on the same study sample, a sample of 800–900 African American low income youth living in urban, suburban, and rural settings in Georgia and Iowa (Brody et al. 2001; Brody et al. 2003; Ge et al. 2002; Natsuaki et al. 2007; Simons et al. 2005). Furthermore, most of these studies were focused on samples consisting primarily of low income and/or ethnic minority populations. Only Cleveland and Gilson (2004) and Roche et al. (2005) used economically, racially, and ethnically diverse national samples, both using National Longitudinal Survey of Adolescent Health data (Add Health). However, the Add Health study is limited in the types of neighborhood measures available and did not include the direct observations of neighborhood environment such as was included in this study.

Our study has several limitations. First, this analysis was cross-sectional, so causality cannot be inferred. Second, the possibility of selection bias cannot be ruled out given the proportion of students whose parents declined to be contacted as well as the participants for whom teacher-reported outcome data were not available. Another limitation of the current investigation was the lack of more detailed measures of parenting and family processes such as those based on direct observation and assessment or measures of harsh/inconsistent parenting. However, having exposures and outcomes measured by multiple reporters (youth, parent, and teacher) provided the ability to triangulate measures in a way not possible in many studies.

Despite these limitations, the strengths of the study are many. In our sample, we included participants with wide variations in socioeconomic status and race/ethnicity living in diverse neighborhoods. We obtained a variety of neighborhood measures by characterizing neighborhoods from multiple sources, both objective and subjective, and we obtained data from the census, residents, and direct observation by trained observers. The issue of same source bias, a common problem in many neighborhood studies, was not present in this study as reporters on youth adjustment (teachers) were different from those who reported on neighborhood conditions (parents and trained observers). This rich data set has allowed us to investigate in depth the relationships between youth outcomes, parenting factors, and neighborhoods as well as moderation in the relationship between youth outcomes and neighborhoods.

The findings of this study add to the growing body of literature documenting the influence of residential neighborhoods on the growth and development of children and youth. The results of our study indicate that neighborhood conditions, particularly neighborhood social capital and neighborhood physical conditions have important implications for youth functioning, particularly in the domains of aggressive behavior and social competence. Our results are an important addition to the literature because we were able to address previous limitations of this literature using the rich data available in the multi-city Healthy Passages study. More research is needed to further elucidate the mechanisms of neighborhood differences in family processes and youth development and the degree to which they can be generalized across diverse urban, suburban, and rural settings and youth from economically and ethnically diverse backgrounds. With many interventions focused on supporting families and/or intervening with youth directly, either individually or in groups, a deeper understanding of how neighborhood conditions may moderate these processes could have profound implications for the development of effective preventive interventions to improve youth development.

References

Aneshensel CS, Sucoff CA. The neighborhood context of adolescent mental health. Journal of Health and Social Behavior. 1996; 37(4):293–310. [PubMed: 8997886]

Barber BK, Olsen JE, Shagle SC. Associations between parental psychological and behavioral control and youth internalized and externalized behaviors. Child Development. 1994; 65(4):1120–1136. [PubMed: 7956469]

Barnes GM, Farrell MP, Windle M. Parent-adolescent interactions in the development of alcohol abuse and other deviant behaviors. Family Perspective. 1987; 21:321–335.

Barnes GM, Windle M. Family factors in adolescent alcohol and drug abuse. Pediatrician. 1987; 24:13–18.

Bowen NK, Bowen GL, Ware W. Neighborhood social disorganization, families, and the educational behavior of adolescents. Journal of Adolescent Research. 2002; 17(5):468–490.

Brody GH, Ge X, Conger R, Gibbons FX, Murry VM, Gerrard M, et al. The influence of neighborhood disadvantage, collective socialization, and parenting on African American children's affiliation with deviant peers. Child Development. 2001; 72(4):1231–1246. [PubMed: 11480944]

Brody GH, Ge X, Kim SY, Murry VM, Simons RL, Gibbons FX, et al. Neighborhood disadvantage moderates associations of parenting and older sibling problem attitudes and behavior with conduct disorders in African American children. Journal of Consulting & Clinical Psychology. 2003; 71(2): 211–222. [PubMed: 12699016]

Browning CR, Leventhal T, Brooks-Gunn J. Sexual initiation in early adolescence: The nexus of parental and community control. American Sociological Review. 2005; 70(5):758–778.

Cairns, RB.Bergman, LR., Kagan, J., editors. Methods and models for studying the individual. Thousand Oaks, CA: Sage; 1998.

Catalano RF, Berglund ML, Ryan JAM, Lonczak HS, Hawkins JD. Positive youth development in the United States: Research findings on evaluations of positive youth development programs. Prevention & Treatment. 2002; 5(1):15.

Caughy MO, Nettles SM, O'Campo PJ, Lohrfink KF. Neighborhood matters: Racial socialization and the development of young African American children. Child Development. 2006; 77(5):1220–1236. [PubMed: 16999794]

Caughy MO, O'Campo PJ, Brodsky AE. Neighborhoods, families, and children: Implications for policy and practice. Journal of Community Psychology. 1999; 27:615–633.

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(12):2118–2224. [PubMed: 15569963]

Ceballo R, McLoyd V. Social support and parenting in poor, dangerous neighborhoods. Child Development. 2002; 73(4):1310–1321. [PubMed: 12146749]

Cleveland HH. Disadvantaged neighborhoods and adolescent aggression: Behavioral genetic evidence of contextual effects. Journal of Research on Adolescence. 2003; 13(2):211–238.

Cleveland HH, Gilson M. The effects of neighborhood proportion of single-parent families and mother-adolescent relationships on adolescents' number of sexual partners. Journal of Youth and Adolescence. 2004; 33(4):319–329.

Colder CR, Mott J, Levy S, Flay B. The relation of perceived neighborhood danger to childhood aggression: A test of mediating mechanisms. American Journal of Community Psychology. 2000; 28(1):83–103. [PubMed: 10824275]

Conger RD, Ge X, Elder GHJ, Lorenz FO, Simons RL. Economic stress, coercive family process, and developmental problems of adolescents. Child Development. 1994; 65:541–561. [PubMed: 8013239]

Cubbin C, Santelli J, Brindis CD, Braveman P. Neighborhood context and sexual behaviors among adolescents: Findings from the National Longitudinal Study of Adolescent Health. Perspectives on Sexual and Reproductive Health. 2005; 37(3):125–134. [PubMed: 16150660]

Dornbusch SM, Ritter PL, Leiderman PH, Roberts DF, Fraleigh MJ. The relation of parenting style to adolescent school performance. Child Development. 1987; 58:1244–1257. [PubMed: 3665643]

Dorsey S, Forehand R. The relation of social capital to child psychosocial adjustment difficulties: The role of positive parenting and neighborhood dangerousness. Journal of Psychopathology and Behavioral Assessment. 2003; 25(1):11–23.

Duncan GJ, Raudenbush SW. Assessing the effects of context in studies of child and youth development. Educational Psychologist. 1999; 34(1):29–41.

Earls, F. Project on Human Development in Chicago Neighborhoods: Community survey. Vol. 1994–95. Boston, MA: Harvard Medical School; 1999.

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(1):42–54. [PubMed: 11806701]

Gorman-Smith D, Tolan PH, Henry DB. A developmental-ecological model of the relation of family functioning to patterns of delinquency. Journal of Quantitative Criminology. 2000; 16(2):169–198.

Harding DJ. Counterfactual models of neighborhood effects: The effect of neighborhood poverty on dropping out and teenage pregnancy. American Journal of Sociology. 2003; 109(3):676–719.

Jones S, Lynam DR. In the eye of the impulsive beholder: The interaction between impulsivity and perceived informal social control on offending. Criminal Justice and Behavior. 2009; 36(3):307–321.

Leonard TCM, Caughy MO, Mays JK, Murdoch JC. Systematic neighborhood observations at high spatial resolution: Methodology and assessment of potential benefits. PLoS. 2011 in press.

Leventhal T, Brooks-Gunn J. Moving to Opportunity: An experimental study of neighborhood effects on mental health. American Journal of Public Health. 2003; 93(9):1576–1582. [PubMed: 12948983]

Meyers SA, Miller C. Direct, mediated, moderated, and cumulative relations between neighborhood characteristics and adolescent outcomes. Adolescence. 2004; 39(153):121–144. [PubMed: 15230070]

Morenoff JD, Sampson RJ. Violent crime and the spatial dynamics of neighborhood transition: Chicago, 1970–1990. Social Forces. 1997; 76:31–64.

Natsuaki MN, Ge X, Brody GH, Simons RL, Gibbons FX, Cutrona C. African American children's depressive symptoms: The prospective effects of neighborhood disorder, stressful life events, and parenting. American Journal of Community Psychology. 2007; 39:163–176. [PubMed: 17294122]

Olson, DH. Circumplex model of marital and family systems: Assessing family functioning. In: Walsh, F., editor. Normal Family Processes. 2nd. New York: Guilford Press; 1993. p. 104-137.Guildford Family Therapy Series

Paschall MJ, Hubbard ML. Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. Journal of Consulting and Clinical Psychology. 1998; 66(5):825–831. [PubMed: 9803701]

Rankin BH, Quane JM. Social contexts and urban adolescent outcomes: The interrelated effects of neighborhoods, families, and peers on African-American youth. Social Problems. 2002; 49:79–100.

Roche KM, Ensminger ME, Cherlin A. Variations in parenting and adolescent outcomes among African American and Latino families living in low-income, urban areas. Journal of Family Issues. 2007; 28(7):882–909.

Roche KM, Leventhal T. Beyond neighborhood poverty: Family management, neighborhood disorder, and early transitions to sex. Journal of Family Psychology. 2009; 23(6):819–827. [PubMed: 20001140]

Roche KM, Mekos D, Alexander CS, Astone NM, Bandeen-Roche K, Ensminger ME. Parenting influences on early sex initiation among adolescents: How neighborhood matters. Journal of Family Issues. 2005; 26:32–54.

Sampson RJ. Linking the micro and macrolevel dimensions of community social organization. Social Forces. 1991; 70(1):43–64.

Sampson, RJ. Family management and child development: Insights from social disorganization theory. In: McCord, J., editor. Facts, frameworks, and forecasts. Advances in criminological theory. Vol. 3. New Brunswick, NJ, USA: Transaction Publishers; 1992. p. 63-93.

Sampson RJ, Morenoff JD, Earls F. Beyond social capital: Spatial dynamics of collective efficacy for children. American Sociological Review. 1999; 64(5):633–660.

Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: A multilevel study of collective efficacy. Science. 1997; 277:918–924. [PubMed: 9252316]

Schaefer-McDaniel N, Caughy MO, O'Campo PJ, Gearey W. Examining methodological details of neighborhood observations and the relationship to health: A literature review. Social Science & Medicine. 2010; 70:277–292. [PubMed: 19883966]

Schwartz D, Gorman AH. Community violence exposure and children's academic functioning. Journal of Educational Psychology. 2003; 95(1):163–173.

Seidman E, Yoshikawa H, Roberts A, Chesir-Teran D, Allen L, Friedman JL, et al. Structural and experiential neighborhood contexts, developmental stage, and antisocial behavior among urban adolescents in poverty. Development and Psychopathology. 1998; 10:259–281. [PubMed: 9635224]

Shaw, C., McKay, H. Juvenile deliquency and urban areas. Chicago: University of Chicago Press; 1942.

Silk JS, Sessa FM, Morris AS, Steinberg L, Avenevoli S. Neighborhood cohesion as a buffer against hostile maternal parenting. Journal of Family Psychology. 2004; 18(1):135–146. [PubMed: 14992616]

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(1):145–171. [PubMed: 8712184]

Simons RL, Johnson C, Conger RD. Harsh corporal punishment versus quality of parental involvement as an explanation of adolescent maladjustment. Journal of Marriage & the Family. 1994; 56(3): 591–607.

Simons RL, Simons LG, Burt CH, Brody GH, Cutrona C. Collective efficacy, authoritative parenting and delinquency: A longitudinal test of a model integrating community- and family-level processes. Criminology. 2005; 43:989–1029.

StataCorp. Multiple-imputation reference manual. College Station: Stata Press; 2009.

Steinberg L, Lamborn SD, Dornbusch SM, Darling N. Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. Child Development. 1992; 63:1266–1281. [PubMed: 1446552]

Thompson FT. Student achievement, selected environmental characteristics, and neighborhood type. Urban Review. 2002; 34(3):277–292.

Tremblay RE, Loeber R, Gagnon C, Charlebois P, Larivee S, LeBlanc M. Disruptive boys with stable and unstable high fighting behavior patterns during junior elementary school. Journal of Abnormal Child Psychology. 1991; 19(3):285–300. [PubMed: 1865046]

Vanderbilt-Adriance E, Shaw DS. Neighborhood risk and the development of resilience. Annals of the New York Academy of Science. 2006; 1094:359–362.

Vazsonyi AT, Cleveland HH, Wiebe RP. Does the effect of impulsivity on delinquency vary by level of neighborhood disadvantage? Criminal Justice and Behavior. 2006; 33(4):511–541.

Werthamer-Larsson L, Kellam SG, Wheeler L. Effect of first-grade classroom environment on shy behavior, aggressive behavior, and concentration problems. American Journal of Community Psychology. 1991; 19(4):585–602. [PubMed: 1755437]

Wickrama KAS, Merton M, Elder JGH. Community influence on precocious transitions to adulthood: Racial differences and mental health consequences. Journal of Community Psychology. 2005; 33:639–653.

Wickrama KAT, Wickrama KAS, Bryant CM. Community influence on adolescent obesity: Race/ethnicity differences. Journal of Youth and Adolescence. 2006; 35(4):647–657.

Windle M, Grunbaum JA, Elliott M, Tortolero SR, Berry S, Gilliland J, et al. Healthy passages. A multilevel, multimethod longitudinal study of adolescent health. American Journal of Preventive Medicine. 2004; 27(2):164–172. [PubMed: 15261905]

Xue Y, Leventhal T, Brooks-Gunn J, Earls F. Neighborhood of residence and mental health problems of 5- to 11-year-olds. Archives of General Psychiatry. 2005; 62:554–563. [PubMed: 15867109]

Zimmerman G. Impulsivity, offending, and the neighborhood: Investigating the person-context nexus. Journal of Quantitative Criminology. 2010; 26(3):301–332.

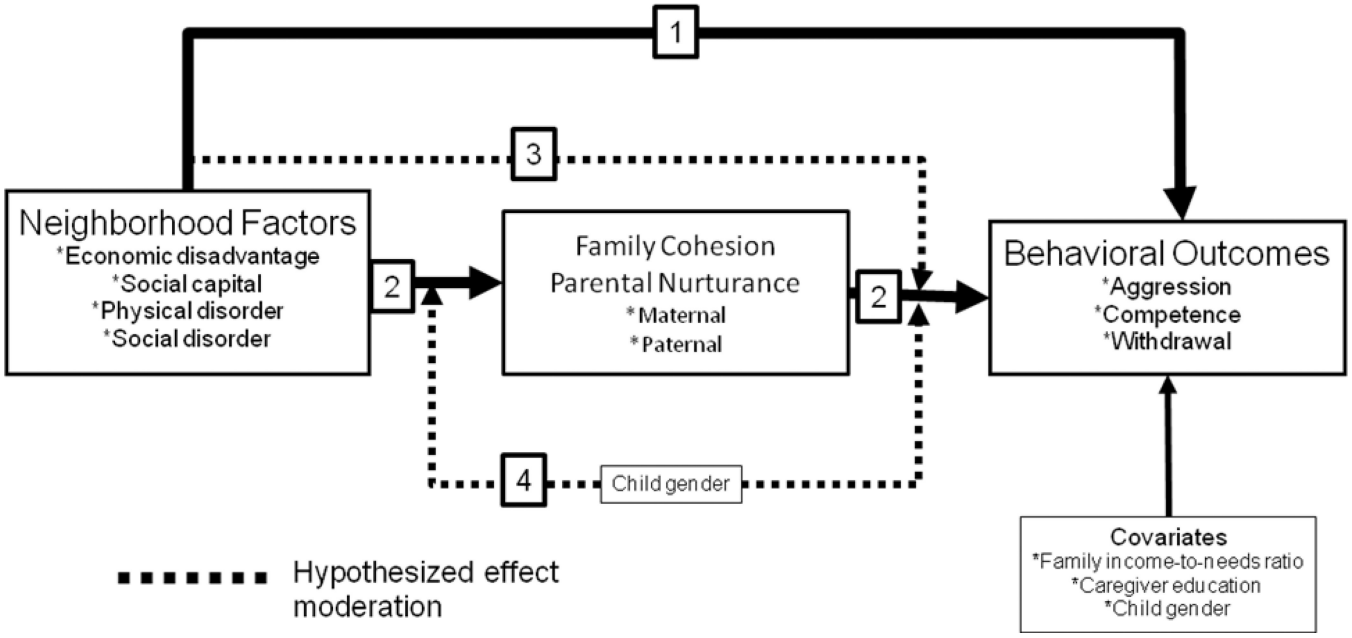

Figure 1.
Conceptual model of neighborhood effects on social competence in late elementary school

Table 1

Characteristics of study participants and study neighborhoods

Study participants (N = 3624)		
	N	%
Child's race/ethnicity		
White, non-Hispanic	954	26.3
Black, non-Hispanic	1169	32.3
Hispanic	1293	35.7
Other	208	5.7
Child's gender		
Boy	1765	48.7
Girl	1859	51.3
Child's age		
9 years old	9	.1
10 years old	456	12.6
11 years old	2531	70.0
12 years old	569	15.7
13 years old	57	1.6
14 years old	3	.1
Primary caregiver's relationship to child		
Mother	3254	89.8
Father	266	7.3
Stepparent	29	.8
Grandparent	75	2.1
Primary caregiver's education		
Less than high school	828	22.8
High school/GED	688	19.0
Some college	972	26.8
College or more	1129	31.2
Missing	7	.2
Family poverty level		
Less than 100% poverty	1090	30.1
100–199% poverty	731	20.2
200%+ poverty	1594	44.0
Missing	209	5.8
Study neighborhoods (N = 884)		
	Mean (SD)	Range
Vacant housing (%)	7.02 (5.24)	(0 – 44.67)
Single parent households (%)	12.30 (8.63)	(0 – 54.14)
Unemployed persons (%)	4.77 (3.43)	(0 – 64.19)
Households receiving public assistance (%)	4.70 (5.78)	(0 – 37.62)

Study participants (N = 3624)		
Families living below poverty (%)	15.83 (13.27)	(0 – 78.55)

Table 2

Factor loadings for TESB items

	Factor		
Item	**Social Aggression**	**Social Withdrawal**	**Prosocial**
Makes fun of others	.849		
Gets into arguments with others	.831		
Disrupts other students in class	.812		
Talks back to adults	.781		
Has a hot temper	.780		
Persuades kids to be mean to others	.778		
Intimidates other students	.765		
Seeks attention	.688		
Seems sad or depressed		.630	
Is excluded from groups and activities		.569	
Prefers to be alone		.561	
Seems shy or withdrawn		.553	
Is sensitive		.530	
Is popular among boys		−.448	
Volunteers to help others			.819
Stands up for others			.606
Participates in class			.591
Internal realiability	.93	.74	.77

Table 3

Intercorrelations of study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Social aggression	1.00												
2. Social competence	−.298**	1.00											
3. Social withdrawal	.179**	−.401**	1.00										
4. Maternal nurturance	−.011	.163**	−.111**	1.00									
5. Paternal nurturance	−.055**	.129**	−.121**	.547**	1.00								
6. Family cohesion	−.114**	.074**	−.008	.079**	.130**	1.00							
7. Economic disadvantage	.109**	−.086**	.020	−.024	−.116**	−.224**	1.00						
8. Social capital	−.115**	.118**	−.040*	.045*	.135**	.198**	−.358**	1.00					
9. Physical disorder	.077**	−.139**	.077**	−.081**	−.108**	−.141**	.453**	−.317**	1.00				
10. Social disorder	.025	−.074**	.029	−.052**	−.031	−.099**	.325**	−.144**	.475**	1.00			
11. Family income-to-needs ratio	−.144**	.182**	−.086**	.039*	.156**	.231**	−.571**	.379**	−.411**	−.262**	1.00		
12. Caregiver's education[a]	−.069**	.178**	−.086**	.071**	.115**	.191**	−.490**	.310**	−.462**	−.266**	.654**	1.00	
13. Child's gender[a]	−.151**	.195**	.032	.173**	−.033	−.011	.020	−.004	−.003	.009	−.011	−.008	1.00

[a]Spearman rank coefficients

+ p < .10;

* p < .05;

** p < .01;

*** p < .001

Table 4

Multivariable regression of teacher reported social aggression, social competence, and social withdrawal on parenting and neighborhood factors (N = 3289)

	Social Aggression			
	Model 1		**Model 2**	
	B (SE)	**t**	**B (SE)**	**t**
Intercept	1.836 (.033)	55.55***	2.310 (.165)	13.97***
Caregiver education < HS	−.040 (.040)	−1.00	−.063 (.049)	−1.29
Family poverty level <100%	.172 (.040	4.24***	.146 (.062)	2.34*
Neighborhood economic disadvantage	.087 (.029)	3.01**	.073 (.048)	1.52
Neighborhood social capital	−.066 (.023)	−2.88**	−.055 (.026)	−2.10*
Neighborhood physical disorder	−.009 (.032)	−.28	−.001 (.048)	−.01
Social disorder	−.021 (.023)	−.93	−.028 (.033)	−.86
Mother nurturance	---	---	.006 (.006)	.94
Father nurturance	---	---	−.010 (.005)	−1.85+
Family cohesion	---	---	−.010 (.003)	−3.62***
	Social Competence			
	Model 1		Model 2	
	B (SE)	t	B (SE)	t
Intercept	3.616 (.034)	106.40***	2.685 (.168)	15.96***
Caregiver education < HS	−.151 (.041)	−3.67***	−.164 (.054)	−3.01**
Family poverty level <100%	−.195 (.042)	−4.68***	−.163 (.049)	−3.33**
Neighborhood economic disadvantage	.024 (.030)	.79	.015 (.038)	.39
Neighborhood social capital	.045 (.023)	1.94+	.042 (.032)	1.32
Neighborhood physical disorder	−.089 (.023)	−2.69**	−.094 (.040)	−2.31*
Neighborhood social disorder	.016 (.023)	.68	.016 (.030)	.55
Mother nurturance	---	---	.037 (.005)	6.79***
Father nurturance	---	---	.002 (.005)	.49
Family cohesion	---	---	.002 (.003)	.87
	Social Withdrawal			
	Model 1		Model 2	
	B (SE)	t	B (SE)	t
Intercept	2.03 (.026)	78.69***	2.457 (.152)	16.21***
Caregiver education < HS	.085 (.031)	2.72**	.067 (.037)	1.81+
Family poverty level <100%	.061 (.032)	1.92+	.053 (.046)	1.16

	Social Aggression			
	Model 1		Model 2	
	B (SE)	t	B (SE)	t
Neighborhood economic disadvantage	−.030 (.022)	−1.33	−.044 (.032)	−1.41
Neighborhood social capital	−.003 (.017)	−.18	−.009 (.019)	−.46
Neighborhood physical disorder	.036 (.025)	1.45	.036 (.033)	1.09
Neighborhood social disorder	−.011 (.018)	−.60	−.004 (.024)	−.16
Mother nurturance	---	---	−.011 (.005)	−2.10 *
Father nurturance	---	---	−.012 (.004)	−2.95 **
Family cohesion	---	---	.001 (.003)	.49

+ p < .10;

* p < .05;

** p < .01;

*** p < .001