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The Unique Relations between Early Homelessness and Educational Well-Being: An Empirical Test of the Continuum of Risk Hypothesis

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Abstract

This study examined the Continuum of Risk Hypothesis by assessing the unique relations between early homelessness and educational outcomes while controlling for co-occurring risks. An integrated data system was used to account for multiple co-occurring early risk factors for an entire cohort of first grade students in a large urban school district and municipality (N = 8,267). Multilevel linear regression models indicated that the presence of some co-occurring risk factors explained the relation between homelessness and academic engagement problems in school. However, after controlling for co-occurring risks, an experience of homelessness was found to be uniquely related to social engagement problems in first grade. These results support the Continuum of Risk Hypothesis and stress the importance of early intervention for children with an experience of homelessness to foster their social development.

Keywords

homelessness; early childhood; academic achievement; classroom engagement; continuum of risk hypothesis

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1. Introduction

Homelessness among families with young children is a national problem. In 2013, approximately 23% of all people in homeless shelters were children (Henry, Cortes, & Morris, 2013). These children experiencing homelessness are disproportionately between zero and five years of age with as many as 60% of homeless children experiencing homelessness before the age of six years old (Rog, Holupka, & Patton, 2007). Research shows that more than half of children experiencing homelessness are in families whose income is less than \$8,000 per year (Rog et al., 2007). Taken together, this research indicates that a large number of young children are spending their most formative years of child development at risk for poor educational outcomes associated with poverty and experiencing homelessness.

In recognition of the potential impact that homelessness can have on the educational well-being of young children, the United States Interagency Council on Homelessness has identified homeless families with children as a top national priority for research and strategic action. Unfortunately, there are relatively few empirical investigations on the relations between homeless experiences and early educational well-being, and the findings from these studies are equivocal (Buckner, 2008; Miller, 2011).

While some of this research found that early homelessness is associated with later academic and behavioral problems, other studies found no differences between low-income children and homeless peers (Buckner, 2008; Miller, 2011). Specifically, in terms of reading and mathematics achievement, a group of studies found that homelessness in early childhood is associated with worse performance on academic tests, when comparing children with an experience of homelessness to low-income peers (Rescolora, Parker, & Stolley, 1991; Rubin et al., 1996). However, other research has challenged these findings by demonstrating no evidence of increased academic difficulties for children with an experience of homelessness (Buckner, Bassuk, & Weinreb, 2001).

These equivocal findings extend to behavioral outcomes as well. Some studies investigating the relations between homelessness and adjustment to school found no evidence of behavioral problems for children with an experience of homelessness after matching for low-income status (Masten, Miliotis, Graham-Bermann, Ramirez, & Neemann, 1993; Ziesemer, Marcoux, & Manvell, 1994). In contrast, two studies that control for low-income status found that homelessness was uniquely associated with behavioral problems in school (Fantuzzo, LeBoeuf, Brumley, & Perlman, 2013; Fantuzzo, LeBoeuf, Chen, Rouse, & Culhane, 2012). These studies indicated that students with experiences of homelessness were more likely to be rated by their teachers as having trouble with academic engagement, including problems with completing work on time and staying focused on tasks, than their housed peers (Fantuzzo et al., 2012). In addition to problems with academic engagement, research has found that experiences of homelessness were also uniquely associated with poor engagement in school (Fantuzzo et al., 2013). Specifically, these students had problems sustaining positive relationships with peers and teachers.

To address these inconsistencies in the research findings regarding the relations between homelessness and educational well-being, researchers have advanced the Continuum of Risk Hypothesis (Buckner, 2008; Cutuli, Desjardins, Herbers, Long, Heistad, Chan et al., 2012; Masten et al., 1993; Obradovic, Long, Cutuli, Chan, Hinz, Heistad, & Masten, 2009; Rafferty, Shinn, & Weitzman, 2004). This hypothesis places homelessness in the context of poverty and claims that homelessness is associated with many harmful risks that affect educational outcomes. Therefore, the variability of exposure to these co-occurring risks may explain the equivocal findings. Children who are homeless share an overlapping set of risk experiences with children who are living in poverty. These risk experiences are less prevalent among the general population and low-income children who experience relatively few risks along a continuum of risks associated with poverty. As a result, poor educational outcomes for young children with an experience of homelessness are not due to homelessness per se but to co-occurring risks associated with poverty. However to date, this hypothesis has never been empirically investigated.

Any study of the relations between homelessness and early school success should recognize poverty as a heterogeneous array of risk experiences that independently and cumulatively exert a negative influence on a child's educational trajectory (Huston and Bentley, 2010). To investigate the Continuum of Risk Hypothesis, researchers must account for the multiple risk context of poverty that homeless children may experience (Miller, 2011). Major, publicly monitored risks with documented associations to poor educational outcomes that are found to occur at higher than average rates among children with an experience of homelessness should be included in these studies.

Children experiencing homelessness are likely to face additional co-occurring socio-familial and early health risks to early educational success. Children born to teenage mothers (Coker, Meyer, Smith, & Price, 2010; David, Gelberg, & Suchman, 2012; Swick & Williams, 2010; Yordan & Yordan, 1993) and those born to mothers with lower educational attainment (Rouse & Fantuzzo, 2009; Duffield & Lovell, 2008; David, Gelberg & Suchman, 2012) are more likely to experience periods of homelessness. Children who experience homelessness are also much more likely to experience child maltreatment. Studies report that almost one-third of children with an experience of homelessness also have substantiated cases of maltreatment (Fantuzzo & Perlman 2007; Swick & Williams, 2010). Biological vulnerabilities and health threats are also disproportionately associated with early homelessness. Research studies have shown that children who experience homelessness are more likely to evidence birth risks, including inadequate prenatal care (David, Gelberg & Suchman, 2012) and preterm birth (Rouse & Fantuzzo, 2009), than their housed peers. These vulnerabilities are exacerbated by low quality housing, including exposure to high rates of lead concentration due to the lead-based paint found in poor housing conditions (Kerker et al., 2011; Rafferty and Shinn, 1991).

The purpose of the present study was to empirically test the Continuum of Risk Hypothesis. This was done by identifying the multiple-risk context for a population of young children from low-income households with homeless shelter experiences and their housed, low-income peers and by determining if there are poor academic and behavioral outcomes

uniquely associated with homelessness after accounting for the multiple-risk context of the children. Specifically, the research addressed the following questions:

1. What is the prevalence of risk factors among children with a history of emergency housing utilization prior to end of first grade compared to low-income housed peers?
2. To what extent do children with a history of emergency housing utilization prior to the end of first grade exhibit worse school readiness, including lower reading proficiency and increased social and academic classroom engagement problem behaviors, compared with their low-income, housed peers?
3. To what extent is emergency housing utilization uniquely associated with school readiness indicators by the end of first grade, controlling for risk factors experienced by the child?

To answer these questions this study involved the use of a municipal integrated data system to capture population-based data drawn from multiple public service agencies. This system allowed the researchers to examine the association between homeless shelter experiences and poor academic and behavioral outcomes for an entire population of low-income, first grade students, while indicating whether the homeless or housed low-income children also experience co-occurring risks.

2. Method

2.1 Participants

Participants in this study included all the children enrolled in first grade in a large urban public school district who were both born to mothers living in the municipality and receiving free and reduced lunch ($N = 4,594$). First grade was selected as it is the first mandatory year of schooling for children in this municipality. The gender and racial/ethnic composition of the participants were 49.1% male, 67% African American, 17.3% Hispanic/Latino, and 10.6% non-Hispanic White. The percent of participants with limited English proficiency and receiving special education were 5.8% and 8.5%, respectively. These student represented 56% of the total cohort of first grade students who were born to mothers living in the municipality ($N = 8,267$). These demographics were not significantly different from the total cohort (see Table 1 for a full breakdown of participant demographics). The participants were comprised of two contrasting groups, students receiving free and reduced lunch who had a homeless shelter experience before the end of first grade ($n = 481$) and students receiving free and reduced lunch without a homeless shelter experience ($n = 4,113$).

2.2. Measures

2.2.1. Homeless shelter experience—The Office of Supportive Housing collected Homeless Management Information System (HMIS) data from every shelter in this municipality. HMIS is a nationally standardized data system for monitoring homelessness. This system has met rigorous national guidelines for ensuring accurate and standardized reporting (U.S. Government & Culhane, 2004). These data were used to determine if any emergency shelter experiences were recorded for children before the end of first grade.

Children were identified as having had a homeless experience if the Office of Supportive Housing (OSH) and the Department of Human Services (DHS) records indicated that the child had ever been placed in a homeless shelter.

2.2.2. Low-income status—Children were identified as low-income if school district records indicated that the child was eligible to receive free or reduced school lunch in either kindergarten or first grade. Eligibility for free or reduced lunch was based on parental income level as well as participation in the federal Temporary Assistance for Needy Families (TANF) program.

2.2.3. Birth risks—Children were identified as having birth risks if the Department of Public Health (DPH) records indicated that the child received no prenatal care, prenatal care only during the third trimester, or fewer than four prenatal visits during pregnancy. Children were also identified for a birth risk if DPH birth records indicated that the child was born at less than 36 weeks gestational age or the child was born weighing less than 2.5 kg.

2.2.4. Lead toxicity—Children were identified as having experienced lead toxicity or lead poisoning if DPH records indicated a blood lead threshold of 10 µg/dL or higher was documented in the child's health records. This toxicity threshold was based on the Center for Disease Control's recommendation for follow-up and/or intervention.

2.2.5. Low maternal education—Low maternal education was indicated for children whose mothers were at least twenty years old at the time of the child's birth and held less than a high school diploma or equivalent, according to DPH birth records.

2.2.6. Teen mother—Children were identified as having been born to a teen mother if DPH birth records indicated that the child's mother was under the age of twenty at the time of the child's birth.

2.2.7. Child maltreatment—DHS records provided information on child maltreatment for any substantiated allegation. For each allegation of child maltreatment, an investigation was conducted and evidence was gathered to support claims of a threat to the child's wellbeing. Maltreatment allegations included claims of neglect, physical abuse, and sexual abuse. Children were considered to have experienced child maltreatment if these DHS records indicated at least one substantiated allegation.

2.2.8. Reading achievement—Academic achievement outcome data for first grade was provided by the school district. Children's standardized reading achievement was assessed by the TerraNova, Second Edition (CTB/McGraw-Hill, 1997). The TerraNova, also known as the *California Achievement Tests, Sixth Edition*, is a group-administered achievement test considered to be one of the most reliable and valid of existing standardized achievement tests. The TerraNova Reading Composite includes standardized measures of critical reading skills, including identifying the main idea of a passage, drawing conclusions, making inferences, and interpreting context clues. The Reading Composite also includes an assessment of children's vocabulary. Measures of vocabulary included the identification of

words and their meanings in different contexts, the matching of words with definitions, and the identification of categories of words based on meaning.

2.2.9. Problems with classroom engagement—Classroom engagement problems were assessed through the Problems with Classroom Engagement Scale (PCES; Fantuzzo, Li, Barghaus, LeBoeuf, McDermott, & Rouse, 2014). The PCES is a 14 item teacher-rated assessment designed to identify problems with academic and social engagement behaviors in elementary school environments. The PCES features two empirically derived dimensions through exploratory and confirmatory factor analytic methods. Items for academic engagement include “follows directions,” “asks for help when necessary,” and “contributes information to class discussions” ($\alpha = .87$). The social engagement scale included items such as “works cooperatively with others,” “displays appropriate behavior in work and play,” and “displays a positive attitude” ($\alpha = .90$). All 14 items demonstrated no differential functioning across gender, race/ethnicity groups, and temporal invariance between first and third grades (Fantuzzo et al., 2014). Predictive validity analyses revealed that the academic engagement subscale significantly predicts academic performance on state mathematics and reading achievement tests (Fantuzzo et al., 2014). The social engagement scale was found to be predictive of suspensions in third grade (Fantuzzo et al., 2014). A higher score on the PCES subscales indicates the exhibition of more engagement problems.

2.3. Procedures

This study was conducted using an integrated data system (IDS) in a large urban area in the northeastern United States. The IDS contains information on each child from multiple public service records, including the Department of Public Health (DPH), the Department of Human Services (DHS), the Office of Supportive Housing (OSH), and the school district serving the county. The IDS was scientifically disciplined through state-of-the-art data management and data integration procedures to compile integrated datasets. Systematic auditing of data are undertaken to satisfy data quality standards. Record matching algorithms using deterministic and probabilistic linking methods are employed to instill confidence in accurate record integration. Identifying information is then removed from the dataset to ensure privacy and confidentiality for ongoing research projects.

2.4. Data Analysis

Models were separately estimated for each behavioral and reading outcome using Proc Mixed in SAS 9.3. The multilevel linear models included a random intercept for each school, which enabled these models to adjust for the clustering of students within schools (see Raudenbush & Bryk, 2002). All predictor variables were uncentered in the model due to the exogenous nature of the risk experiences outside of the school context. Overall, two sets of models were run for each outcome variable. In the initial model, each first grade outcome was regressed on demographic characteristics and included a dummy contrast variable representing either low-income non-homeless status or low-income status with an experience of homelessness. A second model was then estimated using all the same predictor variables with the addition of the five risk factors.

3. Results

3.1. Prevalence of Risk Factors

Children with a history of homelessness were compared to their low-income housed peers. A series of five Chi-Square tests indicated a significantly higher prevalence of each risk factor across all five monitored risks (see Table 2 for Chi-Square statistics and prevalence percentages). Children with an experience of homelessness were found to have higher rates of birth risks ($\chi^2(1) = 16.96, p < .001$) and were more likely to have a history of lead exposure, $\chi^2(1) = 33.69, p < .001$. Children with an experience of homelessness were more likely to be born to teen mothers ($\chi^2(1) = 6.96, p < .01$) and mothers with low educational attainment, $\chi^2(1) = 10.29, p < .01$. Children with a history of homelessness also experienced over three times the maltreatment rate of low-income housed peers, $\chi^2(1) = 110.94, p < .001$.

3.2. Multilevel Linear Models

3.2.1. Reading achievement—In the demographics only model, several predictors were significantly associated with lower reading scores (see Table 3). Males scored 5.64 points lower than females on average ($\beta = -5.64, p < .0001$). Black and Hispanic/Latino students scored approximately 10 points lower on average than White students ($\beta = -9.97, p < .0001$; $\beta = -11.53, p < .0001$). Students with special needs scored 25 points lower in reading ($\beta = -24.97, p < .0001$) and English language learners scored 10 points lower than native English speakers ($\beta = -9.73, p < .001$). In comparison, children with an experience of homelessness scored 2.50 points lower than their peers, however, this finding was not significant ($\beta = -2.50, p = .16$).

Adding in the risks, all demographic predictors remained significant. Children with a record of lead exposure scored lower than peers without exposure ($\beta = -5.08, p < .05$). Students born to teen mothers and those with low maternal education also scored lower than peers without these risks ($\beta = -3.12, p < .05$; $\beta = -6.50, p < .05$). Children with an experience of homelessness were still not significantly performing worse than their low-income peers ($\beta = -1.27, p = .48$) See Table 3 for full model coefficients.

3.2.2. Problems with academic engagement—In the demographic covariates model, several predictors were associated with higher ratings of academic engagement problems. Males were higher than females on average ($\beta = .86, p < .0001$). Black and Hispanic/Latino students were rated approximately .40 points higher on average than White students, indicating a greater frequency of academic engagement problems ($\beta = .45, p < .0001$; $\beta = .38, p < .001$). Students with special needs and English language learners were also recorded as exhibiting higher engagement problems than peers ($\beta = 1.02, p < .0001$; $\beta = .38, p < .01$). Children with an experience of homelessness exhibited significantly higher academic engagement problems than their low-income peers ($\beta = .28, p < .05$).

Adding in the risks, demographic predictors remained significant (see Table 4). In addition, students born to teen mothers and those from families with low maternal education also scored lower than peers ($\beta = .15, p < .05$; $\beta = .18, p < .01$). Other risks were not significantly predictive of academic engagement. With the inclusion of these risks, children with an

experience of homelessness were no longer significantly higher in academic engagement problems than low-income housed peers ($\beta = .22, p = .06$).

3.2.3. Problems with social engagement—In the demographics only model, all major demographic groups, except English language learners, had higher rates of social engagement problems (see Table 5). Males scored higher than females on average ($\beta = 1.24, p < .0001$). Black and Hispanic/Latino students scored higher on average than White students ($\beta = .83, p < .0001$; $\beta = .39, p < .001$). Students with special needs exhibited higher social engagement problems ($\beta = .42, p < .001$). In addition, children with an experience of homelessness were assessed as having higher social engagement problems compared with their low-income peers ($\beta = .46, p < .0001$).

Adding in the risks, all of the previous demographic predictors remained significant. In addition, students born to teen mothers ($\beta = .28, p < .01$) and mothers with low maternal education ($\beta = .19, p < .01$) as well as children with a history of maltreatment ($\beta = .32, p < .01$) scored higher than peers without these risks. Controlling for these risks, children with an experience of homelessness still had significantly higher rates of social engagement problems compared to low-income peers ($\beta = .38, p < .001$). See Table 5 for full model coefficients.

4. Discussion

This research was designed to provide the first empirical test of the Continuum of Risk Hypothesis. This hypothesis posits that children who are homeless are on a continuum of risk experiences shared with children living in poverty. As a result, poor educational outcomes for young children with an experience of homelessness are not due solely to homelessness but to their higher likelihood of experiencing multiple, co-occurring risks associated with poverty. Findings from this study provide empirical support for this hypothesis.

First, we found that children with an experience of homelessness living in low-income households experience higher rates of co-occurring risks than housed peers from low-income households. Children with a homeless shelter experience evidenced higher prevalence rates for *all* five publicly monitored risk factors included in this study. Approximately, one third of children with an experience of homelessness experienced socio-familial risk factors, such as child maltreatment or being born to a teenage mother or a mother with low maternal education. Moreover, these risks occurred at higher prevalence for children experiencing homelessness compared to their low-income, housed peers. These findings support studies that have found an association between any one of these risks in isolation and homelessness for children.

There are research studies documenting the relations between homelessness and co-occurring early health and socio-familial risk factors for young children in poverty. It has been found that maternal characteristics, like low educational attainment and teen parenthood, predict the likelihood of later financial and relational stability for young children in poverty (Bugental & Happaney, 2004; Jackson, Brooks-Gunn, Huang, Glassman,

2000; Wu et al., 2004). Children with an experience of homelessness also experienced elevated prevalence of birth risks and lead exposure. Financial instability, as marked by a lack of stable housing, may explain challenges in making prenatal visits (Feijen-de Jong et al., 2012), and poor housing conditions leading to homelessness have linked homelessness and lead exposure (David et al., 2012). All of these risk factors have independently been associated with poor academic and behavioral outcomes, highlighting the importance of including them in models testing the Continuum of Risk Hypothesis. However, these risk factors have never been simultaneously included in the same model to test the Continuum of Risk Hypothesis.

Secondly, we examined the association between homelessness and academic and behavioral outcomes, without controlling for these publicly monitored risks. In this case, children with an experience of homelessness from low-income families evidenced worse classroom social and academic engagement problems compared with their non-homeless, low-income peers, but no reading achievement differences were found. These findings support previous studies documenting early behavioral difficulties for young children experiencing homelessness (Bassuk et al., 1997; Rescorla et al., 1991). They also support evidence demonstrating no association between homelessness and poor reading achievement for young children (Buckner et al., 2001).

Finally, in a second series of models, the co-occurring risks were added. These risks explained the significant relation between homelessness and academic engagement problems, but they did not account for the relation between homelessness and social engagement problems. Homelessness was no longer related to lower academic engagement but was still uniquely related to social engagement problems. Specifically, both maternal risks including low maternal education and being born to a teen mother accounted for the covariance between homelessness and academic engagement problems. Given that studies have shown that children with parents with lower educational attainment were more likely to have problems sustaining their attention on academic matters (Entwisle et al., 2005; Raver, 2004), this differentiated finding for academic engagement is supported by the research literature (Fredricks, Blumenfield, & Paris, 2004). Additionally, we found that the co-occurring maternal risks experienced by this population, and not homelessness per se, were explaining early academic engagement difficulties for children with an experience of homelessness in this study.

Controlling for the co-occurring risks, we found that homelessness was *uniquely* associated with poor classroom social engagement. Social engagement problems were not fully explained by the other co-occurring risks even though low maternal education, teen mothers, and maltreatment were significant predictors of social engagement problems. A significant body of research documents the association between early disruptions in parent-child relationships and later problems in school (Sheridan, Knoche, & Marvin, 2008). However, an array of factors can hinder the development of these positive relationships – including, parental, and environmental risk factors.

Prior research documents that the strain associated with homelessness, including parenting in the context of homelessness, maternal risks, and child welfare involvement, can impede

positive early parent-child relationships (Perlman, Cowan, Gewirtz, Haskett & Stokes, 2012). The shelter environment can adversely influence parent-child relationships by disrupting daily routines and undermining parental autonomy (Friedman & Clark, 2000; Schultz-Krohn, 2004). The public scrutiny associated with parenting in the context of emergency housing can leave parents feeling that they are under constant surveillance or “parenting in a fishbowl” (Friedman & Clark, 2000). Additionally, mothers' own risk experiences can also adversely impact their parenting capacities. A recent study found that over 90% of mothers living in emergency housing had experienced at least one trauma – and over 50% were diagnosed with PTSD (The National Center on Family Homelessness, 2013). These traumatic experiences are associated with an increased likelihood of being diagnosed with depression and/anxiety. These histories of trauma and mental health diagnoses can impede parents' ability to respond sensitively and consistently to the needs of their children. Parents experiencing homelessness also experience higher rates of separation from their children, due to placement in foster or kinship care for extended periods of times (Barrow, Lawinski, 2009; Perlman & Fantuzzo, 2013). Cumulatively, these experiences result in significant disruptions in the parent-child relationship and negatively affect children's interactions with teachers and classmates.

4.1. Implications for Research and Policy

Since this was the first empirical test of the Continuum of Risk Hypothesis, there are a number of relevant next steps to pursue. The inclusion of characteristics of homeless shelter experiences that better differentiate the nature of the shelter experience for young children would improve our ability to relate homeless experiences to educational outcomes. Future research models would be enhanced by incorporating characteristics of experiences of homelessness that are currently available through the Homeless Management Information System (HMIS). These could include, for example, the frequency or developmental onset of episodes in emergency housing (Fantuzzo et al., 2013). Including the characteristics of homeless experiences may provide more precision in disentangling the unique impacts of homeless experience on children's educational well-being.

Additionally, the variability of experiences of homelessness, such as the quality of emergency housing programs, should be accounted for in future studies. While some programs offer on-site support for parents and children (e.g., child care, parenting services, and developmentally appropriate spaces for older and younger children), others do not have this type of supportive programming. Employing characteristics of homelessness and understanding the quality of the emergency housing environments are important next steps in disentangling experiences of homelessness as they relate to early delays in social engagement (Buckner, 2008). The specific finding of social engagement problems for young children experiencing homelessness provides a context for inclusion of other relevant interaction and support variables that were not included in the models tested in this study. Missing from the models tested are the family and school characteristics known to relate to the social relationships children are forming. While the research literature has demonstrated that children in situations of homelessness are more likely to be isolated from peers and extended families (Mackenzie, Kotch, & Lee, 2011; Oravec, Osteen, Sharpe, & Randolph, 2011), these experiences are not currently captured by public surveillance systems. More

precise inquiry is needed to fully unpack what specifically about different types of homeless experiences is related to problematic social engagement and what is protective in nature.

To test the Continuum of Risk Hypothesis, this study utilized records of five publicly-monitored risk factors that have been associated with homelessness and educational well-being. Future research should strive to include additional risks with documented associations to homelessness and well-being. For example, factors like whether a child resides in a single-parent household or has an incarcerated parent could be included in future studies (Dallaire & Wilson, 2010; Sarsour, Sheridan, Jutte, Nuru-Jeter, Hinshaw, & Boyce, 2011). The inclusion of other publicly-monitored risks may help to further explain relations between homelessness and educational well-being. Risk factors beyond the five included in this study were not incorporated because other risks did not meet the Integrated Data System quality standards (e.g. missing data, no record of audits – see Method section). More work is needed to improve the quality of the data collected by public service agencies so that future research can enhance the precision of the multiple risk models used to study the well-being of children experiencing homelessness.

The present study utilized the HMIS to obtain records of emergency shelter utilization. The HMIS is the only national system for recording shelter experiences that is utilized for the Annual Homeless Assessment Report (U.S. Government & Culhane, 2004). However, the data collected through the HMIS only captures housing instability related to shelter stay. Other forms of homelessness, such as living “doubled up,” are not included in the HMIS definition of homelessness. The omission of these other forms of homelessness experiences from the HMIS means that that some children are not identified as being homeless. This currently limits our overall capacity to conduct large-scale population-based research using the HMIS records to identify all children with homeless experiences. Nationally, we need to develop a more comprehensive and scientifically substantiated system for documenting homelessness to more fully understand the impact of homelessness on children's educational well-being (Cackley, 2010).

Findings from this test of the Continuum of Risk Hypothesis have concrete implications for policy. First, experiences of homelessness were found to significantly relate to poor social engagement. As noted previously, these outcomes may be due, in part, to strained early parent-child relationships. Existing research demonstrates that positive parent-child relationships can serve as a protective factor for vulnerable young children. Consequently, emergency housing programs should provide interventions that target strengthening these relationships. Second, findings from the present study demonstrate that maternal risks significantly predict to poor reading and academic engagement. While experiences of homelessness are not directly associated with these outcomes, young children experiencing homelessness are disproportionately more likely to be born to mothers with these risks. Emergency housing programs should focus on building maternal capacity through both education and employment training for mothers and by supporting active parent involvement in their children's schools.

The Continuum of Risk Hypothesis examined in this study stresses the importance of understanding that the homeless experiences of young children occur within a multiple-risk

context. The findings also underscore the policy significance of promoting interventions that target the early development of young children. This will enable them to enter school ready to make beneficial connections with their teachers and peers.

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Highlights

- This study examined a population of homeless children using integrated public records
- Homelessness was related to poor academic engagement and social engagement
- Homeless children had higher rates of risks compared with other poor children
- Risks occurring alongside homelessness partially explained worse outcomes
- Findings underscore the need for integrated public services and early intervention

Table 1
Demographic Characteristics for the Study Cohort and Comparison Groups

	Study Cohort (N = 8,267)	All Low Income (N = 4,594)
Prevalence (%)		
Male	49.7	49.1
White	13.1	10.6
Black	66.4	67.3
Hispanic/Latino	15.3	17.3
Special needs	8.5	8.5
English language learner	5.8	6.4

Table 2
Prevalence Rates of Risk Factors for the Study Cohort and Comparison Groups

	Study Cohort (N = 8,267)	Low Income Non-Homeless (n = 4,113)	Low-Income Homeless (n = 481)	χ^2
Risk factor (%)				
Early health risks				
Birth risks	48.3	50.0	59.8	16.96***
Lead toxicity	12.0	12.6	22.2	33.69***
Socio-familial risks				
Teen mother	24.2	27.7	33.5	6.96**
Low maternal education	25.5	30.1	37.2	10.29**
Maltreatment	5.9	6.0	19.3	110.94***

Note. The Chi-Square difference test is between Low Income Non-Homeless students and Low-Income Homeless students.

**
 $p < .01$,

 $p < .001$

Table 3
Results from Two-stage Multilevel Models for First Grade Reading Achievement

	Stage One without Risks			Stage Two with Risks		
	β	SE	p	β	SE	p
Demographic covariates						
Male	-5.64	1.08	<.0001	-5.49	1.08	<.0001
Black	-9.97	1.92	<.0001	-10.20	1.91	<.0001
Hispanic/Latino	-11.53	2.24	<.0001	-11.47	2.23	<.0001
Special needs	-24.97	2.12	<.0001	-24.75	2.12	<.0001
English language learner	-9.73	2.91	.0009	-9.43	2.91	.0012
Homeless contrast	-2.50	1.78	.1609	-1.27	1.80	.4825
Risks						
Birth risks				-0.98	1.09	.3705
Low maternal education				-6.50	1.33	<.0001
Teen mother				-3.12	1.33	.0196
Maltreatment				-2.10	2.13	.3243
Lead toxicity				-5.08	1.60	.0015

Note. Regression coefficients are in an unstandardized outcome metric and represent the mean difference between predictor groups. SE = Standard Error.

Table 4
Results from Two-stage Multilevel Models for Academic Engagement Problems

	Stage One without Risks			Stage Two with Risks		
	β	SE	p	β	SE	p
Demographic covariates						
Male	0.86	0.06	<.0001	0.86	0.06	<.0001
Black	0.45	0.09	<.0001	0.44	0.09	<.0001
Hispanic/Latino	0.38	0.11	.0004	0.36	0.10	.0006
Special needs	1.02	0.12	<.0001	1.01	0.12	<.0001
English language learner	0.38	0.12	.0023	0.37	0.13	.0037
Homeless contrast	0.28	0.12	.0227	0.22	0.12	.0632
Risks						
Birth risks				0.01	0.06	.8324
Low maternal education				0.18	0.06	.0057
Teen mother				0.15	0.07	.0399
Maltreatment				0.17	0.10	.0814
Lead toxicity				0.12	0.08	.1282

Note. Regression coefficients are in an unstandardized outcome metric and represent the mean difference between predictor groups. SE = Standard Error.

Table 5
Results from Two-stage Multilevel Models for Social Engagement Problems

	Stage One without Risks			Stage Two with Risks		
	β	SE	p	β	SE	p
Demographic covariates						
Male	1.24	0.07	<.0001	1.24	0.07	<.0001
Black	0.83	0.09	<.0001	0.80	0.09	<.0001
Hispanic/Latino	0.39	0.11	.0002	0.36	0.10	.0007
Special needs	0.42	0.12	.0005	0.41	0.12	.0006
English language learner	-0.04	0.13	.7547	-0.04	0.13	.7820
Homeless contrast	0.46	0.12	<.0001	0.38	0.11	.0007
Risks						
Birth risks				0.01	0.06	.8153
Low maternal education				0.19	0.07	.0077
Teen mother				0.28	0.09	.0011
Maltreatment				0.32	0.12	.0094
Lead toxicity				0.19	0.10	.0524

Note. Regression coefficients are in an unstandardized outcome metric and represent the mean difference between predictor groups. SE = Standard Error.