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<ATL> Is neighborhood poverty harmful to every child? Neighborhood poverty, family poverty, and behavioral/emotional problems among young children </ATL><zaq;1>

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<H1> Abstract

This longitudinal study investigates the association between neighborhood poverty and behavioral/emotional problems among young children. This study also examines whether social environments mediate the relationship between neighborhood poverty and behavioral/emotional problems. We used data from the third and fourth waves of the Fragile Families and Child Wellbeing study to assess behavioral/emotional problems separately for children who experienced no family poverty, moved out of family poverty, moved into family poverty, and experienced long-term family poverty. Regression models assessed the effect of neighborhood poverty at age 3 on 2 behavioral/emotional problem outcomes at age 5<zaq;3>, after controlling for sociodemographic characteristics and earlier behavioral/emotional problems. Results showed an association between neighborhood poverty and lower social cohesion and safety, which lead to greater externalizing problems among children with long-term family poverty living in high-poverty neighborhoods compared with those in low-poverty neighborhoods. Policies and community resources need to be allocated to improve neighborhood social environments, particularly for poor children in high-poverty neighborhoods.

<P> Approximately 1 in 10 young children (aged 2–5 years) present with behavioral/emotional problems (Hill, Degnan, Calkins, & Keane, 2006; Lavigne et al., 1996). Behavioral/emotional problems refer to internalizing and externalizing behaviors (Achenbach, 1978). Internalizing behaviors were defined as a grouping of negative behaviors expressed inwardly, such as preferring to be alone, refusing to speak, feeling worthless, being sad, and self-conscious (Achenbach, Howell, Quay, Conners, & Bates, 1991). Externalizing behaviors in early childhood were defined as a grouping of negative behaviors expressed outwardly, such as arguing, destroying own things, disobedience at home, and behavioral outbursts (Achenbach et al., 1991).

<P> Internalizing and externalizing behaviors are widely known to increase the risk for later academic difficulties and psychopathology, including poor academic functioning, depression, delinquency, substance abuse, and poor health (Bornstein, Hahn, & Haynes, 2010; Fanti & Henrich, 2010; Mesman & Koot, 2001; Snyder, 2001; Tremblay, Mass, Pagani, & Viatro, 1996). Though the significance of addressing behavioral/emotional problems in early childhood is well established, social determinants of behavioral/emotional problems among young children who may be especially sensitive to neighborhood and family contexts need further exploration, especially as young children spend much of their time with their family and in their neighborhood.

<P> Prior research has found that the interplay of factors related to the individual child, family, and neighborhood determines behavioral/emotional problems in early childhood (e.g., Bubier, Drabick, & Breiner, 2009; Burlaka, Bermann, & Graham-Bermann, 2015; Caughy, Nettles, & O'Campo, 2008; Plybon, & Kliewer, 2001;

Ingoldsby et al., 2006; Shaw, Sitnick, Reuben, Dishion, & Wilson, 2016). For example, family economic difficulties increase the likelihood of behavioral/emotional problems (Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 2000).

<P> According to human capital theory and the family economic stress model, a family's economic status determines parental stress and the quantity and quality of resources a family can invest in their children, which affect the behavioral/emotional development of their children (Becker, 1991; Becker & Tomes, 1986; Ermisch & Francesconi, 2001; Haveman & Wolfe, 1994; 1995; Leibowitz, 1974). Empirical findings corroborate human capital theory and the family economic stress model (see reviews in Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 2000). However, much of the variance in behavioral/emotional problems remains unexplained.

<P> Not surprisingly, there has been extensive research investigating the influence of neighborhood economic status on behavioral/emotional problems. Findings have identified the harmful impact of neighborhood economic disadvantage on internalizing and externalizing problems among young children (e.g., Kohen, Leventhal, Dahinten, & McIntosh, 2008; Leventhal & Brooks-Gunn, 2000; Palamar et al., 2015; Rowe, Zimmer-Gembeck, & Hood, 2016; Xue, Leventhal, Brooks-Gunn, & Earls, 2005). However, little is known about the intersection between family and neighborhood economic status. The present study investigates the intersectionality of family and neighborhood economic contexts, examining neighborhood poverty as a factor contributing to behavioral/emotional problems among young children, separately by family poverty levels.

<H2> Neighborhood Poverty and Child Behavioral/Emotional Problems

<P> One fifth of children overall in the United States live in poor neighborhoods, whereas half of poor families reside in poor urban neighborhoods that have high concentrations of poverty (Leventhal & Brooks-Gunn, 2003). Independent of family economic status, current literature cites neighborhood factors and their association with behavioral/emotional outcomes as a point of interest. One Canadian longitudinal study (Kohen et al., 2008) showed an association between neighborhood economic disadvantage in early childhood and greater behavioral/emotional problems in middle childhood, after controlling for family socioeconomic characteristics.

<P> Other longitudinal studies showed an association between neighborhood socioeconomic disadvantage and greater behavioral/emotional problems among children aged 5–11 years, even after controlling for earlier behavioral/emotional problems as well as family socioeconomic status (Palamar et al., 2015; Rowe et al., 2016; Xue et al., 2005). On the contrary, one recent study found no significant relationship between neighborhood poverty and internalizing or externalizing problems among 7-year-olds, after controlling for child, family, school, and neighborhood social characteristics and adjusting for selection bias (Humphrey & Root, 2017). Further in-depth assessment is needed to determine the influence of neighborhood economic disadvantage on child behavioral/emotional problems.

<H2> Intersection of Family Poverty and Neighborhood Poverty

<P> Theoretical frameworks explain that a neighborhood's impact on child development may differ by family poverty status. However, there is theoretical inconsistency in the way family economic status interacts with neighborhood economic context to influence child outcomes. On the one hand, *middle- and high-income* families can use their financial resources to counteract the harmful impact of neighborhood disadvantage on their children (Jencks & Mayer, 1990). For example,

middle- and high-income families in poor neighborhoods may have (a) ties to social groups of similar economic status, (b) limited exposure to unsafe, violent environments, and (c) access to safe, higher quality facilities and services outside of their neighborhoods (Kim & Cubbin, 2017). However, *low-income* families in poor neighborhoods may lack the family financial resources to compensate for any harmful effects of neighborhood economic disadvantage.

<P> On the other hand, according to relative deprivation theory (Jencks & Mayer, 1990), low-income families residing in more economically advantaged neighborhoods may feel deprived and isolated, implying that living in these neighborhoods may not always benefit children from low-income families. In a study about desegregation, poor residents, under court order, moved from poor neighborhoods into publicly funded townhomes in more affluent neighborhoods (Fauth, Leventhal, & Brooks-Gunn, 2007). The study found that children who moved from poor to more affluent neighborhoods presented with higher levels of depression and anxiety, possibly because of social isolation, when compared with children who stayed in their original neighborhood. Such isolation, in turn, may deter families from taking advantage of social environments readily available where they live.

<P> Despite theoretical inconsistencies, little empirical evidence exists as to whether the impact of neighborhood economic disadvantage on behavioral/emotional problems differs by family economic status. The present study examines the effect of neighborhood poverty on behavioral/emotional problems, separately by family poverty status, to investigate the intersection of family and neighborhood poverty and its impact on behavioral/emotional problems.

<H2> Role of Social Environments on Neighborhood Impact

<P> In response to the need for further in-depth analysis of neighborhood factors, several theoretical pathways of neighborhood impact have emerged, such as social cohesion, safety, social services, and facilities. Conceptual research has identified social environments as a potential mediator in the relationship between neighborhood economic context and child behavioral/emotional problems (Jencks & Mayer, 1990; Robert, 1999).

<P> Social disorganization theory posits that economically disadvantaged neighborhoods are less cohesive and safe (Shaw & McKay, 1942). Guided by this theory, prior studies have found that neighborhood economic disadvantage is, indeed, associated with lower levels of neighborhood social cohesion and safety (Brody et al., 2001; Haney, 2007; Sampson, Morenoff, & Gannon-Rowley, 2002). Theoretically, neighborhood social cohesion and safety have been thought to influence child behavioral/emotional problems. Specifically, according to epidemic models (Jencks & Mayer, 1990), children are more likely to present behavioral/emotional problems if they grow up in neighborhoods with high rates of crime and antisocial behaviors.

<P> The collective efficacy theory posits that neighborhood social efficacy, the extent to which residents share values and trust their neighbors, is associated with an adult neighbors' willingness to supervise children in the neighborhood for the good of the public (Sampson, 1992; Sampson, Raudenbush, & Earls, 1997). Such supervision may result in children with fewer behavioral/emotional problems.

<P> Relatively few empirical studies have investigated social environments as mediators in the relationship between neighborhood economic disadvantage and behavioral/emotional problems among young children. However, Xue and colleagues (2005) tested a mediation model linking neighborhood social efficacy with the

relationship between neighborhood socioeconomic disadvantages and internalizing problems among children aged 5–12 years after controlling for family economic status and earlier internalizing problems. Neighborhood social efficacy was associated with lower internalizing behaviors, and neighborhood economic disadvantage became insignificant once neighborhood social efficacy was included in the model (Xue et al., 2005).

<P> Xue et al.'s (2005) study showed a significant result of the Sobel test indicating a mediation role for neighborhood social efficacy; yet the study did not address the direction of the association between neighborhood economic disadvantage and neighborhood social efficacy, which makes it difficult to interpret results of the mediation tests. Moreover, the study did not examine externalizing problems and differential effects by family economic status.

<P> In studies of school-aged children, neighborhood safety, cleanliness, and social cohesion were found to be significant mediators in the relationship between neighborhood poverty and externalizing or internalizing problems among children aged 9–12 years (Kohen et al., 2008; Mrug & Windle, 2009). Kohen and colleagues (2008) found that neighborhood socioeconomic disadvantage increased internalizing and externalizing behaviors among children through decreased neighborhood social cohesion and increased parental psychosocial factors. Similarly, Mrug and Windle (2009) found a full mediation effect of neighborhood social cohesion and neighborhood safety in the association between neighborhood poverty and child externalizing behaviors. Specifically, they found that the association between neighborhood poverty and increased externalizing behaviors was mediated by decreased neighborhood social cohesion and safety.

<P> Despite their contribution to the understanding of the social environment, these studies did not focus on young children and/or did not control for earlier behavioral/emotional problems in examining neighborhood impacts on behavioral/emotional problems. Further longitudinal research needs to investigate the role of neighborhood social environments on the association between neighborhood poverty and young children's behavioral/emotional problems after adjusting for earlier behavioral/emotional problems.

<H2> The Present Study

<P> The present study uses a longitudinal design to explore the pathway between neighborhood poverty and its association with behavioral/emotional problems. First, this study tests the association between neighborhood poverty (measured when the child was 3 years old) and greater internalizing and externalizing problems among children aged 5 years. Second, this study analyzed the potential mediating role of social environments (measured by neighborhood social cohesion and safety when the child was 3 tears old) in the relationship between neighborhood poverty and child behavioral/emotional problems. In all analyses, this study considered the intersection of family poverty (no family poverty, moving out of family poverty, moving into family poverty, long-term family poverty) and neighborhood poverty. Based on previous research, our hypotheses are as follows: (a) the association between neighborhood poverty and child behavior problems will differ by family poverty status, and (b) perceived neighborhood social cohesion and safety will mediate the association between neighborhood poverty and child behavior problems.

<H1> METHOD

<H2> Data Sources

<P> Data from the third and fourth waves of the Fragile Families and Child Wellbeing Study (FFCWS) were used to assess the association between neighborhood poverty and behavioral/emotional problems in early childhood. The FFCWS is a longitudinal birth cohort survey of 4,898 births born in 1998–2000 in 75 hospitals in 20 cities across the United States (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

<P> The study interviewed parents about their parenting, sociodemographic status, health, employment, social support, and relationship status with the focal baby's biological father (or mother) shortly after the birth of their child. Follow-up surveys collected additional information such as child health and well-being when the focal child was 1, 3, 5, and 9 years old. In 2001–2003, a total of 4,140 mothers participated in the core survey at the third wave (response rate: 86%), and 3,288 participated in additional in-home assessments (79% of core survey respondents; FFCWS, 2006, 2008).

<P> For the fourth wave of FFCSW conducted in 2003–2006, 4,055 mothers participated in the core survey (response rate: 85%), and 3,001 participated in additional in-home assessment (74% of core survey respondents; The Fragile Families and Child Wellbeing Study, 2001). FFCWS provided the restricted use census tracts data, which contains an economic composition of census tracts from the U.S. 2000 Decennial Census for sample families. Additional details about the FFCWS's sample designs have been described in Reichman et al. (2001).

<P> The present study linked the third and fourth waves of the core survey and in-home assessments to census tract data. Of 2,455 mothers who participated in both

waves of in-home assessments, we only included children living with their mother at age 3<zaq;4> (excluding 15 cases) because mothers' neighborhood characteristics to child behavioral/emotional problems were linked. We excluded 87 mothers without records of neighborhood poverty rates in the census tract data and 309 mothers who had missing data on the primary outcome variables, resulting in 2,044 mothers. Then we excluded mothers with missing data on the behavioral/emotional problems of child at age 3 (127 cases), and maternal characteristics (race/ethnicity, relationship status, education level, and depression; nine cases). We conducted multiple imputations for missing neighborhood social cohesion (2% of the analytic sample), neighborhood safety (16% of the analytic sample), and parental stress (4% of the analytic sample) using the following variables: mother's age, race/ethnicity, relationship status, education, and depression, whether or not mothers moved between waves 3 and 4, and neighborhood poverty.

<P> The final sample in the analytic data included 1,908 respondents. There were significant differences in child's age, maternal race/ethnicity, maternal education, and the family income-to-needs ratio at age 3 between the eligible sample (*N*=2,455) and the final sample (*N*=1,908). Specifically, the final sample consisted of younger children, more non-Hispanic White mothers, more educated mothers, and families with a higher family income-to-needs ratio at age 3 than the eligible sample.

<H2> Measures

<P> The dependent variables were (a) internalizing problems and (b) externalizing problems. The measures included items from the Child Behavior Checklist 4-18 (Achenbach, 1992). Mothers rated her focal child's behavioral/emotional problems on a 3-point scale (ranging 0–2) when the child was approximately 60 months of age. For internalizing problems, mothers were asked to complete a 23-item scale on

her child's anxious/depressed and withdrawn behaviors (Cronbach's alpha = .77). The scale includes "child complains of loneliness," "child cries a lot," and "child refuses to talk." We summated 23 items to a scale of internalizing problems out of 46 points, with a higher score indicating greater internalizing problems. Externalizing problems consist of 30 questions on her child's aggressive behaviors (Cronbach's alpha = .87) such as "he/she is disobedient at home," "child destroys his/her own things," and "child swears or uses obscene language." Thirty items were summated to a scale of externalizing problems out of 60 points, with a higher score indicating greater externalizing problems.

<P> The independent variable was neighborhood poverty, defined as the percentage of families below the federal poverty line in a census tract where the focal child lived at age 3 by using data from FFCWS's restricted use census tracts data. Neighborhood poverty was categorized into low poverty (< 9.08%), moderate poverty (≥ 9.08% and < 22.54%), and high poverty (≥ 22.54%) based on its tertiles. Neighborhood poverty was categorized to examine a nonlinear relationship between neighborhood poverty and child behavioral/emotional problems, based on prior research (Crane, 1991).

<P> Two mediators were (a) neighborhood social cohesion and (b) neighborhood safety. Neighborhood social cohesion was measured using a scale from the Social Cohesion and Trust Scale based on five response options (ranging from *strongly agree* to *strongly disagree*; Cronbach's alpha = .80) when the focal child was 3 years of age (Sampson, 1997; Sampson et al., 1997). Mothers were asked five questions (e.g., people around here are willing to help their neighbors). Five items were summated with a higher score indicating higher neighborhood social cohesion.

<P> Neighborhood safety was measured using eight questions from the Neighborhood Environment for Children Rating Scales based on four response options (ranging from *never* to *frequently*; Cronbach's alpha = .93; Coulton, Korbin, Su, & Chow, 1995). Mothers were asked how often the following things happen in her neighborhood: (a) drug dealers or users hanging around; (b) drunks hanging around; (c) unemployed adults loitering; (d) young adults loitering; (e) gang activity; (f) disorderly misbehaving groups of young children; (g) disorderly or misbehaving groups of teenagers; and (h) disorderly or misbehaving groups of adults. After reverse coding, we summated eight items so that a higher score indicates higher neighborhood safety.

<P> Control variables were child's sex and mother's age, race/ethnicity, relationship status, education level, parental stress, whether or not mothers met depression criteria, and whether or not mothers moved between waves 3 and 4. Child's sex was coded as 0 for boys and 1 for girls. Mother's age was coded as continuous. Mother's race/ethnicity was categorized into the following groups: non-Hispanic black, Latina, non-Hispanic White (a reference group), and other. Mother's relationship status was categorized into five groups: married with biological father (a reference group), cohabiting with biological father, romantic with biological father, re-partnered, and no relationship with anyone. Mother's education level was coded as less than high school (a reference group), high school or equivalent, and some college or above.

<P> In addition to sociodemographic characteristics, we controlled for mothers' parental stress and depression given the association between mother's psychological distress and child behavioral/emotional problems (Crum & Moreland, 2017; Lee, Lee, & August, 2011; Sanner & Neece, 2018). Mother's parental stress

was measured using a 12-item scale derived from the Early Head Start Study based on five response options (ranging from *strongly agree* to *strongly disagree*) at the time of wave 3 (Cronbach's alpha = .87). The scale includes “You find yourself giving up more of your life to meet your child(ren)’s needs than you ever expected?” and “You feel trapped by your responsibilities as a parent?” Twelve items were summated to a parental stress scale out of 60 points, with a higher score indicating greater parental stress.

<P> Mother’s depression was measured using a scale derived from the Composite International Diagnostic Interview-Short Form, Section A (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998), which is consistent with the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*; American Psychiatric Association, 1994). Mothers were first asked whether or not they felt sad, blue, or depressed for two or more weeks in a row in the past year and, if so, whether the symptoms lasted most of the day and occurred every day during the 2 weeks. If so, more specific questions were asked, such as losing interest, feeling tired, and change in weight. According to the FFCSW documentation, mothers were coded as those meeting depression criteria if they felt sad, blue, or depressed during 2 weeks in the past year and they had three or more symptoms of seven symptoms (otherwise no).

<P> Whether or not mothers moved between waves 3 and 4 was controlled to consider residential mobility between two waves. If mothers moved since the interview at the wave 3, they were coded as yes (otherwise no). To capture neighborhood impact at age 3 on child behavioral/emotional problems at age 5, mother-rated child behavioral/emotional problems measured at age 3<zaq;5> (Cronbach's alpha = .90) were controlled as well. Child behavioral/emotional

problems at age 3 were measured using 39 items derived from the Child Behavior Checklist 2-3 based on three response options (Achenbach, 1988, 1992; Achenbach & Rescorla, 2000).

<H2> Analytic Plan

<P> Univariate and bivariate analyses were conducted to describe the distribution of all variables overall and by family poverty experiences. Then multiple linear regression models assessed associations between neighborhood poverty and behavioral/emotional problems, separately for internalizing and externalizing problems, after adjusting for covariates. The variance inflation factors ranged from 1.02 to 2.06, which indicates that multicollinearity of independent variables in the regression models was not a problem. Multilevel analyses at the census tract level were not used because census tract-level residuals were not significant (internalizing problems: $\tau_{00} = 0$, $p > .05$; externalizing problems: $\tau_{00} = 2.96$; $p > .05$) and because 96% of census tracts (1,252 census tracts) had only one or two respondents.

<P> Finally, this study tested the mediating role of neighborhood social cohesion and safety on the association between neighborhood poverty and behavioral/emotional problems according to Baron and Kenny (1986). We conducted all analyses in groups separated by family poverty levels: (a) children with family income at or above 200% of the federal poverty line at ages 3 and 5 (no family poverty at both times); (b) children with family income at or below 199% of the federal poverty line at age 3 and at or above 200% at age 5 (out of poverty); (c) children with family income at or above 200% at age 3 and at or below 199% of the federal poverty line at age 3 years (into poverty); and (d) children with family income at or below 199% of the federal poverty line at both ages 3 and 5 (family poverty at

both times). Analyses were conducted using the statistical software package IBM SPSS (version 20).

<H1> RESULTS

<P> Table 1 presents the characteristics of 1,908 children overall and by their family poverty experiences. Approximately half of the children were boys. Half of the mothers were non-Hispanic Black, and more than half of the mothers were involved in a relationship with the child's biological father (married, cohabiting, or romantic). In terms of family poverty, more than half of the families were poor or near poor (< 200% FPL) when the child was at ages 3 and 5, followed by no family poverty at both ages 3 and 5 (25%), and being poor or near poor at either age 3 or 5 (17%).

<P> Scores of internalizing and externalizing problems were higher among children with family poverty at both ages 3 and 5 than children with no family poverty, out of family poverty, or in family poverty. We conducted a supplementary mean-comparison analysis to examine whether or not internalizing and externalizing problems differed by a combination of family poverty and neighborhood poverty. Findings showed that children with family poverty at both times living in high-poverty neighborhoods presented with a higher level of internalizing (*M*=6.24) and externalizing problems (*M*=14.42) at age 5 than those with other combinations of family poverty and neighborhood poverty (see Appendix Table 1).

<P> As shown in Table 1, nearly half of the families in family poverty at both times lived in high-poverty neighborhoods, followed by moderate-poverty neighborhoods (35%) and low-poverty neighborhoods (19%). Two thirds of nonpoor families at both times lived in low-poverty neighborhoods, followed by moderate-poverty neighborhoods (24%) and high-poverty neighborhoods (12%). Families with no family poverty at both times lived in more cohesive (*M*=4.0) and safer neighborhoods

(*M*=3.6) than those who moved out of family poverty (*M*=3.6 and 3.3, respectively), moved into family poverty (*M*=3.6 and 3.4, respectively), and experienced family poverty at both times (*M*=3.2 and 3.0, respectively).

<P> Table 2 presents bivariate correlations among neighborhood characteristics at age 3 and behavioral/emotional problems at age 5. Among children with family poverty at both times, internalizing and externalizing problems were negatively correlated with low-poverty neighborhoods (internalizing behaviors: $r = -.06$, $p < .05$ and externalizing behaviors: $r = -.10$, $p < .01$, respectively) and positively correlated with high-poverty neighborhoods (internalizing behaviors: $r = .07$, $p < .05$ and externalizing behaviors: $r = .08$, $p < .01$, respectively). Among children with family poverty at both times, internalizing and externalizing problems were negatively correlated with neighborhood social cohesion (internalizing behaviors: $r = -.11$, $p < .001$ and externalizing behaviors: $r = -.19$, $p < .001$, respectively) and safety (internalizing behaviors: $r = -.15$, $p < .001$ and externalizing behaviors: $r = -.25$, $p < .001$, respectively).

<P> Using the stratified sample of children with experiences of no family poverty at both times, moving out of family poverty, moving into family poverty, and family poverty at both times, linear regression models examined the association between neighborhood poverty and internalizing problems among children aged 5 years, shown in Table 3. The amount of variance explained by the models ranged from 24% to 31%. Neighborhood poverty was not associated with internalizing behaviors among children with any type of family poverty.

<P> Table 4 presents findings of linear regression models assessing externalizing problems among children aged 5 years associated with neighborhood poverty. The percentage of variance explained by the models ranged from 29% to 37%. Living in

high-poverty neighborhoods was associated with greater externalizing problems among children with family poverty at both times compared with living in low-poverty neighborhoods (*b*=1.36, $p < .05$). Neighborhood poverty was not a significant factor in externalizing problems among children with experiences of no family poverty, being out of family poverty, and being into family poverty.

<P> Finally, we tested two potential mediators, neighborhood social cohesion, and safety, among children with family poverty at both times. We first tested the association between high-poverty neighborhoods (vs. low-poverty neighborhoods) and each potential mediator and found significant associations with both mediators (see Table A2). Subsequent separate models examined the effect of each potential mediator on the association between high- vs. low-poverty neighborhoods and externalizing problems among children with family poverty at both times (Table 5).

<P> Presented in Table 4 is the multivariate model, which is the unstandardized coefficient (b=1.36) of the high-poverty neighborhood. To the multivariate model, each potential mediator was added one at a time. When adding neighborhood social cohesion to that multivariate model, social cohesion was associated with externalizing problems (*b*=-0.52), and the unstandardized coefficient of externalizing problems associated with high-poverty neighborhood decreased from 1.36 to 0.98. When adding neighborhood safety to multivariate model, neighborhood safety was associated with externalizing problems (*b*=-0.79), and the unstandardized coefficient associated with high-poverty neighborhood decreased from 1.36 to 1.07.

<P> The unstandardized coefficients for each potential mediator in unadjusted or adjusted models are also shown. Both mediators were associated with externalizing problems in unadjusted and adjusted models. In both cases, neighborhood social cohesion and safety served as a mediator in the association between neighborhood

poverty and externalizing problems among children with family poverty at both times. Living in high-poverty neighborhoods was associated with lower levels of neighborhood social cohesion and safety, which in turn led to increased externalizing behaviors among children with family poverty at both times.

<H1> DISCUSSION

<P> Research on behavioral/emotional problems in children has identified several family- and neighborhood-level factors to predict a variety of adverse psychosocial difficulties in later life. The present study focused on the intersection of both family- and neighborhood-level economic context by investigating the association between neighborhood poverty and behavioral/emotional problems of young children, by family poverty levels. Our study found an association between living in high-poverty neighborhoods at age 3 and greater externalizing problems among children at age 5 who experienced family poverty at ages 3 and 5. Additionally, our findings supported the mediation role of neighborhood social cohesion and safety on explaining behavioral/emotional problems of poor children in high-poverty neighborhoods.

<H2> Children in Double Disadvantage: Family Poverty and Neighborhood Poverty

<P> Study findings showed an association only between neighborhood poverty and externalizing problems among children who experienced long-term family poverty at ages 3 and 5. The same relationship was not found in children without experiences of poverty or with family poverty at either age 3 or 5. As our first hypothesis expected, the association between neighborhood poverty and behavior problems differed by family poverty status. Our findings indicate that the buffering role of family economic resources is at play here rather than relative deprivation theory (Jencks & Mayer, 1990). Families in poverty lack financial resources to protect against the harmful effects of neighborhood disadvantage—the impact of

neighborhood poverty may be stronger for such families (Hamilton, Noh, & Adlaf, 2009). On the other hand, families not in poverty may be in a position to compensate for potential adverse effects of neighborhood disadvantage by utilizing alternative, higher-quality resources outside of the neighborhood (Jencks & Mayer, 1990). This explanation suggests a protective role of family economic status on behavioral/emotional problems among children living in high-poverty neighborhoods.

<P> Our findings are consistent with a prior study that focused on poor children: One longitudinal study focused on children from low-income families found that neighborhood socioeconomic disadvantage in early childhood predicted externalizing problems during childhood and adolescence (Shaw et al., 2016). In alignment with the prior literature, the present study suggests that *poor* children in *high-poverty* neighborhoods may suffer from a double disadvantage: family poverty and neighborhood poverty.

<P> The findings propose considering neighborhood economic context in family- or school-based interventions. Previous research has implemented a multitude of behavioral and mental health interventions aimed at assisting low-income families. For example, one successful program delivered a 12-week evidence-based, parent management program for 102 toddlers living in poverty (Fox & Holtz, 2009). Also, a 13-week behavioral parenting intervention used schools to provide family interventions for children of low-income families (Dawson-McClure et al., 2015). The intervention was found efficacious in improving parenting knowledge, positive behavioral support, and teacher-rated parental involvement, especially for young pre-kindergarten aged boys. Our findings suggest that interventions treating child behavioral/emotional problems target children in families who experienced both family poverty and neighborhood poverty, a highly vulnerable population group. Also,

family- and school-based interventions can integrate with neighborhood-level approaches by collaborating with social service agencies in residential neighborhoods to make neighborhoods more cohesive and safer for families with young children.

<P> On the other hand, we found no association between neighborhood poverty and internalizing problems among both poor and nonpoor children. A possible reason explanation is that internalizing behaviors are more endogenous than externalizing behaviors. Thus, the mother reports used in this study may be a relatively poor measure of these traits, therefore not fully capturing internalizing behaviors in young children (Davis, Sawyer, Lo, Priest, & Wake, 2010). Another possible reason is that the effect of economic disadvantage on child psychiatry differs by its dimensions (Amone-P'olak et al., 2009). Economic disadvantage is expected to be a risk factor for child aggression and hyperactive behaviors, whereas personality characteristics (e.g., temperament) and emotionally stressful events (e.g., loss of a loved one) are expected to increase the risk of depression and anxiety (Amone-P'olak et al., 2009). Our findings reveal that further research is needed to better understand the different effects of neighborhood economic context on child outcomes by dimensions of mental health.

<H2> The Role of Social Environments on Neighborhood-Behavioral/Emotional Problems Relationship

<P> The present study supports the mediating role of neighborhood social environments on the relationship between neighborhood poverty and externalizing problems among children who experienced long-term family poverty, as our second hypothesis expected. The findings are consistent with theoretical frameworks and other empirical studies (Kohen et al., 2008; Mrug & Windle, 2009; Tolan, Gorman-

Smith, & Henry, 2003) that have focused on school-aged children. As social disorganization theory posits, high-poverty neighborhoods are associated with lower levels of neighborhood social cohesion and safety. In addition, social cohesion and safety were associated with externalizing problems, as the collective efficacy theory argues, possibly through the establishment of social norms related to child behaviors (Sampson, 1992; Sampson et al., 1997). As informed by the current study and others, improving neighborhood social cohesion and safety can be an intervention strategy to reduce behavior problems among poor children living in high-poverty neighborhoods.

<P> Some studies have conducted neighborhood-based interventions to improve neighborhood climate. For example, a community-based, resident-initiated and -lead program was designed to address the needs of the community and to build stronger social environments in an inner-city neighborhood in Dayton, Ohio (Donnelly & Kimble, 2006). The program was found to reduce neighborhood crime, drug issues, traffic, and noise. Such programs have been particularly successful when used in conjunction with resident engagement, and cooperation with diverse partner organizations (Shan, Muhajarine, Loptson, & Jeffery, 2012; Springer, Lauderdale, Fitzgerald, & Baker, 2015). Therefore, our findings suggest that neighborhood-based interventions designed to improve social cohesion and safety in cooperation with various entities (such as residents, social service agencies, research institutions, police, and government) can not only improve neighborhood social environment but also reduce child behavior problems. Because the effect of neighborhood-based interventions targeting behavior problems among children is unknown, future research is needed to investigate such effectiveness of neighborhood intervention.

<H2> Limitations

<P> Several limitations of this study deserve consideration. First, because of the high-mobility level in the United States (Margerison-Zilko et al., 2015), the census tract at age 3 may not accurately represent neighborhood economic status throughout children's entire childhood. For example, some children may have relocated to certain neighborhoods (i.e., either to or from high-poverty neighborhoods) right before the time of the survey. Future research needs to investigate trajectories of neighborhood poverty rates as a result of residential mobility associated with child behavioral/emotional problems. Second, because neighborhood economic status changes over time, neighborhood poverty rate at one-time point might lump different characteristics of neighborhoods. For instance, the high poverty neighborhoods category in this study could include neighborhoods that recently became poor (e.g., due to a local industry crisis or natural disaster) and neighborhoods with a long history of concentrated poverty. In future work, neighborhood economic histories need consideration.

<P> Third, we focused on neighborhood poverty and social environments to explain the mechanism by which neighborhood economic disadvantage affect children, but other essential neighborhood measures (such as employment, racial/ethnic composition, service environments, and physical environments) deserve attention in future studies. Fourth, we included only perceived measures of neighborhood social cohesion and safety. Future research needs to compare objectively measured social environments to perceived social environments, which subsequently would affect neighborhood impacts on child behavioral/emotional outcomes. Finally, our sample was limited to respondents who had non-missing data on variables of our interest, which resulted in a biased sample of FFCWS. Our results might not be generalizable to all children.

<H1> Conclusion

<P> Healthy development in early childhood is critical for children's health, well-being, and success in their later lives, particularly for children who suffer from poverty and limited resources. The present study supports prior conceptual and empirical research by identifying poor children vulnerable to neighborhood economic disadvantage. The present study also identified mediators—social environmental factors—community interventions may target to help children. Findings from this study propose that building a positive neighborhood climate in which residents share common values, trust their neighbors, and have limited exposure to violence and crime, may promote young children's behavioral development and their later development of academic competencies and health.

<H1> REFERENCES

Achenbach, T. M. (1978). The child behavior profile: An empirically based system for assessing children's behavioral problems and competencies. International Journal of Mental Health, 7(3-4), 24-42.

Achenbach, T. M. (1988). Manual for the child behavior checklist. Burlington, VT: University of Vermont.

Achenbach, T. M. (1992). Manual for the child behavior checklist / 2-3 and 1992 profile. Burlington, VT: University of Vermont Department of Psychiatry.

Achenbach, T. M., Howell, C. T., Quay, H. C., Conners, C. K., & Bates, J. E. (1991). National survey of problems and competencies among four- to sixteen-year-olds: Parents' reports for normative and clinical samples. Monographs of the Society for Research in Child Development, 56(3), i-130.

Achenbach, T. M., & Rescorla, L. A. (2000). Manual for the ASEBA preschool forms and profiles. Burlington, VT: University of Vermont.

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders, Fourth Edition. Washington, DC: American Psychiatric Association.

Amone-P'olak, K., Burger, H., Ormel, J., Huisman, M., Verhulst, F. C., & Oldehinkel, A. J. (2009). Socioeconomic position and mental health problems in pre- and early-adolescents: The TRAILS study. Social Psychiatry and Psychiatric Epidemiology, 44(3), 231-238.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6), 1173-1182.

Becker, G. S. (1991). A treatise on the family. Cambridge, MA: Harvard University Press.

Becker, G. S., & Tomes, N. (1986). Human capital and the rise and fall of families. Journal of Labor Economics, 4(3), S1-S39.

Bornstein, M. H., Hahn, C. S., & Haynes, O. M. (2010). Social competence, externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades. Development and Psychopathology, 22(4), 717-735.

Brody, G. H., Conger, R., Gibbons, F. X., Ge, X., McBride Murry, V., Gerrard, M., & Simons, R. L. (2001). The influence of neighborhood disadvantage, collective socialization, and parenting on African American children's affiliation with deviant peers. Child Development, 72(4), 1231-1246.

Brooks-Gunn, J., & Duncan, G. J. (1997). The effects of poverty on children. The Future of Children, 7(2), 55-71.

Bubier, J. L., Drabick, D. A., & Breiner, T. (2009). Autonomic functioning moderates the relations between contextual factors and externalizing behaviors among inner-city children. Journal of Family Psychology, 23(4), 500-510.

Burlaka, V., Bermann, E. A., & Graham-Bermann, S. A. (2015). Internalizing problems in at-risk preschoolers: Associations with child and mother risk factors. Journal of Child and Family Studies, 24(9), 2653-2660.

Caughy, M. O. B., Nettles, S. M., & O'Campo, P. J. (2008). The effect of residential neighborhood on child behavior problems in first grade. American Journal of Community Psychology, 42(1-2), 39-50.

Coulton, C. J., Korbin, J. E., Su, M., & Chow, J. (1995). Community level factors and child maltreatment rates. Child Development, 66(5), 1262-1276.

Crane, J. (1991). The epidemic theory of ghettos and neighborhood effects on dropping out and teenage childbearing. American Journal of Sociology, 96(5), 1226-1259.

Crum, K. I., & Moreland, A. D. (2017). Parental stress and children's social and behavioral outcomes: The role of abuse potential over time. Journal of Child and Family Studies, 26(11), 3067-3078.

Davis, E., Sawyer, M. G., Lo, S. K., Priest, N., & Wake, M. (2010). Socioeconomic risk factors for mental health problems in 4–5-year-old children: Australian population study. Academic Pediatrics, 10(1), 41-47.

Dawson-McClure, S., Calzada, E., Huang, K. Y., Kamboukos, D., Rhule, D., Kolawole, B., ... Brotman, L. M. (2015). A population-level approach to promoting healthy child development and school success in low-income, urban

neighborhoods: Impact on parenting and child conduct problems. Prevention Science, 16(2), 279-290.

Donnelly, P. G., & Kimble, C. E. (2006). An evaluation of the effects of neighborhood mobilization on community problems. Journal of Prevention & Intervention in the Community, 32(1-2), 61-80.

Duncan, G. J., & Brooks- Gunn, J. (2000). Family poverty, welfare reform, and child development. Child Development, 71(1), 188-196.

Ermisch, J., & Francesconi, M. (2001). Family matters: Impacts of family background on educational attainments. Economica, 68, 137-156.

Fanti, K. A., & Henrich, C. C. (2010). Trajectories of pure and co-occurring internalizing and externalizing problems from age 2 to age 12: Findings from the National Institute of Child Health and Human Development Study of Early Child Care. Developmental Psychology, 46(5), 1159-1175.

Fauth, R. C., Leventhal, T., & Brooks- Gunn, J. (2007). Welcome to the neighborhood? Long- term impacts of moving to low- poverty neighborhoods on poor children's and adolescents' outcomes. Journal of Research on Adolescence, 17(2), 249-284.

Fox, R. A., & Holtz, C. A. (2009). Treatment outcomes for toddlers with behaviour problems from families in poverty. Child and Adolescent Mental Health, 14(4), 183-189.

Hamilton, H. A., Noh, S., & Adlaf, E. M. (2009). Perceived financial status, health, and maladjustment in adolescence. Social Science & Medicine, 68(8), 1527-1534.

Haney, T. J. (2007). “Broken windows” and self-esteem: Subjective understandings of neighborhood poverty and disorder. Social Science Research, 36(3), 968-994.

Haveman, R. H., & Wolfe, B. S. (1994). Succeeding generations: on the effects of investments in children. New York: Russell Sage Foundation Publication.

Haveman, R. H., & Wolfe, B. S. (1995). The determinants of children's attainments: A review of methods and findings. Journal of Economic Literature, 33, 1829-1878.

Hill, A. L., Degnan, K. A., Calkins, S. D., & Keane, S. P. (2006). Profiles of externalizing behavior problems for boys and girls across preschool: The roles of emotion regulation and inattention. Developmental psychology, 42(5), 913-928.

Humphrey, J. L., & Root, E. D. (2017). Spatio-temporal neighborhood impacts on internalizing and externalizing behaviors in US elementary school children: Effect modification by child and family socio-demographics. Social Science & Medicine, 180, 52-61.

Ingoldsby, E. M., Shaw, D. S., Winslow, E., Schonberg, M., Gilliom, M., & Criss, M. M. (2006). Neighborhood disadvantage, parent–child conflict, neighborhood peer relationships, and early antisocial behavior problem trajectories. Journal of Abnormal Child Psychology, 34(3), 293-309.

Jencks, C., & Mayer, S. E. (1990). The social consequences of growing up in a poor neighborhood. In L Lynn, Jr., M. G. H. McGeary (Eds.), Inner-city poverty in the United States (pp. 111-186). Washington, DC: National Academy Press.

Kessler, R. C., Andrews, G., Mroczek, D., Ustun, T. B., & Wittchen, H. U. (1998). The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). International Journal of Methods in Psychiatric Research, 7, 171-185.

Kim, Y., & Cubbin, C. (2017). The role of neighborhood economic context on physical activity among children: Evidence from the Geographic Research on Wellbeing (GROW) study. Preventive Medicine, 101, 149-155.

Kohen, D. E., Leventhal, T., Dahinten, V. S., & McIntosh, C. N. (2008). Neighborhood disadvantage: Pathways of effects for young children. Child Development, 79(1), 156-169.

Lavigne, J. V., Gibbons, R. D., Christoffel, K. K., Arend, R., Rosenbaum, D., Binns, H., ... Isaacs, C. (1996). Prevalence rates and correlates of psychiatric disorders among preschool children. Journal of the American Academy of Child & Adolescent Psychiatry, 35(2), 204-214.

Lee, C. Y. S., Lee, J., & August, G. J. (2011). Financial stress, parental depressive symptoms, parenting practices, and children's externalizing problem behaviors: Underlying processes. Family Relations, 60(4), 476-490.

Leibowitz, A. (1974). Home investments in children. Journal of Political Economy, 82(2), S111-S131.

Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. Psychological Bulletin, 126(2), 309-337.

Leventhal, T., & Brooks-Gunn, J. (2003). Children and youth in neighborhood contexts. Current Directions in Psychological Science, 12(1), 27-31.

Margerison-Zilko, C., Cubbin, C., Jun, J., Marchi, K., Fingar, K., & Braveman, P. (2015). Beyond the cross-sectional: Neighborhood poverty histories and preterm birth. American Journal of Public Health, 105(6), 1174-1180.

Mesman, J., & Koot, H. M. (2001). Early preschool predictors of preadolescent internalizing and externalizing DSM-IV diagnoses. Journal of the American Academy of Child & Adolescent Psychiatry, 40(9), 1029-1036.

Mrug, S., & Windle, M. (2009). Mediators of neighborhood influences on externalizing behavior in preadolescent children. Journal of Abnormal Child Psychology, 37(2), 265-280.

Palamar, J. J., Calzada, E. J., Theise, R., Huang, K., Petkova, E., & Brotman, L. M. (2015). Family- and neighborhood-level factors as predictors of conduct problems in school among young, urban, minority children. Behavioral Medicine, 41(4), 177-185.

Plybon, L. E., & Kliewer, W. (2001). Neighborhood types and externalizing behavior in urban school-age children: Tests of direct, mediated, and moderated effects. Journal of Child and Family Studies, 10(4), 419-437.

Reichman, N. E., Teitler, J. O., Garfinkel, I., & McLanahan, S. S. (2001). Fragile families: Sample and design. Children and Youth Services Review, 23(4-5), 303-326.

Robert, S. A. (1999). Socioeconomic position and health: The independent contribution of community socioeconomic context 1. Annual Review of Sociology, 25(1), 489-516.

Rowe, S. L., Zimmer-Gembeck, M. J., & Hood, M. (2016). From the child to the neighbourhood: Longitudinal ecological correlates of young adolescents' emotional, social, conduct, and academic difficulties. Journal of Adolescence, 49, 218-231.

Sampson, R. J. (1992). Family management and child development: Insights from social disorganization theory. In J. McCord (Ed.), Facts, frameworks, and

forecasts: Advances in criminological theory (Vol. 3, pp. 63–93). New Brunswick, NJ: Transaction Books.

Sampson, R. J. (1997). Collective regulation of adolescent misbehavior validation results from eighty Chicago neighborhoods. Journal of Adolescent Research, 12(2), 227-244.

Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": Social processes and new directions in research. Annual Review of Sociology, 28(1), 443-478.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. Science, 277(5328), 918-924.

Sanner, C. M., & Neece, C. L. (2018). Parental distress and child behavior problems: Parenting behaviors as mediators. Journal of Child and Family Studies, 27(2), 591-601.

Shan, H., Muhajarine, N., Loptson, K., & Jeffery, B. (2012). Building social capital as a pathway to success: Community development practices of an early childhood intervention program in Canada. Health Promotion International, 29(2), 244-255.

Shaw, C., & McKay, H. (1942). Juvenile delinquency and urban areas. Chicago: University of Chicago Press.

Shaw, D. S., Sitnick, S. L., Reuben, J., Dishion, T. J., & Wilson, M. N. (2016). Transactional effects among maternal depression, neighborhood deprivation, and child conduct problems from early childhood through adolescence: A tale of two low-income samples. Development and Psychopathology, 28(3), 819-836.

Snyder, H. (2001). Child delinquents. In R. Loeber & D. P. Farrington (Eds.), Risk factors and successful interventions. Thousand Oaks, CA: Sage.

Springer, D. W., Lauderdale, M., Fitzgerald, K., & Baker, D. (2015). Restoring Rundberg: A community-research partnership. Professional Development: The International Journal of Continuing Social Work Education, 18, 5-8.

The Fragile Families and Child Wellbeing Study. (2001). Five-year in-home longitudinal study of pre-school aged children. Princeton, NJ: Benheim-Thoman Center for Research on Child Wellbeing.

The Fragile Families and Child Wellbeing Study. (2006). Introduction to the fragile families core public use data: Baseline, one-year, and three-year files. Princeton, NJ: Benheim-Thoman Center for Research on Child Wellbeing.

The Fragile Families and Child Wellbeing Study. (2008). Three-year in-home longitudinal study of pre-school aged children: User's guide. Retrieved from http://fragilefamilies.princeton.edu/sites/fragilefamilies/files/ff_hv_guide3.pdf

Tolan, P. H., Gorman-Smith, D., & Henry, D. B. (2003). The developmental ecology of urban males' youth violence. Developmental Psychology, 39(2), 274-291.

Tremblay, R. E., Mass, L. C., Pagani, L., & Vitaro, F. (1996). From childhood physical aggression to adolescent maladjustment: The Montreal prevention experiment. In R. D. Peters, & R. J. MacMahon (Eds.), Preventing childhood disorders, substance abuse and delinquency (pp. 268–298). Thousand Oaks, CA: SAGE Publications.

Xue, Y., Leventhal, T., Brooks-Gunn, J., & Earls, F. J. (2005). Neighborhood residence and mental health problems of 5-to 11-year-olds. Archives of General Psychiatry, 62(5), 554-563.

<H1> APPENDIX

<H2> Table A1. Mean comparison of internalizing and externalizing problems at age 5 by family- and neighborhood-level poverty experiences, waves 3-4, Fragile Families and Child Wellbeing Study, *N*=1,908

	Nonpoor both times		Out of family poverty		Into family poverty		Poor both times	
	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems
Neighborhood poverty								
1. Low poverty	4.02	10.53	6.04	13.30	5.07	11.22	5.32	12.06
2. Moderate poverty	4.29	11.85	4.81	12.56	5.94	12.75	5.75	13.59
3. High poverty	5.14	10.79	6.44	12.85	5.78	11.78	6.24	14.42

<H2> Table A2. Regression analyses of neighborhood social environments associated with neighborhood poverty, wave 3, Fragile Families and Child Wellbeing Study, *N*=1,908

	Neighborhood social cohesion *b* [95% CI]	Neighborhood safety *b* [95% CI]
Neighborhood poverty		
Low poverty (reference)		
Moderate poverty	-0.22*** [-0.33, -0.11]	-0.39*** [-0.48, -0.29]
High poverty	-0.48*** [-0.59, -0.36]	-0.86*** [-0.96, -0.76]

Note. CI = confidence interval. Child's sex, and mother's age, race/ethnicity, relationship status, education level, parental stress, and depression were controlled.

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

See ecopies for table edits

<<enote>>AQ1: Per APA style, please replace the forward slash in behavioral/emotional with “and,” “or,” or “and/or” starting here in the title and throughout the text.

<<enote>>AQ2: Please provide the email address of the corresponding author.

<<enote>>AQ3: Please revise this for greater clarity: Perhaps, “Regression models assessed the effect of neighborhood poverty among children aged 3 years on behavioral/emotional problem outcomes among children aged 5 years…”

<<enote>>AQ4: Please revise this for greater clarity: “we only included 3-year-old children living with their mothers” or “we only included children aged 3 years living with their mothers”

<<enote>>AQ5: Please revise this for greater clarity: To capture the effect of neighborhood among children aged 3 years on child behavioral/emotional problems among children aged 5 years, mother-rated child behavioral/emotional problems measured at age 3.

{TBL1}<TC>TABLE 1. Sample characteristics overall and by family poverty experiences, waves 3-4, Fragile Families and Child Wellbeing Study, *N*=1,908

Characteristic	Mean ± SD / %	Family poverty experiences				
		Nonpoor both times (n=473)	Out of poverty (n=165)	Into poverty (n=156)	Poor both times (n=1,114)	F (χ^2)
Child's sex						(1.0)
Boys	51.8%	51.8%	51.5%	48.1%	52.4%	
Girls	48.2%	48.2%	48.5%	51.9%	47.6%	
Child's internalizing problems at age 3	9.3 ± 5.8	7.1 ± 4.2	8.6 ± 5.5	9.0 ± 4.9	10.4 ± 6.2	38.6***
Child's externalizing problems at age 3	9.6 ± 5.9	8.3 ± 5.1	9.3 ± 6.0	9.6 ± 5.3	10.3 ± 6.2	13.4***
Child's internalizing problems at age 5	5.4 ± 4.4	4.2 ± 3.5	5.6 ± 4.7	5.6 ± 4.7	5.9 ± 4.6	16.5***
Child's externalizing problems at age 5	12.8 ± 7.6	10.9 ± 6.2	12.9 ± 7.5	11.9 ± 6.3	13.7 ± 8.1	16.3***
Maternal age (years)	28.1 ± 6.0	31.4 ± 6.1	26.8 ± 5.6	26.9 ± 5.5	27.0 ± 5.6	70.6***
Maternal race/ethnicity						(261.1***)
Black, non-Hispanic	53.1%	31.3%	53.9%	54.5%	62.0%	
Hispanic	21.3%	16.1%	22.4%	21.2%	23.4%	
White, non-Hispanic	22.5%	47.4%	21.8%	21.8%	12.1%	
Other	3.1%	5.3%	1.8%	2.6%	2.4%	
Maternal relationship status						(419.2***)
Married with biological father	30.2%	65.8%	21.8%	30.8%	16.3%	
Cohabiting with biological father	22.6%	14.6%	24.8%	28.8%	24.8%	
Romantic with biological father	3.7%	1.3%	3.6%	1.9%	5.0%	
Re-partnered	18.0%	7.0%	25.5%	23.7%	20.7%	
No relationship with anyone	25.5%	11.4%	24.2%	14.7%	33.1%	
Maternal education						(426.6***)
Less than high school	30.5%	7.4%	24.2%	21.8%	42.4%	
High school or equivalent	32.1%	18.4%	37.6%	37.8%	36.4%	
Some college or above	37.4%	74.2%	38.2	40.4%	21.3%	
Parental stress	1.2 ± 0.7	0.9 ± 0.6	1.1 ± 0.6	1.3 ± 0.7	1.3 ± 0.7	34.8***
Maternal depression (% meeting criteria)	21.4%	12.9%	18.8%	23.1%	25.1%	(30.5***)

Characteristic	Mean ± SD / %	Family poverty experiences				
		Nonpoor both times (n=473)	Out of poverty (n=165)	Into poverty (n=156)	Poor both times (n=1,114)	F (χ^2)
Moving between waves 3 and 4 (% moved)	47.4%	34.0%	52.7%	48.1%	52.2%	(46.3***)
Neighborhood poverty						(346.2**)
Low poverty	32.9%	63.8%	33.9%	37.8%	18.9%	
Moderate poverty	32.5%	24.3%	42.4%	32.7%	34.6%	
High poverty	34.6%	11.8%	23.6%	29.5%	46.6%	
Neighborhood social cohesion	3.5 ± 1.0	4.0 ± 0.8	3.6 ± 1.0	3.6 ± 0.9	3.2 ± 1.0	69.4***
Neighborhood safety	3.3 ± 0.9	3.6 ± 0.6	3.3 ± 0.8	3.4 ± 7.0	3.0 ± 0.9	53.7***

Note. SD = standard deviation.

*$p < 0.05$ **$p < 0.01$. ***$p < 0.001$.

{TBL2}<TC>TABLE 2. Correlation between neighborhood characteristics at age 3 and child behavioral/emotional problems at age 5 by family poverty experiences, waves 3-4, Fragile Families and Child Wellbeing Study, *N*=1,908

	Nonpoor both times		Out of family poverty		Into family poverty		Poor both times	
	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems	Internalizing problems	Externalizing problems
Neighborhood poverty								
1. Low poverty	-0.07	-0.08	0.07	0.04	-0.09	-0.08	-0.06*	-0.10**
2. Moderate poverty	0.01	0.09	-0.15	-0.04	0.06	0.10	-0.02	-0.01
3. High poverty	0.10*	-0.01	0.10	-0.00	0.03	-0.01	0.07*	0.08**
4. Neighborhood social cohesion	-0.05	-0.14**	-0.17*	-0.18*	-0.24**	-0.02	-0.11***	-0.19***
5. Neighborhood safety	-0.11*	-0.12*	0.01	-0.02	-0.18*	0.01	-0.15***	-0.25***

*$p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

{TBL3}<TC>TABLE 3. Regression analyses of internalizing problems among children aged 5 years by family poverty experiences, waves 3-4, Fragile Families and Child Wellbeing Study, *N*=1,908

Characteristics	Nonpoor both times		Out of poverty		Into poverty		Poor both times	
	b	*β*	*b*	*β*	*b*	*β*	*b*	*β*
Neighborhood poverty								
Low poverty (reference)								
Moderate poverty	-.12	-.02	-1.19	-.13	.04	.00	.18	.02
High poverty	.54	.05	-.23	-.02	.49	.05	.57	.06
Child's sex								
Boys (reference)								
Girls	-.33	-.05	-.45	-.05	.68	.08	.06	.01
Child's behavioral/emotional problems at age 3	.19***	.44	.15***	.33	.23***	.48	.15***	.38
Maternal age (years)	.01	.01	.04	.03	.01	.01	-.02	-.02
Maternal race/ethnicity								
Black, non-Hispanic	-.18	-.02	-.61	-.07	-.66	-.07	-.83*	-.09
Hispanic	.14	.01	.29	.03	.09	.01	.94*	.09
White, non-Hispanic (reference)								
Other	-.01	-.01	-1.83	-.05	2.51	.09	.16	.01
Maternal relationship status								
Married with biological father (reference)								
Cohabiting with biological father	.61	.06	.77	.07	.57	.06	-.16	-.02
Romantic with biological father	-1.02	-.03	.85	.03	-1.51	-.05	.26	.01

Re-partnered	-.84	-.06	-.27	-.02	.68	.07	.05	.01
No relationship with anyone	-.05	-.01	.52	.05	-.09	-.01	.10	.01
Maternal education								
Less than high school (reference)								
High school or equivalent	-1.02	-.11	-1.21	-.13	.22	.02	.43	.05
Some college or above	-.53	-.07	-1.14	-.12	-.09	-.01	-.62	-.06
Parental stress	.08	.01	1.83**	.23	.25	.04	.68***	.11
Maternal depression								
Meeting criteria	.93*	.09	-.39	-.03	.33	.03	.80**	.08
Not meeting criteria (reference)								
Moving between waves 3 and 4								
Moved	.18	.02	.30	.03	.34	.04	.12	.01
Did not move (reference)								
Model fits: F (adjusted R^2)	8.70***	(.25)	3.23***	(.27)	3.63***	(.31)	20.58***	(.24)

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

{TBL4}<TC>TABLE 4. Regression analyses of externalizing problems among children aged 5 years by family poverty experiences, waves 3-4, Fragile Families and Child Wellbeing Study, *N*=1,908

Characteristics	Nonpoor both times		Out of poverty		Into poverty		Poor both times	
	b	*β*	*b*	*β*	*b*	*β*	*b*	*β*
Neighborhood poverty								
Low poverty (reference)								
Moderate poverty	.35	.02	-.50	-.03	.92	.07	1.04	.06
High poverty	-.95	-.05	-.81	-.04	.72	.05	**1.36***	.08
Child's sex								
Boys (reference)								
Girls	-1.23*	-.10	-.08	-.01	-2.01*	-.16	-.35	-.02
Child's behavioral/emotional problems at age 3	.37***	.50	.41***	.59	.31***	.46	.33***	.47
Maternal age (years)	.03	.02	.18	.13	.07	.06	-.14***	-.09
Maternal race/ethnicity								
Black, non-Hispanic	.04	.01	-2.23	-.15	-2.05	-.16	-1.45*	-.09
Hispanic	-.43	-.03	-3.60*	-.20	-1.40	-.09	-.95	-.05
White, non-Hispanic (reference)								
Other	.62	.02	-8.20*	-.15	-1.81	-.05	.03	.01
Maternal relationship status								
Married with biological father (reference)								
Cohabiting with biological father	-.17	-.01	2.36	.14	.51	.04	.37	.02
Romantic with biological father	-2.29	-.04	1.73	.04	1.24	.03	.65	.02

Re-partnered	1.35	.06	1.95	.11	.47	.03	1.94**	.10
No relationship with anyone	1.37	.07	1.43	.08	1.43	.08	1.00	.06
Maternal education								
Less than high school (reference)								
High school or equivalent	-1.75	-.11	-.81	-.05	1.99	.15	.05	.01
Some college or above	-1.70	-.12	-1.00	-.06	.57	.05	-.24	-.01
Parental stress	.18	.01	1.30	.10	-.48	-.05	.74*	.07
Maternal depression								
Meeting criteria	1.31	.07	.31	.02	.47	.03	1.44**	.08
Not meeting criteria (reference)								
Moving between waves 3 and 4								
Moved	.01	.01	.42	.03	.80	.06	.65	.04
Did not move (reference)								
Model fits: F (adjusted R^2)	12.73***	(.32)	6.60***	(.37)	3.34***	(.29)	28.33***	(.31)

*$p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

{TBL5}<TC>TABLE 5. Mediating effects of neighborhood social cohesion and safety in the relationship between neighborhood high poverty and externalizing problems among children from families in poverty at both times, waves 3-4, Fragile Families and Child Wellbeing Study, *n*=1,114

	Mediator, unadjusted model	Mediator, adjusted model	High-poverty neighborhood
	b (95% CI)	*b* (95% CI)	*b* (95% CI)
Children with poor both times			
Multivariate model (from Table 4)			1.36* (0.20, 2.53)
Neighborhood social cohesion at age 3	-1.51*** (-1.98, -1.03)	-0.52* (-0.96, -0.09)	0.98 (-0.20, 2.16)
Neighborhood safety at age 3	-2.19*** (-2.74, -1.64)	-0.79** (-1.34, -0.23)	1.07 (-0.26, 2.40)

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.