The Association of Low-Income Housing Tax Credit Units and Reports of Child Abuse and Neglect

Meghan E. Shanahan, PhD,[1,2] Anna E. Austin, PhD,[1,2] Christine P. Durrance, PhD,[3] Sandra L. Martin, PhD,[1] Jeremy A. Mercer, MS,[2] Desmond K. Runyan, MD,[4] Carol W. Runyan, PhD[5]

Introduction: Poverty broadly and financial stress owing to housing insecurity specifically are associated with an increased risk of child maltreatment. Therefore, it is possible that a program designed to increase access to affordable housing such as the Low-Income Housing Tax Credit program could reduce child maltreatment. The purpose of this study is to examine the association of the availability of housing units through the Low-Income Housing Tax Credit Program with the rates of child maltreatment reports, including reports for physical abuse and neglect, at the state and county levels.

Methods: Data were from the 2005–2015 National Child Abuse and Neglect Data System and the Low-Income Housing Tax Credit Program database. Generalized estimating equations were conducted in 2021 to calculate rate ratios and 95% CIs, adjusting for relevant confounders.

Results: At the state level, ≥25 compared with <25 Low-Income Housing Tax Credit Program units per 100,000 population was associated with a lower rate of overall child maltreatment (i.e., neglect and physical abuse; rate ratio=0.96, 95% CI=0.93, 0.99), neglect (rate ratio=0.96, 95% CI=0.94, 0.99), and physical abuse (rate ratio=0.96, 95% CI=0.93, 1.00) reports. Similarly, at the county level, ≥1 compared with 0 Low-Income Housing Tax Credit Program units per 100,000 population was associated with a lower rate of overall child maltreatment (rate ratio=0.94, 95% CI=0.92, 0.97), neglect (rate ratio=0.96, 95% CI=0.93, 0.98), and physical abuse (rate ratio=0.94, 95% CI=0.91, 0.98) reports.

Conclusions: Increasing access to affordable housing may be an effective strategy to reduce child maltreatment at both the state and county levels.
Am J Prev Med 2022;62(5):727−734. © 2022 American Journal of Preventive Medicine. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

INTRODUCTION

Child maltreatment is an insidious problem that affects between 656,000[1] and 2.9 million[2] children annually in the U.S. In addition, each year, there are approximately 4.4 million referrals to child protective service (CPS) agencies concerning the potential maltreatment of 7.9 million children.[1] The high prevalence of child maltreatment is concerning not only because of immediate safety concerns but also because children who experience abuse or neglect are at an increased risk of poor health and wellbeing outcomes across the life course, such as poor academic achievement,[3] poor mental health,[4] substance use disorders,[5]

From the [1]From the Department of Maternal and Child Health, UNC Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; [2]UNC Injury Prevention Research Center (IPRC), The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; [3]Robert M. LaFollette School of Public Affairs, University of Wisconsin-Madison, Madison, Wisconsin; [4]Department of Pediatrics, CU School of Medicine, University of Colorado, Aurora, Colorado; and [5]and the Department of Health Behavior, UNC Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Address correspondence to: Meghan E. Shanahan, PhD, Department of Maternal and Child Health, The University of North Carolina at Chapel Hill, 421 Pittsboro Street, CB# 7445, Chapel Hill NC 27599 E-mail: shanahan@unc.edu.

and sexually transmitted infections.[5] Furthermore, the lifetime economic burden of investigated child maltreatment from 1 year alone is estimated to be $2 trillion.[6] Given the magnitude of this problem as well as the associated individual and societal burdens, it is imperative that effective prevention strategies, particularly those that address macro-level factors,[7] are identified.

Although child maltreatment impacts families across the economic spectrum, poverty and economic stress are strong risk factors.[2,8−10] Data from the Fourth National Incidence Study of Child Abuse and Neglect revealed that children of low SES were 7 times as likely to experience neglect and 3 times as likely to experience abuse as peers from families with higher incomes.[2] Neighborhood poverty rates also are positively associated with child maltreatment.[11−13] Specifically, children who live in neighborhoods where >10% of families are below the Federal Poverty Level have higher rates of CPS involvement than children who live in neighborhoods where <10% of the residents are poor.[11] Furthermore, poverty rates at the census-track level are associated with Emergency Medical Services encounters for child maltreatment, such that a 5% increase in poverty is associated with a 3% increase in encounters for child maltreatment.[12]

Housing is a recognized social determinant of health,[14] and housing insecurity (e.g., housing unaffordability, housing instability, poor housing conditions) is a tangible measure of how poverty affects living circumstances for a substantial number of children and families.[15] Stress related to housing insecurity may indirectly function as a risk factor for child maltreatment because it may increase parental depression and parenting stress, known risk factors for child maltreatment.[16−19] Housing insecurity could also have a direct effect on neglect because inherent in the definition of neglect is failing to provide adequate housing.[20] In addition, in the absence of affordable housing, families may face challenging decisions as to how to use limited resources to meet their children's needs and therefore be reported to CPS for neglect. In a study of Temporary Assistance for Needy Families recipients, families who had trouble paying rent, who were living with others, who experienced eviction, or who were homeless were significantly more likely to become involved with CPS than families who did not experience these indicators of housing insecurity.[21] Therefore, it is possible that programs designed to address housing insecurity, such as the Low-Income Housing Tax Credit Program (LIHTC), may reduce the prevalence of child maltreatment.

The LIHTC program was created by the Tax Reform Act of 1986 and is the largest federal housing program for low-income individuals. It provides approximately $8 billion in tax credits annually, making an average of approximately 1,400 projects and 106,400 units available per year.[22] This program, administered through the Internal Revenue Service, grants states the authority to issue federal tax credits for the development of affordable rental housing.[23] States receive federal tax credits on the basis of total population size and allocate those credits to developers on a competitive basis.[24] Developers are incentivized to ensure that a large proportion of the units are reserved for low-income households and that the units remain affordable for ≥30 years.[24] More specifically, developers can either choose to set aside ≥20% of the units for households earning ≤50% of the area median income or ≥40% of the units for those earning ≤60% of the area median income.[23] The amount of tax credits granted to developers is a factor of development cost, the proportion of units reserved for low-income households, and the tax rate.

A nascent body of literature has examined the impact of addressing housing insecurity on child maltreatment. Studies have found that providing Housing Choice Vouchers that cover ≥70% of rent and utilities to families involved with CPS results in fewer new reports of abuse and neglect, higher CPS case closure rates,[25] and reduced self-reported minor physical assault and neglect.[26] A recent study examined the impact of LIHTC on child maltreatment reports in Georgia. This study did not find a statistically significant association between the numbers of LIHTC units and reports or confirmed cases of child maltreatment at the county level.[27] However, given that this study used data from 1 state, it focused analyses on the county level. Therefore, the association of the availability of LIHTC units with CPS reports on a national level is not known. Building on this literature, this study examines the possible associations of LIHTC unit availability with reports of child maltreatment for physical abuse and neglect to CPS at the state and county levels.

METHODS

Two primary data sources were used to examine the associations between LIHTC unit availability and child maltreatment: (1) the National Child Abuse and Neglect Data System from the Office of Administration for Children and Families and (2) the LIHTC Database from the Department of Housing and Urban Development. Data from 2005 to 2015 were used to calculate yearly rates of physical abuse and neglect reports at the state and county levels. Analyses were conducted in 2021. The IRB of The University of North Carolina at Chapel Hill determined the study to be exempt from approval.

Measures

The exposure of interest was the number of LIHTC units per 100,000 population per year. Consistent with previous research,[28] the number of units from the year that the units were placed into

service rather than the year the contract was awarded was used to determine the number of LIHTC units available. This decision was made because this is when the units would influence individual housing availability. For state-level analyses, LIHTC unit availability above and below the median number of units per 100,000 population (<25 vs ≥25 units per 100,000) was compared. For county-level analyses, a similar approach was taken, comparing the availability above and below the median number of units at the county level (0 vs ≥1 per 100,000 population.)

Data from the National Child Abuse and Neglect Data System Child File were used to create outcome measures of child maltreatment reports. States voluntarily submit their data to this federally sponsored national data collection effort. The Child File includes case-level data regarding all investigations or assessments of suspected child maltreatment that received a case disposition within the reporting year (i.e., case-level data are not included until a disposition is made). The year the report was made, not when the case decision was finalized, was used to calculate rates. When states failed to submit data for a year, data from the preceding year were excluded to prevent biasing the estimates (the following states and years were excluded: North Dakota, 2005−2008; Oregon, 2005−2011; Michigan, 2005−2007; Maryland, 2005 −2006).

Consistent with previous studies examining the impact of policies and programs on child maltreatment,[29,30] all screened-in reports to CPSs were included rather than only substantiated cases. Extensive literature indicates that substantiation, relative to screened-in reports, is not an indicator of future maltreatment risk[31−33] or child cognitive, emotional, or behavioral outcomes.[34,35] Furthermore, previous research suggests that decisions regarding substantiation are heavily influenced by factors external to the case, such as CPS agency policies permitting service provision to unsubstantiated cases.[36]

The National Child Abuse and Neglect Data System data were used to calculate 3 child maltreatment outcomes as follows:

1 Overall maltreatment reports. A count of all unique screened-in reports for suspected maltreatment per year, state, and county was calculated. Unique reports of neglect or deprivation of necessities, medical neglect, or physical abuse were included. This count was used to calculate the rate of all screened-in reports for suspected maltreatment per 100,000 population of those aged <18 years per year for each state and county.
2 Neglect reports. A count of all unique screened-in reports for suspected neglect or deprivation of necessities or medical neglect per year, state, and county was calculated. This count was used to calculate the rate of all screened-in reports for suspected neglect per 100,000 population of those aged <18 years per year for each state and county.
3 Physical abuse reports. A count of all unique screened-in reports for suspected physical abuse per year, state, and county was calculated. This count was used to calculate the rate of all screened-in reports for suspected physical abuse per 100,000 population aged <18 years per year for each state and county.

Of note, the unique reports may include multiple children as well as multiple forms of child maltreatment. Furthermore, consistent with previous research,[29] reports of sexual abuse were not included in the analysis because perpetrators in these cases are less likely to be parents or caregivers than those in other types of maltreatment.[2,37]

To identify potential sources of confounding, a directed acyclic graph[38] was developed using extant literature[1,13,29,30,39−42] and expert judgment, and models were subsequently adjusted for observable measures that were identified as confounders (Appendix Figure 1, available online). The annual percentage of the population unemployed,[43] violent crime rate,[44] median household income,[43] percentage of the population by race/ethnicity,[45] state Medicaid expansion status,[46] state minimum wage,[43] state Temporary Assistance for Needy Families benefit level for a family of 3,[43] and whether the state had refundable Earned Income Tax Credit[43] were included as confounders in the state-level analyses. The same confounders were included in the county-level analyses except for Medicaid expansion, minimum wage, Temporary Assistance for Needy Families benefit level for a family of 3, or Earned Income Tax Credit because these state-level policies do not vary among counties within states. Violent crime rate was also not included because these data were not available at the county level.

Statistical Analysis

Data were analyzed using SAS, version 9.4. First, descriptive statistics were calculated, and outcomes and confounders above and below the median number of units per 100,000 population were compared. Then, data were analyzed using generalized estimating equations with negative binomial distribution, owing to overdispersion of the number of maltreatment reports, and log link. A linear time trend to account for secular trends over time was included. The number of overall child maltreatment, neglect, and physical abuse reports was separately the outcome, and an offset term for the total population aged <18 years was used to calculate rate ratios and 95% CIs. Using American Statistical Association guidance,[47] *p*-values were not relied on when interpreting results, but rather the magnitude of the point estimate for the rate ratio and the width of the CI were examined. A lag of 1 year for the number of LIHTC units per 100,000 population was used in all models because there may be a delay between when LIHTC units become available and when families can access them. In addition, the LIHTC data did not include the specific date the units became available; therefore, within any given year, reports to CPS could occur before LIHTC units were placed in service.

RESULTS

Table 1 includes state-level descriptive statistics stratified by the median number of LIHTC units per 100,000 population. The mean neglect report rate was slightly higher in states with ≥25 LIHTC units than in those with <25 LIHTC units per 100,000 population (1,796.3 vs 1,046.5), although the 25th, 50th, and 75th percentiles were similar. Differences in the mean physical abuse report rate by LIHTC unit availability were not observed. The median household income was higher in areas with <25 LIHTC units per 100,000 population ($51,877 vs $50,733). There were no other substantial differences in the confounding variables at the state level. Table 2 describes the county-level descriptive statistics stratified

Table 1. State-Level Characteristics of States by LIHTC Availability, 2005–2015 (N=530 State-Years)

Characteristics	<25 low-income units per 100,000 population (*n*=236 state-years)		≥25 low-income units per 100,000 population (*n*=294 state-years)	
	Mean	25th, 50th, 75th percentile	Mean	25th, 50th, 75th percentile
Percentage population unemployed	6.6	4.9, 6.6, 7.9	6.1	4.5, 5.5, 7.7
Median household income	51,877	45,329, 50,043, 56,840	50,733	44,011, 49,381, 56,811
Percentage population White, non-Hispanic	72.1	64.0, 74.8, 83.3	71.7	60.0, 75.7, 84.4
Percentage population Black, non-Hispanic	10.6	3.9, 8.1, 14.6	12.2	3.6, 8.0, 15.8
Percentage population other race, non-Hispanic	6.7	2.6, 3.7, 6.6	5.8	2.2, 3.7, 7.2
Percentage population Hispanic	10.6	4.4, 7.4, 12.1	10.3	3.7, 8.1, 12.4
Violent crime rate per 100,000 population	381.5	273.8, 356.2, 474.9	408.5	257.4, 341.4, 503.4
State minimum wage	7.11	7.15, 7.25, 7.50	6.67	5.15, 7.01, 7.30
Maximum TANF benefit for family of 3	429	292, 424, 543	430	292, 424, 549
Maltreatment reports per 100,000 child population	3,903.4	2,523.9, 3,852.8, 5,065.4	4,030.3	2,609.3, 3,645.7, 5,095.8
Neglect reports per 100,000 child population	1,046.5	982.0, 1,622.6, 2,433.0	1,796.3	1,092.0, 1,674.2, 2,474.5
Physical abuse reports per 100,000 child population	796.3	580.0, 748.7, 957.8	836.2	580.6, 738.9, 945.3

LIHTC, Low-Income Housing Tax Credit; TANF, Temporary Assistance for Needy Families.

Table 2. County-Level Characteristics of Counties by LIHTC Availability, 2005–2015 (N=8,011 State-Years)

Characteristics	0 units per 100,000 population (*n*=4,345)		≥1 unit per 100,000 population (*n*=3,666)	
	Mean	25th, 50th, 75th percentile	Mean	25th, 50th, 75th percentile
Percentage population unemployed	7.1	5.1, 6.7, 8.7	6.9	4.9, 6.3, 8.4
Median household income, $	47,578	39,546, 45,287, 52,640	51,175	41,954, 48,316, 57,318
Percentage population White, non-Hispanic	77.3	67.8, 82.3, 91.0	69.4	56.4, 73.2, 85.3
Percentage population Black, non-Hispanic	10.3	2.2, 5.8, 12.9	12.8	3.2, 8.4, 18.0
Percentage population other race, non-Hispanic	3.2	1.1, 1.7, 3.3	5.0	1.8, 32, 5.6
Percentage population Hispanic	9.3	2.6, 4.9, 10.0	12.7	3.8, 7.4, 16.2
Maltreatment reports per 100,000 population <18 years	5,389.5	3,347.9, 5,389.5, 7,997.3	4,706.4	2,591.5, 4,223.8, 6,008.7
Neglect reports per 100,000 population <18 years	3,164.4	1,475.2, 2,470.3, 3,800.3	2,191.7	1,138.2, 1,935.4, 2,828.4
Physical abuse reports per 100,000 population <18 years	1,177.8	560.1, 926.1, 1,310.2	861.5	508.1, 784.8, 1,097.4

A total of 8,011 county years were included in analyses for neglect reports; 7,947 county years were included in analyses for physical abuse reports.
LIHTC, Low-Income Housing Tax Credit.

Table 3. Associations of LIHTC Units and Reports to CPS at the State Level

Variables	Maltreatment reports, rate ratio (95% CI)	Neglect reports, rate ratio (95% CI)	Abuse reports, rate ratio (95% CI)
≥25 vs <25 units per 100,000 population	0.96 (0.93, 0.99)	0.96 (0.94, 0.99)	0.96 (0.93, 1.00)

The table shows the reports with 1 year lag for the number of LIHTC units per 100,000 population and offset term for the total population aged <18 years. It includes 491 total state years. Data from 4 states over a varying number of years were excluded (North Dakota 2005–2008, Oregon 2005–2011, Michigan 2005–2007, and Maryland 2005–2006). Reports were adjusted for annual percentage population unemployed; violent crime rate; median household income; percentage population Black, non-Hispanic; percent population other race, non-Hispanic; percentage population Hispanic; Medicaid expansion; minimum wage; TANF benefit level for a family of 3; and refundable EITC.
CPS, Child Protection Services; EITC, Earned Income Tax Credit; LIHTC, Low-Income Housing Tax Credit; TANF, Temporary Assistance for Needy Families.

Table 4. Associations of LIHTC Units and Reports to CPS at the County Level

Variables	Maltreatment reports, rate ratio (95% CI)	Neglect reports, rate ratio (95% CI)	Abuse reports, rate ratio (95%CI)
≥1 vs 0 units per 100,000 population	0.94 (0.92, 0.97)	0.96 (0.93, 0.98)	0.94 (0.91, 0.98)

The table shows the reports with 1 year lag for the number of LIHTC units per 100,000 population and offset term for the total population aged <18 years. It includes 8,011 total county years. County data from 4 states over a varying number of years were excluded from the analysis (North Dakota 2005–2008, Oregon 2005–2011, Michigan 2005–2007, and Maryland 2005–2006). Reports were adjusted for annual percentage population unemployed; violent crime rate; median household income; percentage population Black, non-Hispanic; percentage population other race, non-Hispanic; percentage population Hispanic.
CPS, Child Protective Services; LIHTC, Low-Income Housing Tax Credit.

by the median number of LIHTC units per 100,000 population. Interestingly, the mean neglect and physical abuse report rates were higher in counties with 0 LIHTC units per 100,000 population (3,164.4 vs 2,192.7; 1,177.8 vs 861.5). The mean household income was higher in areas with ≥1 unit per 100,000 population ($51,175 vs $47,578). Racial and ethnic differences were observed among counties with 0 LIHTC units compared with those with ≥1 unit per 100,000 population.

Adjusting for potential confounders, the rate of maltreatment reports in states with ≥25 LIHTC units per 100,000 population was 0.96 times (95% CI=0.93, 0.99) that of reports in states with <25 units per 100,000 population (Table 3). Results were similar for neglect reports (rate ratio=0.96, 95% CI=0.94, 0.99) and for physical abuse reports (rate ratio=0.96, 95% CI=0.93, 1.00) (Table 3).

Adjusting for potential confounders, the rate of maltreatment reports in counties with ≥1 LIHTC unit per 100,000 population was 0.94 times (95% CI=0.92, 0.97) that of reports in counties with no LIHTC units (Table 4). Results were similar for neglect reports (rate ratio=0.96, 95% CI=0.93, 0.98) and physical abuse reports (rate ratio=0.94, 95% CI=0.91, 0.98) (Table 4).

DISCUSSION

This study found an association between the availability of LIHTC units and the rates of screened-in CPS reports.

Specifically, greater LIHTC unit availability was associated with a reduction in CPS reports for overall maltreatment, neglect, and physical abuse at both the state and county levels. Of note, these results were robust to sensitivity analysis that used a contemporaneous measure of the number of LIHTC units per 100,000 population.

These results add to the mounting evidence that it may be possible to prevent child maltreatment by addressing social determinants of health, such as socioeconomic conditions, access to health care, and housing.[14] Previous work suggests that increasing the minimum wage reduces CPS reports, particularly for neglect among young children.[30] In addition, other state policies such as Medicaid expansion,[29] the Earned Income Tax Credit,[48] and paid family leave[49] have been associated with reductions in child maltreatment. Taken together, these results, along with those from this study, suggest that improving the context in which families live contributes to reductions in child maltreatment.

Specifically, this study's results indicate that a federal tax program designed to increase the availability of affordable housing is associated with reductions in CPS reports for overall maltreatment, physical abuse, and neglect. Although these results indicate a small reduction in CPS reports associated with greater availability of LIHTC units, it is important to note that these effects were found in population-level data. Depending on the outcome and geographic region, the LIHTC program was associated with a 4%−6% reduction in CPS reports

([(1/rate ratio)−1] × 100%). At the population level, these percentage reductions translate to numerous children who did not experience maltreatment. Indeed, using 2015 CPS reports as an example, results indicate that the LIHTC program was associated with 72,000 −108,000 fewer reports to CPS. Furthermore, given that all states have LIHTC units, marginal effects were estimated in state-level analyses. That is, areas with fewer units were compared with those with more units, rather than comparing areas without any LIHTC units with those with them. Therefore, the state-level results represent a lower bound of the impact of affordable housing on child maltreatment. This study builds on previous work focused on addressing the lack of access to affordable housing among families involved with CPS.[25,26] This previous work found that providing housing vouchers to families involved with CPS prevents recidivism. This study's results further suggest that the presence of more LIHTC units in a state or county is associated with reduced rates of child maltreatment, indicating that increasing affordable housing may be a component of an effective prevention strategy for child maltreatment. This aligns with previous research showing that housing developments created through the LIHTC program result in secondary effects, such as reductions in property and violent crime in low-income areas[50,51] as well as increased housing values in declining and stable neighborhoods.[52]

Limitations

The results of this study should be interpreted in the context of several limitations. First, they rely on administrative records to measure reports to CPS. It is widely accepted that CPS reports represent a portion of child maltreatment incidents that occur.[2] To the extent that incidents known to CPS differ from those not known, the findings may not be generalizable to all cases of maltreatment. Future research should examine the association of LIHTC units with child maltreatment captured in other data sources. In addition, CPS data are vulnerable to changes in policies and practices that may vary between states and over time. The analytic models included confounders that may account for some of these changes, but it is possible that key confounders were omitted. Second, the ecologic study design does not allow for the determination of what proportion of LIHTC unit residents were children at risk for maltreatment or being reported to CPS. It also is not possible to know what proportion of children reported to CPS lived in LIHTC units. Therefore, it is not possible to say that living in a LIHTC unit reduces the risk of child maltreatment at the individual level, but rather that the conditions offered by LIHTC unit presence at the state or county level are associated with a lower incidence of child maltreatment in aggregate. Third, the results only generalize to the states and counties included in these analyses. It is possible that the LIHTC program implementation, CPS reporting, or the association between the 2 are different in areas that were not included in this study. This is particularly relevant to county-level analyses because county years with <10 reports were suppressed. Although these results may not represent the association of LIHTC units with CPS reports among counties excluded from the analysis, many county-level observations were included, and therefore the analyses were sufficiently powered.

CONCLUSIONS

This study found that the availability of LIHTC units is associated with reduced rates of CPS reports for overall maltreatment, physical abuse, and neglect at the state and county levels. A federal policy increasing support for LIHTC units may contribute to further reductions in child maltreatment reports. Future research should examine the causal pathways between increases in affordable housing and rates of child maltreatment.

ACKNOWLEDGMENTS

CREDIT AUTHOR STATEMENT

Meghan E. Shanahan: conceptualization, methodology, writing - original draft, visualization, project administration, funding acquisition. Anna E. Austin: conceptualization, methodology,

formal analysis, writing - review and editing, visualization. Christine P. Durrance: conceptualization, methodology, writing - review and editing. Sandra L. Martin: conceptualization, writing - review and editing. Jeremy Mercer: software. Desmond K. Runyan: conceptualization, writing - review and editing. Carol W. Runyan: conceptualization, writing - review and editing.

SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at https://doi.org/10.1016/j.amepre.2021.11.020.

REFERENCES

1. HHS. Administration for Children and Families, Children's Bureau. Child maltreatment. Washington, DC: HHS, Administration for Children and Families, Children's Bureau; 2019. https://www.acf.hhs.gov/cb/report/child-maltreatment-2019. Published January 14, 2021. Accessed May 3, 2021.
2. Sedlak, AJ, Mettenburg, J, Basena, M, Petta, I, McPherson, K, Greene, A, and Li, S. (2010). *Fourth National Incidence Study of Child Abuse and Neglect (NIS−4): Report to Congress*. Washington, DC: U.S. Department of Health and Human Services, Administration for Childrenand Families.
3. Ryan JP, Jacob BA, Gross M, Perron BE, Moore A, Ferguson S. Early exposure to child maltreatment and academic outcomes. *Child Maltreat.* 2018;23(4):365–375. https://doi.org/10.1177/1077559518786815.
4. Breiding MJ, Black MC, Ryan GW. Chronic disease and health risk behaviors associated with intimate partner violence-18 U.S. states/territories, 2005. *Ann Epidemiol.* 2008;18(7):538–544. https://doi.org/10.1016/j.annepidem.2008.02.005.
5. Norman RE, Byambaa M, De R, Butchart A, Scott J, Vos T. The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Med.* 2012;9(11):e1001349. https://doi.org/10.1371/journal.pmed.1001349.
6. Peterson C, Florence C, Klevens J. The economic burden of child maltreatment in the United States, 2015. *Child Abuse Negl.* 2018;86:178–183. https://doi.org/10.1016/j.chiabu.2018.09.018.
7. Bullinger LR, Feely M, Raissian KM, Schneider W. Heed neglect, disrupt child maltreatment: a call to action for researchers. *Int J Child Maltreat.* 2020;3(1):93–104. https://doi.org/10.1007/s42448-019-00026-5.
8. Putnam-Hornstein E, Needell B. Predictors of child protective service contact between birth and age five: an examination of California's 2002 birth cohort. *Child Youth Serv Rev.* 2011;33(8):1337–1344. https://doi.org/10.1016/j.childyouth.2011.04.006.
9. Berger LM. Income, family structure, and child maltreatment risk. *Child Youth Serv Rev.* 2004;26(8):725–748. https://doi.org/10.1016/j.childyouth.2004.02.017.
10. Kim H, Drake B. Child maltreatment risk as a function of poverty and race/ethnicity in the USA. *Int J Epidemiol.* 2018;47(3):780–787. https://doi.org/10.1093/ije/dyx280.
11. Fong K. Neighborhood inequality in the prevalence of reported and substantiated child maltreatment. *Child Abuse Negl.* 2019;90:13–21. https://doi.org/10.1016/j.chiabu.2019.01.014.
12. Bressler CJ, Letson MM, Kline D, McCarthy T, Davis J, Leonard JC. Characteristics of neighborhoods where emergency medical services encounter children at risk for maltreatment. *Prehosp Emerg Care.* 2019;23(5):672–682. https://doi.org/10.1080/10903127.2019.1573940.
13. Morris MC, Marco M, Maguire-Jack K, et al. Connecting child maltreatment risk with crime and neighborhood disadvantage across time and place: a Bayesian Spatiotemporal analysis. *Child Maltreat.* 2019;24(2):181–192. https://doi.org/10.1177/1077559518814364.
14. Social determinants of health. Healthy People 2030, HHS, Office of Disease Prevention and Health promotion. https://health.gov/healthypeople/objectives-and-data/social-determinants-health. Accessed May 3, 2021.
15. Gershoff ET, Aber JL, Raver CC, Lennon MC. Income is not enough: incorporating material hardship into models of income associations with parenting and child development. *Child Dev.* 2007;78(1):70–95. https://doi.org/10.1111/j.1467-8624.2007.00986.x.
16. Lee SJ, Taylor CA, Bellamy JL. Paternal depression and risk for child neglect in father-involved families of young children. *Child Abuse Negl.* 2012;36(5):461–469. https://doi.org/10.1016/j.chiabu.2012.04.002.
17. Ethier LS, Lacharité C, Couture G. Childhood adversity, parental stress, and depression of negligent mothers. *Child Abuse Negl.* 1995;19(5):619–632. https://doi.org/10.1016/0145-2134(95)00020-9.
18. Shanahan ME, Runyan DK, Martin SL, Kotch JB. The within poverty differences in the occurrence of physical neglect. *Child Youth Serv Rev.* 2017;75:1–6. https://doi.org/10.1016/j.childyouth.2017.02.014.
19. Curenton SM, McWey LM, Bolen MG. Distinguishing maltreating versus nonmaltreating at-risk families: implications for foster care and early childhood education interventions. *Fam Soc.* 2009;90(2):176–182. https://doi.org/10.1606/1044-3894.3871.
20. HHS. Administration for Children and Families, Children's Bureau. Acts of Omission: an Overview of Child Neglect. Washington, DC: HHS, Administration for Children and Families, Children's Bureau; 2018. https://www.childwelfare.gov/pubPDFs/acts.pdf. Published July 2018. Accessed January 25, 2022.
21. Yang MY. The effect of material hardship on child protective service involvement. *Child Abuse Negl.* 2015;41:113–125. https://doi.org/10.1016/j.chiabu.2014.05.009.
22. Low-Income Housing Tax Credit Program (LIHTC). U.S. Department of Housing and Urban Development. Office of Policy Development and Research; 2021. https://www.huduser.gov/portal/datasets/lihtc.html. Accessed June 11.
23. Abt Associates Inc. U.S. Department of Housing and Urban Development. Development and analysis of the national low-income housing tax credit database. Washington, DC: U.S: Department of Housing and Urban Development; 1996. https://www.huduser.gov/portal/publications/affhsg/report.html.
24. Office of the Comptroller of the Currency. Community developments insights. Low-income housing tax credits: affordable housing investment opportunities for banks. Washington, DC: Office of the Comptroller of the Currency; 2021. https://www.occ.gov/publications-and-resources/publications/community-affairs/community-developments-insights/ca-insights-mar-2014.html.
25. Pergamit M, Cunningham M, Hanson D. The impact of Family Unification Housing Vouchers on child welfare outcomes. *Am J Community Psychol.* 2017;60(1−2):103–113. https://doi.org/10.1002/ajcp.12136.
26. Fowler PJ, Schoeny M. Permanent housing for child welfare-involved families: impact on child maltreatment overview. *Am J Community Psychol.* 2017;60(1−2):91–102. https://doi.org/10.1002/ajcp.12146.
27. Ports KA, Rostad WL, Luo F, Putnam M, Zurick E. The impact of the low-income housing tax credit on children's health and wellbeing in Georgia. *Child Youth Serv Rev.* 2018;93:390–396. https://doi.org/10.1016/j.childyouth.2018.08.012.
28. Fallon KF, Price CR. Evaluating exposure to crime among LIHTC building types and characteristics in Ohio. *Hous Policy Debate.* 2020 In press. Online December 15. https://doi.org/10.1080/10511482.2020.1839938.
29. Brown ECB, Garrison MM, Bao H, Qu P, Jenny C, Rowhani-Rahbar A. Assessment of rates of child maltreatment in states with Medicaid expansion vs states without Medicaid expansion. *JAMA Netw Open.* 2019;2(6):e195529. https://doi.org/10.1001/jamanetworkopen.2019.5529.
30. Raissian KM, Bullinger LR. Money matters: does the minimum wage affect child maltreatment rates? *Child Youth Serv Rev.* 2017;72:60–70. https://doi.org/10.1016/j.childyouth.2016.09.033.
31. Dolan M, Casanueva C, Smith K, Ringeisen H. *NSCAW child well-being spotlight: children with substantiated and unsubstantiated*

reports of child maltreatment are at similar risk for poor outcomes. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, HHS; 2012. https://www.acf.hhs.gov/opre/report/nscaw-ii-child-well-being-spotlight-children-substantiated-and-unsubstantiated-reports. Published May 9, 2012. Accessed January 25, 2022.

32. Kohl PL, Jonson-Reid M, Drake B. Time to leave substantiation behind: findings from a national probability study. *Child Maltreat.* 2009;14(1):17−26. https://doi.org/10.1177/1077559508326030.

33. Drake B, Jonson-Reid M, Way I, Chung S. Substantiation and recidivism. *Child Maltreat.* 2003;8(4):248−260. https://doi.org/10.1177/1077559503258930.

34. Hussey JM, Marshall JM, English DJ, et al. Defining maltreatment according to substantiation: distinction without a difference? *Child Abuse Negl.* 2005;29(5):479−492. https://doi.org/10.1016/j.chiabu.2003.12.005.

35. Leiter J, Myers KA, Zingraff MT. Substantiated and unsubstantiated cases of child maltreatment: do their consequences differ? *Soc Work Res.* 1994;18(2):67−82. https://doi.org/10.1093/swr/18.2.67.

36. Font SA, Maguire-Jack K. Decision-making in child protective services: influences at multiple levels of the social ecology. *Child Abuse Negl.* 2015;47:70−82. https://doi.org/10.1016/j.chiabu.2015.02.005.

37. Finkelhor D, Shattuck A, Turner HA, Hamby SL. The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. *J Adolesc Health.* 2014;55(3):329−333. https://doi.org/10.1016/j.jadohealth.2013.12.026.

38. Austin AE, Desrosiers TA, Shanahan ME. Directed acyclic graphs: an under-utilized tool for child maltreatment research. *Child Abuse Negl.* 2019;91:78−87. https://doi.org/10.1016/j.chiabu.2019.02.011.

39. Raissian KM, Bullinger LR. Money matters: does the minimum wage affect child maltreatment rates? *Child Youth Serv Rev.* 2017;72(C):60−70. https://doi.org/10.1016/j.childyouth.2016.09.033.

40. Coulton CJ, Korbin JE, Su M, Chow J. Community level factors and child maltreatment rates. *Child Dev.* 1995;66(5):1262−1276. https://doi.org/10.2307/1131646.

41. Molnar BE, Goerge RM, Gilsanz P, et al. Neighborhood-level social processes and substantiated cases of child maltreatment. *Child Abuse Negl.* 2016;51:41−53. https://doi.org/10.1016/j.chiabu.2015.11.007.

42. Berger LM, Font SA, Slack KS, Waldfogel J. Income and child maltreatment in unmarried families: evidence from the Earned Income Tax Credit. *Rev Econ Househ.* 2017;15(4):1345−1372. https://doi.org/10.1007/s11150-016-9346-9.

43. UKCPR National welfare data. 1980−2018. Gatton College of Business and Economics. University of Kentucky Center for Poverty Research; 2021. http://ukcpr.org/resources/national-welfare-data. Accessed June 11.

44. Crime Data Explorer. Federal Bureau of Investigation https://crime-data-explorer.app.cloud.gov/pages/home. Accessed January 25, 2022.

45. U.S. Census populations with bridged race categories. Centers for Disease Control and Prevention. National Center for Health Statistics; 2021. https://www.cdc.gov/nchs/nvss/bridged_race.htm.

46. Kaiser Family Foundation. Status of Medicaid expansion decisions: interactive Map. San Francisco, CA: Kaiser Family Foundation; 2021. https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/. Published January 18, 2022. Accessed January 25, 2022.

47. Wasserstein RL, Lazar NA. The ASA statement on *p*-values: context, process, and purpose. *Am Stat.* 2016;70(2):129−133. https://doi.org/10.1080/00031305.2016.1154108.

48. Rostad WL, Ports KA, Tang S, Klevens J. Reducing the number of children entering foster care: effects of state earned income tax credits. *Child Maltreat.* 2020;25(4):393−397. https://doi.org/10.1177/1077559519900922.

49. Klevens J, Luo F, Xu L, Peterson C, Latzman NE. Paid family leave's effect on hospital admissions for pediatric abusive head trauma. *Inj Prev.* 2016;22(6):442−445. https://doi.org/10.1136/injuryprev-2015-041702.

50. Diamond R, McQuade T. *Who wants affordable housing in their backyard? An equilibrium analysis of low income property development.* Stanford, CA: Stanford GSB; 2017. https://web.stanford.edu/~diamondr/LIHTC_spillovers.pdf. Published December 2017. Accessed July 9, 2021.

51. Woo A, Joh K. Beyond anecdotal evidence: do subsidized housing developments increase neighborhood crime? *Appl Geogr.* 2015;64:87−96. https://doi.org/10.1016/j.apgeog.2015.09.004.

52. Baum-Snow N, Marion J. The effects of low income housing tax credit developments on neighborhoods. *J Public Econ.* 2009;93(5−6):654−666. https://doi.org/10.1016/j.jpubeco.2009.01.001.