

Housing Insecurity Associated with Food Insecurity and Poor Health in Children

Cutts DB, Meyers AF, Black MM, et al. U.S. housing insecurity and the health of very young children. Am J Public Health 2011;101:1508-14.

Study Overview

Objective. To determine the association between housing insecurity and the health of very young children.

Design. Cross-sectional study.

Setting and participants. Between June 1998 and December 2007, researchers from the Children’s Health-Watch study approached 36,618 adult caregivers of very young children (< 3 years of age) who sought care at 7 urban medical centers serving a low-income population (Baltimore, Boston, Little Rock, Los Angeles, Minneapolis, Philadelphia, and Washington, DC). Caregivers were enrolled into the study at the time they were seeking care at an acute or primary care clinic or hospital emergency department. Of the 36,618 caregivers, 3419 were ineligible and 3343 refused to participate or did not complete the interview for the study. Of the remaining 31,199 participants, 3358 who had private insurance, 780 who were homeless and/or living in a residential treatment facility, and 3649 who had missing data were excluded. The final analysis sample included 22,069 caregivers who met the study eligibility criteria.

Main outcome measures. Outcome variables included household food insecurity, child food insecurity, caregivers report of child’s health status, developmental risk, and weight-for-age z scores. Household and child food insecurity were determined using the US Food Security Scale. Households that scored at a level indicating that they could not afford nutritious food for active, healthy lives were considered to be food insecure. Children were classified as food insecure if their caregivers reported that they met criteria for child hunger (skipping or reducing the size of meals) or poor diet quality (inability to provide balanced meals, or relying on few foods). Poor child health status was defined as caregivers ranking children to have either fair or poor health status. A subset of caregivers (*n* = 7345) completed the Parents’ Evaluation of Developmental Status (PEDS), which measures caregiver’s concerns about their child’s development in 8 developmental areas: expressive language, receptive language, fine motor skills, gross motor skills, behavior, social-emotional skills, self-help, and school. Caregivers were also assessed for depressive symptoms.

The primary independent variable was housing insecurity, defined as either living in crowded housing or moving multiple times in the previous year. Based on

Outcomes Research in Review SECTION EDITORS

Jason P. Block, MD, MPH
Brigham and Women’s Hospital
Boston, MA

Asaf Bitton, MD, MPH
Brigham and Women’s Hospital
Boston, MA

Ula Hwang, MD, MPH
Mount Sinai School of Medicine
New York, NY

Maya Vijayaraghavan, MD
University of California, San Diego
San Diego, CA

Melanie Jay, MD, MS
NYU School of Medicine
New York, NY

William Hung, MD, MPH
Mount Sinai School of Medicine
New York, NY

the US Department of Housing and Urban Development definition, participants living more than 2 per bedroom or living doubled-up with family or friends were considered to be living in crowded housing. Participants who reported 2 or more moves in the past year, with or without housing crowding, were considered households with frequent moves. Families who had no more than 1 move in the previous year and were living in un-crowded housing were the referent securely housed group.

Main results. Almost half the study sample (46%) experienced housing insecurity; 41% reported crowding, and 5% experienced multiple moves. Housing insecurity was significantly associated with study site, caregiver race/ethnicity, maternal older age, lower education, and depressive symptoms. Food insecurity was found in 9% of households reporting stable housing, 12% among households with crowding, 16% among households reporting frequent moves ($P < 0.001$). Child food insecurity was found in 7% of families with secure housing, 17% of families with crowding, and 19% among families with multiple moves ($P < 0.001$). In multivariable analysis, after adjusting for site, demographics, social factors, maternal and children-specific factors, caregivers living in crowded housing had 1.30 (adjusted odds ratio (AOR), 1.30 [95% CI, 1.18–1.43]) greater odds of experiencing household food insecurity, and 1.47 greater odds of childhood food insecurity (AOR, 1.47 [95% CI, 1.34–1.63]) compared with stably housed counterparts. As an indicator of housing insecurity, moving frequently was more strongly associated with household (AOR, 1.91 [95% CI, 1.59–2.28]) and childhood food insecurity (AOR, 2.56 [95% CI, 2.13–3.08]) compared with housing crowding. Multiple moves, but not housing crowding, was associated with caregivers reporting poor health status (AOR, 1.48 [95% CI, 1.25–1.76]) and increased developmental risk (AOR, 1.71 [95% CI, 1.33–2.21]) for their children. Children in the multiple moves category had lower weight-for-age z scores than the secure housing group. In secondary analysis, upon adding maternal depressive symptoms as a covariate, the association between housing insecurity and caregiver report of fair/poor child health and development risk was attenuated but remained significant.

Conclusion. Housing insecurity was associated with household and childhood food insecurity, poor health, developmental delays, and lower weight among very young children. Increasing access to subsidized, stable housing can decrease some of the long-term negative health consequences of insecure housing.

Commentary

Housing insecurity is a growing public health problem in the United States, exacerbated by the recent housing foreclosure crisis, rising unemployment, and lack of affordable low-income housing. Low-income households are particularly affected because they have to distribute scarce resources between basic needs such as housing, food, or medical care. While literature on the health of homeless families and children is well documented, limited data exist on the larger population of unstably housed families who are at risk for homelessness and its adverse health consequences. The current study examined the effects of housing insecurity on the health of very young children, a group that may be particularly vulnerable to the long-term effects of unstable housing.

The authors found that the caregivers who reported housing crowding and frequent moves were more likely to experience household and childhood food insecurity compared with those who were stably housed. The association between housing instability and food insecurity has been described in previous studies and both factors commonly coexist among low-income households [1,2]. Children living in households that experience both housing instability and food insecurity may be at an increased risk for health problems because food insecurity is independently associated with barriers to receiving health care [3], increased risk for hospitalizations among children [3], poor health [3], development delays [4], and mothers' risk for depressive symptoms [5].

Children living in households with frequent moves were more likely to experience poor health and developmental delays and have diminished weight. These childhood health outcomes may be exacerbated in housing insecure households that also experience food insecurity. In addition to developmental delays, these children may be at risk for other chronic medical conditions. Food-insecure households consume fewer servings of fruits and vegetables and rely on inexpensive, energy-dense, low-calorie food, which predispose

to diet-sensitive cardiovascular risk factors such as obesity, hypertension, and diabetes [6,7]. These dietary patterns can have long-term effects on children, predisposing them to obesity during adolescence and chronic cardiovascular disease during adulthood [8]. Therefore, policies increasing access to subsidized housing and consistent supply of nutritious food for very young children have the potential of decreasing long-term negative health consequences of housing instability and food insecurity.

In the current study, multiple moves had a stronger association with food insecurity, children's health status, and developmental risk when compared to housing crowding. The authors concluded that multiple moves may be a more severe form of housing insecurity than housing crowding, indicative of limited social ties. This conclusion is supported by data from previous studies that have shown that children with frequent residential mobility are more likely to experience adverse childhood experiences that increase risk for multiple medical problems during adolescence and adulthood [9]. In addition, children living in households that move frequently compared with those with infrequent moves are more likely to experience emotional and behavioral problems as well as decreased continuity of medical care [10]. These data suggest the importance of tracking residential mobility as a potential marker for other psychosocial stressors that may influence parenting and child behavior, and ultimately affect health outcomes among children.

The authors note several methodological limitations. Due to the cross-sectional nature of the study, causal inferences cannot be made. Because information on housing, food, and childhood measures were by self-report, there is a potential for bias if caregivers either under- or over-reported childhood outcomes. The population of caregivers and children are selected among a low-income group seeking care at either emergency or hospital based clinics, and may not be representative of the broader low-income population. Given the variability in the definition of housing instability, there is a potential for misclassification bias. The measures of housing insecurity did not include housing safety, quality of neighborhood conditions, or affordability.

Applications for Clinical Practice

This study addresses the health of very young children

living in housing- and food-insecure households, a large population is at risk for developmental delays and poor health. This study adds to the burgeoning literature that has demonstrated the relationship between social inequalities such as unstable housing and food insecurity and health and access to health care. From a policy perspective, the current study adds to growing evidence that increasing access to stable, affordable housing can have positive downstream health outcomes especially for very young children who are particularly vulnerable to the effects of unstable housing at a critical developmental phase. From a clinical perspective, emergency and acute care physicians who regularly encounter unstably housed or food-insecure families with very young children have the opportunity to refer these families to basic primary care and psychosocial support to diminish some of the negative consequences of living in these unstable environments.

—*Review by Maya Vijayaraghavan, MD*

References

1. Kushel MB, Gupta R, Gee L, et al. Housing instability and food insecurity as barriers to health care among low-income Americans. *J Gen Intern Med* 2006;21:71–7.
2. Ma CT, Gee L, Kushel MB. Associations between housing instability and food insecurity with health care access in low-income children. *Ambul Pediatr* 2008;8:50–7.
3. Cook JT, Frank DA, Berkowitz C, et al. Food insecurity is associated with adverse health outcomes among human infants and toddlers. *J Nutr* 2004;134:1432–8.
4. Rose-Jacobs R, Black MM, Casey PH, et al. Household food insecurity: associations with at-risk infant and toddler development. *Pediatrics* 2008;121:65–72.
5. Whitaker RC, Phillips SM, Orzol SM. Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their preschool-aged children. *Pediatrics* 2006;118:e859–68.
6. Drewnowski A, Specter SE. Poverty and obesity: the role of energy density and energy costs. *Am J Clin Nutr* 2004;79:6–16.
7. Dixon LB, Winkleby MA, Radimer LK. Dietary intakes and serum nutrients differ between adults from food-insufficient and food-sufficient families: Third National Health and Nutrition Examination, 1988-1994. *J Nutr* 2001;131:1232–46.
8. Shonkoff JP, Boyce WT, McEwen BS. Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *JAMA* 2009;301:2252–9.
9. Dong M, Anda RF, Felitti VJ, et al. Childhood residential mobility and multiple health risks during adolescence and adulthood: the hidden role of adverse childhood experi-

ences. Arch Pediatr Adolesc Med 2005;159:1104–10.
10. Jelleyman T, Spencer N. Residential mobility in childhood

and health outcomes: a systematic review. J Epidemiol
Community Health 2008;62:584–92.

Copyright 2011 by Turner White Communications Inc., Wayne, PA. All rights reserved.