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The Impact of Childhood Mobility on Exposure to Neighborhood Socioeconomic Context Over Time

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We used the 1998–1999 Early Childhood Longitudinal Study—Kindergarten Cohort, with data collected in kindergarten, first, third, fifth, and eighth grades, in a descriptive analysis of associations between early childhood residential mobility frequency and neighborhood context changes. We found that children who move frequently appear initially to move into higher-socioeconomic-status neighborhoods but eventually move back to lower-socioeconomic-status neighborhoods, exposing frequent movers to diverse neighborhood contexts. These findings have implications for policy and research that seeks to link neighborhood context to health. (*Am J Public Health.* 2014;104:80–82. doi:10.2105/AJPH.2013.301467)

In 2011 approximately 12% of US children aged 5 to 17 years changed residences.[1] Previous research has associated frequent residential mobility with numerous adverse and long-term educational, behavioral, emotional, and mental health issues; physical health outcomes; and inconsistent or lacking preventive health services.[2,3] As children move, they are also exposed to new neighborhood environments.[4] Although the literature on neighborhood context and health suggests that residential socioeconomic status (SES) has an impact on a wide range of health outcomes,[4–12] most studies that examine these dynamics are conducted with cross-sectional study designs because longitudinal data are largely unavailable. In fact, very little literature even examines how children's neighborhood contexts change over time. This knowledge gap compromises our ability to study and understand the impacts of neighborhood on children's health over time because we do not know (1) whether children move to neighborhoods with similar or different socioeconomic characteristics and (2) whether children who move frequently maintain consistently upward or downward trajectories in neighborhood SES with each subsequent move.

Using a nationally representative longitudinal data set, we examined how often children moved during early childhood and the socioeconomic contexts of neighborhoods children move to and from over time. The findings from this study have implications for future research examining the impact of neighborhood environments on health.

METHODS

We drew data from the Early Childhood Longitudinal Study—Kindergarten Cohort (ECLS-K), maintained by the National Center for Educational Statistics.[13] The ECLS-K is a nationally representative longitudinal study of 21 410 children in the United States who began kindergarten during the 1998–1999 school year. Five waves of data were collected, in kindergarten, first, third, fifth, and eighth grades. The National Center for Educational Statistics established a complex process for following children who changed schools so researchers could study the effects of mobility on child well-being. Details of the survey methods, including attrition and sample limitations, are described in materials available as a supplement to the online version of this article at http://www.ajph.org and elsewhere.[14]

Residential mobility was assessed at each wave of the study by the parent interview question, "Why did you move?" Families were categorized as "stayers" if they did not indicate a change in residence at any point during the study period, "movers" if they changed residences 1 time, and "frequent movers" if they changed residences 2 or more times. The ECLS-K provided census tract of residence for each wave except fifth grade, which we linked to measures of neighborhood SES derived from the 2000 US Census and the 2005–2009 American Community Survey. We developed 3 indices of neighborhood SES—the Townsend and Carstairs Indices and the Centers for Disease Control and Prevention's Index of Local Economic Resources—and 3 single variable measures—percentage below the federal poverty line, percentage with a college education, and median household income.[12,15–17]

We compared the mean values of neighborhood SES indicators for stayers, movers, and frequent movers by using analysis of variance tests in SAS version 9.3 (SAS Institute, Cary, NC). We applied survey weights to all estimates using the jackknife method.

RESULTS

After we applied sample weights, 18 950 children were included in the analyses. Between kindergarten and eighth grade, 22.9% of families moved once and 6.3% moved 2 or more times.

At baseline, movers and frequent movers lived in lower SES neighborhoods compared with stayers for all SES measures (Table 1). Over time, both movers and frequent movers in the ECLS-K sample moved to higher SES neighborhoods, although frequent movers appear to move back to lower SES neighborhoods during their final move (Figure 1 and materials available as a supplement to the online version of this article at http://www.ajph.org). Additional results can be found in the online supplemental material.

DISCUSSION

This study provides evidence of significant movement and change in neighborhood context over time among children in the ECLS-K. Perhaps the most novel finding relates to the diversity of experiences among frequent movers who appear initially to move into higher SES

TABLE 1—Mean Values of Neighborhood Context Measures at Baseline by Mover Type: 1998–1999 Early Childhood Longitudinal Study—Kindergarten Cohort, United States

Variable	Baseline (Kindergarten)		
	No.	Mean (SE)	*P*[a]
Townsend Index			< .001
Stayers	11 380	–0.0602 (0.1032)	
Movers	3650	0.1075 (0.1237)	
Frequent movers	1000	0.3179 (0.1471)	
Carstairs Index			< .001
Stayers	11 380	0.0584 (0.1016)	
Movers	3650	0.2475 (0.1141)	
Frequent movers	1000	0.3813 (0.1306)	
CDC Index			.52
Stayers	11 380	13.4897 (0.1309)	
Movers	3650	13.5351 (0.1273)	
Frequent movers	1000	13.5901 (0.1532)	
Living below poverty, %			< .001
Stayers	11 380	0.1280 (0.0045)	
Movers	3650	0.1365 (0.0041)	
Frequent movers	1000	0.1448 (0.0058)	
Median household income, $			< .001
Stayers	11 380	46 772 (996)	
Movers	3650	43 786 (684)	
Frequent movers	1000	41 519 (982)	
College education, %			< .001
Stayers	11 380	0.2309 (0.0069)	
Movers	3650	0.2120 (0.0062)	
Frequent movers	1000	0.2064 (0.0064)	

Note. CDC = Centers for Disease Control and Prevention.
[a]*P* values are for analysis of variance tests of the difference in baseline means among the 3 different mover types.

neighborhoods but may eventually move back to neighborhoods with poorer conditions. There is a variety of positive and negative reasons that families change residences that directly relate to the type of neighborhood environment families move into and out of. Future research should engage with the residential mobility literature more directly by exploring the relationship between determinants of residential mobility (e.g., family-level factors), mobility itself (e.g., the disruption of moving), and the results of mobility (e.g., neighborhood change) to pull apart the relative importance of these factors on child health. It may be that frequent movers are simply in socioeconomically less stable households and that health outcomes are related to this instability rather than neighborhood environment. Relatively little literature makes this distinction, yet there are clear policy implications: should policy focus on changing neighborhood structure, supporting family stability, or both?

Disentangling the potential health effects of these different aspects of mobility requires that we properly and consistently measure neighborhood socioeconomic change. Past research has relied on repeated use of (the same) decennial Census data to measure changes in neighborhood context rather than true longitudinal measures of neighborhood SES. With the introduction of the American Community Survey, which has rolling 5-year averages of important SES indicators, more precise longitudinal measures can, and should, be constructed.

Socioeconomic status is a complex construct consisting of several domains: material resources, human capital, and social capital.[18,19] Indices and single-indicator measures of SES quantify these domains in different ways; some focus on material resources (Centers for Disease Control and Prevention Index, poverty) whereas others focus on human capital (education). The difference in results we found across the SES measures used demonstrates that researchers should carefully ground their choice of SES measure in theoretical arguments about the impact of neighborhood context on health. But there is no single "best" SES indicator applicable for all study aims and research designs. As such, measures of neighborhood SES should be chosen on the basis of (1) the underlying theoretical SES construct of interest (e.g., inadequate material resources or human capital) and its theoretical link to a health outcome and (2) the proposed research question (e.g., Do poor neighborhood material resources affect mammography rates?).[20] ■

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Contributors

E. D. Root designed the study. Both authors conducted the statistical analysis and drafted the article.

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Human Participant Protection

This project was reviewed and found exempt by the University of Colorado at Boulder institutional review board.

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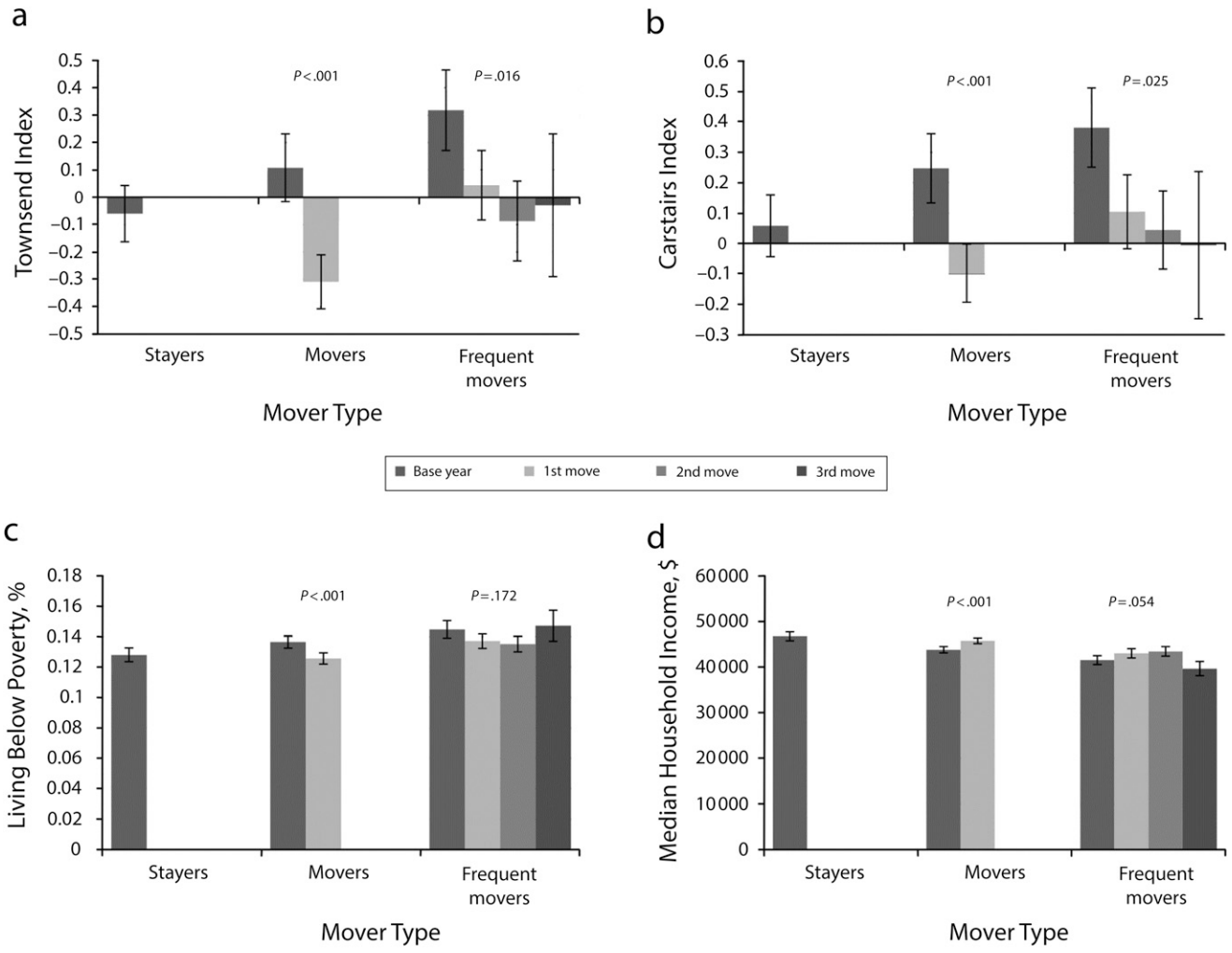

Note. Whiskers indicate 95% confidence intervals. For the Townsend and Carstairs Indices, higher scores indicate more deprived areas. *P* values are for analysis of variance tests of the difference between mean neighborhood socioeconomic status over time.

FIGURE 1—Moves and mover type mean neighborhood context measures (a) Townsend Index, (b) Carstairs Index, (c) percentage living below poverty, and (d) median household income: 1998–1999 Early Childhood Longitudinal Study—Kindergarten Cohort.

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