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Rurality and Reading Readiness: The Mediating Role of Parent Engagement

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Reading skills are critical to children's academic success (Adams, 1990), and the effects of poor reading are compounded over time (Stanovich, 1986). Language skills that influence reading abilities are formed in the beginning stages of life. Children's early language experiences not only set the stage for their learning potential, but they also greatly influence their academic trajectory (National Institute of Child Health and Human Development, 2000; Shonkoff & Phillips, 2000; Snow, Burns, & Griffin, 1998; Whitehurst & Lonigan, 2001).

Early family engagement in language and literacy activities is important for young children's reading development (Sénéchal & LeFevre, 2002; Sheridan, Knoche, Kupzyk, Edwards, & Marvin, 2011) and has longitudinal effects on reading outcomes (Roberts, Jurgens, & Burchinal, 2005). Parent engagement may take many forms, each with varying levels of influence on children's reading abilities and school achievement. Parent engagement, as defined here, concerns parental practices and provisions that support early learning and healthy development. Particular to this study are parents' activities that support early language and literacy skills for preschoolers, such as providing access to print materials and community resources (e.g., libraries), interactive book reading, and language-based interactions (e.g., telling stories, singing songs, reciting nursery rhymes).

One area that requires greater inquiry to expand our understanding of family engagement in early language and literacy development is spatial variation (Roscigno & Crowley, 2001). Little is currently known about how setting conditions, specifically rurality, influence the manner by which parents engage in language and literacy activities with their young children and the effect that their engagement has on children's school readiness.

Parent involvement in children's education in rural settings produces similar benefits on student achievement for children in rural schools as it does for children in urban and suburban settings (Keith, Keith, Quirk, Cohen-Rosenthal, & Franzese, 1996). Specifically, rural parent involvement in school-based literacy activities has been shown to positively affect kindergarten children's reading skills (Porter DeCusati & Johnson, 2004). However, previous studies were based on traditional forms of involvement in school-based activities for children in elementary school, rather than parent engagement in learning activities with their child in natural home environments during the formative preschool period.

Conditions in rural settings may differentially impact the ways in which parents are engaged in early learning activities and the degree to which parents' behaviors impact school readiness. Some have argued that the diminished resources and income potential in rural communities may negatively influence parents' educational aspirations for their children and in turn depress their efforts to promote learning in the home (Durham & Smith, 2006; Roscigno & Crowley, 2001). Additionally, the education and income levels of rural parents tend to be lower (Dagata, 2000; Ghelfi, 2000), which may negatively impact the quality of parent-child interactions that stimulate academic skills. Conversely, it might also be argued that families in rural settings with fewer reading resources readily available in the community may provide more language and literacy experiences in the home to make up for experiences to which their child may not have access. In turn, parent engagement may have a greater impact on children's school readiness and reading skills in rural settings than urban settings.

Purpose of Study

This study examined the effect of setting on parents' literacy engagement and children's early literacy, and whether parent engagement mediates the pathway between setting and child outcomes. Research questions were:

1. Does setting predict (a) parents' literacy engagement and (b) children's early literacy?

2. Does parent literacy engagement mediate the relationship between setting and children's early literacy?

Research Process/Procedures

Participants

This study represents a secondary data analysis of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), a study sponsored by the National Center for Education Statistics (NCES), U.S. Department of Education, that followed a nationally representative sample of children born in the United States in 2001. This study used data from the preschool and kindergarten waves. Based on ECLS-B eligibility requirements, only cases with a completed parent interview at previous waves were invited to participate in subsequent data collection waves (Snow, Derecho, Wheeless, Lennon, Rosen, Rogers, & Einaudi, 2009; n = 6550).

Measures

Data for this study were obtained from a structured parent interview administered via a computer-assisted personal interviewing (CAPI) program and direct child cognitive assessment, both of which were conducted at the child's home (Snow et al., 2009).

Household setting. Parent-reported household ZIP codes were combined with data from the American Community Survey to create a composite household location variable (Snow et al., 2009) collapsed into four groups: city (n = 1950), suburban (n = 2550), town (n = 850), and rural (n = 1100).

Home literacy materials. The amount of children's print materials in the home was measured using a one-item parent-report measure: "About how many children's books does [child] have in your home now, including library books?"

Child's exposure to the library. Four dichotomous parent-report questions regarding library use were summed to create a composite library exposure score. These questions were (a) "In the past month, has anyone in your family visited a public library with [child]?"; (b) "In the past month, did you use the public library to…Borrow books to read aloud to [child] or for [him/her] to read?; (c) Borrow materials other than books, such as cassettes, CDs, videos, or toys, to share with [child]?; and (d) Take [child] to a story hour or program?"

Parent language and literacy behaviors. Three questions on the parent interview were identified as measuring parent language and literacy behaviors: "In a typical week, how often do you or any other family member… (a) Read books to your child?; (b) Tell stories to your child?; and (c) Sing songs with your child?" The four possible response options were *Not at all*, *Once or twice*, *3 to 6 times*, and *Every day* with higher scores representing more language and literacy behaviors.

Children's kindergarten literacy. The reading assessment was designed to be a broad measure of early child language and literacy skills, including English language skills, letter knowledge, letter-sound knowledge, print conventions, word recognition, vocabulary, initial understanding, developing interpretation, and demonstrating critical stance (Snow et al., 2009). These skills were directly assessed using items from the *PreLAS 2000* (Duncan & De Avila, 1998), PPVT-III (Dunn & Dunn, 1997), Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP; Lonigan, Wagner, Torgesen, & Rashotte, 2002) and items created for the ECLS-K (Najarian, Snow, Lennon, Kinsey, & Mulligan, 2010).

Analyses

Structural equation modeling (SEM) was used to evaluate the primary research questions. All data were analyzed in M*plus* Version 6.1 (Muthén & Muthén, 1998-2010) using full-information maximum likelihood estimation to account for item-level missing data.

Results

There was a significant effect of geographic setting on child reading scores in kindergarten (-2log(Λ) [df = 3] = 29.826, $p < 0.001$). Planned comparisons revealed that only the difference between the suburban and rural settings in child reading scores was significant. Suburban children had higher reading scores when entering kindergarten than rural children (β = 0.072, $p = 0.013$).

There was a significant overall effect of household setting on child exposure to the library, -2log(Λ) [df = 3] = 40.978, $p < 0.001$ with city and suburban children exposed to the library more than rural children (β = 0.105, $p < 0.001$ and β = 0.102, $p < 0.001$, respectively). There was also a significant effect of household setting on child reading scores (-2log(Λ) [df = 3] = 29.826, $p < 0.001$), with suburban children scoring higher than rural children (β = 0.072, $p = 0.013$).

There was a small but marginally significant indirect effect of household setting, city versus rural, on child kindergarten entry reading scores through pre-kindergarten exposure to the library, β = 0.004, $p = 0.051$. There was also a small but significant indirect effect of household setting, suburban versus rural, on child kindergarten entry reading score through pre-kindergarten exposure to the library, β = 0.004, $p = 0.036$.

Discussion

This study provides a unique look into the influence of rurality on early (preschool) parent engagement in children's kindergarten language and literacy development and children's reading readiness. Findings revealed that living in a rural community influences parents' access to resources (i.e., libraries), which in turn affects children's literacy. Specifically, preschool children in rural areas were exposed to the library less than preschool children in city and suburban areas, which negatively influenced rural children's kindergarten reading scores. However, rurality does not appear to influence home language environments (i.e., number of children's books in the home) or parent language and literacy behaviors.

Our findings suggest that other mediating factors need to be considered. There was no total effect, or difference, in rural and city children's reading scores, despite the indirect effect of setting on library exposure. Hence, it seems likely that there are additional mediator variables for which rural children are advantaged over city children, making up for the fact that rural children are exposed to the library less than city children. Similarly, given the significant *total* and *direct* effects, or differences, in suburban and rural children's reading scores in addition to the significant indirect effect, it appears that there are additional mediating variables not included in our model that explain why suburban children still have higher kindergarten entry reading scores than rural children after controlling for children's library exposure.

Conditions in rural settings need to be better understood to determine what factors promote strong literacy skills for preschool children in rural areas. Future studies need to include rigorous evaluations of distinctive features of rural contexts to better explain setting differences and identify important mediating factors that can be manipulated to promote early literacy skills.

References

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: The MIT Press.

Dagata, E. M. (2000). Rural poverty rate declines, while family income grows. *Rural Conditions and Trends, 11*, 62-67.

Duncan, S. E., & De Avila, E. A. (1998). *PreLAS 2000*. Monterey, CA: CTB/McGraw-Hill.

Dunn, L. M., & Dunn, L. M. (1997). *Examiner's manual for the Peabody Picture Vocabulary Test* (3rd ed.). Circle Pines, MN: American Guidance Services.

Durham, R. E., & Smith, P. J. (2006). Nonmetropolitan status and kindergarteners' early literacy skills: Is there a rural disadvantage? *Rural Sociology, 71,* 625-661.

Ghelfi, L. M. (2000). Rural nonfarm earnings increase in 1997, but lag urban earnings growth. *Rural Conditions and Trends, 11*, 51-55.

Keith, T. Z., Keith, P. B., Quirk, K. J., Coehen-Rosenthal, E., & Franzese, B. (1996). Effects of parental involvement on achievement for students who attend school in rural America. *Journal of Research in Rural Education, 12,* 55-67.

Lonigan, C. J., Wagner, R. K., Torgesen, J. K., & Rashotte, C. A. (2002). *Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP)*. Tallahassee, FL: Florida State University.

Muthén, L. K., & Muthén, B. O. (1998-2010). M*plus* user's guide (6th ed.). Los Angeles, CA: Muthén & Muthén.

Najarian, M., Snow, K., Lennon, J., & Kinsey, S. (2010). *Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), preschool-kindergarten 2007 psychometric report* (NCES 2010-009). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

National Institute of Child Health and Human Development. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

Porter DeCusati, C. L., & Johnson, J. E. (2004). Parents as classroom volunteers and kindergarten students' emergent reading skills. *The Journal of Educational Research, 97,* 235-246.

Roberts, J., Jurgens, J., & Burchinal, M. (2005). The role of home literacy practices in preschool children's language and emergent literacy skills. *Journal of Speech, Language & Hearing Research, 48,* 345-359. doi:10.1044/1092-4388(2005/024)

Roscigno, V. J., & Crowley, M. L. (2001). Rurality, institutional disadvantage, and achievement/attainment. *Rural Sociology, 66*, 268-293.

Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development, 73*, 445-460.

Sheridan, S. M., Knoche, L. L., Kupzyk, K. A., Edwards, C. P., & Marvin, C. A. (2011). A randomized trial examining the effects of parent engagement on early language and literacy: The Getting Ready Intervention. *Journal of School Psychology, 49,* 361-383. doi:10.1016/j.jsp.2011.03.001

Shonkoff, J. P., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development.* Washington, DC: National Academy Press.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press. doi:10.1002/pits.10011

Snow, K., Derecho, A., Wheeless, S., Lennon, J., Rosen, J., Rogers, J., Kinsey, S., Morgan, K., & Einaudi, P. (2009). *Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), kindergarten 2006 and 2007 data file user's manual* (NCES 2010-010). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 360-407.

Whitehurst, G. J., & Lonigan, C. J. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickensen (Eds.), *Handbook of early literacy research* (pp. 11-29). New York, NY: Guilford Press.