

# Prevalence and Correlates of Unstable Housing Among US Children

Lydie A. Lebrun-Harris, PhD, MPH; Megan Sandel, MD, MPH; Richard Sheward, MPP;  
Ana Poblacion, PhD, MSc; Stephanie Ettinger de Cuba, PhD, MPH

 Supplemental content

**IMPORTANCE** Housing instability is an important public health issue, particularly for children. This study provides nationally representative estimates of unstable housing among US children.

**OBJECTIVE** To examine unstable housing prevalence; differences by sociodemographic characteristics, health, and state of residence; and associations with other hardships.

**DESIGN, SETTING, AND PARTICIPANTS** This survey study examined data from the 2022 National Survey of Children's Health, a population-based, nationally representative survey of randomly selected children whose parent or caregiver responded to an address-based mail or web-based survey. Participants were children aged 0 to 17 years living in households in the 50 US states and District of Columbia (N = 54 103). Bivariate analyses tested for observed differences in unstable housing between groups; logistic regression models tested for significant disparities. Associations between unstable housing and health care and food-related hardships, neighborhood conditions, and adverse childhood experiences were examined.

**EXPOSURE** Unstable housing experiences.

**MAIN OUTCOMES AND MEASURES** Unstable housing, comprising 3 indicators: inability to pay mortgage or rent on time in the past 12 months, 2 or more moves in the past 12 months, and homelessness in the child's lifetime. Analyses were adjusted for child age and family poverty ratio. Secondary analyses examine caregiver-reported stress or worry about eviction, foreclosure, or condemned housing in the past 12 months. Weighted prevalence estimates accounted for probability of selection and nonresponse.

**RESULTS** In 2022, 17.1% (95% CI, 16.4%-17.8%) of children living in US households, representing more than 12.1 million children, experienced 1 or more forms of unstable housing: 14.1% (95% CI, 13.4%-14.7%) lived in households that were unable to pay mortgage/rent, 2.9% (95% CI, 2.6%-3.3%) moved frequently, and 2.5% (95% CI, 2.2%-2.8%) experienced lifetime homelessness. Additionally, 9.0% (95% CI, 8.5%-9.5%) of children had caregivers who reported stress/worry over housing. Prevalence of unstable housing varied across states (range, 12.0%-26.6%). Unstable housing was highest among American Indian or Alaska Native children (27.9%; 95% CI, 21.3%-35.6%), Black or African American children (30.4%; 95% CI, 27.8%-33.1%), and Native Hawaiian or Pacific Islander children (27.6%; 95% CI, 16.6%-42.1%) and also differed by special health care needs, family poverty ratio, caregiver education and unemployment status, and whether the family rented or owned their home. Unstable housing was associated with all other types of hardships examined.

**CONCLUSIONS AND RELEVANCE** This study found that 1 in 6 US children experienced unstable housing, varying by state and sociodemographic factors. The prevalence is likely underestimated because the sample excluded children who are currently institutionalized or experiencing homelessness. Results may help move the field toward a unified national definition of unstable housing for families with children and lead to clinically appropriate and evidence-based screening and interventions to support housing stability and improve children's health.

**Author Affiliations:** US Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, Office of Epidemiology and Research, Rockville, Maryland (Lebrun-Harris); Boston Medical Center, Boston, Massachusetts (Sandel, Sheward, Poblacion); Boston University Chobanian & Avedisian School of Medicine, Boston, Massachusetts (Sandel, Sheward, Poblacion, Ettinger de Cuba); Boston University School of Public Health, Boston, Massachusetts (Ettinger de Cuba).

**Corresponding Author:** Lydie A. Lebrun-Harris, PhD, MPH, Health Resources and Services Administration, Maternal and Child Health Bureau, Office of Epidemiology and Research, 5600 Fishers Ln, Rockville, MD 20857 (lharris2@hrsa.gov).

JAMA Pediatr. doi:10.1001/jamapediatrics.2024.1159  
Published online May 20, 2024.

Housing is a critically important social determinant of health, and children are particularly at risk of experiencing housing-related problems and concomitant negative effects on health and health care.<sup>1-7</sup> Six in 10 people experiencing homelessness in the US are children younger than 18 years, and on any given night, about 58 000 families (including more than 100 000 children) experience homelessness.<sup>8</sup> In addition, 1 in 3 households with children experience housing cost burdens (spending more than 30% of household income on housing), leaving insufficient resources for other basic needs.<sup>9</sup> The COVID-19 pandemic exacerbated housing unaffordability, especially among low-income households, and increased the risk of housing displacement among millions of renters and homeowners.<sup>10</sup> In 2023, the Biden-Harris Administration released the US Playbook to Address Social Determinants of Health, highlighting the importance of housing as a key driver of health outcomes and the need to advance data collection and interoperability among health care, public health, social services, and other systems to better address social determinants of health.<sup>11</sup>

While there is no universally accepted definition of unstable housing,<sup>12</sup> numerous studies have established associations between adverse housing circumstances (eg, eviction, frequent moves, homelessness, housing cost burden) and poor health outcomes among children and their caregivers.<sup>13-17</sup> Specifically, being behind on paying the rent or mortgage, moving frequently, or experiencing homelessness (henceforth defined as “unstable housing” for the current analysis) have been associated with poor physical and oral health among children, developmental delays, hospitalizations, unmet needs for health care, and health insurance coverage gaps.<sup>13-15</sup> Children and youth with special health care needs are also at increased risk for unstable housing.<sup>18</sup> Furthermore, unstable housing has been linked with poor physical health and depressive symptoms among parents and caregivers.<sup>13</sup> Avoidable costs to the health care and educational systems attributable to unstable housing are estimated at \$111 billion over 10 years.<sup>19,20</sup> In addition to the effects of unstable housing on health status, prior research also suggests strong associations with other material hardships, which each carry their own health risks, including food and energy insecurity, forgone health care, and health care cost burden.<sup>21</sup>

Unstable housing measures have historically not been included in national health surveys, leaving a gap in federal data collection. To address this gap, the Health Resources and Services Administration’s Maternal and Child Health Bureau (HRSA MCHB) included a short measure of unstable housing, originally developed by Children’s HealthWatch, in the 2022 National Survey of Children’s Health.<sup>22</sup> To our knowledge, findings from the current study provide the first nationally representative estimates of the prevalence of unstable housing affecting currently housed, noninstitutionalized US children and their families, including estimates for subpopulations of interest and by geographical region. Specifically, we sought to address the following research questions: (1) What is the overall prevalence of unstable housing among US children, as well as its specific forms? (2) How does the prevalence of unstable housing differ by various sociodemographic factors?

## Key Points

**Question** What is the prevalence of unstable housing among US children younger than 18 years?

**Findings** This survey study found that in 2022, 17.1% of children currently residing in households experienced 1 or more forms of unstable housing: living in households that were unable to pay mortgage/rent on time in the past 12 months, moving frequently in the past 12 months, or being homeless at some point during their lifetime. Variations in the prevalence of any form of unstable housing were observed by state, child race and ethnicity, and special health care needs status.

**Meaning** This study likely underestimates the prevalence of unstable housing because it excludes children who are currently institutionalized or experiencing homelessness.

(3) How does the prevalence of unstable housing differ by state of residence? (4) How is unstable housing associated with other selected forms of material hardships?

## Methods

### Data Source

Data came from the 2022 National Survey of Children’s Health (NSCH), which is funded and directed by HRSA MCHB and administered by the US Census Bureau using an address-based sampling frame. The NSCH is fielded annually via web- and paper-based questionnaires; respondents are parents or caregivers of children in the 50 states and the District of Columbia. The interview completion rate, or the proportion of households confirmed as occupied with children that completed the survey, was 78.5%.<sup>23</sup> The sample included noninstitutionalized children aged 0 to 17 years living in US households (N = 54 103, representing more than 73 million children) (eTable 1 in Supplement 1). Detailed survey procedures are described elsewhere.<sup>24</sup> Institutional review board approval was not required because the data are publicly available and deidentified.<sup>25</sup> American Association for Public Opinion Research (AAPOR) Best Practices for Survey Research were followed in the design and fielding of the NSCH.

### Measures

The primary outcome was a dichotomous measure for unstable housing, comprising 3 indicators: caregiver-reported inability to pay mortgage or rent on time in the past 12 months, child experienced frequent moves ( $\geq 2$  times) in the past 12 months, and child experienced homelessness in their lifetime (eTable 2 in Supplement 1 includes all measure details). Secondary analyses also examined caregiver-reported stress or worry about eviction, foreclosure, or condemned housing in the past 12 months, adapted from the American Housing Survey’s Housing Insecurity Module.<sup>26</sup> Observations with missing data on all 3 indicators were excluded from analysis (n = 1232). Observations with missing data on some indicators were included to preserve sample size, reduce potential bias, and align with HRSA MCHB’s coding approach for the Title V Services Block Grant Program national performance measures.<sup>27</sup>

**Table 1. Inability to Pay Mortgage/Rent, Frequent Moves, and Homelessness Among US Children Aged 0 to 17 Years: Prevalence Estimates and Associations by Sociodemographic and Family Characteristics, 2022 National Survey of Children's Health**

Characteristic	Inability to pay mortgage/rent on time, past 12 mo			Frequent moves, past 12 mo			Homelessness, lifetime		
	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>
Overall	14.1 (13.4-14.7)	NA	NA	2.9 (2.6-3.3)	NA	NA	2.5 (2.2-2.8)	NA	NA
<b>Sex</b>									
Male	14.1 (13.3-15.1)	.82	1 [Reference]	2.7 (2.3-3.2)	.17	1 [Reference]	2.4 (2.0-2.8)	.46	1 [Reference]
Female	14.0 (13.1-15.0)		0.99 (0.89-1.09)	3.2 (2.7-3.7)		1.15 (0.90-1.40)	2.6 (2.2-3.0)		1.07 (0.81-1.34)
<b>Age category, y</b>									
0-3	13.5 (12.0-15.1)	.83	1 [Reference]	1.8 (1.4-2.4)	.001	1 [Reference]	0.9 (0.6-1.4)	<.001	1 [Reference]
4-5	14.1 (12.4-16.1)		1.02 (0.83-1.21)	2.7 (1.9-3.9)		1.48 (0.82-2.13)	1.5 (0.9-2.4)		1.53 (0.59-2.46)
6-11	14.2 (13.1-15.3)		1.03 (0.88-1.18)	3.6 (3.0-4.4)		1.98 (1.33-2.63)	2.7 (2.2-3.4)		2.89 (1.63-4.15)
12-17	14.3 (13.2-15.4)		1.03 (0.88-1.18)	3.0 (2.5-3.5)		1.61 (1.11-2.11)	3.4 (2.9-3.9)		3.57 (2.10-5.03)
<b>Race and ethnicity</b>									
Hispanic/Latino	18.5 (16.9-20.3)	<.001	1.39 (1.22-1.56)	3.7 (2.9-4.6)	<.001	1.48 (1.09-1.88)	3.0 (2.3-3.8)	<.001	1.44 (0.99-1.89)
<b>Non-Hispanic</b>									
American Indian or Alaska Native	17.8 (12.7-24.2)		1.33 (0.85-1.80)	8.2 (4.3-15.1) <sup>b</sup>		3.25 (1.01-5.48)	7.4 (4.3-12.3)		3.75 (1.55-5.95)
Asian	4.8 (3.7-6.2)		0.49 (0.35-0.62)	2.7 (2.0-3.7)		1.32 (0.86-1.79)	0.9 (0.4-2.2) <sup>b</sup>		0.64 (0.09-1.19)
Black or African American	25.7 (23.2-28.3)		1.96 (1.69-2.22)	5.1 (3.8-6.6)		1.93 (1.29-2.57)	6.0 (4.8-7.4)		2.70 (1.83-3.56)
Native Hawaiian or Pacific Islander	19.9 (12.2-30.6)		1.43 (0.67-2.19)	- <sup>c</sup>		- <sup>c</sup>	- <sup>c</sup>		- <sup>c</sup>
Multiple races	13.2 (11.4-15.1)		1.30 (1.09-1.52)	2.6 (1.9-3.5)		1.26 (0.85-1.67)	2.5 (1.8-3.4)		1.71 (1.07-2.35)
White	9.7 (9.1-10.3)		1 [Reference]	2.0 (1.7-2.3)		1 [Reference]	1.4 (1.2-1.6)		1 [Reference]
<b>Special health care needs</b>									
Yes	18.6 (17.2-20.1)	<.001	1.40 (1.25-1.55)	4.9 (4.0-5.9)	<.001	1.85 (1.42-2.29)	5.4 (4.6-6.5)	<.001	2.74 (2.06-3.41)
No	12.9 (12.2-13.6)		1 [Reference]	2.4 (2.1-2.7)		1 [Reference]	1.7 (1.4-2.0)		1 [Reference]
<b>Household poverty status</b>									
<100% FPR	27.2 (25.0-29.4)	<.001	6.51 (5.38-7.64)	5.8 (4.5-7.1)	<.001	3.38 (2.35-4.40)	6.5 (5.3-7.8)	<.001	8.28 (5.05-11.51)
100%-199% FPR	22.8 (20.9-24.8)		5.46 (4.49-6.43)	3.4 (2.7-4.2)		1.98 (1.34-2.62)	3.1 (2.5-3.7)		3.88 (2.32-5.44)
200%-399% FPR	11.8 (10.7-12.9)		2.83 (2.34-3.32)	2.2 (1.7-2.8)		1.29 (0.86-1.73)	1.4 (1.0-1.9)		1.78 (0.94-2.62)
≥400% FPR	4.2 (3.5-4.8)		1 [Reference]	1.7 (1.3-2.1)		1 [Reference]	0.8 (0.5-1.1)		1 [Reference]
<b>Highest caregiver education</b>									
Less than high school	21.7 (18.1-25.7)	<.001	1.60 (1.24-1.97)	5.0 (3.7-6.6)	<.001	1.67 (1.04-2.31)	4.2 (3.0-5.9)	<.001	1.71 (0.91-2.52)
High school	22.3 (20.5-24.1)		1.88 (1.61-2.14)	5.4 (4.3-6.7)		2.09 (1.47-2.70)	4.5 (3.6-5.7)		2.39 (1.56-3.21)
Some college	23.3 (21.6-25.0)		2.26 (1.99-2.53)	2.8 (2.3-3.5)		1.23 (0.89-1.57)	3.9 (3.3-4.7)		2.55 (1.77-3.33)
College degree or higher	6.8 (6.2-7.3)		1 [Reference]	1.8 (1.6-2.1)		1 [Reference]	0.9 (0.7-1.2)		1 [Reference]
<b>Caregiver unemployment</b>									
Yes, ≥1 caregiver unemployed	26.9 (24.3-29.7)	<.001	1.49 (1.29-1.70)	4.6 (3.1-6.7)	.01	1.19 (0.72-1.66)	5.9 (4.3-8.0)	<.001	1.76 (1.15-2.36)
No caregivers unemployed	12.9 (12.2-13.6)		1 [Reference]	2.8 (2.5-3.1)		1 [Reference]	2.1 (1.9-2.4)		1 [Reference]

(continued)

**Table 1. Inability to Pay Mortgage/Rent, Frequent Moves, and Homelessness Among US Children Aged 0 to 17 Years: Prevalence Estimates and Associations by Sociodemographic and Family Characteristics, 2022 National Survey of Children's Health (continued)**

Characteristic	Inability to pay mortgage/rent on time, past 12 mo			Frequent moves, past 12 mo			Homelessness, lifetime		
	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>
Family immigration status									
First generation	15.6 (12.0-19.9)	.46	0.96 (0.67-1.26)	6.0 (4.1-8.7)	<.001	2.40 (1.32-3.47)	2.6 (1.2-5.6) <sup>b</sup>	.06	1.20 (0.20-2.20)
Second generation	14.3 (12.7-16.1)		1 [Reference]	2.2 (1.8-2.7)		1 [Reference]	1.7 (1.2-2.3)		1 [Reference]
Third generation	13.6 (12.9-14.3)		1.09 (0.94-1.24)	2.8 (2.4-3.2)		1.39 (1.02-1.76)	2.5 (2.2-2.9)		1.85 (1.15-2.56)
Home occupancy type									
Rent	28.8 (27.0-30.7)	<.001	2.28 (2.04-2.52)	6.2 (5.3-7.3)	<.001	2.76 (2.07-3.46)	5.6 (4.8-6.5)	<.001	2.60 (1.86-3.35)
Own	9.3 (8.7-9.9)		1 [Reference]	1.9 (1.6-2.1)		1 [Reference]	1.4 (1.2-1.7)		1 [Reference]
Occupy without payment	14.1 (8.8-21.8)		0.94 (0.47-1.42)	2.8 (1.3-5.8) <sup>b</sup>		1.14 (0.24-2.04)	4.7 (2.0-10.9) <sup>b</sup>		1.92 (0.13-3.71)

Abbreviations: aPR, adjusted prevalence ratio; FPR, federal poverty ratio; NA, not applicable.

<sup>b</sup> Interpret estimate with caution (relative standard error >30%).

<sup>c</sup> Estimate suppressed because of unreliability (relative standard error >50%).

<sup>a</sup> Covariates were age and income.

Covariates of interest were as follows: child sex, age, race and ethnicity, special health care needs status, household poverty status, highest parent/caregiver education in household, parental/caregiver unemployment status, family immigration status, home occupancy type, and state of residence. Race and ethnicity were self-reported by the parent or caregiver and included Hispanic or Latino, non-Hispanic American Indian or Alaska Native (hereafter American Indian or Alaska Native), non-Hispanic Asian (hereafter Asian), non-Hispanic Black or African American (hereafter Black or African American), non-Hispanic individuals reporting multiple races (hereafter multiple races), non-Hispanic Native Hawaiian or Pacific Islander (hereafter Native Hawaiian or Pacific Islander), and non-Hispanic White (hereafter White). Special health care needs were identified based on responses to questions that assessed 5 domains of qualifying health needs.<sup>28</sup> Other hardships examined were unmet health care needs, problems paying medical bills, food insufficiency, unsafe neighborhood, detracting neighborhood elements, and adverse childhood experiences (eTable 2 in Supplement 1).

### Statistical Analysis

We analyzed the 3 unstable housing experiences as individual items and as a summary measure. We conducted sensitivity analyses using an alternative summary measure that included a fourth item (housing stress/worry) to determine the impact of including this element on estimates of unstable housing. We calculated frequencies, unadjusted proportions, and 95% CIs for unstable housing-related measures, overall and among subpopulations of interest. Bivariate analyses assessed significant associations between covariates of interest and unstable housing using  $\chi^2$  tests of independence. State-level estimates were compared with national estimates using *t* tests for overlapping groups. We used multivariable logistic regression models to produce adjusted prevalence ratios (aPRs)

to examine statistically significant differences between subpopulations. A parsimonious set of covariates (child age, family poverty ratio) was selected to be based on clinical and theoretical relevance to account for the association between increasing age and cumulative lifetime events (eg, homelessness, adverse childhood experiences) as well as the associations between income and the other independent and dependent measures. We did not include all covariates of interest in the models because of the challenges of interpretation of subgroup differences. For example, socioeconomic factors such as unemployment or household education are likely mediators in the relationship between race and unstable housing, so including them in the model would likely underestimate the magnitude of racial inequities. For all variables, the subpopulation with the lowest observed (and reliable) prevalence of the unstable housing indicators was selected as the reference group. In addition, we calculated prevalence estimates and aPRs to assess the association between unstable housing and other hardships.

Analyses were performed using Stata MP version 15 (Stata-Corp) using survey weights developed by the US Census Bureau. We used a 2-sided *P* value threshold of .05 to assess statistical significance, with no adjustments made for multiple comparisons because of the exploratory nature of the analysis. Sex (0.1% missing), race (1.7% missing), and ethnicity (0.3% missing) were imputed using hot-deck imputation, and family poverty ratio (19.5% missing) was multiply imputed using regression methods.<sup>23</sup>

## Results

### Prevalence and Correlates of Unstable Housing Among US Children

Overall in 2022, 14.1% (95% CI, 13.4%-14.7%) of children living in households had caregivers who were unable to pay the

**Table 2. Unstable Housing Among US Children Aged 0 to 17 Years: Prevalence Estimates and Associations by Sociodemographic and Family Characteristics, 2022 National Survey of Children's Health**

Characteristic	Unstable housing summary measure ( $\geq 1$ of 3 indicators)					
	Unweighted No.	Estimated population frequency, No.	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	
Overall	7149	12 191 317	17.1 (16.4-17.8)	NA	NA	
Sex						
Male	3753	6 187 810	16.9 (16.0-17.9)	.67	1 [Reference]	
Female	3396	6 003 507	17.3 (16.3-18.3)		1.02 (0.93-1.11)	
Age category, y						
0-3	1328	2 110 588	14.9 (13.4-16.5)	.01	1 [Reference]	
4-5	855	1 251 078	16.5 (14.6-18.5)		1.10 (0.91-1.28)	
6-11	2204	4 245 261	17.8 (16.6-19.1)		1.19 (1.03-1.35)	
12-17	2762	4 584 390	17.9 (16.7-19.0)		1.19 (1.03-1.35)	
Race and ethnicity						
Hispanic or Latino	1619	4 160 948	21.7 (19.9-23.5)	<.001	1.35 (1.20-1.49)	
Non-Hispanic						
American Indian or Alaska Native	77	116 322	27.9 (21.3-35.6)		1.79 (1.27-2.32)	
Asian	279	259 734	7.6 (6.2-9.3)		0.62 (0.48-0.76)	
Black or African American	918	2 660 028	30.4 (27.8-33.1)		1.92 (1.69-2.16)	
Native Hawaiian or Pacific Islander	34	35 384	27.6 (16.6-42.1)		1.68 (0.82-2.54)	
Multiple races	596	829 989	16.3 (14.4-18.4)		1.31 (1.13-1.49)	
White	3626	4 128 912	12.0 (11.4-12.7)		1 [Reference]	
Special health care needs						
Yes	2481	3 596 420	24.1 (22.5-25.7)	<.001	1.53 (1.39-1.67)	
No	4668	8 594 898	15.2 (14.5-16.0)		1 [Reference]	
Household poverty status						
<100% FPR	1874	4 017 607	31.5 (29.2-33.8)	<.001	5.02 (4.33-5.71)	
100%-199% FPR	2042	3 628 656	26.1 (24.0-28.2)		4.14 (3.54-4.74)	
200%-399% FPR	2083	3 012 440	14.4 (13.2-15.7)		2.29 (1.96-2.62)	
$\geq 400\%$ FPR	1150	1 532 614	6.3 (5.5-7.0)		1 [Reference]	
Highest caregiver education						
<High school	357	1 508 776	25.0 (21.4-29.0)	<.001	1.49 (1.20-1.79)	
High school	1702	3 516 669	26.9 (25.0-28.9)		1.84 (1.62-2.07)	
Some college	2521	3 787 882	26.5 (24.9-28.3)		2.06 (1.85-2.27)	
College degree or higher	2569	3 377 991	8.9 (8.3-9.5)		1 [Reference]	
Caregiver unemployment						
Yes, $\geq 1$ caregiver unemployed	993	1 876 242	30.3 (27.5-33.2)	<.001	1.40 (1.23-1.58)	
No caregivers unemployed	6156	10 315 075	15.8 (15.2-16.6)		1 [Reference]	

(continued)



**Table 2. Unstable Housing Among US Children Aged 0 to 17 Years: Prevalence Estimates and Associations by Sociodemographic and Family Characteristics, 2022 National Survey of Children's Health (continued)**

Characteristic	Unstable housing summary measure (≥1 of 3 indicators)				
	Unweighted No.	Estimated population frequency, No.	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>
<b>Family immigration status</b>					
First generation	179	397 754	19.7 (15.7-24.3)	.34	1.06 (0.76-1.35)
Second generation	1180	2 739 219	16.2 (14.6-18.0)		1 [Reference]
Third generation	5160	7 892 252	16.6 (15.8-17.4)		1.18 (1.03-1.32)
<b>Home occupancy type</b>					
Rent	2998	5 881 833	33.5 (31.6-35.4)	<.001	2.21 (2.01-2.41)
Own	4091	6 206 218	11.7 (11.0-12.3)		1 [Reference]
Occupy without payment	60	103 266	17.6 (11.9-25.3)		0.99 (0.57-1.41)

Abbreviations: aPR, adjusted prevalence ratio; FPR, federal poverty ratio; NA, not applicable.

mortgage/rent on time in the previous 12 months, 2.9% (95% CI, 2.6%-3.3%) children experienced frequent moves (2 or more) in the previous 12 months, and 2.5% (95% CI, 2.2%-2.8%) children were homeless during their lifetime (Table 1). Among children who experienced any unstable housing, the most common type of housing difficulty was inability to pay mortgage/rent (70.8%), followed by frequent moves (11.5%) and lifetime homelessness (6.9%) (eFigure in Supplement 1). Smaller proportions of children experienced more than 1 unstable housing indicator (range, 0.7%-5.4%).

After adjusting for age and income, inability to make mortgage/rent payments was significantly associated with child race and ethnicity (Table 1). (There was increased prevalence among Black or African American children, Hispanic or Latino children, and children with multiple races, and decreased prevalence among Asian children relative to White children.) Special health care needs, lower income, lower caregiver education, caregiver unemployment, and renting were also associated with increased prevalence of inability to make mortgage/rent payments. Frequent moves were associated with older age; American Indian or Alaska Native, Black or African American, and Hispanic or Latino race and ethnicity; special health care needs; lower household income; lower caregiver educational attainment; first- and third-generation immigrant families; and renting. Lifetime homelessness among children was significantly associated with older age; American Indian or Alaska Native, Black or African American, and multiple races; special health care needs; lower household income; lower caregiver educational attainment; caregiver unemployment; third-generation families; and renting.

Regarding the composite measure, 17.1% of currently housed US children aged 0 to 17 years were estimated to have experienced unstable housing (Table 2), representing more than 12.1 million children. The prevalence of unstable housing was highest among American Indian or Alaska Native children (27.9%), Black or African American children (30.4%), and Native Hawaiian or Pacific Islander children (27.6%); children with special health care needs (24.1%); children in families with income less than 100% of the fed-

eral poverty ratio (31.5%); children whose caregivers had less than a college degree (25.0%-26.9%), children with an unemployed caregiver (30.3%), and children living in renting households (33.5%). After adjusting for child age and family poverty ratio, unstable housing was significantly associated with child race and ethnicity. (There was increased prevalence among American Indian or Alaska Native children, Black or African American children, Hispanic or Latino children, and children with multiple races, and decreased prevalence among Asian children relative to White children.) Unstable housing was also significantly associated with older child age, having special health care needs, lower household income, lower caregiver education attainment, caregiver unemployment, third-generation immigration status, and renting.

### Prevalence and Correlates of Caregiver Stress/Worry About Unstable Housing

Overall, 9.0% of children had caregivers who reported stress or worry over eviction, foreclosure, or condemned housing in the past 12 months (Table 3). The prevalence of housing-related worry/stress was highest among American Indian or Alaska Native children (15.4%), Black or African American children (18.0%), and Native Hawaiian or Pacific Islander children (22.9%). One in 5 children from families with income less than 100% of the federal poverty ratio (20.4%), children with unemployed caregivers (22.2%), and children from renting families (19.0%) had caregiver-reported housing worry/stress. After adjusting, caregiver housing-related worry/stress was significantly associated with race and ethnicity (increased prevalence among all groups except Asian children relative to White children), special health care needs, lower household income, lower caregiver educational attainment, caregiver unemployment, and renting.

In sensitivity analyses examining an alternate composite measure of unstable housing that added a fourth indicator for caregiver worry/stress about housing, the overall prevalence was 19.5% among US children, slightly higher than the original estimate using the first 3 indicators (17.1%). After adjust-

**Table 3. Stress/Worry About Eviction, Foreclosure, or Condemned Housing and an Alternate Unstable Housing Measure: Prevalence Estimates and Associations, 2022 National Survey of Children's Health**

	Stress/worry about eviction, foreclosure, or condemned housing, past 12 mo			Unstable housing summary measure (alternate version: $\geq 1$ of 4 indicators, including stress/worry)		
	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>	Weighted % (95% CI)	P value	aPR (95% CI) <sup>a</sup>
Overall	9.0 (8.5-9.5)	NA	NA	19.5 (18.8-20.3)	NA	NA
Sex						
Male	8.7 (8.1-9.4)	.35	1 [Reference]	19.2 (18.2-20.2)	.30	1 [Reference]
Female	9.2 (8.5-10.0)		1.06 (0.93-1.20)	19.9 (18.9-21.0)		1.05 (0.96-1.13)
Age category, y						
0-3	7.9 (6.9-9.1)	.05	1 [Reference]	17.0 (15.5-18.7)	.003	1 [Reference]
4-5	7.9 (6.7-9.3)		0.97 (0.74-1.20)	18.4 (16.5-20.5)		1.07 (0.90-1.23)
6-11	9.7 (8.7-10.8)		1.22 (0.99-1.44)	20.6 (19.3-22.0)		1.21 (1.06-1.36)
12-17	9.1 (8.4-10.0)		1.13 (0.93-1.33)	20.3 (19.1-21.5)		1.18 (1.04-1.32)
Race and ethnicity						
Hispanic or Latino	11.5 (10.2-12.9)	<.001	1.41 (1.18-1.64)	24.9 (23.1-26.9)	<.001	1.39 (1.25-1.53)
Non-Hispanic						
American Indian or Alaska Native	15.4 (10.3-22.2)		1.93 (1.08-2.78)	30.2 (23.5-38.0)		1.73 (1.24-2.22)
Asian	6.8 (5.3-8.7)		1.28 (0.90-1.65)	12.2 (10.3-14.4)		0.90 (0.72-1.07)
Black or African American	18.0 (15.9-20.2)		2.22 (1.84-2.60)	34.3 (31.6-37.1)		1.95 (1.73-2.18)
Native Hawaiian or Pacific Islander	22.9 (14.7-33.9)		2.93 (1.38-4.47)	32.2 (20.7-46.3)		1.77 (0.97-2.57)
Multiple races	8.7 (7.2-10.5)		1.54 (1.21-1.87)	18.6 (16.5-20.8)		1.34 (1.17-1.51)
White	5.4 (4.9-5.9)		1 [Reference]	13.5 (12.8-14.2)		1 [Reference]
Special health care needs						
Yes	13.2 (12.0-14.5)	<.001	1.61 (1.39-1.83)	27.2 (25.6-28.9)	<.001	1.52 (1.39-1.65)
No	7.8 (7.3-8.4)		1 [Reference]	17.5 (16.7-18.3)		1 [Reference]
Household poverty status						
<100% FPR	20.4 (18.6-22.3)	<.001	12.33 (9.03-15.64)	36.5 (34.1-38.9)	<.001	5.26 (4.60-5.92)
100%-199% FPR	14.6 (13.1-16.0)		8.79 (6.41-11.16)	29.4 (27.3-31.6)		4.23 (3.66-4.81)
200%-399% FPR	6.4 (5.6-7.3)		3.87 (2.80-4.95)	16.7 (15.4-18.1)		2.41 (2.09-2.72)
$\geq 400\%$ FPR	1.7 (1.2-2.1)		1 [Reference]	6.9 (6.2-7.7)		1 [Reference]
Highest caregiver education						
<High school	14.5 (11.8-17.7)	<.001	1.43 (1.05-1.80)	29.5 (25.6-33.7)	<.001	1.52 (1.24-1.80)
High school	14.8 (13.4-16.4)		1.76 (1.44-2.09)	30.6 (28.6-32.7)		1.82 (1.61-2.02)
Some college	14.8 (13.5-16.3)		2.14 (1.80-2.49)	30.0 (28.2-31.8)		2.02 (1.83-2.22)
College degree or higher	3.9 (3.5-4.3)		1 [Reference]	10.2 (9.6-10.9)		1 [Reference]
Caregiver unemployment						
Yes, $\geq 1$ caregiver unemployed	22.2 (19.8-24.8)	<.001	1.95 (1.64-2.27)	35.9 (33.0-38.9)	<.001	1.49 (1.32-1.66)
No caregivers unemployed	7.7 (7.2-8.2)		1 [Reference]	18.0 (17.3-18.7)		1 [Reference]
Family immigration status						
First generation	13.2 (10.0-17.2)	.002	1.21 (0.79-1.63)	24.7 (20.3-29.8)	.009	1.09 (0.82-1.37)
Second generation	9.2 (8.1-10.5)		1 [Reference]	19.8 (18.1-21.6)		1 [Reference]
Third generation	8.1 (7.5-8.7)		1.04 (0.87-1.21)	18.3 (17.5-19.1)		1.04 (0.93-1.16)
Home occupancy type						
Rent	19.0 (17.6-20.4)	<.001	2.18 (1.88-2.49)	37.2 (35.3-39.2)	<.001	2.08 (1.90-2.26)
Own	5.6 (5.2-6.2)		1 [Reference]	13.7 (13.0-14.4)		1 [Reference]
Occupy without payment	11.2 (6.8-17.8)		1.09 (0.50-1.68)	20.8 (14.5-28.9)		0.97 (0.58-1.36)

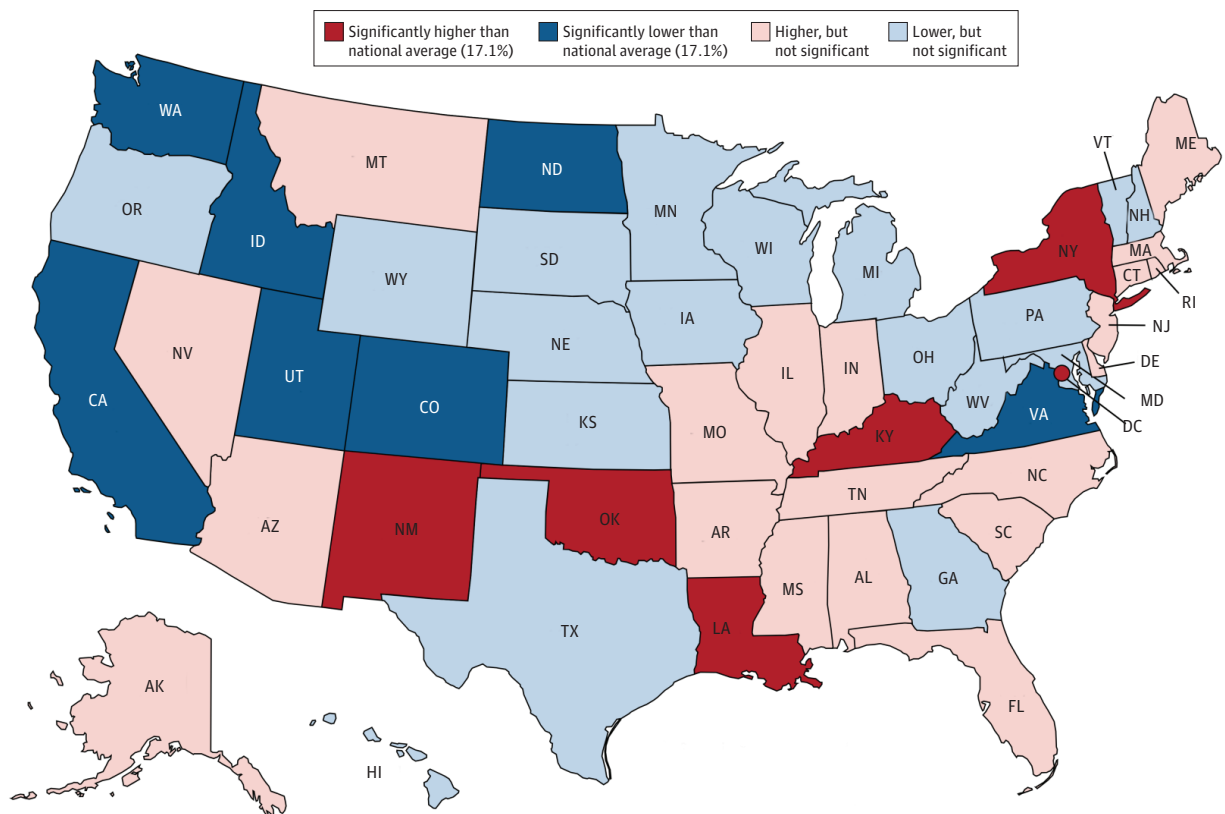
Abbreviations: aPR, adjusted prevalence ratio; FPR, federal poverty ratio; NA, not applicable.

<sup>a</sup> Covariates were age and income.

ment, the same sociodemographic characteristics were significantly associated with this alternate measure as with the original composite measure. There were 2 notable differences between the 2 measures: using the original measure, unstable housing was significantly lower among Asian children

(relative to White children) and significantly higher among children from third-generation families (relative to those from second-generation families), but the alternate measure including caregiver worry/stress found no statistically significant differences.

Figure. Prevalence of Unstable Housing by State of Residence, 2022 National Survey of Children's Health



### State-Level Variation in Unstable Housing Among US Children

There were differences in the prevalence of any form of unstable housing based on state of residence (Figure and eTable 3 in Supplement 1). Five states and the District of Columbia had statistically significantly higher unstable housing estimates than the national average of 17.1% (New Mexico 26.6%, Louisiana 23.8%, District of Columbia 22.8%, Oklahoma 21.9%, Kentucky 21.4%, and New York 20.7%). Seven states had statistically significantly lower unstable housing estimates than the national average (North Dakota 12.0%, Virginia 12.4%, Utah 12.6%, Washington 13.2%, Idaho 13.4%, Colorado 13.8%, and California 14.7%).

### Associations Between Unstable Housing and Other Hardships

Among children who experienced unstable housing, 7.4% experienced unmet health care needs in the past 12 months, 16.7% experienced problems paying medical bills, and 17.9% experienced food insufficiency (Table 4). More than one-third (35.6%) of children experiencing unstable housing lived in neighborhoods with 1 or more detracting elements (litter/garbage, vandalism, poorly kept or rundown housing). More than half had experienced 1 or more adverse childhood experiences (1 adverse childhood experience, 24.8%; ≥2 adverse childhood experiences, 30.2%). After controlling for child age and income, relative to children with no unstable housing ex-

periences, children with any unstable housing experiences were more than twice as likely to experience unmet health care needs (aPR, 2.79; 95% CI, 2.24-3.34), have problems paying medical bills (aPR, 2.33; 95% CI, 2.02-2.64), and live in unsafe neighborhoods (aPR, 2.62; 95% CI, 2.17-3.08), and 5 times more likely to experience food insufficiency (aPR, 5.12; 95% CI, 4.15-6.09). Unstable housing was significantly associated with all adverse childhood experiences except parental death (aPR range, 1.61-3.55), and children who experienced unstable housing were twice as likely to experience 2 or more adverse childhood experiences (aPR, 2.43; 95% CI, 2.19-2.67).

### Discussion

To our knowledge, this study provides the first nationally representative estimates of unstable housing among US children who are currently housed and noninstitutionalized. Among the 17.1% of children aged 0 to 17 years who experienced unstable housing in 2022, inability to pay mortgage/rent on time was the most common indicator (70.8%). There were higher prevalences of unstable housing among racial and ethnic minority groups and populations experiencing greater societal adversity, including poverty and unemployment. In addition, lack of financial assets (ie, home ownership) was associated with greater unstable housing. Similarly, unstable housing was associated with higher prevalences of household-level hard-



**Table 4. Observed Prevalence of Other Hardships and Associations by Unstable Housing Status, 2022 National Survey of Children's Health**

Other hardship	Unstable housing experiences reported, weighted % (95% CI)		P value	aPR (95% CI) <sup>a</sup>
	≥1	None		
Unmet health care needs, past 12 mo	7.4 (6.4-8.6)	2.4 (2.1-2.6)	<.001	2.79 (2.24-3.34)
Problems paying medical bills, past 12 mo	16.7 (15.1-18.5)	7.4 (6.9-7.9)	<.001	2.33 (2.02-2.64)
Food insufficiency, past 12 mo	17.9 (16.2-19.8)	2.4 (2.1-2.8)	<.001	5.12 (4.15-6.09)
Unsafe neighborhood	12.5 (11.0-14.1)	3.6 (3.3-4.0)	<.001	2.62 (2.17-3.08)
Detracting elements in neighborhood <sup>b</sup>	35.6 (33.5-37.8)	21.1 (20.4-21.9)	<.001	1.47 (1.36-1.59)
Adverse childhood experiences (lifetime)				
Parent/guardian divorced or separated	40.7 (38.5-42.9)	18.4 (17.6-19.1)	<.001	2.01 (1.85-2.18)
Parent/guardian died	4.0 (3.4-4.8)	2.7 (2.4-3.1)	<.001	1.17 (0.90-1.45)
Parent/guardian served time in jail/prison	14.7 (13.2-16.3)	4.5 (4.1-5.0)	<.001	2.41 (2.02-2.80)
Witness of household interpersonal violence	13.6 (12.1-15.2)	3.8 (3.4-4.2)	<.001	2.83 (2.32-3.34)
Victim or witness of neighborhood violence	10.7 (9.3-12.3)	2.4 (2.1-2.7)	<.001	3.55 (2.81-4.29)
Household mental illness	18.8 (17.0-20.7)	6.8 (6.3-7.3)	<.001	2.53 (2.20-2.86)
Household substance use problem	16.9 (15.3-18.7)	6.7 (6.2-7.2)	<.001	2.24 (1.93-2.54)
Treated/judged unfairly due to race or ethnicity	8.1 (7.0-9.3)	3.4 (3.1-3.8)	<.001	2.34 (1.90-2.77)
Treated/judged unfairly due to sexual orientation/gender identity	2.7 (2.1-3.5)	1.7 (1.5-2.0)	.004	1.61 (1.09-2.13)
Treated/judged unfairly due to health condition/disability	5.8 (5.0-6.8)	2.2 (1.9-2.5)	<.001	2.43 (1.90-2.96)
No. of adverse childhood experiences				
0	44.9 (42.7-47.2)	70.9 (70.0-71.7)	<.001	0.70 (0.66-0.74)
1	24.8 (22.8-26.9)	17.9 (17.1-18.6)		1.24 (1.11-1.36)
≥2	30.2 (28.3-32.3)	11.3 (10.7-11.9)		2.43 (2.19-2.67)

Abbreviation: aPR, adjusted prevalence ratio.

<sup>a</sup> The reference category was no unstable housing experiences. Covariates were age and income.

<sup>b</sup> At least 1 of the following: litter/garbage on sidewalks and streets, vandalism, poorly kept or rundown housing.

ships, including difficulty accessing and paying for medical care, insufficient food, and perception of unsafe neighborhoods. These findings demonstrate the complex realities faced by families with children in unstable housing circumstances.

Variations in the prevalence of unstable housing by state were expected but with some surprising results. Areas with well-known high housing costs (eg, California, Washington) had lower rates than the national average. However, state policy environments (such as investments in and implementation and availability of housing supports) were not taken into account in the present analysis, which may partially explain the differences. For example, a state may have high costs and great housing pressures but may also invest significant resources in addressing housing needs.

Past studies have shown the relationship between housing instability and structural racism.<sup>29,30</sup> Historical practices and policies throughout the US have served to perpetuate structural racism, including more than a century of disinvestment and harmful policies related to housing.<sup>29</sup> In particular, “redlining” made mortgages and homeownership less accessible for

people in racial and ethnic minority groups, especially Black households, while also impacting neighborhood infrastructure. Although the Fair Housing Act officially banned redlining in 1968, the impact is ongoing with historically redlined neighborhoods receiving less investment, discriminatory zoning laws, and poor access to homeownership, capital, educational and career opportunities, and political power.<sup>31-33</sup> These and other factors may have lasting current-day impacts on residents' ability to maintain stable housing as well as their short- and long-term health and well-being, and limit opportunities for economic mobility to break intergenerational cycles of poverty.<sup>29,34</sup> This history may provide some important context for this study's findings regarding differences by race and ethnicity, although it does not provide a full accounting of all the root causes, for example, challenges faced by Native American individuals.<sup>35</sup>

Housing stability is essential for health and well-being, but there is no consensus or regulatory requirement on how to best

screen for and assess it. The most commonly used measures to date have been the questions included in the Centers for Medicare & Medicaid Services Accountable Health Communities Model screening tool,<sup>36</sup> and the questions analyzed in this study, which are also included in the Epic electronic health record company's screening tool.<sup>37</sup> However, these measures were designed with primarily adult populations in mind, and there are additional nuances to consider when screening children, such as how to account for split-custody arrangements. Thus, more research is needed to validate standardized screening instruments among pediatric populations. Previous research suggests that screening should include questions that identify experiences of homelessness as well as less severe forms of housing instability that nevertheless pose a risk to health and well-being.<sup>1,13,16,38</sup> Thus, the results presented here underscore that efforts to improve children's health should consider children's housing-related problems beyond homelessness.

### Strengths and Limitations

This study has many strengths, including the nationally representative data set, large sample size, and breadth of questions allowing for nuanced analyses. Despite its strengths, there are several limitations to consider when interpreting the findings. While the housing-related measures captured by the NSCH were based on existing evidence and practice, the individual indicators are not exhaustive and do not address other important domains, such as housing quality, substandard living conditions, or overcrowding. This limits our ability to examine the exacerbating effects of overlapping housing problems. In addition, because the NSCH is an address-based survey of noninstitutionalized children, the estimates may underestimate the prevalence of unstable housing by missing children currently residing in institutional settings (eg, homeless shelters, transitional housing), temporarily staying in hotels/motels, unsheltered, or "doubling up" at someone else's home. Disaggregated race and ethnicity data were not available, which may mask differences in unstable housing prevalence among subgroups (eg, Asian vs

Chinese, Japanese, or Vietnamese). Finally, the cross-sectional design precludes the inference of causal relationships between unstable housing and other types of hardships.

### Conclusions

This study found that 1 in 6 US children experiences unstable housing, with variations by state and by sociodemographic factors, including child race and ethnicity and special health care needs, household income, caregiver educational attainment and unemployment, and renting. Efforts to improve children's health must consider children's housing-related problems beyond homelessness to reflect the true extent of risk to health and future stability faced by children and their families. Results from these nationally representative analyses may help move the field toward a unified definition of unstable housing for families with children, which would in turn inform clinically appropriate and evidence-based screening and interventions to support housing stability. To that end, HRSA MCHB's Title V Maternal and Child Health Services Block Grant Program is in the process of adopting the unstable housing measure described in this study as a new national performance measure, to track state-level trends on this social determinant of health among aged children 0 to 11 years beginning in 2024.<sup>39</sup> Such data can increase understanding of the size of the problem over time as well as the success of housing instability solutions. Additionally, in November 2023, the US Department of Health and Human Services announced a new Medicaid and Children's Health Insurance Program Health-Related Social Needs Framework, which will help states support clinically appropriate and evidence-based interventions to address housing and other social needs for certain Medicaid enrollees, including housing navigation services, transition and moving costs, and tenancy-sustaining services.<sup>40</sup> Addressing the spectrum of housing-related challenges faced by children and their families is crucial for enhancing their well-being and future prospects.

#### ARTICLE INFORMATION

**Accepted for Publication:** February 26, 2026.

**Published Online:** May 20, 2024.

doi:10.1001/jamapediatrics.2024.1159

**Author Contributions:** Dr Lebrun-Harris had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Concept and design:** Lebrun-Harris, Sandel, Ettinger de Cuba.

**Acquisition, analysis, or interpretation of data:** All authors.

**Drafting of the manuscript:** Lebrun-Harris, Sheward, Ettinger de Cuba.

**Critical review of the manuscript for important intellectual content:** All authors.

**Statistical analysis:** Lebrun-Harris.

**Administrative, technical, or material support:** Sandel, Sheward, Poblacion, Ettinger de Cuba.  
**Supervision:** Sandel.

**Conflict of Interest Disclosures:** Dr Sandel reported serving as an unpaid board member for the National Low Income Housing Coalition and

Enterprise Community Partners, both national housing organizations. No other disclosures were reported.

**Disclaimer:** The views expressed in this article are those of the authors and do not necessarily reflect the official policies of the US Department of Health and Human Services (HHS) or the Health Resources and Services Administration (HRSA), nor does mention of HHS or HRSA imply endorsement by the US government.

**Data Sharing Statement:** See Supplement 2.

#### REFERENCES

- Office of Disease Prevention and Health Promotion, US Department of Health and Human Services. Healthy People 2030: housing instability. Accessed April 17, 2024. <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/housing-instability>
- Carroll A, Corman H, Curtis MA, Noonan K, Reichman NE. Housing instability and children's health insurance gaps. *Acad Pediatr*. 2017;17(7):732-738. doi:10.1016/j.acap.2017.02.007
- Atkins M, Castro I, Sharifi M, et al. Unmet social needs and adherence to pediatric weight management interventions: Massachusetts, 2017-2019. *Am J Public Health*. 2020;110(52):S251-S257. doi:10.2105/AJPH.2020.305772
- Hatem C, Lee CY, Zhao X, Reesor-Oyer L, Lopez T, Hernandez DC. Food insecurity and housing instability during early childhood as predictors of adolescent mental health. *J Fam Psychol*. 2020;34(6):721-730. doi:10.1037/fam0000651
- 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(1):50-57. doi:10.1016/j.ambp.2007.08.004
- Seltzer RR, Thompson BS, Feudtner C. The daunting problem of medical complexity and housing instability. *Pediatrics*. 2020;146(1):e20193284. doi:10.1542/peds.2019-3284
- Ziol-Guest KM, McKenna CC. Early childhood housing instability and school readiness. *Child Dev*. 2014;85(1):103-113. doi:10.1111/cdev.12105
- US Interagency Council on Homelessness, Peer TA. Homelessness in America: Focus on Families

- With Children. Accessed April 17, 2024. <https://peerta.acf.hhs.gov/content/homelessness-america-focus-families-children>
9. Federal Interagency Forum on Child and Family Statistics. America's children: key national indicators of well-being, 2021 [NCJ No. 302780]. US Government Printing Office; 2021.
  10. Joint Center for Housing Studies of Harvard University. The state of the nation's housing 2023. Accessed April 17, 2024. <https://www.jchs.harvard.edu/state-nations-housing-2023>
  11. Domestic Policy Council, Office of Science and Technology Policy, The White House. The US playbook to address social determinants of health. Accessed April 17, 2024. <https://www.whitehouse.gov/wp-content/uploads/2023/11/SDOH-Playbook-3.pdf>
  12. De Marchis EH, Ettinger de Cuba SA, Chang L, et al. Screening discordance and characteristics of patients with housing-related social risks. *Am J Prev Med*. 2021;61(1):e1-e12. doi:10.1016/j.amepre.2021.01.027
  13. Sandel M, Sheward R, Ettinger de Cuba S, et al. Unstable housing and caregiver and child health in renter families. *Pediatrics*. 2018;141(2):e20172199. doi:10.1542/peds.2017-2199
  14. Sandel M, Sheward R, Ettinger de Cuba S, et al. Timing and duration of pre- and postnatal homelessness and the health of young children. *Pediatrics*. 2018;142(4):e20174254. doi:10.1542/peds.2017-4254
  15. Busacker A, Kasehagen L. Association of residential mobility with child health: an analysis of the 2007 National Survey of Children's Health. *Matern Child Health J*. 2012;16(1)(suppl 1):S78-S87. doi:10.1007/s10995-012-0997-8
  16. Cutts DB, Meyers AF, Black MM, et al. US Housing insecurity and the health of very young children. *Am J Public Health*. 2011;101(8):1508-1514. doi:10.2105/AJPH.2011.300139
  17. Cutts DB, Ettinger de Cuba S, Bovell-Ammon A, et al. Eviction and household health and hardships in families with very young children. *Pediatrics*. 2022;150(4):e202205669. doi:10.1542/peds.2022-056692
  18. Rose-Jacobs R, Ettinger de Cuba S, Bovell-Ammon A, et al. Housing instability among families with young children with special health care needs. *Pediatrics*. 2019;144(2):e20181704. doi:10.1542/peds.2018-1704
  19. Poblacion A, Bovell-Ammon A, Sheward R, et al; Children's HealthWatch. Stable homes make healthy families. Published 2017. Accessed April 17, 2024. <https://childrenshealthwatch.org/stablehomeshealthyfamilies/>
  20. Poblacion A, Bovell-Ammon A, Sheward R, et al; Children's HealthWatch. Methods only: Stable Homes Make Healthy Families: Children's HealthWatch, 2017. Accessed April 17, 2024. <https://childrenshealthwatch.org/wp-content/uploads/Cost-of-unstable-housing-Methods-only.pdf>
  21. Frank DA, Casey PH, Black MM, et al. Cumulative hardship and wellness of low-income, young children: multisite surveillance study. *Pediatrics*. 2010;125(5):e1115-e1123. doi:10.1542/peds.2009-1078
  22. Children's HealthWatch. Methods: overview. Accessed October 17, 2023. <https://childrenshealthwatch.org/overview/>
  23. US Census Bureau, US Department of Commerce. 2022 National Survey of Children's Health: methodology report. Accessed April 17, 2024. <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2022-NSCH-Methodology-Report.pdf>
  24. Ghandour RM, Jones JR, Lebrun-Harris LA, et al. The design and implementation of the 2016 National Survey of Children's Health. *Matern Child Health J*. 2018;22(8):1093-1102. doi:10.1007/s10995-018-2526-x
  25. US Census Bureau. National Survey of Children's Health (NSCH). Updated June 9, 2023. Accessed June 20, 2023. <https://www.census.gov/programs-surveys/nsch.html>
  26. Murdoch J, Brahmachari M, Okyere D, Mouden F, Streiff S. Measuring housing insecurity: Index development using American Housing Survey data. Accessed April 17, 2024. <https://www.huduser.gov/portal/publications/Measuring-Housing-Insecurity-Index-Development-Using-AHS-Data.html>
  27. Maternal and Child Health Bureau, US Department of Health and Human Services. Federally Available Data (FAD) Resource Document. Accessed April 17, 2024. <https://mchb.tvisdata.hrsa.gov/Home/FADDocuments>
  28. Bethell CD, Read D, Stein RE, Blumberg SJ, Wells N, Newacheck PW. Identifying children with special health care needs: development and evaluation of a short screening instrument. *Ambul Pediatr*. 2002;2(1):38-48. doi:10.1367/1539-4409(2002)002<0038:icwshc>2.0.co;2
  29. Bailey ZD, Feldman JM, Bassett MT. How structural racism works: racist policies as a root cause of U.S. racial health inequities. *N Engl J Med*. 2021;384(8):768-773. doi:10.1056/NEJMs2025396
  30. Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet*. 2017;389(10077):1453-1463. doi:10.1016/S0140-6736(17)30569-X
  31. Lee J, Ponicki W, Mair C, Gruenewald P, Ghanem L. What explains the concentration of off-premise alcohol outlets in Black neighborhoods? *SSM Popul Health*. 2020;12:100669. doi:10.1016/j.ssmph.2020.100669
  32. King N. A brief history of how racism shaped interstate highways. National Public Radio. Published 2021. Updated April 7, 2021. Accessed October 17, 2023. <https://www.npr.org/2021/04/07/984784455/a-brief-history-of-how-racism-shaped-interstate-highways>
  33. Lukes D, Cleveland C. The lingering legacy of redlining on school funding, diversity, and performance (EdWorkingPaper No. 21-363). Annenberg Institute at Brown University. Accessed April 17, 2024. <https://edworkingpapers.com/ai21-363>
  34. Green KA, Bovell-Ammon A, Sandel M. Housing and neighborhoods as root causes of child poverty. *Acad Pediatr*. 2021;21(8S):S194-S199. doi:10.1016/j.acap.2021.08.018
  35. Listokin Y. Confronting the barriers to Native American homeownership on tribal lands: the case of the Navajo Partnership for Housing. *Urban Lawyer*. 2001;33(2):433-476.
  36. Center for Medicare and Medicaid Innovation. The Accountable Health Communities Health-Related Social Needs Screening Tool. Centers for Medicare & Medicaid Services. Accessed October 11, 2023. <https://www.cms.gov/priorities/innovation/files/worksheets/ahcm-screeningtool.pdf>
  37. Harle CA, Wu W, Vest JR. Accuracy of electronic health record food insecurity, housing instability, and financial strain screening in adult primary care. *JAMA*. 2023;329(5):423-424. doi:10.1001/jama.2022.23631
  38. Bess KD, Miller AL, Mehdipanah R. The effects of housing insecurity on children's health: a scoping review. *Health Promot Int*. 2023;38(3):daac006. doi:10.1093/heapro/daac006
  39. Health Resources and Services Administration, Maternal and Child Health Bureau. Title V Maternal and Child Health Services Block Grant to States Program: Technical Assistance Resources. Accessed April 17, 2024. <https://mchb.hrsa.gov/programs-impact/title-v-maternal-child-health-mch-services-block-grant>
  40. Centers for Medicare & Medicaid Services. Coverage of Health-Related Social Needs (HRSN) Services in Medicaid and the Children's Health Insurance Program (CHIP).