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## **The Influence of Rurality and Parental Affect on Kindergarten Children's Social and Behavioral Functioning. — Source link**

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# The Influence of Rurality and Parental Affect on Kindergarten Children's Social and Behavioral Functioning

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## Abstract

*Research Findings:* Children's early academic achievement is supported by positive social and behavioral skills, and difficulties with these skills frequently gives way to underachievement. Social and behavioral problems often arise as a product of parent-child interactional patterns and environmental influences. Few studies have examined the role of a salient aspect of children's environments, community locale, in the relationship between parenting practices and child outcomes. Using a large, nationally representative sample, we examined whether preschool parenting practices and children's social-behavioral skills in kindergarten were related to geographic setting (rural vs. city, suburban, and town). Results indicated that rural children experienced greater difficulties with parent-reported externalizing behaviors. Furthermore, rural parents displayed less emotional support than parents in other settings. Preschool parenting behaviors were associated with social skills and behavior problems in kindergarten, as reported by both parents and teachers. Parents' emotional supportiveness was found to account for the relationship between geographic setting and parent-reported children's social skills, such that rural parents who provided less emotional support had children with lower social skills in kindergarten. *Practice or Policy:* Findings of this research indicate that rural children may face particular risk for behavioral issues and highlight the need for increased

behavioral supports in rural communities. Moreover, our results suggest that interventions designed to promote parents' support of children's emotions may have particular utility for rural families.

The influence of behavior on academic performance has been the focus of research for many decades. Behavioral and social skills are often considered enablers for school success (DiPerna & Elliott, 2002; Malecki & Elliott, 2002; Wentzel, 1991). That is, school success is often manifest through behaviors such as self-control, persistence, and engagement. Social skills and behavioral competence have been found to be significant predictors of many indices of children's academic success (teacher-reported academic functioning, reading and math achievement; Kwon, Kim, & Sheridan, 2012; Malecki & Elliott, 2002); they are believed to increase academic performance because they allow students to participate actively in classroom activities that facilitate engagement with academic work and thereby influence productivity and performance (Farrington et al., 2012).

However, the presence of interfering behaviors, such as disruption, noncompliance, and aggression, precludes those behaviors that are necessary for engagement and learning. Children's social-behavioral problems are among the most prevalent and costly of all mental health issues, and they are predictive of negative long-term outcomes. In regard to behavioral and emotional skills, the *Report of the Surgeon General's Conference on Children's Mental Health* concluded that "no other set of conditions is close in the magnitude of its deleterious effects on children and youth" (U.S. Department of Health and Human Services, 2000, p. 21). The presence of social-behavioral challenges in school settings is dually detrimental: Numerous studies demonstrate the comorbid relationship between externalizing behaviors and underachievement. That is, children with severe behavior problems also exhibit significant deficits in academic performance (Lane, Barton-Arwood, Nelson, & Wehby, 2008; Nelson, Benner, Lane, & Smith, 2004; Reid, Gonzalez, Nordness, Trout, & Epstein, 2004), which is highly predictive of later school dropout, failure to attend college, and socioeconomic disparities (McLeod & Kaiser, 2004). Indeed, the negative effects of behavior problems on children's academic achievement appear to persist from early childhood through adolescence and beyond (Bub, McCartney, & Willett, 2007; Henricsson & Rydell, 2006; Masten et al., 2005; Reinke, Herman, Petras, & Jalongo, 2008).

Ecological theory (Bronfenbrenner & Morris, 1998) posits that children develop within and across multiple interacting systems. These systems vary in their level of contact with children and range from direct, proximal influences (i.e., microsystems) such as the home or school environment to indirect, distal influences (i.e., exosystems) such as the geographic setting in which children live. Given that positive academic and social behaviors are often perceived as the gateway to academic performance (i.e., enabling learning to occur when present and preventing learning when disrupted), attention to contextual features (e.g., parenting behaviors, geographic setting) influencing their development is warranted.

The development of social and behavioral problems in children is often considered the result of complex interactions between a child and his or her caregivers within natural environments (i.e., school, home). Prior to school entry, children's socialization experiences occur primarily within the family. Within the familial context, behaviors become reinforced through reciprocal parent-child interactional patterns. Patterns that include negative parental behaviors—such as maternal negativity, harsh and inconsistent discipline, and lack of sensitivity and responsiveness—give rise to the early expression of behavior problems (Hill, 2002; Hinshaw & Lee, 2003; Loeber & Dishion, 1983; Patterson, 1982; Patterson, Reid, & Dishion, 1992; Shaw, Gilliom, Ingoldsby, & Nagin, 2003; Shaw & Winslow, 1997). Additional family characteristics, including socioeconomic status (SES), are known to play a role in the development of behavior problems (Dodge, Pettit, & Bates, 1994; Hill, 2002; Miech, Essex, & Goldsmith, 2001) possibly because they may limit access to resources (such as high-quality early childhood education, pediatric care) that promote healthy child adjustment (Bradley & Corwyn, 2002). However, the degree to which children's social-behavioral development and parenting practices are predicted by other contextual variables that may also limit access to health-promoting resources, such as community size or locale, has not been explored.

Community settings within which children develop are characterized by a host of variables that may influence the demonstration of prosocial behaviors and their negative counterparts (e.g., disruptive, externalizing behaviors). Approximately 20% of the nation's children reside in rural communities (Strange, Johnson, Showalter, & Klein, 2012), yielding a potentially significant effect on social-emotional development. On the one hand, close community networks and generally safe neighborhoods characteristic of rural settings may support stability in social relationships. On the other hand, agencies in rural communities (including schools) are often ill equipped with inadequate resources, underqualified staff, and poor facilities (Gamm, Stone, & Pittman, 2003; Holzer, Goldsmith, & Ciarlo, 1998; Jerald, 2002). Isolation, small population bases, and limited revenue create barriers, including lack of availability of and access to specialized services and ongoing support (Fortney, Owen, & Clothier, 1999; Monk, 2007), lack of anonymity and trust (Hartley, Korsen, Bird, & Agger, 1998; Owens, Richerson, Murphy, Jagelewski, & Rossi, 2007), underidentification of problems (Girio-Herrera, Owens, & Langberg, 2013), and fear of stigmatization (Susman, Crabtree, & Essink, 1995). Schools and other agencies in rural communities tend to be hard to staff, with high turnover and a high percentage of inexperienced or poorly prepared teachers and mental health providers (Gamm et al., 2003; Monk, 2007).

Social-behavioral problems and mental health needs of rural children often are overshadowed by discussions of problems in urban areas (Atav & Spencer, 2002; Herzog & Pittman, 1995), likely because of the higher visibility of urban schools and communities as well as concentrated populations of schoolchildren in large cities. However, both internalizing and externalizing problems are prevalent among children in rural America. Using

the National Survey of Children with Health Care Needs, Lenardson, Ziller, Lambert, Race, and Yousefian (2010) reported that a greater proportion of children living in rural areas have a mental health problem compared to children in urban settings. Furthermore, a greater proportion of rural children with mental health problems demonstrate behavioral difficulties relative to their urban counterparts. However, rural communities experience significant disparities in services equipped to treat children with social-behavioral problems (Lenardson et al., 2010).

Community context and its relationship to children's social-behavioral challenges has been the focus of a handful of studies. Research with young children entering kindergarten found that teachers in rural classrooms reported higher overall adjustment problems among their students relative to those in urban or suburban communities (Rimm-Kaufman, Pianta, & Cox, 2000). Hope, Bierman, and The Conduct Problems Prevention Research Group (1998) found that compared to urban children, those in rural settings were significantly more likely to exhibit patterns of conduct problems at home only. In the school setting, differences in the nature of behavior problems surfaced: Rural children demonstrated essentially equal levels of externalizing, internalizing, and comorbid behavior patterns, whereas urban children experienced greater levels of externalizing behaviors than other problem types.<sup>1</sup>

Although general descriptive information about social and behavioral patterns among children in rural and urban contexts is available, processes that may account for differences across rural and urban sites are unknown. The finding that rural children showed behavior problems at home only (Hope et al., 1998) suggests that different processes may be at play in the home but not school settings across these contexts. Similarly, Miller and Votruba-Drzal (2013) reported that children from rural areas entered kindergarten with less advanced academic skills than those from small urban and suburban settings, explained in part by less advantageous home environments (i.e., less warmth and responsive parenting, less parental knowledge about child development, and lower parental academic expectations).

Parents control the early home environments within which children develop, and interactions among children and adults in the immediate environment (i.e., microsystem) influence children's social and behavioral development in a significant way (Bronfenbrenner, 1979). Thus, it is possible that parent-child interactions unique to the rural setting are responsible in part for differences in the manifestation of behaviors across distinct geographic contexts. However, very little is known about parenting practices among families living in rural communities and whether or how they differ from those of parents in other geographic contexts (e.g., city, suburban, town). In addition, little is known about how parenting and parent-child interaction patterns influence the social-behavioral outcomes of children in rural versus city, suburban, and town settings. An understanding of the role of parenting within various geographic locales on children's development may go far in

detecting risk factors in early parent-child interaction patterns. Because parenting practices are malleable, early parenting interventions can then become the focus of prevention efforts aimed at circumventing the development of social-behavioral difficulties and establishing positive adaptive outcomes for rural children.

### **Purpose of the Study and Research Questions**

The purposes of the present study were multifold. First, we hoped to determine, with a large and nationally representative sample, whether geographic setting (rural vs. city, suburban, and town) influences the development of children's social-behavioral skills as manifested in kindergarten. Rural communities represent a significantly vast array of features that vary on a number of important dimensions, including cultural and economic diversity, density, remoteness, and stability, and studies with broad representation of rural communities are necessary.

Second, given the relevance of early home experiences for the development of social and behavioral skills, differences in parenting practices of parents in rural versus city, suburban, and town contexts was of interest. Finally, very little is known about how preschool parenting practices operate within various geographic settings to predict children's social and behavioral skills in kindergarten. Thus, the present study sought to determine whether parenting practices mediate the relationship between geographic setting and children's social-behavioral skills in kindergarten, as reported by both parents and teachers.

Our research questions were as follows:

1. Does living in a rural community context (vs. city, suburban, or town) influence children's social-behavioral skills (i.e., social skills, externalizing behaviors) in kindergarten?
2. Does living in a rural community context (vs. city, suburban, or town) influence parents' affective behaviors (i.e., emotional supportiveness, negative regard, intrusiveness, detachment) during preschool?
3. Do parents' affective behaviors (i.e., emotional supportiveness, negative regard, intrusiveness, detachment) during preschool mediate the relationship between geographic setting (i.e., rural, city, suburban, town) and social-behavioral skills (i.e., social skills, externalizing behaviors) in kindergarten?

### **Method**

#### ***Data Source and Participant Characteristics***

Data were drawn from the Early Childhood Longitudinal Study–Birth cohort (ECLS-B) restricted datafile, which includes information about 10,700 children<sup>2</sup> born in the United

States in 2001 and their parents, early child care providers, and kindergarten teachers. Data were collected across five waves: when the children were approximately 9 months of age (Wave 1), 2 years of age (Wave 2), preschool age (Wave 3), and kindergarten age (Waves 4 and 5; Snow et al., 2009). The additional wave of kindergarten data collection was necessary to obtain information about children who were not yet in kindergarten in 2006 (approximately 24% of the total sample) or who repeated kindergarten in 2007 (approximately 3% of the total sample). All children were assessed at Wave 4, but only repeaters and children first entering kindergarten in 2007 were assessed at Wave 5.

A stratified, clustered, systematic sampling method involving unequal selection probabilities was used to obtain a nationally representative sample of children born in the United States in 2001 (Snow et al., 2009). Certain groups, including twins, Chinese, other Asians and Pacific Islanders, American Indians/Native Alaskans, and low birthweight children, were oversampled to ensure precision of parameter estimates. More information regarding the ECLS-B sampling design can be obtained from Bethel, Green, Nord, and Kalton (2005).

The present study utilized data collected during the preschool (Wave 3) and kindergarten (Waves 4 and 5) waves (Snow et al., 2009). Waves 4 and 5 were combined into a single kindergarten wave to allow for inferences about children's social-behavioral skills in kindergarten. Data were drawn from Wave 4 for children initially entering kindergarten in 2006 and from Wave 5 for children initially entering kindergarten in 2007. Taking into account the attrition that occurred during the data collection phase as well as sample restrictions made during the analytic phase,<sup>3</sup> the effective sample size for the present study was 6,550 children. Table 1 provides a weighted demographic summary of the reduced sample. Note that only a subset of the cases ( $n = 4,900$ ) had kindergarten teacher data; thus, the analyses involving children's teacher-reported social-behavioral skills were based on a smaller sample. Additional item-level missing data resulted in some variation in sample size across analyses.

**Table 1.** Weighted Descriptive Statistics for the Reduced Sample

| Study variable                   | Statistic <sup>a</sup> |
|----------------------------------|------------------------|
| Child                            |                        |
| Sex                              |                        |
| Male                             | 51.34%                 |
| Female                           | 48.66%                 |
| Race/ethnicity                   |                        |
| White                            | 53.45%                 |
| Black                            | 14.00%                 |
| Hispanic                         | 25.52%                 |
| Asian                            | 2.54%                  |
| American Indian or Alaska Native | 0.50%                  |
| More than one race               | 4.00%                  |



|  |              |
|--|--------------|
| Preschool exposure to outside care                   |              |
| Parent-only care                                     | 19.78%       |
| Outside care   | 80.22%       |
| Kindergarten assessment age in months                | 68.16 (4.42) |
| Parent <sup>b</sup>                                  |              |
| Primary respondent is biological mother <sup>c</sup> | 95.59%       |
| Family <sup>b</sup>                                  |              |
| Highest parent education level                       |              |
| Less than a high school degree                       | 10.99%       |
| High school degree or equivalent                     | 23.18%       |
| Vocational or technical program degree               | 5.83%        |
| Some college   | 27.55%       |
| Bachelor's degree                                    | 16.61%       |
| Advanced schooling beyond bachelor's                 | 15.84%       |
| At or above 100% poverty threshold                   | 75.64%       |
| Two or more adults <sup>d</sup> in the home          | 86.64%       |
| Primary language in home is English                  | 81.41%       |

**Note:**  $N = 6,550$ . Percentages may not sum to 100 because of rounding error. Estimates were weighted using the WKR0 variable. a. Percentages for categorical variables and means (SD) for continuous variables. b. Statistics are based on Wave 3 data. c. Remaining respondents included biological fathers, other mother and father types, nonparent relatives, and nonrelatives. d. Individuals 18 years of age or older.

### ***Procedure***

For each wave of data collection, parents were contacted by telephone to schedule a home visit. Data were collected by ECLS-B field staff, who interviewed parents via a structured computer-assisted personal interviewing program (Snow et al., 2009). Direct child assessments of cognitive skills, gross and fine motor skills, and physical measurements were conducted at each assessment; during the preschool wave, an additional parent-child interaction referred to as the Two Bags Task (see "Constructs and Measures") was recorded (Snow et al., 2007). Kindergarten teacher data were collected through mailed self-administered questionnaires.

### ***Constructs and Measures***

#### *Geographic Setting*

Household zip codes obtained from the preschool parent interview were merged with data from the American Community Survey to create a composite variable classifying households according to the Urban-Centric Locale Codes developed by the National Center for Education Statistics (Snow et al., 2009). For the purposes of the present study, the 12 codes were collapsed into four categories: city (large city, mid-size city, and small city;  $n = 1,950$ ), suburban (large suburban area, mid-size suburban area, and small suburban area;  $n =$

2,550), town (fringe town, distant town, and remote town;  $n = 850$ ), and rural (rural fringe, distant rural, and remote rural;  $n = 1,100$ ).

#### *Child Social-Behavioral Skills*

Social-behavioral items included in the kindergarten parent interview and teacher questionnaire provided an indirect assessment of children's social and emotional skills (Najarian, Snow, Lennon, & Kinsey, 2010). Most items were drawn from the Preschool and Kindergarten Behavior Scales–Second Edition (Merrell, 2003), but items were also drawn from the Social Skills Rating System (Gresham & Elliott, 1990) and Family and Child Experiences Survey (U.S. Department of Health and Human Services, 1997–2013). In addition, one item was developed specifically for inclusion in the ECLS-B. Considerable overlap existed between parent- and teacher-rated items, although some items were specific to each respondent. All items were rated on a 5-point scale ranging from 1 = *never* to 5 = *very often*.

**Parent report.** Previous confirmatory factor analysis work (see Rispoli, McGoey, Koziol, & Schreiber, 2013) has provided evidence that the ECLS-B social-behavioral battery administered to parents measures three distinct but correlated constructs: children's social skills, externalizing behaviors, and approaches to learning. We applied this model to the present sample to obtain the parent-reported factor scores used in our primary analyses. Only the social skills and externalizing behaviors factor scores were used in the present study. Table 2 lists the individual items loading on each of the three factors in addition to the estimated factor loadings. The weighted average scores were 0.00 ( $SD = 0.92$ , range =  $-5.03$  to  $1.85$ ) for children's parent-reported social skills and 0.00 ( $SD = 0.90$ , range =  $-1.74$  to  $4.25$ ) for children's parent-reported externalizing behaviors. Higher scores indicate more social skills and externalizing problems. Internal consistency measures were acceptable (unweighted Cronbach's  $\alpha$ s = .81 and .80 for the social skills and externalizing behaviors items, respectively), providing reliability evidence for the parent-report scores.

**Table 2.** CFA Factor Loading Parameter Estimates Based on Parent and Teacher Responses to Items from the Child Social-Behavioral Battery

| Factor   | Parent report |               | Teacher report |               |
|--|---------------|---------------|----------------|---------------|
|  | $\hat{B}$     | $\hat{\beta}$ | $\hat{B}$      | $\hat{\beta}$ |
| Social skills <sup>a,b</sup>                   |               |               |                |               |
| Comforts other children <sup>d</sup>           | 0.61          | 0.65          | 0.89           | 0.82          |
| Stands up for others' rights                   | 0.58          | 0.63          | 0.92           | 0.83          |
| Tries to understand others <sup>d</sup>        | 0.57          | 0.65          | 0.86           | 0.80          |
| Invited to play by other children <sup>e</sup> | 0.45          | 0.46          |                |               |
| Volunteers to help others                      | 0.66          | 0.65          |                |               |
| Is liked by others                             | 0.36          | 0.55          |                |               |
| Uses words to describe feelings                | 0.46          | 0.51          |                |               |
| Invites other children to play <sup>e</sup>    | 0.47          | 0.55          |                |               |
| Makes friends easily                           |               |               | 0.56           | 0.66          |
| Externalizing behaviors <sup>a,c</sup>         |               |               |                |               |
| Is physically aggressive <sup>f,g</sup>        | 0.63          | 0.69          | 0.62           | 0.70          |
| Acts impulsively                               | 0.46          | 0.48          | 0.90           | 0.83          |
| Is overly active                               | 0.61          | 0.53          | 0.96           | 0.84          |
| Has temper tantrums <sup>f,h</sup>             | 0.58          | 0.59          | 0.55           | 0.62          |
| Annoys other children <sup>g</sup>             | 0.60          | 0.68          | 0.84           | 0.84          |
| Angry <sup>h</sup>                             | 0.49          | 0.52          |                |               |
| Destroys others' things                        | 0.51          | 0.67          |                |               |
| Disrupts others                                |               |               | 0.93           | 0.89          |
| Approaches to learning <sup>b,c</sup>          |               |               |                |               |
| Shows eagerness to learn                       | 0.45          | 0.61          | 0.98           | 0.68          |
| Pays attention well                            | 0.49          | 0.59          | 1.02           | 0.63          |
| Works/plays independently                      | 0.38          | 0.47          | 0.99           | 0.82          |
| Keeps working until finished                   | 0.49          | 0.56          | 1.00           | 0.80          |
| Shows imagination                              | 0.39          | 0.53          | 0.73           | 0.56          |
| Accepts ideas                                  | 0.44          | 0.53          |                |               |
| Adjusts to new situations                      | 0.44          | 0.53          |                |               |
| Tries new things                               | 0.45          | 0.56          |                |               |

**Note:** Empty cells indicate that the item was not administered to the respondent. Standard errors were computed using a paired jackknife replication method. CFA = confirmatory factor analysis.

Parent-report CFA:  $n = 6,550$ . a. Factor correlation =  $-.38$ . b. Factor correlation =  $.81$ . c. Factor correlation =  $-.50$ . e. Residual correlation =  $.31$ . h. Residual correlation =  $.39$ . Estimates were weighted using the WKRO variable. Teacher-report CFA:  $n = 4,900$ . A. Factor correlation =  $-.47$ . b. Factor correlation =  $.72$ . c. Factor correlation =  $-.70$ . d. Residual correlation =  $.47$ . f. Residual correlation =  $.37$ . g. Residual correlation =  $.32$ . Estimates were weighted using the WK45T0 variable.

**Teacher report.** Previous confirmatory factor analysis results were not available for the social-behavioral battery administered to teachers. We tested a three-factor solution comparable to the model applied to the parent-report data. Based on Hu and Bentler's (1999) joint criteria that suggest that the combination of a root mean square error of approximation (RMSEA) less than  $.06$  and a standardized root-mean-square residual (SRMR) less

than .09 indicates good model fit, the initial three-factor solution was unacceptable (RMSEA = .124 [90% confidence interval {CI} = .122–.126], SRMR = .104). Modification indices identified three problematic items (“child shares with others,” “child is accepted by others,” and “child has difficulty concentrating”) that did not load on a single factor. These items were dropped from the analysis. In addition, it was necessary to allow residual correlations among three pairs of items (“child comforts other children” with “child tries to understand others,” “child is physically aggressive” with “child has temper tantrums,” and “child is physically aggressive” with “child annoys other children”). To avoid capitalizing on sample-specific variation, we disregarded suggested modifications that lacked a strong theoretical basis. The revised model demonstrated considerably improved fit (RMSEA = .069 [90% CI = .066–.072], SRMR = .057), and all standardized factor loadings were quite large (greater than .50). Thus, the revised model was deemed acceptable. See table 2 for the teacher-report items loading on each of the factors and the estimated factor loadings based on the final model. The weighted average scores were 0.00 ( $SD = 0.93$ , range =  $-8.25$  to  $1.49$ ) for children’s teacher-reported social skills and 0.00 ( $SD = 0.96$ , range =  $-1.11$  to  $7.94$ ) for children’s teacher-reported externalizing behaviors. Unweighted Cronbach’s alphas were .86 and .90 for the social skills and externalizing behaviors items, respectively, indicating sufficient reliability evidence for the teacher-report scores.

#### *Parents’ Affective Behaviors*

The Two Bags Task, an ECLS-B modification of the Three Bags Task (Love et al., 2002), was used to assess parents’ affective behaviors at the preschool wave (Snow et al., 2007). The Two Bags Task consisted of a 10-min semistructured interaction between a parent and child in which the dyad was instructed to play with the contents of two bags. The first bag contained the book *Corduroy* (Freeman, 1968) and the second bag contained Play-Doh and related materials. All interactions were recorded, and the recordings were subsequently observed by trained certified coders who rated parents and children on several global scales originally developed by Fauth, Brady-Smith, and Brooks-Gunn (2003) for scoring the Three Bags Task and modifications of the task. Each scale was based on a 7-point coding system ranging from 1 = *very low* to 7 = *very high*.

Four scales were used in the present study to define parents’ affective behaviors directed toward their preschool child. The Parental Emotional Supportiveness rating scale evaluated the “parent’s emotional availability and physical and affective presence during the task” (Snow et al., 2007, p. 71). The Parental Negative Regard rating scale evaluated the “parent’s expression of discontent with, anger toward, disapproval of, or rejection of the child” (p. 71). The Parental Intrusiveness rating scale evaluated the “degree to which the parent controls the child rather than recognizes and respects the validity of the child’s perspective” (p. 71). Finally, the Parental Detachment rating scale evaluated the “parent’s [lack of] awareness of, attention to, and engagement with the child” (p. 72). Based on the

sample used in the present study, the weighted average scores were 4.42 ( $SD = 0.92$ , range = 1–7) for emotional supportiveness, 1.19 ( $SD = 0.51$ , range = 1–6) for negative regard, 1.53 ( $SD = 0.87$ , range = 1–6) for intrusiveness, and 1.31 ( $SD = 0.69$ , range = 1–7) for detachment. Higher scores indicate more emotional supportiveness, negative regard, intrusiveness, and detachment.

To ensure the reliability of the Two Bags Task scores, field coders were first required to demonstrate 80% agreement (within 1 point) on five cases double coded by “standard,” or expert, coders (Najarian et al., 2010). Then field coders were required to maintain 85% agreement on each parent/child scale for each 2-week period in which 20% of their tapes were double coded by a standard coder. Ratings of coders who did not meet this criterion were discarded, and the interactions were recoded by a new group of trained and certified coders.

Weighted Pearson correlation coefficients were calculated among all Two Bags Task scale scores, which included ratings of both parent and child behaviors. Results provided validity evidence for the parent emotional supportiveness, negative regard, intrusiveness, and detachment scores. For the present sample, all correlations were in the expected directions (e.g., positive parent behaviors were positively associated with other positive parent and child behaviors and negatively associated with negative parent and child behaviors). Additional information regarding the quality control, reliability, and validity of the Two Bags Task is provided in the ECLS-B preschool-kindergarten 2007 psychometric report (Najarian et al., 2010).

#### *Child and Family Covariates*

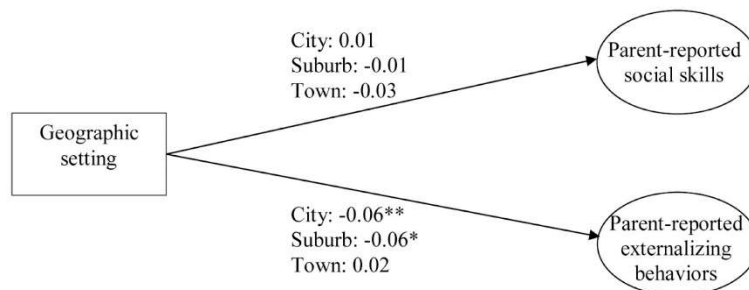
Parent-reported child race/ethnicity and gender, child exposure to outside care (parent-only vs. outside care) at the preschool wave, child age at the kindergarten wave, and family SES at the preschool wave were used as covariates in the study. Child race/ethnicity was included in the analyses as a nominal variable with six mutually exclusive categories: White, non-Hispanic; Black or African American, non-Hispanic; Hispanic; Asian, non-Hispanic; American Indian or Alaska Native, non-Hispanic; and more than one race, non-Hispanic. Family SES was represented by a composite variable constructed by the ECLS-B authors that combined five parent/household variables, including education and occupational prestige of the mother/female guardian and father/male guardian and household income (Snow et al., 2009). A weighted sequential hot deck approach<sup>4</sup> (Cox, 1980) was used for the imputation of SES scores in the presence of missing data.

#### *Data Analysis*

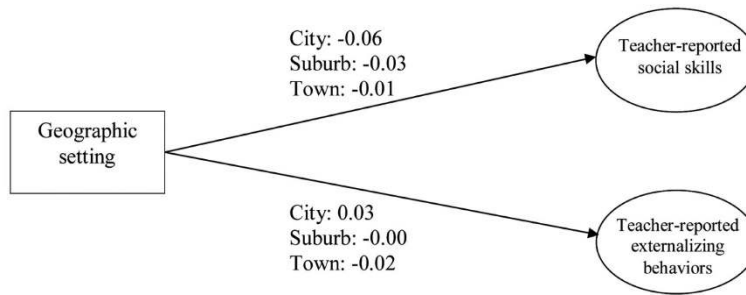
Data were analyzed in Mplus Version 6.1 (Muthén & Muthén, 1998–2010). Full information maximum likelihood estimation was used to account for item-level missing data in the estimation of model parameters. To account for the complex sampling design of the ECLS-B, we applied sampling weights to the data, and a paired jackknife replication method

(Wolter, 1985) recommended by Snow et al. (2009) was used for the estimation of variance components. Because separate ECLS-B weight variables are available for analyses involving parent-report and direct assessment data only (weight = WKR0) versus analyses additionally involving teacher-report data (weight = WK45T0; Snow et al., 2009), separate models were evaluated for the parent- and teacher-reported child outcomes. As per Walston's (2011) recommendation, all cases with a missing value on the weight variable were excluded from the analyses.

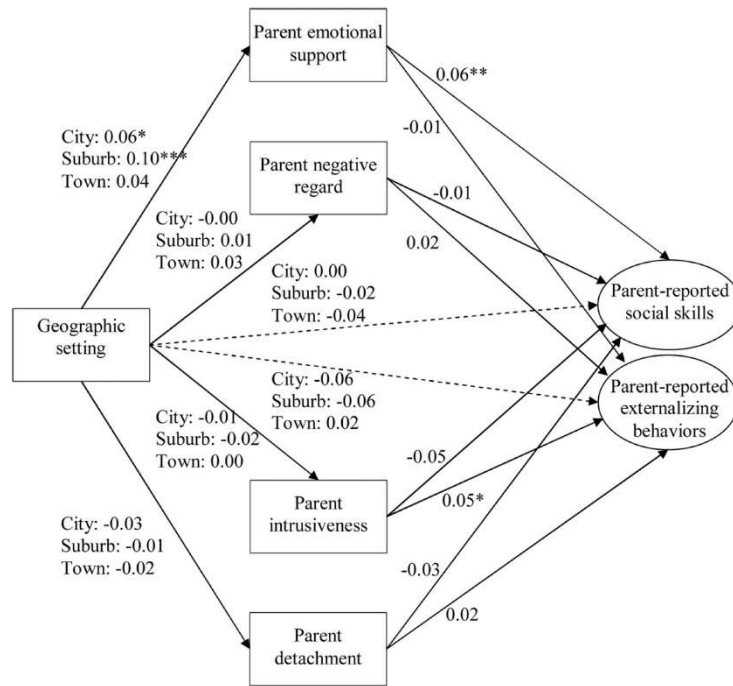
Structural equation modeling (SEM) was used to address the study's research questions. The first SEM examined the total effect of geographic setting on children's social skills and externalizing behaviors in kindergarten controlling for child race/ethnicity, gender, exposure to outside care, and age and family SES. Figures 1 (parent report) and 2 (teacher report) provide partial path diagrams that illustrate the primary relationships among the constructs. Following standard SEM notation, rectangles represent manifest (i.e., observed) variables and ovals represent latent (i.e., unobserved) variables. The second SEM included parents' preschool emotional supportiveness, negative regard, intrusiveness, and detachment as mediators of the relationship between geographic setting and children's social skills and externalizing behaviors in kindergarten (see figures 3 [parent report] and 4 [teacher report]). As before, child outcomes were regressed on all five covariates. Parent affective behaviors were regressed on child race/ethnicity and family SES.



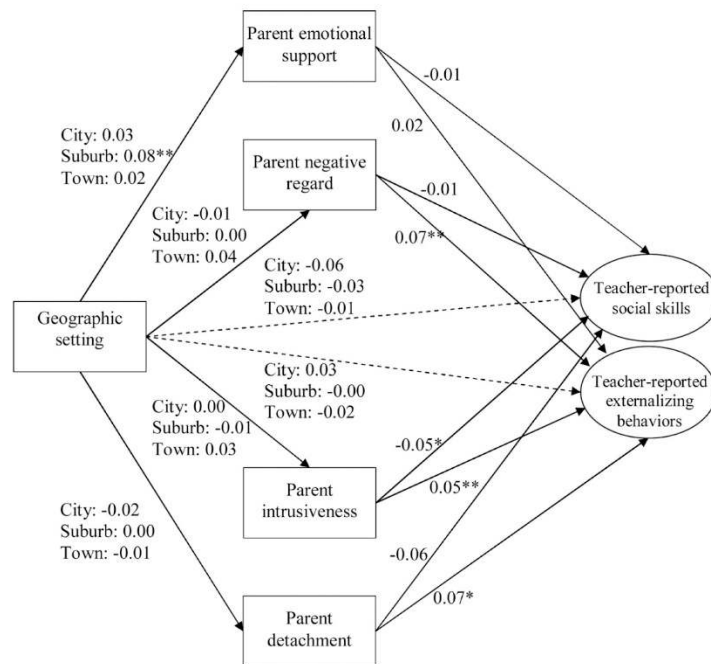
**Figure 1.** Path diagram illustrating the total effect of geographic setting on parent-reported child social-behavioral skills in kindergarten. Path coefficients are standardized. Estimates were weighted using the WKR0 variable. Standard errors were computed using a paired jackknife replication method. Covariate effects and the residual correlation are not pictured. Geographic setting was dummy coded with rural as the reference group. \* $p < .050$ , \*\* $p < .010$  (significance is based on the unstandardized estimates).



**Figure 2.** Path diagram illustrating the total effect of geographic setting on teacher-reported child social-behavioral skills in kindergarten. Path coefficients are standardized. Estimates were weighted using the WK45T0 variable. Standard errors were computed using a paired jackknife replication method. Covariate effects and the residual correlation are not pictured. Geographic setting was dummy coded with rural as the reference group.



**Figure 3.** Path diagram illustrating the indirect effect of geographic setting on parent-reported child social-behavioral skills in kindergarten through parents' preschool affective behaviors. Path coefficients are standardized. Estimates were weighted using the WKR0 variable. Standard errors were computed using a paired jackknife replication method. Covariate effects and residual correlations are not pictured. Geographic setting was dummy coded with rural as the reference group. \* $p < .050$ , \*\* $p < .010$ , \*\*\* $p < .001$  (significance is based on the unstandardized estimates).



**Figure 4.** Path diagram illustrating the indirect effect of geographic setting on teacher-reported child social-behavioral skills in kindergarten through parents' preschool affective behaviors. Path coefficients are standardized. Estimates were weighted using the WK45T0 variable. Standard errors were computed using a paired jackknife replication method. Covariate effects and residual correlations are not pictured. Geographic setting was dummy coded with rural as the reference group. \* $p < .050$ , \*\* $p < .010$  (significance is based on the unstandardized estimates).

Standardized path coefficients ( $\beta$ ) and coefficients of determination ( $R^2$ ) are provided as measures of effect size. Using Cohen's (1988) criteria, we defined small effects as  $\beta$  less than 0.10 and  $R^2$  less than 0.01, medium effects as  $\beta$  near 0.30 and  $R^2$  near 0.06, and large effects as  $\beta$  at or above 0.50 and  $R^2$  at or above 0.14. Only planned comparisons between the rural group and city, suburban, and town groups were evaluated. The rural group was the reference group, such that positive parameter estimates indicated that the rural group had a lower mean outcome value, whereas negative estimates indicated that the rural group had a higher mean outcome value. Sobel's (1982) test was used to evaluate the significance of the indirect effects of geographic setting on child outcomes through parent behaviors.

## Results

Table 3 provides the weighted descriptive statistics, by geographic setting, for the study variables used in the analyses.



**Table 3.** Weighted Descriptive Statistics by Geographic Setting

| Study variable                             | City         | Suburban     | Town         | Rural        |
|--|--------------|--------------|--------------|--------------|
| Child sex                                  |              |              |              |              |
| Male                                       | 51.81%       | 51.13%       | 52.45%       | 50.52%       |
| Female                                     | 48.19%       | 48.87%       | 47.55%       | 49.48%       |
| Child race/ethnicity                       |              |              |              |              |
| White                                      | 38.48%       | 51.73%       | 61.44%       | 78.24%       |
| Black                                      | 20.50%       | 13.00%       | 9.12%        | 8.18%        |
| Hispanic                                   | 33.54%       | 28.75%       | 21.62%       | 6.47%        |
| Asian                                      | 3.20%        | 3.46%        | 0.82%        | 0.37%        |
| American Indian                            | 0.25%        | 0.15%        | 1.26%        | 1.25%        |
| More than one race                         | 4.03%        | 2.90%        | 5.75%        | 5.49%        |
| Child exposure to outside care             |              |              |              |              |
| Parent-only care                           | 21.40%       | 18.32%       | 15.99%       | 23.66%       |
| Outside care                               | 78.60%       | 81.68%       | 84.01%       | 76.34%       |
| Child age in months                        | 68.14 (4.37) | 68.12 (4.39) | 68.09 (4.42) | 68.35 (4.65) |
| Family socioeconomic status                | -0.22 (0.84) | 0.08 (0.78)  | -0.22 (0.77) | -0.15 (0.71) |
| Parent emotional support                   | 4.33 (0.92)  | 4.52 (0.94)  | 4.40 (0.90)  | 4.36 (0.85)  |
| Parent negative regard                     | 1.19 (0.48)  | 1.18 (0.50)  | 1.23 (0.57)  | 1.20 (0.51)  |
| Parent intrusiveness                       | 1.55 (0.87)  | 1.50 (0.85)  | 1.57 (0.89)  | 1.57 (0.88)  |
| Parent detachment                          | 1.30 (0.68)  | 1.30 (0.67)  | 1.31 (0.69)  | 1.37 (0.71)  |
| Child social skills <sup>a</sup>           |              |              |              |              |
| Parent report                              | 0.00 (0.95)  | 0.02 (0.89)  | -0.10 (0.95) | 0.02 (0.88)  |
| Teacher report                             | -0.08 (1.05) | 0.04 (0.85)  | 0.01 (0.93)  | 0.05 (0.87)  |
| Child externalizing behaviors <sup>a</sup> |              |              |              |              |
| Parent report                              | -0.03 (0.88) | -0.06 (0.86) | 0.15 (0.98)  | 0.10 (0.94)  |
| Teacher report                             | 0.06 (1.09)  | -0.05 (0.90) | -0.03 (0.92) | 0.03 (0.90)  |

**Note:** Data are percentages for categorical variables and means (SD) for continuous variables. Percentages may not sum to 100 because of rounding error. Estimates of teacher-reported child social skills and externalizing behaviors were weighted using the WK45T0 variable. All other estimates were weighted using the WKR0 variable.

a. Parent and teacher estimates of child social-behavioral skills are not on the same scale and thus are not comparable.

### *Model Fit*

Table 4 reports the full results for the SEMs examining the total effect of geographic setting on children's parent- and teacher-reported social skills and externalizing behaviors in kindergarten, controlling for child and family covariates. The models were fully saturated, so overall fit could not be evaluated. For the parent-report model, the predictors accounted for 6.2% of the variance in child social skills and 6.9% of the variance in child externalizing behaviors. For the teacher-report model, the predictors accounted for 6.0% of the variance in child social skills and 9.3% of the variance in child externalizing behaviors.

**Table 4.** Parameter Estimates from a Structural Equation Model Examining the Total Effect of Geographic Setting on Children's Parent- and Teacher-Reported Social-Behavioral Skills

| Parameter   | Parent report |               |       | Teacher report |               |       |
|---|---------------|---------------|-------|----------------|---------------|-------|
|   | $\hat{B}$     | $\hat{\beta}$ | $R^2$ | $\hat{B}$      | $\hat{\beta}$ | $R^2$ |
| Child social skills <sup>a</sup> regressed on           |               |               | .06   |                |               | .06   |
| City  | 0.01          | 0.01          |       | -0.13          | -0.06         |       |
| Suburban  | -0.02         | -0.01         |       | -0.05          | -0.03         |       |
| Town  | -0.10         | -0.03         |       | -0.03          | -0.01         |       |
| Black   | 0.04          | 0.02          |       | 0.01           | 0.00          |       |
| Hispanic  | -0.03         | -0.02         |       | 0.05           | 0.02          |       |
| Asian   | -0.30***      | -0.05         |       | -0.12*         | -0.02         |       |
| American Indian or Alaska Native                        | -0.18*        | -0.01         |       | 0.22           | -0.02         |       |
| Multiple races  | 0.01          | 0.00          |       | -0.11          | -0.02         |       |
| Socioeconomic status                                    | 0.17***       | 0.15          |       | 0.14***        | 0.12          |       |
| Child age   | 0.01***       | 0.07          |       | 0.02***        | 0.09          |       |
| Child gender  | 0.32***       | 0.18          |       | 0.34***        | 0.18          |       |
| Child exposure to outside care                          | -0.03         | -0.01         |       | 0.01           | 0.00          |       |
| Child externalizing behaviors <sup>a</sup> regressed on |               |               | .07   |                |               | .09   |
| City  | -0.12**       | -0.06         |       | 0.07           | 0.03          |       |
| Suburban  | -0.11*        | -0.06         |       | -0.00          | -0.00         |       |
| Town  | 0.04          | 0.02          |       | -0.06          | -0.02         |       |
| Black   | 0.04          | 0.01          |       | 0.12           | 0.04          |       |
| Hispanic  | -0.10*        | -0.05         |       | -0.16**        | -0.07         |       |
| Asian   | -0.14*        | -0.03         |       | -0.25***       | -0.04         |       |
| American Indian or Alaska Native                        | 0.20*         | 0.02          |       | 0.28           | 0.02          |       |
| Multiple races  | 0.06          | 0.01          |       | 0.08           | 0.02          |       |
| Socioeconomic status                                    | -0.16***      | -0.14         |       | -0.16***       | -0.13         |       |
| Child age   | -0.01**       | -0.05         |       | -0.01**        | -0.06         |       |
| Child gender  | -0.35***      | -0.19         |       | -0.47***       | -0.24         |       |
| Child exposure to outside care                          | 0.05          | 0.02          |       | 0.17***        | 0.07          |       |

**Note:** The geographic setting, child race/ethnicity, child sex, and child exposure to outside care variables were dummy coded such that the reference groups were rural, White, male, and parent-only care. Standard errors were computed using a paired jackknife replication method.

Parent-report confirmatory factor analysis:  $n = 6,450$ . a. Residual correlation =  $-.42$ . Estimates were weighted using the WKRO variable.

Teacher-report confirmatory factor analysis:  $n = 4,850$ . a. Residual correlation =  $-.49$ . Estimates were weighted using the WK45T0 variable.

\* $p < .050$ , \*\* $p < .010$ , \*\*\* $p < .001$  (significance is based on the unstandardized estimates).

Table 5 provides the full results for the SEMs examining the indirect effect of geographic setting on children's parent- and teacher-reported social skills and externalizing behaviors in kindergarten through parents' emotional supportiveness, negative regard, intrusiveness, and detachment in preschool, controlling for child and family covariates. Both models demonstrated excellent fit to the data: parent-report model, RMSEA = .018 (90% CI =

.011–.024), SRMR = .006; teacher-report model, RMSEA = .023 (90% CI = .016–.031), SRMR = .007. For the parent-report model, the predictors accounted for 12.8% of the variance in parent emotional supportiveness, 3.8% of the variance in parent negative regard, 2.8% of the variance in parent intrusiveness, 3.1% of the variance in parent detachment, 7.1% of the variance in child social skills, and 7.2% of the variance in child externalizing behaviors. For the teacher-report model, the predictors accounted for 12.1% of the variance in parent emotional supportiveness, 3.9% of the variance in parent negative regard, 2.8% of the variance in parent intrusiveness, 3.0% of the variance in parent detachment, 6.7% of the variance in child social skills, and 11.0% of the variance in child externalizing behaviors.

**Table 5.** Parameter Estimates from a Structural Equation Model Examining the Indirect Effect of Geographic Setting on Children’s Parent- and Teacher-Reported Social-Behavioral Skills through Parents’ Affective Behaviors

| Parameter  | Parent report |               |       | Teacher report |               |       |
|--|---------------|---------------|-------|----------------|---------------|-------|
|  | $\hat{B}$     | $\hat{\beta}$ | $R^2$ | $\hat{B}$      | $\hat{\beta}$ | $R^2$ |
| Parent emotional support <sup>a,b,c</sup> regressed on |               |               | .13   |                |               | .12   |
| City   | 0.11*         | 0.06          |       | 0.06           | 0.03          |       |
| Suburban   | 0.18***       | 0.10          |       | 0.15**         | 0.08          |       |
| Town   | 0.11          | 0.04          |       | 0.07           | 0.02          |       |
| Black  | -0.27***      | -0.10         |       | -0.30***       | -0.11         |       |
| Hispanic   | -0.29***      | -0.14         |       | -0.28***       | -0.14         |       |
| Asian  | -0.42***      | -0.07         |       | -0.38***       | -0.07         |       |
| American Indian or Alaska Native                       | -0.05         | -0.00         |       | -0.05          | -0.00         |       |
| Multiple races   | -0.03         | -0.01         |       | -0.03          | -0.01         |       |
| Socioeconomic status                                   | 0.30***       | 0.26          |       | 0.28***        | 0.25          |       |
| Parent negative regard <sup>a,d,e</sup> regressed on   |               |               | .04   |                |               | .04   |
| City   | -0.00         | -0.00         |       | -0.01          | -0.01         |       |
| Suburban   | 0.01          | 0.01          |       | 0.00           | 0.00          |       |
| Town   | 0.04          | 0.03          |       | 0.06           | 0.04          |       |
| Black  | 0.16***       | 0.11          |       | 0.15***        | 0.10          |       |
| Hispanic   | -0.09***      | -0.08         |       | -0.10***       | -0.09         |       |
| Asian  | 0.02          | 0.01          |       | 0.05*          | -0.02         |       |
| American Indian or Alaska Native                       | -0.02         | -0.00         |       | -0.04          | -0.01         |       |
| Multiple races   | 0.04          | 0.02          |       | 0.04           | 0.02          |       |
| Socioeconomic status                                   | -0.08***      | -0.12         |       | -0.08***       | -0.13         |       |
| Parent intrusiveness <sup>b,d,f</sup> regressed on     |               |               | .03   |                |               | .03   |
| City   | -0.02         | -0.01         |       | 0.01           | 0.00          |       |
| Suburban   | -0.03         | -0.02         |       | -0.02          | -0.01         |       |
| Town   | 0.01          | 0.00          |       | 0.07           | 0.03          |       |
| Black  | 0.20***       | 0.08          |       | 0.20***        | 0.08          |       |
| Hispanic   | -0.18***      | -0.09         |       | -0.17***       | -0.09         |       |
| Asian  | 0.15*         | 0.03          |       | 0.17*          | 0.03          |       |

|   |          |       |          |       |
|---|----------|-------|----------|-------|
| American Indian or Alaska Native                        | -0.14    | -0.01 | 0.08     | -0.01 |
| Multiple races  | 0.01     | 0.00  | 0.02     | 0.00  |
| Socioeconomic status                                    | -0.12*** | -0.11 | -0.11*** | -0.10 |
| Parent detachment <sup>c,e,f</sup> regressed on         |          |       |          |       |
| City  | -0.05    | -0.03 | -0.02    | -0.02 |
| Suburban  | -0.01    | -0.01 | 0.00     | 0.00  |
| Town  | -0.04    | -0.02 | -0.03    | -0.01 |
| Black   | -0.12*** | 0.04  | 0.06     | 0.03  |
| Hispanic  | -0.04    | -0.08 | -0.12**  | -0.08 |
| Asian   | 0.22     | -0.01 | -0.00    | -0.00 |
| American Indian or Alaska Native                        | 0.22     | 0.02  | 0.27     | 0.03  |
| Multiple races  | -0.10*   | -0.03 | -0.06    | -0.02 |
| Socioeconomic status                                    | -0.14*** | -0.16 | -0.14*** | -0.16 |
| Child social skills <sup>g</sup> regressed on           |          |       | .07      | .07   |
| City  | 0.00     | 0.00  | -0.13    | -0.06 |
| Suburban  | -0.04    | -0.02 | -0.05    | -0.03 |
| Town  | -0.10    | -0.04 | -0.02    | -0.01 |
| Parent emotional support                                | 0.06**   | 0.06  | -0.01    | -0.01 |
| Parent negative regard                                  | -0.02    | -0.01 | -0.01    | -0.01 |
| Parent intrusiveness                                    | -0.05    | -0.05 | -0.06*   | -0.05 |
| Parent detachment                                       | -0.04    | -0.03 | -0.08    | -0.06 |
| Black   | 0.07     | 0.03  | 0.03     | 0.01  |
| Hispanic  | -0.03    | -0.01 | 0.03     | 0.01  |
| Asian   | -0.26*** | -0.05 | -0.12    | -0.02 |
| American Indian or Alaska Native                        | -0.18*   | -0.01 | -0.21*   | -0.02 |
| Multiple races  | 0.01     | 0.00  | -0.11    | -0.02 |
| Socioeconomic status                                    | 0.14***  | 0.12  | 0.13***  | 0.11  |
| Child age   | 0.01***  | 0.07  | 0.02***  | 0.09  |
| Child gender  | 0.32***  | 0.17  | 0.33***  | 0.18  |
| Child exposure to outside care                          | -0.03    | -0.01 | 0.01     | 0.00  |
| Child externalizing behaviors <sup>g</sup> regressed on |          |       | .07      | .11   |
| City  | -0.12**  | -0.06 | 0.07     | 0.03  |
| Suburban  | -0.10*   | -0.06 | -0.01    | -0.00 |
| Town  | 0.04     | 0.02  | -0.07    | -0.02 |
| Parent emotional support                                | -0.01    | -0.01 | 0.02     | 0.02  |
| Parent negative regard                                  | 0.03     | 0.02  | 0.14**   | 0.07  |
| Parent intrusiveness                                    | 0.05*    | 0.05  | 0.06**   | 0.05  |
| Parent detachment                                       | 0.03     | 0.02  | 0.11*    | 0.07  |
| Black   | 0.02     | 0.01  | 0.08     | 0.03  |
| Hispanic  | -0.08    | -0.04 | -0.12*   | -0.05 |
| Asian   | -0.15**  | -0.03 | -0.26*** | -0.04 |
| American Indian or Alaska Native                        | 0.20*    | 0.02  | 0.27     | 0.02  |
| Multiple races  | 0.06     | 0.01  | 0.08     | 0.02  |
| Socioeconomic status                                    | -0.15*** | -0.13 | -0.13*** | -0.11 |
| Child age   | -0.01**  | -0.05 | -0.02**  | -0.07 |

|                                |          |       |          |       |
|--------------------------------|----------|-------|----------|-------|
| Child gender                   | -0.34*** | -0.19 | -0.47*** | -0.24 |
| Child exposure to outside care | 0.05     | 0.02  | 0.16***  | 0.07  |

**Note:** The geographic setting, child race/ethnicity, child sex, and child exposure to outside care variables were dummy coded such that the reference groups were rural, White, male, and parent-only care. Standard errors were computed using a paired jackknife replication method.

Parent-report confirmatory factor analysis:  $n = 6,450$ . a. Residual correlation =  $-.22$ . b. Residual correlation =  $-.14$ . c. Residual correlation =  $-.32$ . d. Residual correlation =  $.36$ . e. Residual correlation =  $.24$ . f. Residual correlation =  $.18$ . g. Residual correlation =  $-.42$ . Estimates were weighted using the WKR0 variable.

Teacher-report confirmatory factor analysis:  $n = 4,850$ . a. Residual correlation =  $-.22$ . b. Residual correlation =  $-.11$ . c. Residual correlation =  $-.29$ . d. Residual correlation =  $-.37$ . e. Residual correlation =  $.23$ . f. Residual correlation =  $.15$ . g. Residual correlation =  $-.49$ . Estimates were weighted using the WK45T0 variable.

\* $p < .050$ , \*\* $p < .010$ , \*\*\* $p < .001$  (significance is based on the unstandardized estimates).

### *Effect of Geographic Setting on Children's Kindergarten Social-Behavioral Skills*

Our first research question addressed whether geographic setting influenced children's social-behavioral skills in kindergarten. Results were drawn from the parent- and teacher-report total effects models.

#### *Effect of Geographic Setting on Children's Parent-Reported Kindergarten Social-Behavioral Skills*

See figure 1 for the primary parameter estimates corresponding to the parent-report model. Holding the other variables in the model constant, there were no significant differences between rural children and city, suburban, and town children in their parent-reported social skills. However, rural children were reported by their parents as having significantly greater externalizing behaviors than city ( $\hat{\beta} = -0.06$ ,  $p = .006$ ) and suburban ( $\hat{\beta} = -0.06$ ,  $p = .018$ ) children. There was no significant difference in rural and town children's parent-reported externalizing behaviors. With the exception of child exposure to outside care, all covariates significantly predicted children's parent-reported social skills and externalizing behaviors.

#### *Effect of Geographic Setting on Children's Teacher-Reported Kindergarten Social-Behavioral Skills*

Figure 2 illustrates the primary parameter estimates corresponding to the teacher-report model. Holding the other variables in the model constant, there were no significant differences between rural children and city, suburban, and town children in their teacher-reported social skills. Likewise, there were no significant differences between rural children and city, suburban, and town children in their teacher-reported externalizing behaviors. All covariate effects were significant with the exception of the effect of child exposure to outside care on children's teacher-reported social skills.

### *Effect of Geographic Setting on Parents' Affective Behaviors*

Our second research question addressed whether geographic setting influenced parents' affective behaviors while their children were in preschool. Results were obtained from the parent-report indirect effects model.<sup>5</sup> Pathways of interest are shown in figure 3. Holding

the other variables in the model constant, rural parents were rated as showing significantly less emotional support than city ( $\hat{\beta} = 0.06, p = .023$ ) and suburban ( $\hat{\beta} = 0.10, p < .001$ ) parents. There was no significant difference in ratings of rural and town parents' emotional support. After controlling for the other variables in the model, there were no differences between rural parents and city, suburban, and town parents in their negative regard, intrusiveness, or detachment. Child race/ethnicity and family SES significantly predicted all four parent preschool outcomes.

### *Role of Parental Affect in Preschool on Social-Behavioral Skills in Kindergarten*

Our third question addressed whether parents' affective behaviors when their child was in preschool mediated the effect of geographic setting on children's social-behavioral skills in kindergarten. Mediation is evidenced if the total effect of geographic setting on children's social-behavioral skills (evaluated for Research Question 1) is explained by the intermediate pathways involving the effect of geographic setting on parents' affective behavior (evaluated for Research Question 2) and the effect of parents' affective behavior on children's social-behavioral skills. Indirect effects were only evaluated for combinations of variables in which *both* the "a" (parent behavior regressed on geographic setting) and "b" (child outcome regressed on parent behavior) pathways were significant. All results were drawn from the parent- and teacher-report indirect effects models. See figures 3 and 4 for the primary pathways of interest corresponding to the parent and teacher models, respectively.

### *Parental Affect in Preschool as a Mediator of the Effect of Geographic Setting on Children's Parent-Reported Kindergarten Social-Behavioral Skills*

Parents' preschool emotional supportiveness significantly predicted children's parent-reported social skills in kindergarten ( $\hat{\beta} = 0.06, p = .006$ ), and parents' preschool intrusiveness significantly predicted children's parent-reported externalizing behaviors in kindergarten ( $\hat{\beta} = 0.05, p = .035$ ). However, only emotional supportiveness was predicted by geographic setting, so only the indirect effect of geographic setting on children's parent-reported social skills through parent emotional supportiveness was evaluated. Furthermore, only comparisons between the rural setting and city and suburban settings were examined, as there was no significant difference in rural and town parents' emotional support. There was a small, marginally significant indirect effect of geographic setting, city versus rural, on children's parent-reported social skills in kindergarten through parents' preschool emotional supportiveness ( $\hat{\beta} = 0.003, p = .099$ ). In addition, there was a small, significant indirect effect of geographic setting, suburban versus rural, on children's parent-reported social skills in kindergarten through parents' preschool emotional supportiveness ( $\hat{\beta} = 0.006, p = .050$ ). Thus, differences in children's parent-reported social skills between geographic settings (with rural children lower on this dimension than city and

suburban children) occurred in part because of differences in parents' emotional support, with rural parents lower on this parenting dimension than city and suburban parents.

*Parental Affect in Preschool as a Mediator of the Effect of Geographic Setting on Children's Teacher-Reported Kindergarten Social-Behavioral Skills*

Parents' preschool intrusiveness significantly predicted children's teacher-reported social skills ( $\hat{\beta} = -0.05, p = .036$ ) and externalizing behaviors ( $\hat{\beta} = 0.05, p = .009$ ) in kindergarten. In addition, parents' preschool negative regard and detachment significantly predicted children's teacher-reported externalizing behaviors in kindergarten ( $\hat{\beta} = 0.07, p = .004$ , and  $\hat{\beta} = 0.07, p = .023$ , for negative regard and detachment, respectively). However, because there were no instances in which both the "a" and "b" pathways involving teacher-report data were significant, no indirect effects were examined. Thus, there was no evidence to suggest that parent affective behaviors in preschool mediated the relationship between geographic location and teacher-reported child social-behavioral outcomes.

## **Discussion**

This study provides important insight into the role of community context, particularly rural locale, and parenting on key developmental outcomes for children following the transition to kindergarten. Using a large, nationally representative data set, we analyzed the impact of geographic setting on children's social-behavioral skills in kindergarten, as well as the mediating role of parental affective behaviors. Results of the study shed important light on behavioral challenges and the role of parenting in rural settings.

### *Rural Children's Social-Behavioral Functioning*

Given that rural children make up a significant proportion of the nation's school population, identifying important contextual influences impacting their school readiness and educational success is a laudable direction for research. Our findings indicated that children's social skills (e.g., demonstrating their empathy for others, likability, expression of emotions) as measured by parent and teacher report were equivalent regardless of setting. However, parents in rural settings reported higher levels of externalizing behaviors (e.g., aggression, impulsivity) in their children than parents of children in city and suburban communities did for theirs. This finding was observed even after we controlled for children's race, ethnicity, age, gender, and exposure to outside care and family SES. No differences in behaviors across geographic context were reported by kindergarten teachers, suggesting that teachers view children as behaving similarly regardless of whether they reside in city, suburban, rural, or town settings. Understanding rural parents' perceptions is important given their role in providing structure, discipline, and reinforcement in response to children's behaviors. Relative to peers in other geographic contexts (i.e., city and

suburban), parents of children living in rural settings report that their child may enter school lacking foundational behavioral skills necessary for early school success.

Explanations for differences between rural parents' and teachers' ratings are not entirely clear. It is possible that parents have fewer opportunities than teachers to observe children other than their own and develop a notion of normative levels of externalizing behavior. Our research corroborates previous findings acknowledging that parents and teachers tend to rate behaviors differently (Achenbach, McConaughy, & Howell, 1987), with parents generally perceiving their children's behaviors in a more negative light than teachers (Touliatos & Lindholm, 1981; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Indeed, parents and teachers may rate similar behaviors differently based on their use of different vantage points and personal definitions of acceptability. However, it is possible that rural children's behaviors differ at home and at school. That is, the manifestation of behavior problems is often considered context and respondent specific (Achenbach et al., 1987; McCombs Thomas, Forehand, Armistead, Wierson, & Fauber, 1990); therefore, assessments that occur across settings and respondents yield more nuanced and comprehensive understandings of child behaviors. It is also worthy to note that the differences in children's externalizing behaviors and social skills as rated by parents and teachers may be related to differences in sample size or items measuring the outcomes. Specifically, teacher-report data were available only for a subset of cases used in the analyses, and fewer items were administered to teachers in the social-behavioral battery. Thus, the teacher-report items may have reflected a more limited representation of children's social skills and externalizing behaviors.

### *Rural Parents' Affective Behaviors*

We also evaluated the impact of community context on parents' emotional supportiveness, negative regard, intrusiveness, and detachment when children were in preschool. When controlling for child race/ethnicity, age, gender, and exposure to outside care and family SES, we found that community context predicted parents' emotional support. Specifically, rural parents exhibited less emotional support at the preschool assessment compared to city and suburban parents. These findings are consistent with those of Miller and Votruba-Drzal (2013), who found contextual (i.e., setting) differences in parenting behavior: Specifically, rural parents displayed less positive parenting and cognitive stimulation at home compared to parents in other contexts. However, our findings did not indicate contextually based differences for parents' negative regard, intrusiveness, or detachment. It may be that rural parents, although not overtly negative, may exhibit less warm, sensitive, and supportive qualities that typically define certain constructions of positive parenting. It is possible, for instance, that rural parents focus more on fostering children's cognitive development or managing children's behaviors than the social-emotional component of parenting.



### ***The Relationship Between Parents' Affective Behaviors and Children's Social-Behavioral Functioning***

Although we did not see an overall difference in social skills between rural and city, suburban, and town settings, our analyses demonstrated that geographic setting indirectly affected children's parent-reported social skills through parents' emotional supportiveness. Specifically, rural parents demonstrated less emotional support than their city and suburban peers, and parents who provided less emotional support (i.e., appeared less available to their child or seemingly disengaged during parent-child interaction) reported that their children exhibited lower social skills in kindergarten, which resulted in indirect differences between rural and city and suburban children's reported social skills. Considering that interactions with parents may represent the most frequent and prevalent social exchanges available to rural children given the small community and sparse population base in rural settings, the importance of parental emotional support in children's developing social skills is evident.

Our findings add to extant literature suggesting that parental emotional support impacts rural children's behaviors across different developmental stages. For instance, parental emotional support has also been shown to have an indirect, negative association with rural adolescents' aggressive behaviors (Larsen & Dehle, 2007). Consistent with findings in the general population (e.g., Baker, Fenning, & Crnic, 2011; Berlin & Cassidy, 2003; Guralnick, Neville, Connor, & Hammond, 2003; Jones, Eisenberg, Fabes, & MacKinnon, 2002), it appears that greater emotional support displayed by rural parents serves as a protective factor for rural youth in early childhood and adolescence. Thus, social skills interventions designed and applied in rural communities may benefit from an emphasis on developing and promoting the use of parental emotional support, such as responding to children's emotional cues, following the child's lead, asking open-ended questions, and communicating positive regard (e.g., Knoche et al., 2012).

The fact that there were no overall differences in social skills across settings despite rural children being indirectly disadvantaged by receiving less parent emotional support suggests that other factors in addition to parent emotional support should be considered in future research. More specifically, factors that serve to enhance children's social skill development in rural settings need to be considered, as they appear to buffer against the effects of lower emotional support in the home context. Again, these findings highlight the importance of examining children's social-behavioral development from an ecological perspective that considers systemic influences that may be unique to rural settings. For example, community connectedness or social organization has been shown to influence cognitive development differentially for children in rural and urban settings (Froiland, 2011). Community connectedness may also play a unique role in the social development of young children in rural contexts and should be considered.

We also found that parental emotional support did not mediate the relationship between setting and child externalizing behaviors as measured in kindergarten. The observed mediating effect of parental emotional supportiveness on the relationship between setting and social skills only, and not externalizing behaviors, may be explained by social learning theory (Bandura, 1977). Specifically, in providing emotional support, parents model positive social behaviors for children. Parents who display greater emotional support create opportunities for children to experience positive social interactions and practice social skills. Moreover, emotionally supportive parent-child interactions may be naturally reinforcing, leading children to engage with their parent more often using positive social skills.

Although not identified as mediating factors in the associations between setting and child behavioral or social skill outcomes, certain parental affective behaviors were found to be predictive of child outcomes as reported by both parents and teachers. Parental intrusiveness in preschool was found to have a significant positive and predictive relationship with parent- and teacher-reported kindergarten externalizing behaviors and a significant negative relationship with teacher-reported social skills when children were in kindergarten. Furthermore, parental detachment and negative regard in preschool were also significant predictors of kindergarten teachers' reports of children's externalizing behaviors. These findings were not unique to rural children, and they collectively reinforce decades of research on the predictive relationship between negative styles of parenting and behavioral problems in children (Patterson et al., 1992).

### *Implications*

Together, our findings highlight important differences in children's social-behavioral functioning in rural settings compared to other geographic settings. In particular, the increased prevalence of parents' perceptions of externalizing issues in children in rural communities compared to other contexts has implications for early school readiness. Externalizing issues such as aggression and impulsivity preclude children's engagement in the learning process and are associated with long-term deficits in academic achievement (Lane et al., 2008; Nelson et al., 2004; Reid et al., 2004). Moreover, families living in rural communities often lack access to high-quality supports for managing behavioral issues (DeLeon, Wakefield, & Hagglund, 2003). This compounded risk (i.e., parents' reports of increased externalizing issues and possible lack of behavioral supports) highlights the need to identify important variables impacting children's social-behavioral development in rural contexts and bolster both the quantity and quality of supports available to rural families in order to ameliorate these issues.

The relative differences in emotional support across geographic settings observed in our study are also of note. Although group comparisons did not reveal differences in children's

social functioning, our findings suggested that rural parents exhibited less emotional supportiveness relative to parents in city and suburban settings. Pinderhughes, Nix, Foster, and Jones (2001) found some evidence to suggest that lower levels of child behavior problems were related to greater parental warmth in urban and rural families. It is possible that greater rates of externalizing issues reported for rural children in our study were evident by preschool and thereby had a negative effect on the amount of emotional support provided by rural parents. It is also possible that other factors in rural communities uniquely influence the social-behavioral functioning of children in rural settings, and these factors warrant further attention to support optimal functioning and development among young rural children.

### *Limitations and Future Directions*

It is important to note study limitations in light of our findings. First, limited variability was evident for the parent negative regard, intrusiveness, and detachment scales. In general, low levels of negative parental affective behaviors were displayed by parents across the entire sample. This is often to be expected in direct observations of parent behaviors, as parents refrain from negative behaviors when observed. Second, global criteria were used to classify families as residing in city, suburban, town, or rural settings. Characteristics of rurality vary significantly from one rural community to another and across regions of the United States. Although the use of a nationally representative sample increased the generalizability of our results, the grouping of all families characterized as living in rural contexts prevented us from accounting for intragroup differences within rural communities across diverse regions in the nation. This limitation may also explain why no significant differences were seen in rural and town comparisons. It is possible that the global geographic definitions do not account for unique differences between these groups and that more sensitive qualifiers identifying phenomena unique to these communities may yield different results. Third, items across the parent and teacher social and behavioral scales were not identical, such that the ratings varied not only by source but also by content. Although our intent was not to compare ratings made by parents versus teachers, the differences across scales make conclusions regarding the parent and teacher ratings difficult to interpret in a collective sense.

Future investigation is necessary to identify other aspects of parenting and contextual influences that may explain the higher rates of externalizing behaviors reported for rural children in kindergarten compared to their city and suburban peers. Although we were unable to examine parents' disciplinary practices in natural contexts, this may be a direction worthy of future study (Bornstein et al., 2008). Additional research is also warranted to investigate potential contextually based influences in children's internalizing behaviors. Though differences in internalizing behaviors across settings are plausible, our investiga-

tion focused solely on externalizing behaviors because of the limited number of internalizing items included in ECLS-B parent and teacher interviews, as well as previous research demonstrating the low reliability and construct validity of these items (Rispoli et al., 2013; Roisman & Fraley, 2012). Future research should also attempt to pinpoint reasons for which parental emotional supportiveness was lower in rural parents compared to other parents and whether this finding stands when one is accounting for other factors such as neighborhood safety and social support. Previous research suggests that contextual differences may be masked by the greater influence of these other factors in higher risk communities where lower levels of safety, support, and parental education prevail (Pinderhughes et al., 2001).

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### Notes

1. Hope et al.'s (1998) sampling plan represented substantially fewer numbers of rural ( $n = 17$ ) than urban ( $n = 38$ ) classrooms, with rural sites contained within only one state (Pennsylvania) compared to urban sites dispersed across a wide geographic range.
2. As per Institute of Education Sciences reporting requirements, sample sizes are rounded to the nearest 50 for confidentiality purposes.
3. Children who were home schooled, who were in an ungraded program, who skipped kindergarten, or whose grade was unknown were omitted from the analyses. In addition, children reported as Native Hawaiian or other Pacific Islander, non-Hispanic, were omitted from the analyses because of the group's small sample size, which resulted in nonconvergence when child race/ethnicity was included as a covariate.
4. The weighted sequential hot deck method imputes data for missing responses by substituting information from similarly responding cases. Weighting ensures that the resulting means are equal to the expected value of the nonimputed data (Cox, 1980).
5. Because the Research Question 2 pathways do not involve teacher-report outcomes, the pathways estimated via the teacher model are not discussed here (but all results are presented in table 5). Any differences in the Research Question 2 results between the parent and teacher models are merely due to differences in sample size.

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