

# The Evocative Influence of Child Academic and Social-Emotional Adjustment on Parent Involvement in Inner-City Schools

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The current study examines 3 alternative conceptual models of the directional associations between parent involvement in schooling (homework assistance, home-school conferencing, school-based support) and child adjustment (academic and social competence, aggressive behaviors). The parent socialization model tests the hypothesis that parent involvement contributes to prospective child adjustment. The child adjustment model examines the proposition that children's adjustment affects prospective parent involvement in schooling. The transactional model tests the hypothesis that parent involvement and child adjustment are reciprocally related over time. These models are tested with a large sample of low-income, racially/ethnically diverse children and their parents who were assessed in the fall and spring of children's 3rd and 4th grades. Overall, consistent support for the child adjustment hypothesis was found. When children were struggling academically, socially, and behaviorally, their parents showed higher prospective levels of homework assistance and home-school conferencing but lower levels of school-based support. Economic hardship also contributed to variation in levels of parent involvement and child adjustment, with child adjustment mediating the effects of economic hardship on parent involvement.

**Keywords:** parent involvement in schooling, academic competence, social competence, aggressive behaviors, low-income

Calls to reorient educational practice and policy to better meet the needs of low-income families have renewed research interest on parent involvement in schooling (Christenson, 2004; Patrikakou, Weissberg, Manning, Walberg, & Redding, 2005).

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Broadly, parent involvement in schooling is a multi-dimensional construct that refers to the engagement of significant caregivers in the education of their children at home, such as helping their child with homework, and at school, such as communicating with their child's teacher and supporting their child in school (Epstein & Dauber, 1991; Grolnick & Slowiaczek, 1994). Parent involvement in schooling may be particularly important for low-income children, who are often vulnerable to poor academic and social-emotional adjustment. While research has indicated that low-income parents generally engage in fewer school-related activities than higher income parents (Raffaele & Knoff, 1999), there is substantial variability in the frequency of school-related activities among low-income parents and in how these activities relate to children's academic and social-emotional adjustment (Hill et al., 2004; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Schulting, Malone, & Dodge, 2005).

Research with diverse samples of families has presented a complex picture of the relations between parent involvement in schooling and child adjustment. This complexity is due in part to methodological differences, such as dimension of parent involvement (Grolnick & Slowiaczek, 1994; Shumow & Miller, 2001; Stright & Yeo, 2014) and domain of child adjustment (El Nokali, Bachman, & Votruba-Drzal, 2010) assessed. The association between parent involvement in schooling and child adjustment can also differ depending on the directionality by which the associations are examined (e.g., involvement predicting prospective ad-

justment or vice versa; Englund, Luckner, Whaley, & Egeland, 2004; Goldenberg, Gallimore, Resse, & Garnier, 2001). Typically, parent involvement in schooling has been assessed as a precursor of child academic and social-emotional adjustment (e.g., Hill et al., 2004; El Nokali et al., 2010). However, both theory on parent-child relations (e.g., Grusec, 2002; Sameroff, 1995) and research on parent involvement in schooling (e.g., Englund et al., 2004; Goldenberg et al., 2001) suggest that it is equally likely that child adjustment precedes or transacts over time with parent involvement.

The current study tests three alternative models of the directional associations between parent involvement and child adjustment among low-income, racially/ethnically diverse children and parents across two school years and four discrete waves of data (see Figure 1). The *parent socialization model* assesses the hypothesis that parents' level of involvement in school-related activities contributes to prospective child adjustment (McNeal, 1999). The *child adjustment model* tests the hypothesis that children's prior level of adjustment evokes parents' subsequent levels of involvement in school-related activities (Grusec, 2002). The *transactional model* tests the proposition that the association between parent involvement and child adjustment is a dynamic, bi-directional process that unfolds over time (Sameroff, 1995). Using these directional models, we assess the concurrent and prospective associations between three related dimensions of parent involvement (homework assistance, home-school conferencing, school-based support) and three domains of child adjustment (academic and social competence, aggressive behaviors).

To better understand the variability within our sample of low-income families, we also examine the direct and indirect contributions of economic hardship (a cumulative risk index) to levels of parent involvement and child adjustment at each wave in our best fitting directional models. Among low-income families, variability

in the degree to which they experience economic hardship may impact the frequency by which low-income parents can participate in school-related activities and their children's levels of adjustment. Economic hardship reflects income-level indicators that include a household income below the poverty threshold and also key factors that undermine the income a household can generate, including unemployment, low parental education, and single-parent household status (Gershoff, Aber, Raver, & Lennon, 2007; Kiernan & Mensah, 2011). Among low-income families, variation in economic hardship may directly affect levels of parent involvement and child adjustment. In addition, parent involvement may mediate the effect of economic hardship on children's prospective adjustment (Gershoff et al., 2007; Kiernan & Mensah, 2011; Mistry, Vandewater, Huston, & McLoyd, 2002). Alternatively, child adjustment may mediate the effect of economic hardship on parents' involvement in schooling (De Civita, Pagani, Vitaro, & Tremblay, 2004; Eamon, 2002; Schreiber, 2002). We next discuss the conceptual rationale for our hypothesized models.

### Parent Socialization Hypothesis: Influence of Parent Involvement on Child Adjustment

The idea that parent involvement in school-related activities contributes to prospective child adjustment is broadly consistent with both social capital and socialization theory. The majority of research on parent involvement has been guided by these perspectives. A social capital framework proposes that parents' social investment in their children is a strong contributor to children's prospective adjustment (Astone, Constance, Nathanson, & Young, 1999; Coleman, 1988; McNeal, 1999). In this sense, parent involvement in school is believed to be a resource that parents distribute to their children and that has the potential to directly improve children's adjustment. Socialization theory proposes that

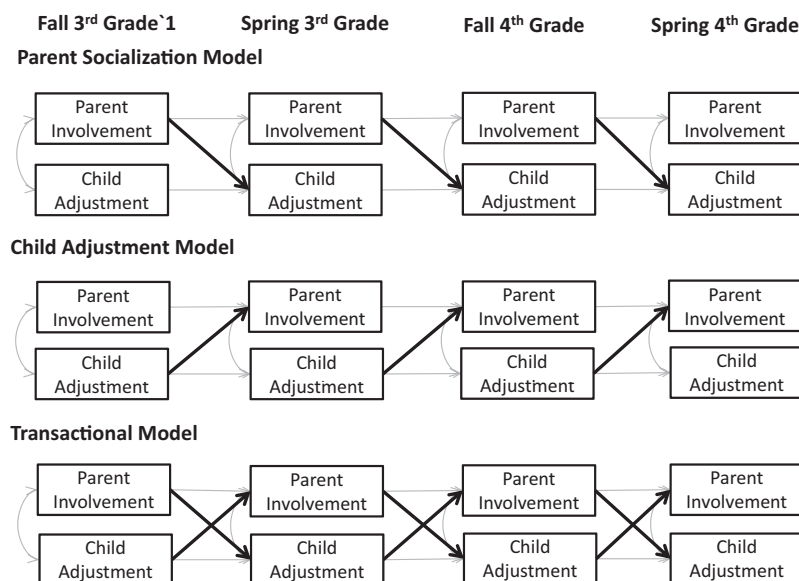


Figure 1. Hypothesized associations between parent involvement and child adjustment. Lighter lines indicate the autoregressive stability paths and within-time co-variances from the baseline model that are included in the three hypothesized models.

parents are the primary socializers of children's development and, like social capital theory, situates parents as a key source of educational support for their children (McNeal, 1999; Parke, 2004). Such socialization about schooling is believed to be the process by which children come to develop and express specific school-related values, beliefs, and behaviors that are consistent with their family beliefs (Grusec, 2002; Parke, 2004).

Drawing from these theoretical perspectives, parents' school-related involvement in the home and school setting is expected to contribute positively to children's prospective adjustment because parents are thought to be generally motivated to engage in activities that have the potential to enhance their children's adjustment (Grusec, 2002; McNeal, 1999). According to this perspective, parents are believed to socialize children to value learning and to develop the self-regulation skills necessary to participate successfully in school through parents' involvement in school-related activities in the home and school setting.

Parent involvement in the home setting, such as monitoring or helping children with homework, is thought to be beneficial because parents scaffold their children's learning in a one-on-one environment and transmit values about the importance of commitment to schoolwork (Hoover-Dempsey et al., 2001). When parents are engaged in children's schooling at home they also model a positive valuing of school that may motivate children to be more engaged in and excited about school, nurturing children's academic success (Fantuzzo, McWayne, Perry, & Childs, 2004; Izzo et al., 1999; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004). For example, with a large sample of ethnically diverse children in kindergarten to Grade 3 followed over 3 years, Izzo et al. (1999) found that parent homework assistance contributed positively to children's prospective reading and math scores. However, more frequent homework assistance has also been found to contribute negatively to children's academic competence (Silinskas, Niemi, Lerkkanen, & Nurmi, 2013; Shumow & Miller, 2001). Silinskas et al. (2013) found that parents' more frequent homework assistance in the early spring of Grades 1 and 2 contributed negatively to children's academic performance by late spring of each respective year. It may be that parents of less successful children are more involved at home than are parents of more successful children (Shumow & Miller, 2001). Little research has examined the effects of parent homework assistance on children's social-emotional adjustment. By assisting with homework, parents may model positive ways of interacting with others and healthy ways to regulate excitement or frustration about learning activities, enhancing children's social-emotional adjustment (Izzo et al., 1999).

Involvement in the school setting includes activities such as communicating with teachers about children's school-related adjustment and actively supporting children's adjustment in the school setting. These activities are thought to be influential because when parents are positively involved in the school setting they can proactively monitor children's school-related adjustment, demonstrate their connection to the school system, and provide a source of support for their child at school (Epstein, 1987). Parent involvement in the school setting, including home-school conferencing and educational support, has been found to contribute positively to children's prospective academic and social-emotional adjustment (Dearing, Kreider, Simpkins, & Weiss, 2006; El Nokali et al., 2010). With a sample of low-income, ethnically diverse

parents and children, Dearing et al. (2006) found that when parents increased their involvement in the school setting (a latent construct that included home-school conferencing and educational support) from kindergarten to Grade 5 their children showed corresponding gains in literacy skills. El Nokali et al. (2010) also found that growth in parent involvement in the school setting (a composite construct that included home-school conferencing and educational support) from Grade 1 to 5 contributed to increases in child social competence and decreases in problem behaviors but was unrelated to child academic competence. Other research has also found that parent home-school conferencing and school-based support are unrelated to children's prospective academic competence (Izzo et al., 1999; Shumow & Miller, 2001). Aside from El Nokali et al. (2010), few studies of parent involvement in the school setting have addressed children's social-emotional adjustment.

### Child Adjustment Hypothesis: Influence of Child Adjustment on Parent Involvement

Beyond this unidirectional model of parental influence on child development, more recent conceptualization of the parent-child dyad argues for the evocative influence of child adjustment on parents' prospective behaviors. An extension of socialization theory on the parent-child dyad proposes that parents adapt their parenting strategies in response to their children's behaviors (Grusec, 2002; Maccoby, 1992; McHale & Crouter, 2003). In this sense, parents are believed to use their children's behavior as a regulator of their parenting behaviors, tailoring their parenting efforts to their children's own skills and behaviors (Maccoby, 1992). The hypothesis that children's school-related adjustment contributes to parents' prospective involvement in schooling also converges with the belief that requests from children or teachers (whether literal or perceived) are powerful motivators of parent involvement (Epstein, 1987). Perceived invitations for parents' school-related involvement are hypothesized to be significant because parents generally want their children to succeed and are encouraged to respond positively to such requests, particularly when their children need support (Grusec, 2002; Hoover-Dempsey et al., 2001). Perceived invitations from teachers are also thought to be influential because they underscore teachers' valuing of the contributions parents make to children's school-related success (Patrikakou et al., 2005).

The degree to which children evidence competent or problematic behaviors in the home or school setting may propel their parents to be more or less involved in their schooling (Shumow & Miller, 2001). However, there is limited evidence on the contributions of child academic and social-emotional adjustment to prospective parent involvement in the home or school setting. Children's adjustment may be particularly likely to prompt low-income parents to become more (or less) involved in school-related activities in the home setting because this setting can offer flexibility in meeting parents' schedules (Eccles & Harold, 1996; Hoover-Dempsey et al., 2001). When children struggle academically, socially, or behaviorally in school, low-income parents may be especially likely to monitor their children's homework completion and to provide direct homework assistance as a way to support their children (Gershoff, Aber, & Clements, 2009; Shumow & Miller, 2001; Silinskas et al., 2013). Silinskas et al. (2013) found that when children showed poorer reading and math skills at the

beginning of Grade 1 and Grade 2, their parents subsequently engaged in more homework assistance by the spring of the same school year. Parents may believe that the home environment provides the best venue to offer the one-on-one support that their struggling child needs. It may also be that when children struggle in school, parents respond to teachers' requests for additional educational support by increasing their assistance in the home setting. Nonetheless, parents may find it challenging to assist their child with schoolwork at home when the homework tasks are difficult or when their child is struggling academically or is overly aggressive. On the other hand, when children are doing well academically, socially, and behaviorally, parents may increase their homework assistance because they are proud of their children and are inspired by their children's ability to do well. Parents may also be more willing to assist with homework when their children show more competent academic or social-emotional skills because they find it easier to help these children.

Children's adjustment may also be a powerful motivator of low-income parents' involvement in the school setting, including their home-school conferencing and school-based support. While most studies have examined parent involvement in the school setting as a latent or composite construct, it may be that children's adjustment differentially prompts parents' home-school conferencing and school-based support. When children are doing well, parents may demonstrate support and encouragement in the school setting because they are comfortable in that setting and find it easy to communicate with teachers and be supportive of their child at school (Eccles & Harold, 1996). These parents may also hold high expectations for their children's success and respond positively to how well their children are doing. With a small sample of low-income, immigrant Hispanic families, Goldenberg et al. (2001) found that child academic skills at the end of Grades 1 through 5 contributed positively to parents' prospective expectations of their child's academic skills by Grades 4 and 5. On the other hand, when children struggle academically, socially, or behaviorally in the school setting it may motivate low-income parents to increase their communication with teachers and other home-school conferencing activities to identify ways to better support their children (Green, Walker, Hoover-Dempsey, & Sandler, 2007; Izzo et al., 1999). It may also be that when children are struggling, teachers initiate more communication with parents, and this serves to motivate parents to increase their home-school conferencing activities (Hoover-Dempsey, Bassler, & Brissie, 1987).

### Transactional Hypothesis: Bi-Directional Relations Between Involvement and Adjustment

Developmental systems theory (Sameroff, 1995) raises the possibility that the relation between parent involvement and child adjustment is a reciprocal rather than unidirectional process. Developmental systems theory proposes that children interact with their environment in ways that their development is changed by environmental phenomena (e.g., parenting behaviors) and conversely that their environment is shaped by children's adjustment (Sameroff, 1995). In this sense, the relation between parent involvement in school-related activities and child academic and social-emotional adjustment is thought to be a dynamic process that unfolds over time. According to this perspective, change in

parent involvement or child adjustment is proposed to be explained by the ongoing interchanges between these phenomena.

Despite theory on these transactional relations, only a handful of studies have investigated the bi-directionality between parent involvement in schooling and child adjustment (Dearing et al., 2006; Englund et al., 2004; Gershoff et al., 2009; Izzo et al., 1999; Silinskas et al., 2013). With a nationally representative sample, Gershoff et al. (2009) found support for transactional associations between parent involvement and child reading skills in Grades 1 and 3 that occurred within continuous time periods (i.e., at the same time point). As parents increased in their learning support, children increased in their reading ability. Conversely, as children increased in their reading ability, parents decreased in their learning support. This suggests that parents sensitively provided the level of scaffolding children needed to improve their skills. With a sample of low-income families, Englund et al. (2004) also found that children's academic skills in Grade 1 contributed to higher prospective levels of parent involvement in the school setting by Grade 3 that, in turn, contributed to higher concurrent levels of academic skills. Silinskas et al. (2013) also found reciprocal associations between parent homework assistance and child adjustment that occurred within the same school year. Nonetheless, Dearing et al. (2006) found no evidence that parent involvement in the school setting was reciprocally related to children's literacy skills. As Gershoff et al. (2009) argued, transactions between parent involvement and child adjustment may be more likely to occur within a short time frame (such as within a school year) than over a large time span (such as from year to year) and may transpire across discrete time points (e.g., from fall to spring within a school year). The current study uses discrete-time cross-lagged path analysis to test the directional associations between parent involvement in schooling and child adjustment across fall to spring of Grade 3 and Grade 4.

### The Role of Economic Hardship

Living in the context of economic hardship has a strong potential to undermine children's academic and social-emotional adjustment, often through the adverse effects of hardship on parenting behaviors such as their involvement in schooling (Raffaale & Knoff, 1999; Yoshikawa, Aber, & Beardslee, 2012). Nonetheless, variability exists in the degree to which low-income parents have the resources and ability to be engaged in their children's schooling and the degree to which their children demonstrate competent or problematic adjustment (e.g., Dearing et al., 2006; Hill et al., 2004; Izzo et al., 1999). Theory on social capital argues that the social resources parents provide to their children, such as their involvement in school-related activities, likely mediates the effects of economic hardship on child adjustment (Coleman, 1988; McNeal, 1999). In support of this, parenting behaviors (including parent involvement) have been found to mediate the effect of economic hardship on children's academic and social-emotional adjustment (Gershoff et al., 2007; Kiernan & Mensah, 2011; Mistry et al., 2002). However, the majority of this work has examined directional paths from economic hardship to parenting toward child adjustment, neglecting the idea that parents also adjust their behaviors in response to children's behaviors (Grusec, 2002; McHale & Crouter, 2003). Thus, both theory and empirical findings suggest that variation in economic hardship among low-



income families may directly affect levels of parent involvement and child adjustment and also indirectly affect these via levels of child adjustment or parent involvement, respectively.

### The Current Study

In sum, the current study uses discrete-time cross-lagged path analysis to test three alternative models of the directional associations between parent involvement in schooling and child adjustment across four discrete time points (fall and spring of Grades 3 and 4): the parent socialization model, the child adjustment model, and the transactional model. These three models test the following research questions, in order: (1) Do levels of parent involvement in schooling contribute to prospective levels of child adjustment, after accounting for individual stability in these constructs and their within-time co-variation? (2) Do levels of child adjustment contribute to prospective levels of parent involvement, beyond their individual stability and within-time co-variation? (3) Do levels of parent involvement and child adjustment transact over time, beyond individual stability in these constructs and their within-time associations? We consider whether these associations vary by dimension of parent involvement and domain of child development. We further assess the direct and indirect effects of economic hardship on parent involvement and child adjustment to address income-related variability among our sample of low-income families.

### Method

#### Participants

Participants included 941 children (50.1% girls; mean age = 8.16 years,  $SD = 0.70$ ) in Grade 3 and their parents (83.9% mothers; mean age = 35.28 years,  $SD = 7.84$ ). The children were attending one of 18 inner-city elementary schools located in a large metropolitan city in northeastern United States. The schools were participating in a 3-year school-randomized evaluation of a universal, school-wide social-emotional and academic learning program: The 4Rs Program (Reading, Writing, Respect, and Resolution; see Jones, Brown, Hoglund, & Aber, 2010).

Parents reported that children represented diverse racial/ethnic groups: 47.6% Hispanic/Latino, 39.6% Black/African American, 4.5% non-Hispanic White, and 8.3% other (e.g., South and East Asian, Native American). At baseline, 60.7% of families were at or below 100% of the federal poverty threshold, 29% of primary caregivers had less than a high school diploma, 14.5% of primary caregivers were not employed, and 53.5% of children lived in a single-parent household.

#### Procedures

Consent packages in English or Spanish were sent home to all parents of eligible children in Grade 3 in the participating schools informing them of the study and seeking active consent for their child and for themselves to participate in the study. At each wave, consent was sought for children new to the school. The overall consent rate was 62.18% (range = 51.72% to 74.36% across schools) and did not differ between the treatment (63.59%) or control (60.57%) schools.

Data were collected on four occasions. At Wave 1 (W1), baseline data were collected in the fall of Grade 3 from 818 children. Follow-up data were gathered in the spring of Grade 3 (W2) from 883 children (new entrants = 124 children, attrition = 58 children), in the fall of Grade 4 (W3) from 929 children (new entrants = 177, attrition = 127 children), and in the spring of Grade 4 (W4) from 948 children (new entrants = 63, attrition = 48 children). Parent refusals to continue participation were rare ( $n = 8$ ). The sample size in the current study represents 79.5% of the full sample of child participants ( $N = 1,184$ ) for whom we obtained parental consent across Grades 3 and 4; 130 parents did not consent for themselves to participate, and for 113 cases the parent reporter was not consistent across each of the four waves of data collection, and these data were excluded from the current analyses. One-way analysis of variance tests indicated no significant differences ( $p < .05$ ) between children in the reduced sample ( $n = 941$ ) and children in the full sample ( $N = 1,184$ ) by the demographic or teacher-reported variables included here.

Parents completed questionnaires on demographics (e.g., education, employment, income) and on their involvement in school-related activities. Parents returned their surveys directly to the researchers via surface mail. Parents who failed to return questionnaires via mail were contacted by the researchers to complete phone interviews. The majority of parents completed their questionnaires in English (82%) at each data collection point. Parents were paid \$15 for the completion of the questionnaires at each data collection point. For each child in their class with consent, teachers reported on parents' school-based support and on children's literacy skills, social competence, and aggressive behaviors. Teachers were paid at a rate equivalent to their union-negotiated wage to complete the surveys at each data collection point (\$36.50/hr). Teachers returned their completed questionnaires directly to the researchers.

#### Measures

All constructs were calculated as the average of their respective items. Parent involvement in schooling was assessed from parent reports on the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996) and the Parent-Teacher Involvement Questionnaire (PTIQ; Conduct Problems Prevention Research Group [CPPRG], 1991) and from teacher-reports on the PTIQ. *Homework assistance* was assessed from parent-reports on one item on the APQ and two items on the PTIQ (e.g., help child with homework, monitor homework completion). *Home-school conferencing* was assessed from parent-reports on three items on the PTIQ (e.g., call, write or make suggestions to child's teacher). *School-based support* was assessed from teacher-reports on three items from the PTIQ (e.g., engagement in child's schooling, encouragement of child's learning relative to other parents). On the APQ, parents rated how frequently they engaged in the activity on a 4-point scale (0 = *never*, 3 = *almost always*). On the PTIQ, parents and teachers rated how often in the past 30 days parents engaged in the activities on a 4-point scale (0 = *never*, 3 = *more than once a week*). At each wave, internal consistencies were moderate for homework assistance ( $\alpha = .50-.59$ ) and home-school conferencing ( $\alpha = .51-.61$ ) and high for school-based support ( $\alpha = .89-.91$ ).

The construct validity of the three school involvement constructs and factorial invariance of the factor loadings of the involvement indicators across waves was established using confirmatory factor analysis in Mplus 7.11 (Muthén & Muthén, 1998–2011). Models with the factor loadings constrained to be equal across waves were compared to models with these equalities relaxed (Widaman, Ferrer, & Conger, 2010). Model comparisons were calculated via a Satorra-Bentler scaled chi-square likelihood ratio difference test. Non-significant  $\Delta\chi^2$  tests indicate factorial invariance. Each of the models fit the data well, and the factor loadings were invariant over time, providing evidence of the construct validity of the three parent involvement constructs: home-school conferencing,  $\chi^2(45) = 86.20$ ,  $p = .01$ , comparative fit index (CFI) = .936, root-mean-square error of approximation (RMSEA) = .032 (90% confidence interval [CI] = .02, .04),  $\Delta\chi^2(6) = 3.91$ ,  $ns$ ; home-school conferencing,  $\chi^2(45) = 83.89$ ,  $p = .01$ , CFI = .954, RMSEA = .032 (90% CI = .02, .04),  $\Delta\chi^2(6) = 4.08$ ,  $ns$ ; and school-based support,  $\chi^2(45) = 53.68$ ,  $p = .18$ , CFI = .998, RMSEA = .014 (90% CI = .00, .03),  $\Delta\chi^2(6) = 5.25$ ,  $ns$ .

*Academic competence* was assessed from teacher-reports of children's academic performance and motivation relative to grade-level standards on the Social Skills Rating System (Gresham & Elliott, 1990). Academic performance and motivation (e.g., performance in reading, math and overall) were rated on five items using on a 5-point scale (1 = *far below grade level*, 5 = *far above grade level*). Internal consistencies were high at each wave ( $\alpha$ s = .86–.87).

*Social competence* was assessed from teacher-reports on the prosocial and emotion regulation subscales of the Social Competence Questionnaire (CPPRG, 1999). The prosocial subscale included 11 items (e.g., expresses needs and feelings appropriately, is helpful to others, cooperates with peers). The emotion regulation subscale included eight items (e.g., copes well with failure, controls temper, plays by the rules of the game). Teachers rated children's typical behaviors in the past 30 days on a 4-point scale (1 = *never*, 4 = *almost always*). Internal consistencies were high at each wave ( $\alpha$ s = .97).

*Aggressive behaviors* were assessed from teacher-reports on the aggressive behaviors subscale of the Behavioral Assessment System for Children (Reynolds & Kamphaus, 1998). This subscale includes 13 items (e.g., concerning threatening or hitting other children or being argumentative). Teachers rated children's typical behaviors in the past 30 days on a 4-point scale (1 = *never*, 4 = *almost always*). Internal consistencies were high at each wave ( $\alpha$ s = .95–.96).

*Economic hardship* represented the sum of four dichotomous risks (range = 0–4) that included poverty at or below 100% of the federal poverty threshold (vs. above the threshold), single-parent household (vs. two-parent), parent education less than high school (vs. high school and beyond), and parent unemployment (vs. employment). There was substantial within-group variability in this risk index across our low-income families: 20.2% ( $n = 190$ ) experienced no risks, 28.4% ( $n = 267$ ) experienced one risk, 28.9% ( $n = 272$ ) experienced two risks, 18.3% ( $n = 172$ ) experienced three risks, and 4.3% ( $n = 40$ ) experienced all four risks.

*Baseline covariates* included child gender (boys = 0, girls = 1), child race/ethnicity (Hispanic/Latino, Black/African American,

and Other, with non-Hispanic White as the referent group), and treatment status (control schools = 0, program schools = 1).

## Data Analytical Strategy

Analyses are presented in three main sections. First, descriptive data for the criterion constructs for the overall sample and by low (0 to 1 risks; 48.6% of families) and high (2 to 4 risks; 51.4% of families) levels of economic hardship, and the bivariate correlations among the constructs are presented. Second, the primary analyses examining a series of discrete-time autoregressive, cross-lagged models assessing the directional associations between parent involvement and child adjustment are presented. One set of models are tested for each of the three child adjustment constructs (i.e., each model includes the three parent involvement dimensions and one child adjustment domain). Third, the direct and indirect effects of economic hardship on the parent involvement and child adjustment constructs are presented. In each of the primary models tested, levels of the criterion constructs at each wave are regressed on economic hardship (range 0–4) to test parent involvement and child adjustment as mediators of the effects of economic hardship on prospective levels of adjustment and involvement, respectively. Levels of the criterion constructs at Wave 1 are regressed on the set of baseline covariates in each model.

We estimated our discrete-time autoregressive, cross-lagged models using Mplus 7.11 (Muthén & Muthén, 1998–2011). All models were clustered by school to account for the nesting of children within schools and the randomization of the social-emotional and academic learning program at the school level. Full information maximum likelihood (FIML) estimation with robust standard errors was used to estimate missing data. FIML estimation uses data available from each case to produce unbiased parameter estimates and standard errors. The likelihood estimate was computed separately for cases with incomplete data and for cases with complete data, integrating estimates over all possible values to produce parameter estimates that are most likely to have resulted in the observed data (Allison, 2002).

In the current study, missing data are generally a reflection of attrition and new entrant status. Data available for the 941 participants on the criterion constructs were as follows: all four waves of data, ~30% for parent-reports and ~33% for teacher-reports; three waves of data, ~16% for parent-reports and ~21% for teacher-reports; two waves of data, ~25% for parent-reports and ~26% for teacher-reports; and one wave of data only, ~28% for parent-reports and ~20% for teacher-reports. As FIML does not impute missing covariates, missing economic hardship ( $n = 83$ ) was imputed using linear interpolation based on school, child gender, and child race/ethnicity to retain all participants with data on the criterion constructs in the primary analyses.

Model fit precision is examined using a combination of the comparative fit index (CFI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). The CFI estimate compares the specified model with a model in which all variables are assumed to be uncorrelated; values of .95 or greater indicate an excellent model fit, while values of .90–.94 suggest an adequate fit (Kline, 2005). The RMSEA index incorporates adjustments for model complexity. RMSEA and SRMR values of .05 or less indicate excellent fit to the data, while values of .06–.08 suggest adequate model fit

(Kline, 2005). Model comparisons are calculated via the Satorra-Bentler scaled chi-square likelihood ratio difference test to assess the fit statistics of nested models (e.g., parent socialization vs. transactional model). Significant  $\Delta\chi^2$  tests indicate support for the more complex nested model. The Bayesian information criterion (BIC) was used to assess the best fit of non-nested models (e.g., parent socialization vs. child adjustment model).

## Results

### Descriptive Analysis

The basic descriptive statistics of the parent involvement and child adjustment constructs for the overall sample and by levels of economic hardship are presented in Table 1. The intra-class correlations (ICCs) indicate that 2%–11% of the overall variance in these constructs was attributable to the clustering of the data within schools, indicating that the data were mostly independent of school context. Nonetheless, the primary models tested below were clustered by school to account for the nested structure of the data and to adjust the standard errors.

On average, parents reported high levels of homework assistance and low levels of home-school conferencing (see Table 1). Teachers reported moderate levels of parent school-based support.

On average, children showed moderate levels of academic and social competence and low levels of aggressive behaviors across Grades 3 and 4. There were some mean level differences in these constructs by low (0–1 risk) and high (2–4 risks) levels of economic hardship. Relative to parents who experienced low economic hardship, parents who experienced high hardship showed significantly ( $p < .05$ ) less homework assistance at Waves 1 and 2 and school-based support at each wave, and their children showed lower levels of academic and social competence and higher levels of aggressive behaviors at each wave (except for social competence at Wave 1).

The bivariate correlations among the criterion constructs at each wave are presented in Table 2. Stability across waves was moderate for the parent involvement constructs and moderate to high for the child adjustment constructs. Parent homework assistance was positively associated with home-school conferencing at each wave, and these were generally unrelated to school-based support. Parent homework assistance was modestly and negatively associated with child academic and social competence but positively related to aggressive behaviors at most time points. Home-school conferencing was moderately and negatively associated with academic and social competence but positively associated with aggressive behaviors within and across waves. Alternatively, school-based support was positively correlated with child academic and

Table 1  
*Descriptive Statistics of Parent Involvement and Child Adjustment Overall and by Level of Economic Hardship*

Variable and wave	Overall sample						Low hardship			High hardship		
	ICC	$\alpha$	N	M	SD	Range	N	M	SD	N	M	SD
Homework assistance												
W1	.03	.51	514	2.66	.47	1.00–3.00	263	2.72 <sup>a</sup>	.44	251	2.60 <sup>a</sup>	.48
W2	.03	.57	498	2.59	.52	0.00–3.00	239	2.66 <sup>a</sup>	.51	259	2.53 <sup>a</sup>	.53
W3	.03	.50	528	2.55	.54	0.00–3.00	260	2.60	.50	268	2.51	.57
W4	.02	.59	500	2.48	.56	0.00–3.00	249	2.50	.53	251	2.45	.58
Home-school conferencing												
W1	.07	.51	511	0.80	.60	0.00–3.00	263	0.82	.58	248	0.77	.62
W2	.04	.56	497	0.95	.61	0.00–3.00	239	0.92	.59	258	0.98	.63
W3	.04	.57	529	0.89	.61	0.00–3.00	260	0.93	.64	269	0.84	.58
W4	.05	.61	500	0.96	.63	0.00–3.00	249	0.96	.65	251	0.97	.62
School-based support												
W1	.10	.90	533	3.63	1.05	1.00–5.00	272	3.83 <sup>a</sup>	1.01	261	3.41 <sup>a</sup>	1.05
W2	.06	.91	604	3.69	1.08	1.00–5.00	292	3.93 <sup>a</sup>	1.01	312	3.47 <sup>a</sup>	1.10
W3	.08	.89	659	3.68	1.01	1.00–5.00	281	3.84 <sup>a</sup>	0.95	288	3.52 <sup>a</sup>	1.04
W4	.07	.89	697	3.63	1.06	1.00–5.00	347	3.77 <sup>a</sup>	1.01	350	3.49 <sup>a</sup>	1.09
Academic competence												
W1	.09	.94	587	2.60	.87	1.00–5.00	290	2.77 <sup>a</sup>	.90	294	2.44 <sup>a</sup>	.82
W2	.08	.94	641	2.72	.92	1.00–5.00	304	2.91 <sup>a</sup>	.95	337	2.56 <sup>a</sup>	.86
W3	.09	.93	671	2.65	.87	1.00–5.00	332	2.80 <sup>a</sup>	.85	339	2.51 <sup>a</sup>	.84
W4	.07	.94	734	2.74	.93	1.00–5.00	362	2.89 <sup>a</sup>	.94	372	2.59 <sup>a</sup>	.90
Social competence												
W1	.08	.97	588	2.81	.74	1.21–4.00	294	2.81	.73	294	2.76	.74
W2	.07	.97	643	2.75	.74	1.05–4.00	305	2.82 <sup>a</sup>	.72	338	2.68 <sup>a</sup>	.75
W3	.10	.97	671	2.79	.73	1.00–4.00	331	2.88 <sup>a</sup>	.73	340	2.71 <sup>a</sup>	.73
W4	.08	.97	736	2.80	.74	1.00–4.00	364	2.87 <sup>a</sup>	.74	372	2.73 <sup>a</sup>	.73
Aggressive behaviors												
W1	.05	.95	590	1.50	.59	1.00–4.00	296	1.43 <sup>a</sup>	.52	294	1.58 <sup>a</sup>	.65
W2	.07	.96	643	1.63	.65	1.00–4.00	305	1.55 <sup>a</sup>	.59	338	1.71 <sup>a</sup>	.69
W3	.11	.95	671	1.51	.58	1.00–4.00	331	1.46 <sup>a</sup>	.54	340	1.57 <sup>a</sup>	.61
W4	.06	.95	735	1.61	.61	1.00–4.00	365	1.56 <sup>a</sup>	.57	370	1.66 <sup>a</sup>	.64

Note. ICC = intraclass correlations at the school-level; W1 = Wave 1 (fall of third grade); W2 = Wave 2 (spring of third grade); W3 = Wave 3 (fall of fourth grade); W4 = Wave 4 (spring of fourth grade).

<sup>a</sup> Mean levels differ significantly ( $p < .05$ ) between low (0–1 risks) and high (2–4 risks) economic hardship.

Table 2  
*Bivariate Correlations Between Parent Involvement and Child Adjustment*

Variable and wave	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<b>Homework</b>																							
1. W1																							
2. W2	<b>.41**</b>																						
3. W3	<b>.28**</b>	<b>.53***</b>																					
4. W4	<b>.35**</b>	<b>.44***</b>	<b>.45***</b>																				
<b>Conferencing</b>																							
5. W1	.20**	.15**	.15**	.15**																			
6. W2	.12*	.18**	.18**	.17**	<b>.43***</b>																		
7. W3	.17**	.20**	.23**	.10*	<b>.44***</b>	<b>.35***</b>																	
8. W4	.02	.13*	.28**	.22**	<b>.30***</b>	<b>.39***</b>	<b>.44***</b>																
<b>Support</b>																							
9. W1	.09*	.03	.01	.07	.08 <sup>t</sup>	-.04	-.07	-.02															
10. W2	.07	.02	-.02	.01	.07	.03	-.13*	-.04	<b>.67***</b>														
11. W3	-.05	.04	.09 <sup>t</sup>	.03	-.06	-.02	-.00	-.03	<b>.46***</b>	<b>.48***</b>													
12. W4	.03	.02	.02	.04	-.03	-.03	-.01	-.07	<b>.37***</b>	<b>.42***</b>	<b>.57***</b>												
<b>Academic</b>																							
13. W1	-.01	-.08	-.11*	-.11 <sup>t</sup>	-.09*	-.22**	-.14*	-.17**	.48**	.33	.33	.30**											
14. W2	-.04	-.09 <sup>t</sup>	-.11*	-.08	-.10*	-.14**	-.12*	-.15**	.38**	.38	.31	.33	<b>.83***</b>										
15. W3	-.11*	-.01	-.03	-.10*	.13**	-.14**	-.11*	-.14**	.26*	.28	.42**	.37**	<b>.68***</b>	<b>.71***</b>									
16. W4	-.09 <sup>t</sup>	-.03	-.04	-.10*	-.18*	-.18**	-.13**	-.14**	.33*	.29	.35	.47**	<b>.67***</b>	<b>.71***</b>	<b>.79***</b>								
<b>Social</b>																							
17. W1	-.10*	-.14**	-.14**	-.10 <sup>t</sup>	-.27**	-.23**	-.23**	-.22**	.42**	.33	.23	.24	.42**	.42**	.34	.35							
18. W2	-.12*	-.09*	-.08	-.10*	.18**	-.16**	-.19**	-.22**	.34*	.37	.24*	.27*	.39**	.48*	.40*	.40*	<b>.79***</b>						
19. W3	-.17**	-.11*	-.05	-.10*	-.23**	-.21**	-.15**	-.21**	.25*	.23	.41*	.33*	.37**	.40*	.50*	.43*	<b>.53***</b>	<b>.54***</b>					
20. W4	-.14**	-.10*	-.09*	-.09*	-.24**	-.22**	-.13**	-.23**	.27*	.18	.32*	.42*	.36**	.39**	.42*	.48**	<b>.56***</b>	<b>.58***</b>	<b>.77***</b>				
<b>Aggression</b>																							
21. W1	.10*	.12*	.08	.18**	.25**	.21*	.22**	.23**	-.29**	-.27**	-.15**	-.17**	-.25**	-.28**	-.25**	-.27**	-.74**	-.67**	-.47**	-.51**			
22. W2	.14**	.08	.05	.14*	.20*	.18*	.21*	.20*	-.20*	-.26*	-.19*	-.22*	-.25*	-.34*	-.27*	-.28*	-.62*	-.76*	-.49*	-.52*	<b>.76***</b>		
23. W3	.14**	.10*	.06	.14*	.18**	.17*	.19**	.23**	-.10*	-.17*	-.25**	-.24*	-.18*	-.25**	-.27**	-.25*	-.48**	-.51*	-.69**	-.59**	<b>.53***</b>	<b>.60***</b>	
24. W4	.13*	.09 <sup>t</sup>	.08 <sup>t</sup>	.08 <sup>t</sup>	.19*	.22*	.13*	.25*	-.20*	-.15*	-.19*	-.32*	-.21*	-.26*	-.26*	-.34*	-.50*	-.54*	-.61*	-.75*	<b>.54***</b>	<b>.58***</b>	<b>.75***</b>

Note. W1 = Wave 1 (fall of third grade); W2 = Wave 2 (spring of third grade); W3 = Wave 3 (fall of fourth grade); W4 = Wave 4 (spring of fourth grade). Stability coefficients are shown in boldface. Ns = 338–676.

<sup>t</sup>  $p < .10$ . \*\*  $p < .05$ . \*\*\*  $p < .01$ .



social competence and negatively correlated with aggressive behaviors within and across waves. Academic competence and social competence were positively correlated with each other and negatively correlated with aggressive behaviors within and across waves.

### Directional Associations Between Parent Involvement and Child Adjustment

Next, a series of discrete-time autoregressive, cross-lagged regression models were tested to determine the best fitting, most theoretically coherent directional models between parent involvement and child adjustment (see Figure 1). A baseline continuity model that included the autoregressive paths for each construct (e.g., W2 involvement regressed on W1 involvement) and the within-time co-variances between each construct (e.g., W1 involvement with W1 adjustment) was tested first as the reference model by which to compare the primary models. The parent socialization model added directional paths from the three parent involvement constructs to lagged levels of child adjustment (e.g., W2 adjustment regressed on W1 involvement) to assess the hypothesis that parent involvement in school-related activities nurtures children's prospective school-related adjustment. The child socialization model included directional paths from child adjustment to lagged levels of the three parent involvement constructs (e.g., W2 involvement regressed on W1 adjustment) to test the hypothesis that children's school-related adjustment provokes parents to become more (or less) involved in school-related activities. Last, the transactional model included the bi-directional paths between lagged levels of parent involvement and child adjustment to test the hypothesis that parent involvement and child adjustment are reciprocally related over time. Each subsequent model retained the significant and non-significant paths from the baseline continuity model. Levels of each construct at each wave were regressed on economic hardship, and Wave 1 levels of the criterion constructs were regressed on child gender, race/ethnicity, and treatment status.<sup>1</sup>

**Parent involvement and child academic competence.** The baseline continuity model for academic competence assessed the stability paths for each construct and the concurrent relations among each construct. This model fit the data well (see Table 3). Consistent with the bivariate correlations, there was moderate stability over time for parent homework assistance ( $\beta_s = .41-.52$ ,  $p < .01$ ), home-school conferencing ( $\beta_s = .35-.46$ ,  $p < .01$ ), and school-based support ( $\beta_s = .51-.68$ ,  $p < .01$ ) and moderate to high stability for child academic competence ( $\beta_s = .69-.83$ ,  $p < .01$ ). Homework assistance was moderately associated with home-school conferencing at each wave ( $\beta_s = .14-.18$ ,  $p < .01$ ). Home-school conferencing was moderately correlated with higher school-based support at Wave 1 ( $\beta = .11$ ,  $p < .05$ ) and lower academic competence at Wave 4 ( $\beta = -.07$ ,  $p < .05$ ). School-based support was moderately associated with higher academic competence at each wave ( $\beta_s = .30-.40$ ,  $p < .01$ ). No other correlations were significant.

Beyond these stability paths and within-time co-variances, the child adjustment model provided the best fit to the data for academic competence relative to the baseline, parent socialization, and transactional models (see Table 3). As shown in Figure 2, higher child academic competence in the fall of Grade 3 contrib-

uted to less parent homework assistance and home-school conferencing by the spring of Grade 3. Stability in academic competence by the spring of Grade 3 tended to contribute to less home-school conferencing by the fall of Grade 4. In contrast, academic competence in the spring of Grade 3 and fall of Grade 4 contributed to more school-based support by the fall and spring of Grade 4, respectively. These estimates were net of the stability paths, within-time co-variances, economic hardship, and the baseline covariates.

**Parent involvement and child social competence.** The baseline continuity model for child social competence also fit the data well (see Table 3). Consistent with academic competence, social competence showed moderate to high stability across waves ( $\beta_s = .54-.78$ ,  $p < .01$ ). Parent homework assistance was moderately related to lower social competence at Wave 1 ( $\beta = -.09$ ,  $p < .01$ ). Home-school conferencing was negatively related to social competence at Waves 1 and 4 ( $\beta_s = -.23$  and  $-.12$ ,  $p < .01$ , respectively). In contrast, school-based support was moderately associated with higher social competence at each wave ( $\beta_s = .20-.38$ ,  $p < .01$ ). No other correlations were significant.

Findings for social competence paralleled those for academic competence, with the child adjustment model providing the best fit to the data relative to the other models tested (see Table 3). Higher child social competence in the fall and spring of Grade 3 contributed to less homework assistance by the spring of Grade 3 and fall of Grade 4, respectively (see Figure 3). Social competence in the fall and spring of Grade 3 and fall of Grade 4 contributed to less prospective home-school conferencing. Alternatively, social competence in the fall of Grades 3 and 4 contributed more school-based support by the spring of each grade. These estimates were net of the stability paths, within-time co-variances, economic hardship, and baseline covariates.

**Parent involvement and child aggressive behaviors.** The baseline continuity model for aggressive behaviors also fit the data well (see Table 3). Consistent with the competence models, child aggressive behaviors showed moderate to high stability across waves ( $\beta_s = .61-.77$ ,  $p < .01$ ). Parent homework assistance was moderately associated with more aggressive behaviors at Wave 1 ( $\beta = .08$ ,  $p < .05$ ). Home-school conferencing was also correlated with more aggressive behaviors in the fall of Grade 3 ( $\beta = .21$ ,  $p < .01$ ) and fall and spring of Grade 4 ( $\beta_s = .11$  and  $.14$ ,  $p < .05$ ,

<sup>1</sup> Overall, there were modest effects of the baseline covariates (child gender, race/ethnicity, and treatment status) on the criterion constructs at Wave 1 in the child adjustment models. Relative to boys, girls showed higher academic ( $\beta = .16$ ,  $SE = .04$ ,  $p < .01$ ) and social ( $\beta = .31$ ,  $SE = .03$ ,  $p < .01$ ) competence and fewer aggressive behaviors ( $\beta = -.27$ ,  $SE = .04$ ,  $p < .01$ ), and their parents engaged in more school-based support ( $\beta = .10$ ,  $SE = .04$ ,  $p < .01$ ). Relative to Caucasian parents, children from the other ethnic minority group (e.g., Asian) showed higher academic competence ( $\beta = .10$ ,  $SE = .05$ ,  $p < .05$ ), whereas Black/African American and Hispanic children showed lower academic ( $\beta_s = -.21$  and  $-.22$ ,  $SE = .10$ ,  $p < .05$ , respectively) and social ( $\beta_s = -.34$  and  $-.20$ ,  $SE = .07$ ,  $p < .01$ , respectively) competence and more aggressive behaviors ( $\beta_s = .30$  and  $.12$ ,  $SE = .05$ ,  $p < .01$ , respectively). Relative to Caucasian parents, Black/African American parents engaged in more home-school conferencing ( $\beta = .20$ ,  $SE = .10$ ,  $p < .05$ ) but less school-based support ( $\beta = -.27$ ,  $SE = .09$ ,  $p < .01$ ). Hispanic parents demonstrated less school-based support ( $\beta = -.26$ ,  $SE = .08$ ,  $p < .01$ ), and parents of other ethnic minority heritages engaged in less homework assistance ( $\beta = -.14$ ,  $SE = .06$ ,  $p < .05$ ).

Table 3

*Model Fit Estimates of the Directional Associations Between Parent Involvement and Child Academic and Social Competence*

Model	$\chi^2$ (df)	CFI	RMSEA (90% CI)	SRMR	BIC	Model comparisons: $\Delta\chi^2(\Delta df)$
<b>Academic competence</b>						
1. Baseline continuity	449.70 (144), $p < .01$	.910	.048 (.04, .05)	.068	18190.85	
2. Parent socialization	441.17 (135), $p < .01$	.910	.049 (.04, .05)	.065	18238.34	Baseline: $\Delta\chi^2(9) = 11.66, p = .23$
3. Child adjustment	<b>394.40 (135), <math>p &lt; .01</math></b>	<b>.923</b>	<b>.045 (.04, .05)</b>	<b>.056</b>	<b>18196.62</b>	Baseline: $\Delta\chi^2(9) = 56.49, p \leq .01$ Baseline: $\Delta\chi^2(18) = 59.90, p \leq .01$ Parent: $\Delta\chi^2(9) = 51.45, p \leq .01$ Child: $\Delta\chi^2(9) = 8.98, p = .44$
4. Transactional	389.43 (126), $p < .01$	.922	.047 (.04, .05)	.055	18246.98	
<b>Social competence</b>						
1. Baseline continuity	447.48 (144), $p < .01$	.906	.047 (.04, .05)	.072	17458.51	
2. Parent socialization	433.71 (135), $p < .01$	.907	.049 (.04, .05)	.068	17503.53	Baseline: $\Delta\chi^2(9) = 15.06, p = .09$
3. Child adjustment	<b>402.49 (135), <math>p &lt; .01</math></b>	<b>.917</b>	<b>.046 (.04, .05)</b>	<b>.059</b>	<b>17473.60</b>	Baseline: $\Delta\chi^2(9) = 44.21, p \leq .01$ Baseline: $\Delta\chi^2(18) = 57.10, p \leq .01$ Parent: $\Delta\chi^2(9) = 42.14, p \leq .01$ Child: $\Delta\chi^2(9) = 14.13, p = .12$
4. Transactional	390.25 (126), $p < .01$	.918	.047 (.04, .05)	.056	17519.02	
<b>Aggressive behaviors</b>						
1. Baseline continuity	422.30 (144), $p < .01$	.904	.045 (.04, .05)	.072	16676.48	
2. Parent socialization	411.63 (135), $p < .01$	.905	.047 (.04, .05)	.069	16727.59	Baseline: $\Delta\chi^2(9) = 10.42, p = .32$
3. Child adjustment	<b>372.26 (135), <math>p &lt; .01</math></b>	<b>.918</b>	<b>.043 (.04, .05)</b>	<b>.057</b>	<b>16682.65</b>	Baseline: $\Delta\chi^2(9) = 46.42, p \leq .01$ Baseline: $\Delta\chi^2(18) = 58.85, p \leq .01$ Parent: $\Delta\chi^2(9) = 45.28, p \leq .01$ Child: $\Delta\chi^2(9) = 9.59, p = .38$
4. Transactional	362.86 (126), $p < .01$	.918	.045 (.04, .05)	.055	16734.43	

*Note.*  $N = 936$ . Model comparisons were assessed via the Satorra-Bentler scaled chi-square difference test. Best fitting models are shown in boldface. The baseline continuity model includes the autoregressive paths and within-time correlations. Models adjust for the effects of child gender, race/ethnicity, and program status on baseline levels of the criterion constructs and for the effects of economic hardship on levels of the criterion constructs at each wave. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standard root-mean-square residual; BIC = Bayesian information criterion.

respectively). School-based support was associated with fewer aggressive behaviors at each wave ( $\beta$ s = .13–.24,  $p < .01$ ). No other within-time correlations were significant.

Consistent with findings for academic and social competence, comparison of the four models indicated that the child adjustment

model provided the best fit to the data for aggressive behaviors (see Table 3). Higher child aggressive behaviors in the fall of Grades 3 and 4 contributed to more homework assistance but less school-based support by the spring of Grades 3 and 4, respectively (see Figure 4). In addition, higher aggressive behaviors in the spring of Grade 3 and

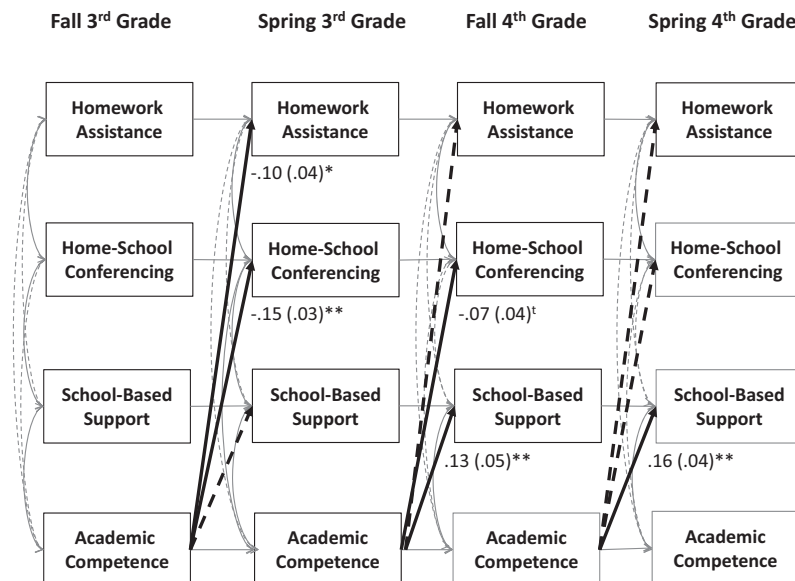


Figure 2. Child adjustment model: Parent involvement and child academic competence. Standardized estimates (and standard errors) are presented. Dashed lines indicate non-significant paths. Lighter lines indicate the autoregressive stability paths and within-time co-variances. <sup>t</sup>  $p < .01$ . \*  $p < .05$ . \*\*  $p < .01$ .

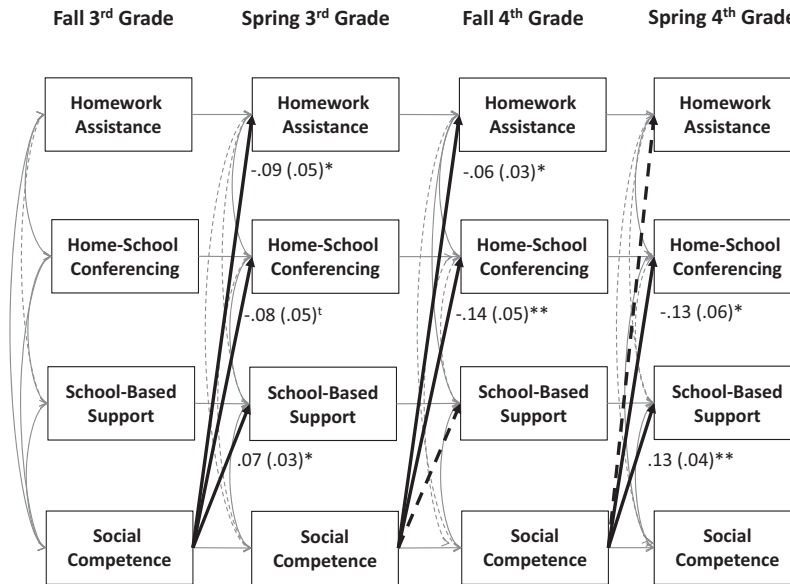


Figure 3. Child adjustment model: Parent involvement and child social competence. Standardized estimates (and standard errors) are presented. Dashed lines indicate non-significant paths. Lighter lines indicate the autoregressive stability paths and within-time co-variances. †  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

fall of Grade 4 contributed to more prospective home-school conferencing. These estimates were net of the stability paths, within-time co-variances, economic hardship, and covariates.

### Economic Hardship

In the child adjustment models, children in families experiencing more economic hardship showed poorer academic competence

in the fall of Grade 4 ( $\beta = -.17$ ,  $SE = .04$ ,  $p < .01$ ) and fall and spring of Grade 4 ( $\beta$ s =  $-.05$  to  $-.06$ ,  $SE = .03$ ,  $p = .06$ ), poorer social competence in the fall and spring of Grade 3 ( $\beta$ s =  $-.06$  to  $-.08$ ,  $SE = .03$ ,  $p < .05$ ), and more aggressive behaviors in the fall of Grade 3 ( $\beta = .11$ ,  $SE = .02$ ,  $p < .01$ ). More disadvantaged parents also provided less homework assistance in the fall and spring of Grade 3 ( $\beta$ s =  $-.12$ ,  $SE = .05$ ,  $p < .05$ ) and less

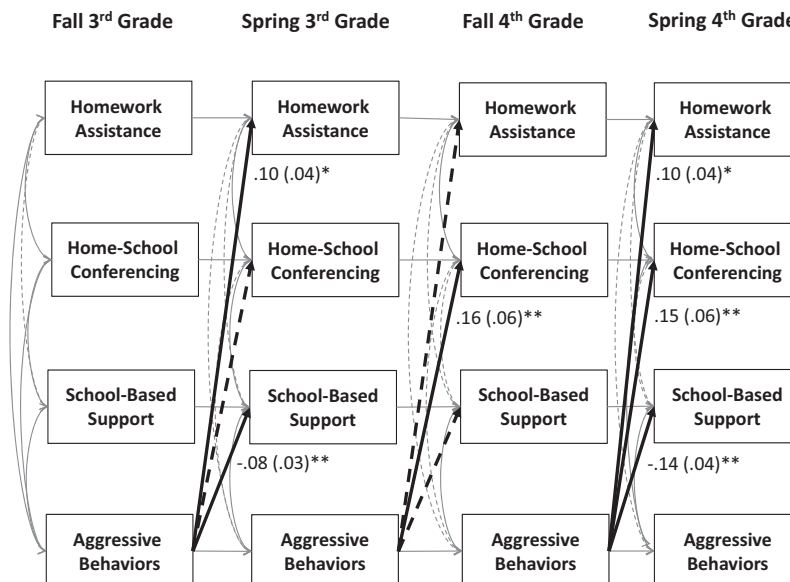


Figure 4. Child adjustment model: Parent involvement and child aggressive behaviors. Standardized estimates (and standard errors) are presented. Dashed lines indicate non-significant paths. Lighter lines indicate the autoregressive stability paths and within-time co-variances. \*  $p < .05$ . \*\*  $p < .01$ .

school-based support in the fall and spring of Grade 3 ( $\beta$ s =  $-.20$  and  $-.07$ ,  $SE = .03-.04$ ,  $p < .01$ , respectively), and they engaged in less home-school conferencing in the fall of Grade 4 ( $\beta = -.20$ ,  $SE = .04$ ,  $p < .01$ ). These effects for economic hardship were net of the autoregressive, within-time co-variances, lagged regression paths, and the baseline covariates.

In turn, child adjustment, primarily academic competence and aggressive behaviors, partially mediated the effect of economic hardship on prospective levels of parent involvement. Specifically, academic competence in the fall of Grade 3 partially mediated the effect of economic hardship on parent homework assistance and home-school conferencing by the spring of Grade 3 (indirect effects:  $\beta$ s =  $.02$  and  $.03$ ,  $SE = .01$ ,  $p < .05-.01$ , respectively). Stability in academic competence across Grade 3 and to the fall of Grade 4 partially mediated the effect of economic hardship on school-based support by the fall and spring of Grade 4, respectively (indirect effects:  $\beta$ s =  $-.02$ ,  $SE = .01$ ,  $p < .05$ ). Stability in social competence across Grade 3 partially mediated the effect of economic hardship on homework assistance by the fall of Grade 4 (indirect effect:  $\beta = .01$ ,  $SE = .00$ ,  $p < .05$ ). Child aggressive behaviors in the fall of Grade 3 partially mediated the effect of economic hardship on parent homework assistance and school-based support by the spring of Grade 3 (indirect effects:  $\beta$ s =  $.01$  and  $-.01$ ,  $SE = .01$ ,  $p < .05$ , respectively). Stability in aggressive behaviors across Grade 3 and to the fall of Grade 4 partially mediated the effect of hardship on home-school conferencing by the fall and spring of Grade 4, respectively (indirect effects:  $\beta$ s =  $.01$ ,  $SE = .01$ ,  $p < .05$ ). Stability in aggressive behaviors to the fall of Grade 4 also partially mediated the effect of economic hardship on homework assistance and school-based support by the spring of Grade 4 (indirect effects:  $\beta$ s =  $.01$ ,  $SE = .01$ ,  $p < .05$ ).

## Discussion

Drawing from social capital, socialization, and developmental systems theories, the current study tested three conceptual models (parent socialization, child adjustment, and transactional) relating parent involvement in schooling temporally to child academic and social-emotional adjustment among a sample of low-income, racially/ethnically diverse children and parents. We found consistent support that child academic and social-emotional adjustment contributes to prospective levels of the three parent involvement dimensions assessed but not the reverse. To better understand how variability in economic hardship among low-income families relates to parent involvement and child adjustment, we assessed the direct and indirect effects of economic hardship on involvement and adjustment. Child adjustment, particularly academic competence and aggressive behaviors, consistently mediated the effects of economic hardship on prospective parent involvement. We center our discussion on these directional and mediated associations.

### The Evocative Influence of Children's Competent and Aggressive Behaviors

Consistent with the idea that children's school-related adjustment encourages parents to become more (or less) involved in their schooling (Epstein, 1987), the temporal associations between the three dimensions of parent involvement (homework assistance, home-school conferencing, and school-based support) and child

academic and social competence and aggressive behaviors consistently supported the child adjustment model. These findings converge with socialization theory (Grusec, 2002; Maccoby, 1992) by providing evidence that low-income parents sensitively adjust dimensions of their school-related activities in response to whether their children demonstrate competent or problematic behaviors in school. As such, these findings underscore the significance of children's abilities to socialize distinct dimensions of their parents' involvement in school-related activities among low-income families.

**Parent homework assistance.** When children demonstrated less academic and social competence and more aggressive behaviors, their parents were particularly likely to engage in more subsequent homework assistance. These findings converge with research from Silinskas et al. (2013), who also found that when children displayed poorer reading and math skills in the fall of Grades 1 and 2 their parents subsequently engaged in more homework assistance by the early spring of each respective year. Together, these findings indicate that families use homework activities to assist their children who are struggling academically and behaviorally rather than as a way to support their children who are doing well in the school setting. Assisting with homework in the home setting may provide a way that low-income families can most flexibly support their children's academic and social-emotional adjustment due to work demands or their comfort levels. When children are struggling in school, teachers may contact parents to ask for their help in monitoring children's homework completion. These effects may occur particularly for more aggressive, disruptive children because teachers have a hard time supporting these children in the school setting (Mercer & DeRosier, 2008). Aggressive children may also have a hard time concentrating at school and require the additional one-on-one support that their parents can sensitively provide at home. Low-income parents who feel confident in their ability to assist their children, and parents who offer their child frequent encouragement, may be most effective and able to maintain this assistance (Pomerantz, Wang, & Ng, 2005).

**Home-school conferencing.** Consistent with the findings for homework assistance, when children showed less academic and social competence and more aggressive behaviors, their parents in turn initiated more home-school conferencing activities. These effects were more consistent for the social-emotional than academic indicators. This suggests that children's difficulty getting along well with classmates, regulating temper, coping with failure, or limiting aggressive behaviors may be among the most salient reasons why low-income parents increase their communication with the school and with teachers in particular (McBride, Dyer, Liu, Brown, & Hong, 2009; Shumow & Miller, 2001). When children do poorly in school it may elevate low-income parents' concerns about their children and increase the likelihood that parents will engage in more home-school communication as well as homework assistance (Pomerantz & Eaton, 2001). It may be that children's unskilled behaviors compel parents to increase their home-school communication because they are primarily responding to teachers' requests for support to help manage children's emotional regulation and behaviors in the school setting. As we found limited support for the transactional model, these findings suggest that such home-school conferencing may not be related to improve-



ments in children's academic or social-emotional adjustment. Parents of less socially and behaviorally competent children may feel compelled to respond to teachers' requests but be unreceptive to teachers' requests for consultation because of conflicted parent-teacher relationships. If parents do not believe that teachers value their contributions it may minimize the ability of home-school conferencing to improve children's academic and social-emotional adjustment (Patrikakou et al., 2005).

**School-based support.** In contrast to findings for parent homework assistance and home-school conferencing, when children showed more academic and social competence and fewer aggressive behaviors low-income parents subsequently demonstrated more educational support for their children in the school setting. When children perform well academically relative to classmates, cooperate well with classmates, and regulate their emotions it likely draws the positive attention of their teachers and enhances children's relationship quality with teachers. Indeed, teachers often report more closeness in their relationship with children who are more academically skilled and motivated and with children who show more regulated, pro-social behaviors (Birch & Ladd, 1998). When children have a positive, nurturing relationship with their teachers it may inspire their parents to support and encourage children more frequently in the school setting because they feel more comfortable around their child's teacher. In turn, teachers may perceive these children's parents as more educationally supportive. Alternatively, teachers more often share conflicted relations with aggressive, disruptive children and provide them with less positive feedback (Ladd & Burgess, 2001; McEvoy & Welker, 2000; Mercer & DeRosier, 2008). Consequently, teachers may perceive parents of aggressive children as less educationally supportive. As suggested by the positive contribution of aggressive behaviors to prospective home-school conferencing, teachers may further call on aggressive children's parents more often as a way to combat their children's misbehaviors. Over time, such calls about children's aggressive behaviors may fuel low-income parents' disconnection from their child's schooling and teachers' perceptions that these parents provide limited support for their aggressive child.

### Child Adjustment as a Mediator of Economic Hardship on Parent Involvement

While research generally indicates that low-income families are less involved in their children's schooling than higher income families (e.g., Raffaele & Knoff, 1999), these comparisons yield little information about the diversity among low-income families in their school involvement or what motivates them to be more or less involved in their children's schooling. Illustrating the variability among low-income families, children in families experiencing more economic hardship generally showed the lowest levels of academic and social competence and highest levels of aggressive behaviors. The most disadvantaged parents generally showed the lowest involvement in schooling as well. In turn, child adjustment partially mediated the effects of economic hardship on prospective levels of parent involvement in schooling. These mediation effects were most consistent for child academic competence and aggressive behaviors, suggesting that these child behaviors may be among the

most salient reasons why disadvantaged parents assist their children with homework and engage in home-school communication. Among these families, children's academic and behavioral struggles may also be areas that disadvantaged parents believe will benefit most from their homework assistance and from conferencing with the school. However, children's struggles may also contribute to teachers' perceptions that these parents are less supportive in the school setting. Among the most economically vulnerable families, parents' chaotic or long work schedules may limit their opportunities to be physically present in the school setting. Thus these families may be more likely to participate in school-related activities that they can flexibly do, such as homework assistance in the home setting. Overall, our findings suggest that among the most economically vulnerable families, dimensions of parent involvement may not be uniformly related to positive child academic and social-emotional adjustment.

### Limitations and Future Directions

Using a large sample of low-income, racially/ethnically diverse families, we examined three models assessing the directional associations between parent involvement in school-related activities and child academic and social-emotional adjustment in Grades 3 and 4. These models consistently identified child academic and social competence and aggressive behaviors as contributors of prospective levels of three dimensions of parent involvement rather than the reverse. By Grades 3 and 4 children have had several years of being more (or less) successful in school, and thus parents may be more likely to react to children's academic and behavioral needs in school. Had we conducted assessments at children's entry to formal schooling, such as in kindergarten or Grade 1, we may have found that parents play a more proactive role in children's schooling and demonstrated support for the parent socialization or transactional model.

The strength of the directional associations we found was modest, possibly because the models also adjusted for the within-time associations between parent involvement and child adjustment. Assessments conducted over more closely spaced time durations (e.g., monthly intervals) may be more sensitive to the fluctuations in the ways that low-income parents are involved in their children's schooling across the school year. Alternative analytical approaches that assess average rates of change over time (e.g., growth curve modeling; Dearing et al., 2006) or continuous-time transactions (i.e., within-time associations; Gershoff et al., 2009) rather than the discrete-time transactions (i.e., lagged associations) examined here may also differentially explain how these associations unfold over time.

We used parents (predominately mothers) as informants of homework assistance and home-school conferencing and teachers as informants of school-based support and child adjustment, strengthening confidence that the associations presented here are not simply a function of shared method bias. Nonetheless, the modest internal consistencies for parent-reported involvement also suggest that measurement error may have limited our ability to detect some effects for these constructs. As each parent involvement construct included only three indicators, this likely contributed to the modest reliability, urging future research to assess additional indicators of these involvement

dimensions. Research that incorporates observational or interview methods may portray a more nuanced and comprehensive picture of the strategies that low-income parents use at home and school to be involved in their child's schooling and the strategies inner-city schools use to welcome diverse parents into the school setting.

As 2%–10% of the variance in parent involvement was between schools, our findings suggest some differences between schools in the efforts they use to foster parent involvement. This variance in parent involvement might be accounted for by school-level strategies to engage parents or differences in school ethos and behaviors around parent involvement. Some schools may actively welcome parent involvement (e.g., hosting family welcome events at the start of the school year, regularly distributing newsletters, encouraging teachers to have parent volunteers), whereas other schools may implement few strategies to engage parents. Estimating this variation may further sharpen the story around the child–parent direction of influence.

In sum, our findings converge with socialization theory that proposes parents adjust their parenting behaviors in response to children's needs. As others have argued (e.g., Lawson, 2003), the issue of temporality between parent involvement and child adjustment can be the result of when and how children's school-related success or difficulties come to the attention of low-income parents. Among low-income families, children in families experiencing more economic hardship show the poorest academic and social-emotional adjustment, which, in turn, motivates parents to be more involved in homework assistance and home-school conferencing but show less school-based support. Low-income parents who experience the most economic hardship may need assistance in identifying strategic, flexible, and enjoyable ways to assist their children's academic and social-emotional learning in ways that accommodate their families' diverse needs and that can effectively support children's learning needs (Adams & Christenson, 2000; Lareau & Horvat, 1999). School-related activities that parents and children can complete together and that foster constructive, supportive, and affectionate relationships may work to support parents' ability to positively assist their children who are struggling (Pomerantz, Moorman, & Litwack, 2007). School-based interventions that provide low-income parents with simple, enjoyable, and effective strategies to assist their child academically, socially, and behaviorally may be particularly beneficial (Fishel & Ramirez, 2005).

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