

Profiles of Housing and Neighborhood Contexts Among Low-Income Families: Links With Children's Well-Being

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Abstract

Low-income families face numerous constraints but also opportunities in accessing affordable, decent, and stable housing in safe neighborhoods. These factors, in combination with individual preferences and priorities, lead to a diverse array of housing experiences. This study assessed the housing and neighborhood profiles of a representative sample of low-income families with children living in high-poverty urban neighborhoods in Boston, Chicago, and San Antonio (N = 2,393). Latent class analyses delineated four profiles of housing and neighborhood characteristics with distinct patterns of housing cost, housing problems, neighborhood disorder, residential instability, and homeownership. Profile 1 featured high cost, high housing and neighborhood problems, moderate residential instability, and high private rentals; Profile 2 featured high cost, low housing problems and neighborhood disorder, moderate residential instability, and prevalent owned homes and private rentals; Profile 3 featured low cost, and high housing problems, neighborhood disorder, residential stability, and assisted housing; and Profile 4 featured low cost, low housing problems and neighborhood disorder, high residential instability, and high assisted housing. Maternal, family, and broader community characteristics varied across these profiles, suggesting the endogeneity between families and their housing and neighborhood contexts. Individual fixed-effects regression models found that housing and neighborhood profiles were associated with children's functioning, with the primary pattern indicating that Profile 2 was associated with superior reading skills and fewer emotional and behavioral problems among children than other housing and neighborhood profiles. The results

Abstract (continued)

highlight the importance of assessing families' holistic bundle of housing and neighborhood characteristics rather than attempting to isolate unique effects of characteristics that are inherently interrelated.

Background

The recent housing crisis focused new attention on housing and neighborhoods as central contexts for children's healthy growth and development. Although various characteristics of housing (for example, quality and homeownership) have received notable scholarly and policy attention in relation to children's development (Newman, 2008), insufficient previous research has addressed the interrelated nature of the housing and neighborhood characteristics that low-income urban families experience. This article investigates the multifaceted nature of low-income families' housing and neighborhood contexts. It adds to existing literature by assessing how multiple aspects of housing and neighborhood characteristics bundle together into distinct patterns, which we term housing and neighborhood "profiles." After establishing the existence of such profiles empirically through advanced person-based analytic techniques in a representative sample of low-income families, we explore the associations of these profiles with children's functioning, adjusting for factors that differentially select families into housing and neighborhood contexts and hence might bias measured associations with child functioning.

This study is based on developmental contextual theory, which argues that proximal contexts, such as homes and neighborhoods, are inextricably linked to human development (Bronfenbrenner and Morris, 1998). We draw more specifically from the developing ecobiodevelopmental (Shonkoff, 2010; Shonkoff and Garner, 2012) and chaotic systems (Bronfenbrenner and Evans, 2000; Evans and Kim, 2013) frameworks that highlight the harmful role that disorder and instability in children's housing and neighborhood contexts play in limiting their growth and development. These models argue that in comparison to their peers, children who experience more environmental chaos, disorder, stress, and instability in their housing and neighborhood contexts will show greater biological and physiological deficits that will translate into less advanced cognitive, behavioral, and emotional functioning.

Interrelations Among Central Characteristics of Housing and Neighborhood Contexts

Previous research has identified numerous characteristics of housing—including quality, affordability, ownership, stability, and neighborhood safety—that interrelate in complex ways to define families' housing experiences and that might contribute to children's development (Leventhal and Newman, 2010). Although much past research treated these factors as distinct and independent characteristics, we argue in this article that they are integrally interrelated, which warrants research that directly assesses the complex patterns across multiple housing and neighborhood characteristics.

One of the central aspects defining families' housing contexts is the quality and safety of the physical unit (Newman, 2008). Structural deficiencies, lack of working utilities, and environmental conditions such as rodent or pest infestation, peeling paint, mold, and limited light or fresh air are housing problems that low-income families in the United States experience (Bradman et al., 2005), with poor families being two to three times more likely than economically advantaged families to experience such housing deficiencies (Evans, 2004; Holupka and Newman, 2011). Families might live in structurally deficient housing because they lack economic or social resources to access better housing (Evans, 2004; Holupka and Newman, 2011) or because high housing costs in comparison to family income inhibit their ability to invest in adequate upkeep and maintenance.

Low-income families are particularly likely to live in unaffordable housing; 70 percent of low-income families in 2003 experienced cost burden, defined as paying more than 30 percent of family income for housing costs (Joint Center for Housing Studies, 2005). Housing costs are also inextricably tied to the type and stability of housing. Home prices and rents increased dramatically in the late 1990s and early 2000s because of demand in the housing market and rising family incomes (Joint Center for Housing Studies, 2005; Quigley and Raphael, 2004). As costs increased, the number of low-cost and subsidized housing units decreased, with estimates of the gap between demand for and supply of low-cost housing at about 5.2 million units nationally in the early 2000s (Joint Center for Housing Studies, 2005). Moreover, estimates in 2008 found that only 31 percent of households eligible for government housing subsidies actually received assistance (Turner and Kingsley, 2008). Together, these figures indicate substantial unmet demand for low-cost and government-subsidized housing. On the other hand, increasing numbers of low-income families have turned to homeownership (Savage, 2009). Homeownership, as compared with renting, might bring the notable benefits of residential stability and greater housing quality because of greater investment (Newman, 2008). For low-income families in particular, however, homeownership is often tied not only to unaffordable costs, but also to residential instability (Herbert and Belsky, 2006). In response to greater experiences of disorder and instability in housing, neighborhoods, and family lives, both renters and homeowners with low incomes move more frequently than their economically advantaged counterparts (Coulton, Theodos, and Turner, 2012; Crowley, 2003; Herbert and Belsky, 2006; Holupka and Newman, 2011; Sandel and Wright, 2006).

Past research also highlights the interconnection between housing characteristics and the neighborhood contexts in which housing is embedded. Subsidized and low-cost housing are often clustered together in inner-city neighborhoods, with recent estimates finding growing rates of concentrated poverty in such neighborhoods in the past decade (Clark and Morrison, 2012; O'Hare and Mather, 2003; Sharkey, 2012). Low-income urban neighborhoods, on average, have fewer institutional resources and higher rates of crime, violence, disorder, and social isolation than more advantaged neighborhoods (Leventhal, Dupéré, and Shuey, forthcoming; Sampson, 2012). Low-income families from neighborhoods with concentrated poverty identify neighborhood violence and disorder as central areas of concern, contributing to dissatisfaction with their residential choices and desires to move (Goering and Feins, 2003).

In short, research demonstrates that low-income families face a variety of constraints and limitations in their housing and neighborhood contexts. Although extensive research has addressed individual aspects of the housing and neighborhood contexts that low-income families experience

(see Conley, 2001; Evans, Wells, and Moch, 2003; Krieger and Higgins, 2002; and Leventhal and Newman, 2010, for reviews), little research has attempted to understand how those aspects fit together into a holistic profile of families' proximal contexts. A handful of studies have addressed how two or three aspects of housing and neighborhood interrelate, and many studies have focused on the different experiences of families in owned, privately rented, or government-subsidized housing. For example, research found that low-income households in private-market rentals experience difficulty finding affordable and decent-quality housing (Murray, 1997) and that low-income families are likely to change residences because of unaffordable housing costs and in pursuit of safe, decent-quality housing (Crowley, 2003; Kull, Coley, and Lynch, unpublished), suggesting that higher quality and affordable housing might coincide with higher residential stability. In a qualitative analysis of low-income mothers' budgeting of family finances, Edin and Lein (1997) observed that low-income families made tradeoffs among housing costs, type, crowding, and neighborhood quality that resulted in distinct combinations of housing characteristics. They specifically found that families who doubled up with friends or family members incurred lower housing costs and experienced more crowding, whereas families who maintained government-assisted units experienced low costs and less crowding. Families in private-market rentals, by contrast, had higher housing costs but also higher neighborhood quality than the other groups.

Together, this research suggests that housing and neighborhood characteristics interrelate in important ways among low-income families facing limited economic resources and perhaps restricted housing options. Little previous research has assessed the interrelations among these characteristics in a comprehensive and quantitative manner, however, and much of the past research on interrelations drew from small, select samples. As an exception, in one of the most comprehensive quantitative analyses to date, Coulton, Theodos, and Turner (2012) analyzed 10 communities across the country to assess how housing, economic, and family factors were associated with mobility and stability in urban neighborhoods. The study identified three distinct profiles of families: those who remained in (stayers), left (movers), or entered (new residents) high-poverty urban neighborhoods; each of these profiles contained three subprofiles of families, with some experiencing distress, others in satisfactory housing situations, and still others whose residential stability was driven by life-stage issues. Together, the limited previous research suggests that, to understand the full housing experiences of low-income families, we must identify how housing and neighborhood factors are linked together in particular patterns.

Housing and Children's Development

One of the central reasons to increase understanding of low-income families' housing and neighborhood contexts is to better delineate repercussions for children's health and development. Existing research suggests that numerous aspects of housing and neighborhoods are associated with child well-being. Substandard housing quality consistently predicts children's compromised cognitive and socioemotional development (Coley et al., 2013), an association often attributed to exposure to environmental toxins like lead and pesticides and to other related stressors (Evans, 2004; Krieger and Higgins, 2002). Frequent residential moves also are associated with detriments to functioning, particularly cognitive skills and school outcomes as a result of disruptions in educational continuity and social relationships (Evans, 2006; Pribesh and Downey, 1999; Ziol-Guest and Kalil, 2013). Research on homeownership has suggested that low-income children living in owned homes display

superior academic and behavioral skills than their peers in the private rental market (Aaronson, 2000; Boyle, 2002; Haurin, Parcel, and Haurin, 2002), but these findings were called into question by studies employing more rigorous methods for handling selection effects (Barker and Miller, 2009; Holupka and Newman, 2012). Less empirical work has attended to associations between housing cost burden and children's development, but Harkness, Newman, and Holupka (2009) found that geographic differences in housing prices are not consistently associated with child and adolescent functioning (Harkness and Newman, 2005; Harkness, Newman, and Holupka, 2009; see also Kull and Coley, unpublished). Finally, neighborhood disorder, which might limit children's access to supportive services and relationships and inhibit their sense of safety and security, is similarly associated with children's poor cognitive and behavioral functioning in both experimental and nonexperimental studies (Leventhal, Dupéré, and Shuey, forthcoming; McWayne et al., 2007; Vaden-Kiernan et al., 2010).

Limitations of Prior Research

Although research has highlighted linkages between children's functioning and housing quality, stability, ownership, and cost and neighborhood disorder (Leventhal, Dupéré, and Shuey, forthcoming; Leventhal and Newman, 2010), scant attention has been paid to how interrelations among multiple housing and neighborhood characteristics might affect child development. A handful of studies have argued for mediational models, for example finding that higher housing costs might buy better housing and neighborhood quality, thereby supporting healthy child development (Kull and Coley, unpublished; see also Aaronson, 2000; Barker and Miller, 2009; Plybon and Kliwer, 2001). Others assess the relative independent contributions of multiple housing or neighborhood characteristics. Coley et al. (2013) took such an approach, examining the unique associations among housing quality, type (homeownership and assistance), affordability, and stability with low-income children's development, finding that substandard housing quality was the most salient predictor of children's poor emotional and behavioral functioning.

In this article, we argue that the combined effects of housing and neighborhood characteristics on children's development might be obscured when features are presumed to function in an independent and unrelated fashion. Just as aspects of families' housing and neighborhood characteristics are likely integrally related, such relationships might have unique import for children's development. Employing data and analytic techniques that allow for a comprehensive assessment of patterns and interrelations among the many individual characteristics of housing and neighborhood contexts is necessary to delineate distinct and replicable profiles of contexts and, in turn, to test the predictive validity of such profiles to children's development.

In addition to the extant research's limited attention to interrelations among various characteristics of housing and neighborhood contexts, several other methodological limitations inhibit confidence in its results on housing and children's development. Those limitations include (1) the use of small, nonrepresentative samples, limiting generalizability; (2) the prevalence of nonexperimental and cross-sectional research designs, raising concerns about causation, directionality, and endogeneity bias; and (3) the limited use of covariates and measurement techniques to help adjust for potential endogeneity biases (see Leventhal, Dupéré, and Shuey, forthcoming; Leventhal and Newman, 2010, for reviews). Indeed, several individual and family characteristics might underlie both housing and

neighborhood choice and children's outcomes, including a complex array of personal preferences and resources, cultural norms, and housing needs and broader economic and policy contexts (Dohmen, 2005; Flippen, 2001; Kull, Coley, and Lynch, unpublished; Murray, 1997; Santiago et al., 2010; Schacter, 2001; Sharkey, 2012). In turn, measured associations between housing and neighborhood contexts and children's functioning might not be causal links, but rather driven by these other factors (often termed *selection bias* or *endogeneity bias*). In addition to random-assignment experiments, a range of quasi-experimental designs and rigorous analytic techniques have been employed to help adjust for endogeneity bias and move closer to identifying causal relationships (for example, Barker and Miller, 2009; Coley et al., 2013; Holupka and Newman, 2012). This literature highlights the importance of identifying and addressing correlates of housing and neighborhood contexts and potential sources of bias.

Present Study: Identifying Profiles of Housing and Neighborhood Contexts and Delineating Associations With Children's Development

To address the limitations noted and to enhance our understanding of housing and neighborhood contexts and child development, we address two primary research questions. First, we ask whether distinct, replicable profiles of housing and neighborhood contexts exist among low-income urban families. To address this question, we used a person-oriented analytic approach (latent class analysis) to assess interrelationships and patterns among multiple aspects of housing units (problems and homeownership), housing experiences (cost and residential instability), and neighborhood contexts (disorder) and to identify distinct profiles of housing and neighborhood contexts. Second, we ask whether the identified profiles of housing and neighborhood contexts were associated with low-income children's development in central domains of well-being, including reading and math skills, emotional problems, and behavioral problems. We addressed this question by using individual fixed-effects regression models, an analytic technique that adjusts for unmeasured, time-invariant sources of bias. Using a randomly drawn and representative sample of low-income families in high-poverty neighborhoods in three cities, this article overcomes limitations in previous housing research which generally has examined one or two aspects of housing in isolation, failing to consider the complexity and interrelatedness of housing and neighborhood characteristics that constitute families' housing and neighborhood profiles.

Method

In the following paragraphs we describe the procedures used to procure the sample of families assessed in this study, describe how we measured the primary constructs of interest, and delineate the analytic techniques employed to analyze the data.

Participants

Our analyses draw on data from the main survey component of the Three-City Study, a longitudinal, multimethod study of the well-being of low-income families with children in the wake of welfare reform (for a detailed description of the research design, see Winston et al., 1999). The Three-City Study began in 1999, when a stratified random sampling frame was used to select a

sample of approximately 2,400 households residing in moderate-poverty (more than 20 percent of families in poverty) and high-poverty (more than 40 percent of families in poverty) neighborhoods in Boston, Chicago, and San Antonio. Eligible families included a child age 0 to 4 or 10 to 14 years old (designated as the “focal child”) residing with a female caregiver and had a family income of less than 200 percent of the federal poverty line. More than 90 percent of caregivers in the study were biological mothers; others were grandmothers or other caregivers. We refer to all caregivers as “mothers.” The first wave screened 40,000 households to assess whether they met eligibility requirements, with a 90-percent response rate; of families deemed eligible, 83 percent completed interviews, leading to an overall response rate of 74 percent. Focal children and mothers were reinterviewed in 2000 to 2001 (88 percent retention) and again in 2005 (80 percent retention of wave 1 respondents). During each wave, mothers participated in 2-hour, in-home interviews, and children participated in assessments. Interviews were completed in English or Spanish with ACASI (Audio Computer Assisted Survey Interviewing) used to improve the validity of reporting on sensitive topics. Probability weights, adjusting for the sampling framework and differential nonresponse, were incorporated in all analyses, making the sample representative of low-income families in low-income neighborhoods in the three cities. The analytic sample included all participating families with valid wave 1 weights (N = 2,393).

Measures

Housing and Neighborhood Characteristics

Housing and neighborhood characteristics were reported by mothers and through observational reports by interviewers at each wave. Housing problems were assessed using mother reports and interviewers' observations. Mothers reported on eight items covering structural, maintenance, and environmental deficiencies, including leaking roofs, broken windows, rodents, heater or stove not working, peeling paint, or exposed wiring. An additional four items drawn from the Home Observation for Measurement of the Environment (HOME) Inventory (Bradley and Caldwell, 1979)—addressing internal and external structural deficiencies, lack of light, and cleanliness—were assessed by interviewers' observational ratings. Items were coded to reflect the presence or absence of each housing problem indicator and were summed into a count variable of housing problems.

Because of the interconnection between individual housing units and the neighborhoods encapsulating them, we also considered neighborhood disorder. Mothers reported on seven neighborhood problems, such as abandoned houses, burglaries and thefts, and unsafe streets (1 = *not a problem*, 2 = *somewhat of a problem*, 3 = *a big problem*) drawn from Elliott et al. (1996). Items were averaged to create a total score of neighborhood disorder ($\alpha_{1-3} = 0.86$ to 0.88). Residential instability was evaluated by mothers' reports on whether the family had moved in the past year. Housing cost was delineated by a proportion of total housing costs, including utilities, divided by total household income, both reported by mothers, with costs capped at 100 percent of income. Mothers also reported whether their home was owned or rented.

Child-Functioning Measures

At each wave of the survey, core areas of child development were assessed using well-validated measures for all children ages 2 and older. Trained field interviewers directly evaluated children's

cognitive skills by administering the Woodcock-Johnson Psycho-Educational Battery Revised Letter-Word Identification and Applied Problems subtests (Woodcock and Mather, 1989; Woodcock and Muñoz-Sandoval, 1996). Standard scores were used in analyses, representing children's reading and math skills, respectively. Mothers reported on emotional and behavioral problems of all children ages 2 and older using the Child Behavior Checklist (CBCL; Achenbach, 1992, 1991; Achenbach and Rescorla, 2001). The CBCL internalizing scale ($\alpha_{1-3} = 0.83$ to 0.95) focused on emotional problems including anxiety, depression, withdrawal, and somatic complaints, whereas the externalizing scale ($\alpha_{1-3} = 0.90$ to 0.95) assessed behavioral problems such as aggression and rule-breaking behaviors. Standard scores (t-scores) were used as continuous measures of emotional and behavioral problems.

Individual, Family, and Community Covariates

Mothers also reported on a variety of individual and family characteristics. Maternal age was reported in years, and an indicator distinguished biological mothers from other caregivers. Maternal race or ethnicity was designated as African American, Hispanic, or White or other. An immigrant indicator variable signified whether the mother was born outside of the United States. Socioeconomic variables included mothers' education level, assessed with a continuous measure (1 = *less than high school* to 9 = *professional degree*), an indicator of whether mothers were engaged in paid employment, and an indicator of Temporary Assistance for Needy Families (TANF) receipt. Total household income in relation to the poverty line indicated each family's income-to-needs ratio. Maternal marital status was designated as married, cohabiting, or single, and a count variable delineated the total number of residents in the household. Mothers also reported child gender and child age in months. Finally, each family's city of residence was designated as a proxy for differences in housing policies, availability, and cost at the city level. Exhibit 1 presents an overview of all study variables and measures.

Analytic Techniques

Within the analytic sample, a moderate level of data were missing, ranging from 3.2 to 28.5 percent on the housing and neighborhood characteristics, from 18.5 to 28.3 percent on child outcomes, and from 0.8 to 28.7 percent on individual, family, and contextual variables. Missing data were imputed using a bootstrap-based Expectation Maximization Bayesian algorithm (Honaker and King, 2010) in R to create 10 complete datasets. All analyses incorporated probability weights that adjusted for the sampling framework and differential response, enabling us to make inferences to our population of interest: low-income mothers and children living in low-income neighborhoods in Boston, Chicago, and San Antonio.

The first goal of this research was to assess interrelations among housing cost, housing problems, neighborhood disorder, residential instability, and homeownership to identify housing and neighborhood profiles within this representative sample of low-income urban families. We conducted latent class analysis, a person-based analytic technique that seeks to identify unobserved subgroups of cases that show similar patterns across a set of variables based on a probability model (Wang and Wang, 2012), to assess patterns in housing and neighborhood characteristics at each wave. We used the Bayes Information Criterion (BIC) and the Lo-Mendell-Rubin likelihood ratio test (Lo, Mendell, and Rubin, 2001) to identify the optimal number of classes. We performed latent class

Exhibit 1

Study Variables and Measurement

Study Variables	Measures
Housing and neighborhood	
Housing cost	Index of housing costs, including rent or mortgage and utilities, to total household income.
Housing problems	Index of 12 items: 8 mother-reported items on structural, maintenance, and environmental deficiencies; 4 interviewer-reported items drawn from HOME inventory (Bradley and Caldwell, 1979) on internal and external structural deficiencies and lack of light.
Neighborhood disorder	Seven mother-reported items on neighborhood problems such as abandoned houses, burglaries and thefts, and unsafe streets (Elliot et al., 1996).
Residential instability	Dichotomous variable of whether family moved in past year.
Homeownership	Dichotomous variable of whether home is owned or rented.
Child functioning	
Math skills	Directly assessed using Applied Problems subtest from the WJ-R (Woodcock and Johnson, 1989).
Reading skills	Directly assessed using Letter Word subtest from the WJ-R (Woodcock and Johnson, 1989).
Emotional problems	Mother-reported internalizing subscale from CBCL (Achenbach, 1992, 1991; Achenbach and Rescorla, 2001) of anxiety and depressive symptoms.
Behavioral problems	Mother-reported externalizing subscale from CBCL (Achenbach, 1992, 1991; Achenbach and Rescorla, 2001) of aggressive behaviors and rule-breaking.
Covariates	
Biological mother	Dichotomous variable of whether respondent is biological mother.
Maternal race or ethnicity	Categorical variable of White or Other, African American, or Hispanic.
Immigrant status	Dichotomous variable of whether respondent was born outside the United States.
Maternal education level	Continuous variable of educational attainment.
Maternal employment	Dichotomous variable of whether respondent is engaged in paid employment.
TANF receipt	Dichotomous variable of whether respondent is receiving TANF.
Income-to-needs ratio	Continuous variable of family income-to-needs ratio, based on household size, family income, and poverty thresholds.
Maternal marital status	Categorical variable of married, cohabiting, or single.
Household size	Continuous variable of number of people living in household.
Child age	Continuous variable coded in months.
Child gender	Dichotomous variable of male or female.
City	Categorical variable of residence in Boston, Chicago, or San Antonio.

CBCL = Child Behavior Checklist. HOME = Home Observation for Measurement of the Environment. TANF = Temporary Assistance for Needy Families. WJ-R = Woodcock-Johnson Psycho-Educational Battery-Revised.

analysis in *Mplus* software (Muthén and Muthén, 1998–2010) on 1 imputed dataset, randomly selected from the 10 imputed datasets, to produce results for the Lo-Mendell-Rubin test, which cannot be conducted when using multiply imputed data. Models fit two through seven classes and used random sets of starting values for initial-stage (N = 1,000) and for final-stage (N = 250) optimizations to avoid convergence on the local maxima (Wang and Wang, 2012).

After conducting the latent class analysis, we conducted descriptive analyses to assess differences in individual, family, and neighborhood characteristics across the identified housing and neighborhood classes (which we term “profiles”) using no-constant ordinary least squares regression models with post estimation comparisons. These analyses employed data from all three waves of the survey and included a Huber-White adjustment to standard errors for the inclusion of multiple data points from each individual.

A third set of analyses used individual fixed-effects regression models to assess associations between classes of housing and neighborhood characteristics and children’s socioemotional and cognitive functioning across the three waves of the panel. Fixed-effects models present a conservative modeling approach, capitalizing on change over time in the variable of interest (housing and neighborhood profiles) and controlling for omitted variable bias derived from all factors that have a time-invariant association with children’s functioning (Duncan, Magnuson, and Ludwig, 2004; Johnson, 2005). Thus, these models also control for factors that we measured, such as maternal race or ethnicity and city, that were stable over time and hence cannot be included in a fixed-effects model. Models also adjusted for key measured, time-varying child and family characteristics that are associated with housing selection and child functioning in previous research, including child age, biological mother status, maternal education level, maternal employment, TANF receipt, maternal marital status, and household size.¹ Initial model estimations also assessed random-effects regression models² to test the assumption that unobserved individual differences are random and uncorrelated with the primary variables of interest in the model. Results from Hausman tests of systematic differences between the coefficients from the random- and fixed-effects models found significant differences across all the models (results not shown), suggesting that the random-effects models were inconsistent. Hence, we present the more conservative fixed-effects regressions testing the association between housing profiles and children’s math skills, reading skills, emotional problems, and behavioral problems.

Results

In the following section we first describe results from the latent class analysis, detailing the four profiles that emerged and how they vary on housing and neighborhood characteristics. We then describe how the profiles vary on child and family characteristics and child functioning measures. In the final section we provide an overview of the fixed effects model results.

Latent Classes of Housing and Neighborhood Characteristics

Results of the latent class analysis identified a four-class solution that showed a low BIC value and a significant Lo-Mendell-Rubin statistic ($p = .02$), suggesting that the four-class solution fit best at wave 1. In waves 2 and 3, the four-class solution was replicated, with the resulting classes in waves 2 and 3 sharing the same descriptive profiles as those in wave 1, supporting the replicability and validity of our latent class solution.

¹ We did not include family income as a covariate because it was part of the housing cost measure.

² The random-effects models included additional time-invariant covariates, including child gender, maternal race or ethnicity, immigrant status, and city.

Exhibit 2 presents descriptive data on the four housing profiles, with data first pooled across all waves and then separated by wave to show the consistency in patterns. Although housing assistance was not included in the latent class analyses or the multivariate models—both because latent class analyses cannot handle categorical variables and because of reliability concerns about individual reports of housing subsidies—we consider assisted versus private rentals in these descriptive analyses.

Exhibit 2

Housing and Neighborhood Characteristics for Full Sample and Across Profiles

Housing and Neighborhood Characteristics	Full Sample		Profile 1 (6.43%)		Profile 2 (9.99%)		Profile 3 (25.82%)		Profile 4 (57.77%)	
	M/%	(SD)	M/%	(SD)	M/%	(SD)	M/%	(SD)	M/%	(SD)
Stacked waves										
Housing cost	0.36	(0.27)	0.80 ^{abc}	(0.22)	0.85 ^{ade}	(0.19)	0.27 ^{bd}	(0.18)	0.28 ^{ce}	(0.17)
Housing problems	1.74	(1.43)	2.89 ^{ab}	(1.09)	1.00 ^{acd}	(1.14)	2.98 ^{ce}	(1.17)	1.19 ^{bde}	(1.16)
Neighborhood disorder	1.75	(0.60)	2.08 ^{ab}	(0.58)	1.51 ^{acd}	(0.51)	2.14 ^{ce}	(0.54)	1.58 ^{bde}	(0.54)
Residential instability	23%		23%		21%		19% ^a		25% ^a	
Home owned	24%		28% ^{ab}		39% ^{acd}		17% ^{bce}		23% ^{de}	
Home rented	76%		72% ^{ab}		61% ^{acd}		83% ^{bce}		77% ^{de}	
Assisted	48%		32% ^{ab}		24% ^{cd}		58% ^{ac}		50% ^{bd}	
Private	28%		40% ^{ab}		37% ^{cd}		26% ^{ac}		26% ^{bd}	
Wave 1										
Housing cost	0.37	(0.29)	0.84 ^{abc}	(0.17)	0.91 ^{ade}	(0.14)	0.22 ^{bdf}	(0.15)	0.27 ^{cef}	(0.16)
Housing problems	1.58	(1.44)	3.08 ^{abc}	(0.72)	0.50 ^{ade}	(0.62)	3.67 ^{bdf}	(0.50)	0.83 ^{cef}	(0.77)
Neighborhood disorder	1.81	(0.60)	1.96 ^{ab}	(0.63)	1.59 ^{acd}	(0.58)	2.09 ^{ce}	(0.55)	1.73 ^{bde}	(0.59)
Residential instability	24%		23%		17% ^a		19% ^b		27% ^{ab}	
Home owned	20%		23%		34% ^{ab}		16% ^a		18% ^b	
Home rented	80%		77%		66% ^{ab}		84% ^a		82% ^b	
Assisted	51%		32% ^{ab}		27% ^{cd}		59% ^{ac}		54% ^{bd}	
Private	30%		46% ^{ab}		39% ^c		24% ^{ac}		28% ^b	
Wave 2										
Housing cost	0.34	(0.26)	0.80 ^{ab}	(0.26)	0.79 ^{cd}	(0.20)	0.26 ^{ac}	(0.18)	0.25 ^{bd}	(0.15)
Housing problems	1.53	(1.44)	3.16 ^{ab}	(1.00)	0.75 ^{ac}	(0.91)	3.16 ^{cd}	(0.97)	0.82 ^{bd}	(0.93)
Neighborhood disorder	1.75	(0.61)	2.03 ^{ab}	(0.60)	1.57 ^{ab}	(0.54)	2.04 ^{bc}	(0.61)	1.63 ^{bc}	(0.56)
Residential instability	23%		20%		27% ^a		14% ^{ab}		27% ^b	
Home owned	22%		30% ^a		45% ^{bc}		12% ^{abd}		23% ^{cd}	
Home rented	78%		70% ^a		55% ^{bc}		88% ^{abd}		77% ^{cd}	
Assisted	48%		33% ^{ab}		19% ^{cd}		58% ^{acd}		50% ^b	
Private	29%		37%		36%		31%		27%	
Wave 3										
Housing cost	0.40	(0.27)	0.76 ^{abc}	(0.22)	0.84 ^{ade}	(0.22)	0.31 ^{bd}	(0.19)	0.33 ^{ce}	(0.19)
Housing problems	2.12	(1.34)	2.47	(1.34)	1.87 ^a	(1.32)	2.34 ^{ab}	(1.32)	2.01 ^b	(1.32)
Neighborhood disorder	1.70	(0.59)	2.26 ^{ab}	(0.46)	1.34 ^{ac}	(0.34)	2.26 ^{cd}	(0.46)	1.37 ^{bd}	(0.38)
Residential instability	22%		24%		20%		24%		22%	
Home owned	29%		32%		40% ^a		22% ^a		30%	
Home rented	71%		68%		60% ^a		78% ^a		70%	
Assisted	46%		32% ^{ab}		25% ^{cd}		56% ^{ace}		46% ^{bde}	
Private	25%		36%		35%		22%		24%	

M/% = mean or percent. SD = standard deviation.

Note: Within each row, matched superscript letters are significantly different from one another at $p < .05$.

Before turning to the housing and neighborhood profiles, we bring attention to the characteristics of the sample as a whole, presented in the first column. Within this high-poverty urban sample, we find the average housing cost in the unaffordable range, with families paying 36 percent of their total incomes toward housing. Housing problems were moderately high, with families averaging fewer than two major structural, safety, or maintenance deficiencies. Mothers reported neighborhood disorder averaging between “not” and “somewhat of” a problem. In relation to residential instability, nearly one-fourth of families moved in the year before the interview. Finally, about one-fourth of families lived in owned homes and three-fourths lived in rented homes, including nearly one-half of the total sample in government-assisted rental units.

The remaining columns of exhibit 2 present the housing and neighborhood characteristics across the four identified profiles. Within each row, matched superscripts indicate statistically significant differences between profiles. Profile 1, the smallest group, had high housing cost (higher than Profiles 3 and 4), housing problems, and neighborhood disorder (higher than Profiles 2 and 4). Residential instability was moderate, as was the prevalence of homeownership, although Profile 1 had a higher rate of private rentals and lower rate of government-assisted housing than Profiles 3 and 4. In short, the distinguishing features of Profile 1 were high cost, poor quality, and private rentals. Profile 2, also a small group, similarly had high housing cost (higher than all other profiles, at 85 percent of household income). By contrast to Profile 1, however, Profile 2 had low housing problems and neighborhood disorder (the lowest of any profile). Residential instability was moderate, but Profile 2 was distinguished by the highest rate of homeownership, high private rentals, and the lowest rate of government-assisted housing. In summary, Profile 2 was characterized by high cost, high quality, and homeownership or private rentals.

Profile 3 showed many extremes, with the lowest housing cost, highest housing problems and neighborhood disorder, lowest residential instability, lowest homeownership rates, and highest assisted-housing rates. By contrast, Profile 4—by far the largest group—had low housing cost (lower than Profiles 1 and 2), housing problems, and neighborhood disorder (better than Profiles 1 and 3). Profile 4 also exhibited the highest residential instability of all the profiles, moderate levels of homeownership and private rentals, and relatively high levels of government-assisted housing. In short, Profiles 3 and 4 shared low cost and high assisted housing, but Profile 3 had very high housing and neighborhood problems and low residential instability, whereas Profile 4 had low housing and neighborhood problems but higher residential instability. Exhibit 2 shows that the characteristics of the four profiles were very consistent across the three waves, indicating the validity of the latent class structure.

Stability in Profile Membership

Although characteristics of the profiles were consistent across the three waves, crosstabulations found that profile membership was much less consistent. From the wave 1 profile groupings, 46 percent of respondents moved into a different housing and neighborhood profile by wave 2 (about 1 1/2 years later). From wave 2 to wave 3 (a 4 1/2-year period), 52 percent of respondents similarly switched profiles. This variability highlights the instability in low-income families' housing. It also is important for supporting the feasibility of individual fixed-effects modeling, which requires individual variation.

Demographic and Community Characteristics Across Profiles

Exhibit 3 presents bivariate associations between the four housing and neighborhood profiles and maternal, family, child, and community characteristics to provide a descriptive view of the families across the profiles. Significant differences in characteristics across the profiles are indicated by shared superscripts in each row. Profile 1, with high housing cost, poor housing and neighborhood quality, and high prevalence of private rentals, was distinguished by high proportions of nonbiological mothers, Whites, and African Americans, and relatively low proportions of Hispanics and immigrants. Profile 1 also showed low human and financial capital, with low maternal education levels and employment rates and the lowest income of any profile. This group further reported the lowest rate of maternal marriage and the largest household size. Profile 1 was particularly prevalent in Chicago.

Exhibit 3

Demographic Characteristics for Full Sample and by Housing and Neighborhood Profile

Demographic Characteristics	Full Sample (100.00%)		Profile 1 (6.43%)		Profile 2 (9.99%)		Profile 3 (25.82%)		Profile 4 (57.77%)	
	M/%	(SD)	M/%	(SD)	M/%	(SD)	M/%	(SD)	M/%	(SD)
Maternal and family characteristics										
Biological mother	90%		85% ^a		85% ^b		91%		92% ^{ab}	
White	6%		8% ^a		9% ^b		4% ^{ab}		6%	
African American	41%		52% ^{ab}		38% ^{ac}		50% ^{cd}		36% ^{bd}	
Hispanic	53%		40% ^{ab}		53% ^a		46% ^c		58% ^{bc}	
Immigrant status	21%		18% ^a		27% ^{ab}		17% ^{bc}		23% ^c	
Maternal education level	3.83	(2.13)	3.62 ^{ab}	(2.06)	4.08 ^{ab}	(2.27)	3.71 ^b	(2.07)	3.86	(2.14)
Maternal employment	51%		34% ^{ab}		36% ^{cd}		52% ^{ac}		54% ^{bd}	
TANF receipt	23%		20% ^{ab}		11% ^{acd}		28% ^{bc}		24% ^d	
Income-to-needs ratio	1.03	(0.68)	0.54 ^{ab}	(0.45)	0.57 ^{cd}	(0.54)	1.04 ^{ace}	(0.61)	1.17 ^{bde}	(0.69)
Mother single	58%		66% ^{ab}		51% ^{ac}		62% ^c		57% ^b	
Mother cohabiting	9%		11%		6% ^{ab}		12% ^a		9% ^b	
Mother married	32%		24% ^{ab}		43% ^{acd}		26% ^{ce}		34% ^{bde}	
Household size	4.78	(1.78)	5.14 ^a	(2.05)	4.71	(1.65)	4.93 ^b	(1.91)	4.69 ^{ab}	(1.70)
Child characteristics										
Child age (months)	120	(68.63)	122	(60.05)	117 ^a	(63.35)	131.30 ^{ab}	(70.04)	114.80 ^b	(68.20)
Male child	49%		47%		53%		49%		48%	
Community characteristics										
Boston	33%		30%		34%		30% ^a		35% ^a	
Chicago	33%		48% ^a		39% ^b		41% ^c		27% ^{abc}	
San Antonio	33%		22% ^a		27% ^b		29% ^c		38% ^{abc}	
Child outcomes										
Math skills	462	(74.31)	473	(58.02)	472	(56.18)	476.20 ^a	(52.34)	469 ^a	(58.57)
Reading skills	472	(56.80)	467	(73.35)	464	(72.81)	467.70 ^a	(69.77)	459 ^a	(76.48)
Emotional problems	50.9	(10.91)	52.6 ^{ab}	(10.46)	49.1 ^{ac}	(10.31)	52.90 ^{cd}	(11.12)	50.1 ^{bd}	(10.82)
Behavioral problems	51.6	(10.67)	52.8 ^{ab}	(10.64)	49.1 ^{acd}	(9.95)	54.60 ^{ce}	(10.78)	50.6 ^{bde}	(10.44)

M/% = mean or percent. SD = standard deviation. TANF = Temporary Assistance for Needy Families.

Note: In each row, matched superscript letters are significantly different from one another at $p < .05$.

Profile 2, which also had very high housing cost but had high housing and neighborhood quality and homeownership, showed a mixed picture in terms of maternal and family characteristics. This group was relatively likely to contain nonbiological mothers who were White or Hispanic and were immigrants as primary caregivers. They had the highest levels of education and marriage and the lowest rate of TANF receipt, but they also had low maternal employment and very low incomes. Profile 3, which shared poor housing and neighborhood quality with Profile 1 but had lower residential instability, more assisted housing, and lower housing cost, was distinguished by a high prevalence of African Americans and few immigrants. Mothers had low education levels but high rates of both employment and TANF receipt and moderate income. Marriage rates were low and family size relatively high.

Profile 4, which had high housing and neighborhood quality and low housing cost but high residential instability and prevalence of government-assisted housing, stood out with regard to several characteristics. This profile had the highest prevalence of biological mothers and Hispanics and the lowest prevalence of African Americans. The maternal employment rate was the highest of any profile, whereas education levels, TANF receipt, and marriage rates were all about average. Profile 4 also had the smallest household size and the highest income-to-needs ratio. This group was most likely to reside in San Antonio and least likely to be in Chicago.

These numerous, significant differences across housing and neighborhood profiles highlight that families are not randomly assigned to these contexts. Personal and family characteristics are likely to influence housing preferences, opportunities, and constraints; they also might affect maintenance or financial behaviors that influence housing quality and costs. At the same time, housing and neighborhood contexts might influence personal and family characteristics, affecting parental access to jobs and other resources and influencing both family and child functioning. In the next set of analyses, we sought to adjust for these selection processes in modeling associations between housing and neighborhood profiles and child functioning.

Housing and Neighborhood Profiles and Child Functioning

Exhibit 4 presents results from individual fixed-effects models predicting the four measures of child functioning (math skills, reading skills, emotional problems, and behavioral problems), controlling for time-varying characteristics of children, mothers, and families. Profile 4 was the omitted group, and hence the coefficients for the other profile groups in exhibit 4 indicate the effects of being in each group in comparison to being in Profile 4. Significant differences between other profiles (derived through post hoc testing) are shown using matching superscripts. A few significant differences among housing and neighborhood profiles emerged in relation to children's cognitive skills. One pattern indicated that children in Profile 2 outperformed their peers in Profile 3 in reading skills (as shown by matching superscripts), a difference of 0.14 standard deviations (SDs). Children in Profile 2 also had marginally higher reading skills than peers in Profile 4 (0.10 SDs). In terms of emotional and behavioral problems, this pattern strengthened. Children in Profile 2 had significantly lower emotional problems than those in Profiles 3 and 4, differences of 0.28 SDs and 0.19 SDs, respectively, and marginally lower emotional problems than children in Profile 1, a similarly sized difference of 0.23 SDs. Likewise, children in Profile 2 had lower behavioral problems than peers in Profiles 3 (0.33 SDs) or 4 (0.19 SDs). Children in Profile 4 were lower than those in Profile 3 in terms of behavioral problems, a difference of 0.14 SDs.

Exhibit 4

Individual Fixed-Effects Regression Analyses Predicting Child Outcomes

Variables	Math Skills		Reading Skills		Emotional Problems		Behavioral Problems	
	Coef	(SE)	Coef	(SE)	Coef	(SE)	Coef	(SE)
Profile 1	0.71	(3.46)	3.43	(4.08)	0.38 ^{a*}	(1.07)	-0.17	(1.08)
Profile 2	3.43	(2.93)	5.87 ^{†a}	(3.57)	-2.10 ^{†a+b}	(0.98)	-2.00 ^{†c}	(0.80)
Profile 3	0.00	(2.17)	-1.93 ^a	(2.53)	0.91 ^b	(0.61)	1.48 ^{†c}	(0.58)
Covariates								
Child age	0.72 ^{**}	(0.03)	0.95 ^{**}	(0.03)	0.01	(0.01)	0.02 ^{**}	(0.01)
Biological mother	4.17	(6.24)	4.06	(8.24)	-0.51	(2.02)	0.98	(1.77)
Education level	0.30	(0.76)	1.03	(0.90)	0.23	(0.20)	0.17	(0.22)
Employment	3.86	(2.46)	3.03	(2.73)	-0.39	(0.72)	-0.67	(0.66)
Mother cohabiting	2.21	(3.35)	1.65	(3.85)	-0.86	(1.11)	-0.79	(0.99)
Mother married	2.78	(3.04)	0.63	(4.02)	-0.49	(0.91)	-0.52	(0.87)
Household size	2.37 ^{**}	(0.84)	3.22 ^{**}	(0.95)	0.13	(0.22)	0.51 [*]	(0.21)
TANF receipt	-1.74	(2.77)	-1.07	(3.21)	-0.41	(0.75)	-1.71 [*]	(0.68)
Constant	359.74 ^{**}	(8.99)	315.33 ^{**}	(10.98)	49.32 ^{**}	(2.27)	46.11 ^{**}	(2.25)

Coef = coefficient. SE = standard error. TANF = Temporary Assistance for Needy Families.

^{**} $p < .01$. ^{*} $p < .05$. [†] $p < .10$.

Notes: In each column, matched superscript letters are significantly different from one another at $p < .05$, with superscript + representing differences at $p < .10$. Profile 4 is the excluded comparison group.

Discussion

The goals of this study were (1) to illuminate comprehensive profiles of low-income urban families' housing and neighborhood characteristics (housing cost, housing problems, neighborhood disorder, residential instability, and homeownership) to delineate the broader "housing bundle" experienced by economically disadvantaged urban families, and, in turn, (2) to assess whether housing and neighborhood profiles were associated with children's core cognitive, emotional, and behavioral skills essential for future life success. Results from this work suggest the validity of four distinct profiles of low-income urban families' housing and neighborhood contexts, which were replicated across multiple waves of data, showed clear patterns with parental and family characteristics, and were predictive of children's development. Before discussing the intricacies of the housing and neighborhood profiles, we highlight the overarching finding that low-income families did not cluster simply into "good" or "bad" housing and neighborhood profiles, but rather that each profile shared more and less desirable characteristics. Moreover, one profile (Profile 2) consistently predicted children's enhanced cognitive and socioemotional functioning. Illustrating the complexity of low-income families' housing, this profile showed low housing problems and neighborhood disorder and high rates of homeownership and private rentals, but it also showed extremely high housing cost.

Multifaceted Profiles of Housing and Neighborhood Characteristics

Our results revealed four distinct profiles of housing and neighborhood characteristics that were replicated across the three waves of data, with distinguishing features of (1) high cost, poor quality, and private rentals; (2) high cost, high quality, and homeownership or private rentals; (3) low cost,

low quality, assisted housing, and low instability; (4) low cost, high quality, assisted housing, and high instability. Although all the housing and neighborhood factors considered contributed to the four profiles, the most distinguishing features in these profiles were housing problems, neighborhood disorder, and housing cost; two groups had high housing problems and neighborhood disorder, and two were low in both; similarly, two groups had very high housing cost (averaging 80 percent or more of family incomes), whereas the other two groups had average costs in the affordable range (less than 30 percent of family income). Considering only these characteristics made the housing and neighborhood profiles appear to be a rather simple two-by-two matrix, albeit with some perhaps surprising patterns. That is, housing cost was not associated with housing problems and neighborhood disorder in a simple linear fashion; one of the groups with high cost (Profile 2) had the lowest housing problems and neighborhood disorder, whereas the other group with high cost (Profile 1) had high housing problems and neighborhood disorder. The same distinction emerged between the two groups with affordable housing cost (Profiles 3 and 4). These results contradict previous research suggesting that higher housing costs buy better housing and neighborhood quality for low-income families (Kull and Coley, unpublished), suggesting that patterns are more complex when concurrently accounting for other aspects of housing.

An even more complex picture of the housing and neighborhood profiles emerges when considering residential instability and homeownership (and receipt of assistance), which provides a second important lesson from this research: homeownership does not necessarily engender lower residential instability. Although the profiles with higher housing costs had higher homeownership and lower receipt of government assistance than the profiles with low costs, differences emerged within pairs as well. When compared with Profile 2, Profile 1 had significantly fewer homeowners and more renters, but a similar level of residential instability. On the other hand, Profiles 3 and 4 had a high prevalence of assisted housing, but Profile 4 had higher homeownership and residential instability than Profile 3. Indeed, the most residentially stable group (Profile 3) also enjoyed low costs but the highest housing problems and neighborhood disorder, lowest homeownership, and highest government assistance. These results suggest that in this low-income, urban sample, homeownership did not provide greater residential stability than renting. In short, the profiles identified in this work indicate consistent patterns in the manner in which families' housing cost, housing problems, neighborhood disorder, residential instability, and homeownership status bundle together. None of the profiles could be characterized as showing either desired or undesired patterns across all five housing and neighborhood characteristics, a finding consistent with previous research indicating that low-income families with limited economic and social resources face complex tradeoffs among various aspects of their housing and neighborhood contexts (Coulton, Theodos, and Turner, 2012; Crowley, 2003; Edin and Lein, 1997).

Although not a primary focus of this article, our descriptive analyses of demographic and community characteristics that distinguish each profile suggest endogeneity between families and their housing and neighborhood contexts. Future research should attend to potential directionality and causality in these associations, seeking to determine to what extent more well-functioning and resourced families are selecting into, or able to maintain, higher quality and more stable housing in relatively safe neighborhoods and, similarly, the extent to which higher quality and more stable housing in relatively safe neighborhoods helps promote the resources and stability of low-income

families (see Sharkey, 2012, for an example). These factors are all related to children's health and well-being as well, so sorting out issues of causality is key for informing policy and practice.

In general, we found connections between profiles with lower quality housing and neighborhood contexts and greater social and economic disadvantage, but we acknowledge the substantial variability in families' profile membership over time. Approximately one-half of families in the sample shifted profile membership between each wave of interviews. Some of this variability was undoubtedly driven by residential mobility; at each wave, nearly one-fourth of the families reported having moved in the previous year. Other shifts were likely the result of changes in families' individual circumstances or in the features of their home and neighborhood. For example, increases in families' housing cost burden (which in turn might drive a shift in their profile membership) could arise from the loss of a job or of TANF payments, from the exit of a spouse or cohabiting partner with income, or from an increase in rent, mortgage, or utility payments. In short, the instability in housing and neighborhood profiles might not only affect, but also reflect, the instability in many other arenas of low-income families' lives, including frequent job transitions, relationship transitions, and income volatility. The instability in housing and neighborhood contexts points to broad opportunities for policy intervention seeking to increase the stability and regularity of children's lives.

Associations Between Housing and Neighborhood Profiles and Children's Development

A major contribution of this article is to document how profiles of housing and neighborhood contexts help to foster or inhibit children's development in core academic and psychosocial domains. In this second goal, we sought to move past previous research that assessed the effects of individual aspects of housing without direct attendance to the embedded and interactive nature of housing and neighborhood contexts. Our results indicated a clear pattern, adjusting for time-varying characteristics of families associated with different housing and neighborhood contexts and, through statistical techniques, controlling for all time-invariant differences among children and families that might influence children's functioning. We primarily found that membership in Profile 2, with the lowest housing problems and neighborhood disorder, highest homeownership, and high prevalence of private rentals but also with exceedingly high housing cost, was associated with the most advantaged child functioning, including better reading skills and fewer emotional and behavioral problems than Profiles 3 and 4. These differences were minimal, averaging about 0.25 SDs. They were notably greater than the effects of maternal employment or marriage, however, suggesting that housing and neighborhood contexts are significant factors for children's healthy development in both academic and psychosocial realms. Only one other significant difference in children's functioning emerged, with membership in Profile 3 predicting greater behavioral problems than membership in Profile 4. These groups shared low housing cost and high government assistance, but Profile 4 showed low housing problems and neighborhood disorder but high residential instability, whereas Profile 3 had high housing problems and neighborhood disorder but low residential instability.

Our results suggest that living in housing with fewer structural deficiencies and maintenance dangers, in neighborhoods with lower perceived crime, social disorder, and distrust, is associated with enhanced child functioning, especially when combined with owned or private-rental housing, even when housing consumes a major portion of family income. By contrast, when high-quality housing

and neighborhood contexts are in government-assisted housing and concomitant with residential instability, such contexts do not consistently benefit children's development, even when housing cost is notably lower. Note that families in Profile 2 shared some distinguishing characteristics, with a higher likelihood of being immigrants and White or Hispanic and a lesser likelihood of being African American than most other groups. Mothers in this profile had the highest levels of education and marriage and the lowest TANF receipt, but they also had low maternal employment and very high poverty rates. The modeling strategy incorporated in this study adjusted for the effects of these time-varying and stable factors, increasing our confidence that the housing and neighborhood profiles, rather than the economic and demographic characteristics, drove associations with child outcomes.

What might explain these patterns of results? Previous research has identified several mechanisms through which substandard housing might impinge children's healthy development: (1) by influencing physical health (that is, through lead poisoning, allergies, asthma, and other respiratory problems; Evans, 2006, 2004), which in turn affects cognitive and socioemotional functioning; (2) by imposing physiological and psychological stress, making concentration and behavioral regulation difficult (Blair, Granger, and Razza, 2005; Shonkoff and Garner, 2012); or less directly, (3) by increasing maternal stress, thereby harming children (Coley et al., 2013). Likewise, research has detailed how neighborhood crime and disorder impinge children's development by similarly creating stress for children and parents and by providing opportunities for children to engage in problem behaviors (Dupéré, Leventhal, and Vitaro, 2012; Roche and Leventhal, 2009). Understanding why homeownership and high housing costs expand the benefits of housing and neighborhood quality, whereas assisted housing and residential instability mask them, is perhaps more complicated. Recent research has been mixed on the benefits of homeownership and high housing costs, with some arguing that higher costs and homeownership help promote children's development because they encourage residential stability and greater social connections, trust, and social capital in communities (Hagan, MacMillan, and Wheaton, 1996; Pettit and McLanahan, 2003). Higher costs and homeownership also are associated with safer and higher quality housing and neighborhood contexts (Kull and Coley, unpublished) and with enhanced access to public resources, such as high-quality schools and community programs that are supportive of children's development (Harkness and Newman, 2002; Holupka and Newman, 2011). Recent rigorous studies nonetheless found limited unique associations between cost or homeownership and children's well-being (Barker and Miller, 2009; Coley et al., 2013; Harkness and Newman, 2005; Harkness, Newman, and Holupka, 2009; Holupka and Newman, 2012; Kull and Coley, unpublished). This article suggests that, rather than acting in isolation, housing cost, housing and neighborhood quality, residential stability, and homeownership might function in a synergistic manner, with constellations of these features providing the most supportive and influential context for promoting children's development.

Limitations

Before concluding, we acknowledge limitations of this work. Most of our housing measures were based solely on maternal report, and we lacked measures of other important characteristics, such as crowding. Moreover, the data focused solely on high-poverty urban neighborhoods, and as such

results might not generalize to other locales, such as smaller cities or rural areas, or to families and neighborhoods with greater economic resources. Finally, we reiterate that the results are descriptive, derived from correlational data, and hence do not necessarily reflect causal relationships.

Conclusions

Beyond these limitations, our results make an important contribution to the extant research, highlighting the importance of assessing families' holistic bundle of housing and neighborhood characteristics rather than attempting to isolate unique effects of characteristics that are inherently interrelated. They provide a much-needed complement to the qualitative literature documenting the various tradeoffs that low-income families make in their housing and neighborhood attributes (Edin and Lein, 1997). Like the qualitative work, our study documented the diversity of low-income families' housing circumstances, but within this diversity we were able to identify and replicate distinct profiles of low-income families' housing and neighborhood characteristics. Thus, our article provides new insights into the complex ways in which low-income families' housing and neighborhood characteristics are configured and the implications for their children's development.

Together, these results have implications for housing research and policy. In terms of research, they suggest that studies—like most extant research—that examine housing features in a piecemeal fashion might misrepresent the connection between certain housing features and children's development. In addition, studies that do not address factors that select families into housing and neighborhood contexts, employ methodological approaches to minimize them, or both, as in the current study, might be likely to lead to unwarranted conclusions. Future research investigating how housing and neighborhood profiles are associated with children's development should explore the mechanisms through which these associations are transmitted, such as parent well-being or neighborhood social processes. In addition, it should consider whether the links between these profiles and children's development vary by child and family characteristics, such as child age, gender, or race or ethnicity. Such information is needed to inform policy. Although additional research is clearly needed, the current study has implications for policy. Our findings suggest that housing policies and programs that do not recognize the synergistic nature of low-income families' housing and neighborhood features might fail to have the desired outcome of promoting children's health and well-being.

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