

Child Protective Services Decision-Making: The Role of Children's Race and County Factors

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The current study investigates the role of race and county characteristics in substantiation and out-of-home placement decisions in the United States. Using multilevel models, we analyzed data from counties in the United States available through the National Child Abuse and Neglect Data Systems and Adoption and Foster Care Analysis and Reporting System to investigate the interactions between children's race and the context in which they live. Our sample consisted exclusively of children whose cases had been investigated; therefore, we were able to focus on the role played by race and county characteristics in substantiation and out-of-home placement decisions made by Child Protective Services, net of the heightened risk factors (or potential biases) that lead to disparate rates of reporting. Adjusting for state and county of investigation, Black, American Indian/Alaskan Native, and multiracial children were more likely than White (non-Hispanic) children to be substantiated or placed out of home, whereas Asian children were less likely to be substantiated or placed out of home. Notably, differences across groups are far smaller in magnitude when demographic and geographic differences are taken into account. Higher county-level poverty, percentages of Black residents, and juvenile arrest rates were associated with lower odds of substantiation and out-of-home placement among investigated children, whereas an elevated percentage of single-headed households was associated with higher odds of both outcomes. We also found that living in a rural county was associated with greater odds of substantiation but lower odds of out-of-home placement. Important differences by race were found for these associations.

Public Policy Relevance Statement

Despite recent efforts to consider the influence of county-level characteristics on racial disparities in child welfare involvement, no known research to this point has included data from smaller counties in the United States because of data system restrictions. As a high degree of geographic variability in decision-making has been documented in the child welfare system, the need for research that considers how the impact of county factors varies by race of individuals has become evident.

By age 18, approximately one in three children in the United States will have experienced a Child Protective Services (CPS) investigation (Kim, Wildeman, Jonson-Reid, & Drake, 2017), 12.5% will have experienced a substantiated (confirmed) investigation (Wildeman et al., 2014), and 6% will have spent

time in foster care (Wildeman & Emanuel, 2014). However, as decades of research has documented, the probability and intensity of CPS involvement is not randomly distributed in the population. Children from Black and American Indian families (and, to a lesser extent, Hispanic families) are overrepresented at most stages of CPS involve-

This article was published Online First May 13, 2019.

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Some data used within this analysis were derived from National Data Archive on Child Abuse and Neglect (NDACAN) restricted data. These data were accessible through contractual arrangements with NDACAN,

and are solely available through the Cornell Restricted Access Data Center at CRADC@Cornell.edu. Neither the collector of the original data, funding agency, nor NDACAN bears any responsibility for the analyses or interpretations presented here.

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ment relative to their presence in the population, whereas White and Asian children are underrepresented. The over- or underrepresentation of certain racial groups is referred to as racial disproportionality, whereas the term *disparity* refers to the unequal outcomes of one racial group compared to the outcomes for another group (Child Welfare Information Gateway, 2016). Overrepresentation is often described using a disparity index, a measure that compares the likelihood of members of one group experiencing an event compared with members of another group (Shaw, Putnam-Hornstein, Magruder, & Needell, 2008). However, disparity or disproportionality can occur at a variety of stages of CPS (e.g., reporting, investigation, substantiation, foster care), and the degree and causes of disproportionality may differ at each stage. In this study, we focus on disproportionality within CPS—specifically, racial and ethnic differences in substantiation and out-of-home placement to foster care among children investigated by CPS.

Disproportionality does not, in itself, suggest the presence of bias or discrimination, because populations may differ in the underlying risk of maltreatment. Indeed, whether disproportionate representation primarily reflects differential risk exposure—as compared with differential treatment—remains the subject of a large and contested body of research. One of the factors making such investigations so difficult is that racial groups are unevenly distributed across counties (the primary organizational level of CPS) and states. Studies that focus on a single state or county are unlikely to be generalizable. On the other hand, national studies that ignore state and county risk may misidentify geographic patterns as racial patterns. Moreover, though some studies have considered whether family risk characteristics have different associations with decision-making as a function of child race, few have considered whether county characteristics have differential impacts. For example, disproportionality may be less prominent in counties where racial minorities are a large proportion of the overall population because such groups may be better represented in CPS, thus better positioned to advocate on behalf of their group interests. Given that racial groups are not evenly distributed across counties and that CPS is largely organized at the county level, differential risk and bias are not the only possible explanations for racial disproportionality in CPS. Understanding how county characteristics—such as racial composition, rurality, proportion of children living in poverty, and percent of single-headed households—are associated with CPS decision-making, and whether those associations vary by race of individuals who come into contact with the child welfare system, is the central goal of this study.

Using a national dataset linked with county characteristics, we investigate two research questions:

Research Question 1: Is race predictive of substantiation and out-of-home placement among children investigated by CPS, net of state and county effects?

Research Question 2: Are the associations of county sociodemographic characteristics with substantiation and out-of-home placement similar across racial groups?

Background

Decisions in Child Protective Services

CPS caseworkers are tasked with two major decisions. First, they decide whether to substantiate a case, which is a determina-

tion of whether there is sufficient evidence that at least one allegation of maltreatment is true. Second, they decide whether to remove a child from the home. Typically, children removed from the home have substantiated cases. In 2016, 19.5% of investigations had substantiated findings and of those who were substantiated, 21.4% were subsequently removed from their home (U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2017).

Theoretical Framework: The Decision-Making Ecology

CPS decision-making is influenced by a multitude of factors. The decision-making ecology framework describes the multilevel systemic context in which case, caseworker, organizational (agency), and external factors influence case-level decisions (Baumann, Dagleish, Fluke, & Kern, 2011). Case characteristics include the factors that are specific to the case—the allegations and risks to the child. Caseworker characteristics include the worker's education, background, personal experiences, and attitudes. Organizational factors include the policies and procedures of the agency, time and resource constraints, size of caseloads, and culture of the agency. The external factors include both aspects of the community where the family resides as well as laws and attitudes of the broader community (Baumann et al., 2011). Case factors—such as type of allegation, source of information, and child vulnerability—are expected to affect decision-making. However, given the same case factors, the decision to substantiate or remove is likely to vary between states because of differences in laws, training, and procedures, as well as between counties within a state due to differences in population characteristics, agency culture, workforce, and resources. As a result, an examination of national disparities without consideration of local contexts provides little insight into why such disparities exist. Prior research has found evidence that specific factors (case, caseworker, organizational, community, and policy) influence child welfare decisions (e.g., Font & Maguire-Jack, 2015), but has not considered whether these factors have the same association with substantiation across racial/ethnic groups. Because racial disproportionality is a longstanding and high-profile issue in child welfare, it is critical to understand the ways in which a child's race and characteristics of the local community might individually and interactively affect child welfare decision-making. Below, we review explanations of racial disparities that have been proposed in prior studies, the evidentiary support of those explanations, and what remains unknown or inconclusive.

Racial Disparities in Child Protective Services' Decisions

National and state-level studies have shown that, as a proportion of CPS-involved children, Black children are overrepresented in substantiations and out-of-home placements, but there are less consistent patterns for Hispanic children (Knott & Donovan, 2010; Needell, Brookhart, & Lee, 2003; Putnam-Hornstein, Needell, King, & Johnson-Motoyama, 2013). Many studies of racial disparities do not include American Indian/Alaskan Native children

due to their geographic concentration in specific states and their comparatively small population size; however, national data suggests overrepresentation in substantiations and out-of-home placements for this group as well (Wildeman & Emanuel, 2014; Wildeman et al., 2014).

Hypotheses on the Role of Race and Ethnicity in CPS Decision-Making

There are several potential explanations for racial disparities in CPS involvement. First, we acknowledge that there may be different levels of underlying risk for maltreatment due to racial disparities in economic deprivation, single or early parenthood, education, health, and criminal justice involvement. However, much of the influence of these differences is likely to be captured in initial reporting or investigation. In other words, a higher rate of underlying risk for maltreatment should, mechanically, lead to racial differences in the rate of reporting within the general child population, thereby resulting in higher rates of investigation within CPS. Yet, there is less reason to believe that differential risk would adequately explain racial disparities in substantiation and out-of-home placement *conditional on investigation*. Hence, we focus this study on two alternative explanations: individual bias (i.e., racial discrimination), and geographic clustering (the idea that there could be clustering of specific populations in high-intervention counties, even if there are not racial differences in intervention within counties).

The individual bias hypothesis contends that there are not underlying differences in the incidence of child maltreatment (or that any differences are insufficient to explain the magnitude of disparities), and that disproportionality in CPS arises from racial bias. Notably, studies of individual bias largely focus on comparisons of Black and White children, but this hypothesis could also be applied to other groups experiencing overrepresentation. Bias can arise at any stage of the CPS process. There is evidence of racial disparities in who is reported to CPS (Fluke, Yuan, Hedderson, & Curtis, 2003; Harris & Hackett, 2008; Krase, 2015), some of which indicates bias against Black children (Mumpower, 2010). However, the current study focuses on outcomes among those who are investigated by CPS. In other words, irrespective of the potential for biased reporting, how similar is decision-making across racial groups once CPS investigates? We note that bias in reporting could affect the extent of disparity at other stages of CPS involvement. For example, if reporters have a lower threshold for reporting Black families than White families, then among those referred, Black families should generally be a lower risk group. If so, then unbiased decision-making should result in lower substantiation and out-of-home placement rates for investigated Black children compared with investigated White children. Consistent with this supposition, Mumpower (2010) found that although Black children were overrepresented in referrals, they also had a higher rate of unsubstantiated reports than all other groups.

Regardless, the individual bias hypothesis has been applied to within-system decisions in addition to decisions external to CPS. The hypothesis asserts that caseworkers will systematically over-evaluate the evidence or risk of harm to a Black or American Indian child due to conscious or subconscious biases about the capacity or suitability of Black or American Indian racial minority parents. The premise largely focuses on the parent as the target of

intervention, and parallels theories in criminal and juvenile justice. However, theories used to explain disparities in incarceration or capital punishment are not necessarily applicable to CPS decision-making. The stated purpose of CPS is not to punish maltreating parents, but to ensure child safety. If we consider that the child is the ostensible motivation for intervention, then it is also possible that racial bias could lead to lower rates of intervention than would be expected given the maltreatment allegations or circumstances. If CPS caseworkers are indeed racially biased, then harms to non-White children may not be viewed as seriously as harms to White children. A large body of research in other fields suggests that harm to Whites is taken more seriously and that people empathize less with Blacks and perceive them to experience lesser pain, compared with Whites (Kaseweter, Drwecki, & Prkachin, 2012; Trawalter & Hoffman, 2015; Trawalter, Hoffman, & Waytz, 2012). Such biases should suggest that caseworkers would underestimate harm and vulnerability experienced by Black children (and perhaps other minority groups). To our knowledge, only one study has looked at level of caseworker investment by race; that study, which found no differences in substantiation rates, also found no differences in how much time or attention caseworkers gave Black families as compared with White families (Levine, Doueck, Freeman, & Compaan, 1996).

Geographic clustering may confound efforts to identify individual bias, and is thus an important consideration. Most of the aforementioned studies made no adjustments for geographic region or characteristics. Krase (2015) examined substantiation rates in one state and found that across types of reports, Black children were more likely to be substantiated than White children; yet, this disparity did not carry over to the county level for most counties. Similarly, others have shown that efforts to identify discrimination without accounting for geography produces misleading estimates (Ards, Myers, Malkis, Sugrue, & Zhou, 2003). This suggests that, in part, racial disproportionality at the state level may be driven by a correlation between county racial composition and substantiation rate (e.g., if Black children are more likely to live in counties with overall high rates of substantiation). Yet, an examination of five states found a high degree of variance in substantiation disparity ratios across and within states (Fluke et al., 2003), indicating a potential role of county and agency characteristics in driving disparity rates.

County Factors, Child Maltreatment, and Race

The geographic context in which families live may influence both their parenting abilities and the way in which case workers interpret their actions. In a body of literature examining maltreatment rates in the general population, community-level poverty has been found to be associated with maltreatment in a variety of studies (see Maguire-Jack, 2014 for a review), and racial disparities in poverty have been found to be associated with racial disparities in maltreatment for Black and Hispanic youth (Maguire-Jack, Lanier, Johnson-Motoyama, Welch, & Dineen, 2015). However, that study was hindered by the lack of information about children living in counties with fewer than 1,000 cases of reported maltreatment (i.e., the most sparsely populated counties). County-level racial composition may also impact racial maltreatment disparities if the children of color are more visible due to living in counties with a primarily White demographic makeup. Klein and Merritt (2014) found that White,

Black, and Hispanic children in Los Angeles, California, who were living in racially diverse neighborhoods were more likely to be reported to CPS compared to children of the same race/ethnicity living in racially homogenous neighborhoods. Additionally, the authors found that only housing stress was associated with referral rates for Black children, but housing stress, neighborhood impoverishment, residential instability, and childcare burden were associated with referral rates for White and Hispanic children (Klein & Merritt, 2014). The study focused on Los Angeles County and used aggregated maltreatment rates. The current study expands on this prior work by examining individual likelihood of having a report substantiated relative to these county effects. The relationship between county-level variables and maltreatment disparities by race needs to be explored further to better understand the interplay of influences across multiple levels of the social ecology.

In addition to the disparate effect by race of these county-level variables on maltreatment, this interplay may also affect decision-making by child welfare caseworkers. That is, caseworkers may interpret actions differently for parents of children of a specific racial group living in an impoverished area than they would the same actions of a parent of a child from a different racial group or the same racial group but a nonimpoverished area. The current study seeks to specifically examine the decision-making of child welfare caseworkers across the United States by scrutinizing case decisions related to substantiation and out-of-home placement among investigated children.

Summary and Gaps in Existing Literature

Despite recent efforts to consider the influence of county-level characteristics on racial disparities in child welfare involvement, no known research to this point has included data from smaller counties in the United States. Previous efforts have often only included data from counties within a certain CPS case reporting minimum due to data system restrictions (Kim & Drake, 2018), resulting in findings that have been skewed toward suburban and urban environments, thus failing to adequately represent rural demographics. As a high degree of geographic variability in decision-making has been documented in the child welfare system (Ards et al., 2003; Maguire-Jack et al., 2015), the need for research that considers how the impact of county factors vary by race of individuals has become evident. Along with questions including variables at multiple levels of a child's social ecology, a need for multilevel analyses has emerged. This study endeavors to address the outlined gaps by assessing the interplay of individual- and county-level factors as they relate to likelihood of a child experiencing case substantiation and out-of-home placement while in contact with the child welfare system.

Current Study

The current study sought to examine the context in which maltreatment substantiation and out-of-home placement occur in the child welfare system, with a specific focus on the extent to which a child's race/ethnicity and the county factors in which the child lives impacts these outcomes. Specifically, we examined two research questions: whether a child's race and ethnicity impact his or her likelihood of being substantiated and placed in out-of-home

care, controlling for characteristics of the county of residence, and if county characteristics matter differently for the likelihood of substantiation and out-of-home placement by race and ethnicity of the child.

The current study adds to the literature in a number of ways. First, this study used an extended dataset that allowed for the examination of counties across the United States, including those that have smaller populations. Previously, examinations of county characteristics and racial disproportionality in child welfare nationally have been restricted to counties which had at least 1,000 reports the child welfare system, which systematically biased the sample toward more suburban and urban areas. Second, this study goes beyond examining the county factors to statistically test whether the county characteristics matter differentially by race. Third, whereas many prior studies focus on White, Black, and Hispanic children only, this study also examines American Indian/Alaskan Native, Asian, Native Hawaiian/Pacific Islander, and multiracial children.

Method

Data

This study used data from the National Child Abuse and Neglect Data System (NCANDS) linked with data from the Adoption and Foster Care Analysis and Reporting System (AFCARS). Both data sets contain data from all 50 states and the District of Columbia on all reported maltreatment, the outcomes of the report (NCANDS), and information about out-of-home care placements (AFCARS). The project was approved by the Pennsylvania State University Institutional Review Board (STUDY00005650: "Variability in Child Protection Decision-Making: Influences of State, County, Caseworker, and Time").

Through a pilot program offered by Cornell University's National Data Archives for Child Abuse and Neglect, we were able to access an extended version of NCANDS that provided complete county identifiers for all children who came into contact with the child welfare system. The data previously masked county identifiers for counties in which there were fewer than 1,000 investigated children in the year. This data masking was in an attempt to protect the confidentiality of the children in smaller counties, but as a result, the data could not be used to examine rural counties. We additionally linked in a set of county-level demographic information available from the United States Census Bureau and United States Department of Justice Federal Bureau of Investigation Uniform Crime Reporting (U.S. Census Bureau, 2017; U.S. Department of Justice, Federal Bureau of Investigation, 2014).

We limited our data to the years 2009–2015, to coincide with the years for which annual estimates were available on the county-level indicators for all counties in the United States from the Census Bureau. The data were organized such that there was a unique observation for each child investigation. In other words, multiple children in the same family could be investigated under a single report, but each child was observed separately because allegations could result in substantiation or removal for one child and not others. In addition, some children were subject to multiple investigations over the observation period, but each investigation could result in a different outcome for that child. Thus, the base unit of observation is the child investigation.

The full data set contained 26,489,456 child investigations. We deleted observations in which race was missing ($n = 2,275,999$) as well all observations from the State of Pennsylvania ($n = 24,472$) because they did not report information about the child's race in 6 of the 7 years for the study period. We then limited the sample to observations with nonmissing values for child age ($n = 21,207,955$), prior victimization history ($n = 20,998,290$), county of residence ($n = 20,919,948$), and all remaining control variables ($n = 20,772,996$).

From this sample, because of the size of the dataset, we selected a random sample of 20% of the overall sample based on county and race. The final sample size for the substantiation models was 4,457,002 child investigations. We then removed all observations from New York and North Carolina and certain counties ($n = 534,894$) from the sample for the out-of-home placement models, because they did not have information to merge between AFCARS and NCANDS. The final sample size for the out-of-home placement models was 3,619,387 child investigations. To assess the extent to which these sample limitations biased our estimates, we examined the rates of substantiation and out-of-home placement by race after each sample change. After dropping observations with missing race information, the magnitude of the differences in substantiation rates and out-of-home placement rates by race were less than 0.3 percentage points for all groups except Hispanic and out-of-home placement, which was a 1 percentage point difference. From the original sample, the difference is slightly higher, with a greater percentage (3%) of White and Hispanic (1.6%) child investigations being substantiated in the final sample and a greater percentage of Hispanic (1.5%) child investigations being removed in the final sample.

Measures

Key dependent variables. We examined two binary outcome variables (1 = yes, 0 = no) indicating whether substantiation and out-of-home care placement occurred. The substantiation variable was available in the NCANDS dataset and included child investigations that were substantiated after an investigation or alternative response assessment. Specifically, substantiation was equal to 1 if the disposition listed for the child was one of the following: substantiated, indicated, or alternative response victim, and 0 otherwise. The out-of-home placement variable was created from two sources: an NCANDS variable indicating whether a child received foster care services, and whether the child appeared in the AFCARS dataset (thus indicating that the child had been in foster care at some point). We concluded that the placement was specific to a child investigation if the placement occurred after the date of referral and there were no additional referrals after the referral of interest. We chose to use these two sources of information because the two indicators were not perfectly aligned in all states, so combining these two sources of information provides the least missing data.

Key independent variables. A child's race and ethnicity were the two key independent variables of interest. Race appeared in the data as a set of nonmutually exclusive binary indicators for each racial group (White, Black, Asian, American Indian/Alaskan Native, Hawaiian/Pacific Islander) and a separate indicator for Hispanic ethnicity. From these, we created the fol-

lowing racial/ethnic subgroups: White/non-Hispanic alone, Black/non-Hispanic alone, American Indian/Alaskan Native/non-Hispanic alone, Asian/non-Hispanic alone, Hawaiian/Pacific Islander/non-Hispanic alone, multiracial/non-Hispanic, and Hispanic alone or with any other race. We note that it was not feasible to examine Hispanics by racial group due to a high proportion of children coded as Hispanic having no identified racial group. In addition, the definition for identifying a child as American Indian or Alaskan Native in these data is "A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment" (U.S. Department of Health and Human Services, 2017, p. 97). Thus, there may be variability in the classification of children as American Indian that is not transparent.

At the county level, we examined percent single-headed households, percent Black, percent American Indian, percent Hispanic, and the juvenile arrest rate. These measures were standardized to have a mean of 0 and standard deviation of 1. We also included a binary indicator (1 = yes, 0 = no) for whether a county had 20% child poverty or more. This cut-off point was selected based on previous literature suggesting 20% as a meaningful level for which outcomes are affected (Maguire-Jack & Font, 2017; U.S. Department of Housing and Urban Development, 2011). Finally, we included a binary indicator for rurality (1 = nonmetro, 0 = metro) based on the rural-urban continuum code classifications.

Control variables. We selected control variables that are related to our dependent variable and were available within the dataset. Because the data are from an administrative data set, there were few variables available to use as controls. Child investigation level covariates were child age (measured continuously and calculated as the time between date of the report and the child's birthdate), maltreatment type (neglect, physical abuse, sexual abuse, emotional abuse, multiple types, and other; operationalized as a series of dummies with "no maltreatment allegations" as the comparison group), whether the child was (at the time of the investigation) a prior victim of maltreatment (1 = yes, 0 = no), and the report source for maltreatment. Report source was operationalized as a series of dichotomous variables including indicators for reporters from social services, medical or mental health, law enforcement, education or child care, foster parents, other nonmandated reporters, anonymous reporters, and unknown reporters. All models also included state dummies and a continuous variable indicating the percent of reports in which race was missing at the county level.

We also controlled for percent of reports in which race was missing at the county level. This control was included because observations where race was not recorded were highly unlikely to have been substantiated or to have resulted in out-of-home placement (this may be because more information was collected about cases that were substantiated or resulted in placement), and the percent of missing on race was variant across county and year. Thus, missing on race could confound estimates of the association between race and substantiation or out-of-home placement.

Analysis

Stata Version 15.1 was used for all models. We estimated a series of multilevel logistic regression models with cases nested within counties to estimate the odds of substantiation and out-of-

home placement. At Level 1 were child welfare investigations and characteristics of the child and family, and Level 2 included county characteristics. Multilevel models allow for the simultaneous estimation of effects at multiple levels to more accurately estimate associations between county-level factors (e.g., county poverty rates) and individual-level outcomes (e.g., substantiation). Children within our dataset are nested within counties, and child welfare services are largely delivered at the county level. As a result, children who live within the same county are likely to have more in common with each other compared with children who reside in other counties. We included a random effect for time in the models to account for potential differences in the effects of time across county. All models included state fixed effects to account for policy differences that may influence the key relationships of interest.

We estimated two sets of models. The first set of models addresses our first research question (does a child's race and ethnicity impact his or her likelihood of likelihood of having a substantiated case and being placed in out-of-home care?). For this set of models, we regressed our outcomes (substantiation or out-of-home placement) on child's race/ethnicity, county characteris-

tics (racial composition, child poverty rate, single-headed households rate, and juvenile arrest rate), and child/case level control variables.

The second set of models addresses our second research question (do county characteristics matter differently for the likelihood of substantiation and out-of-home placement by race and ethnicity of the child?). In these models, we regress our outcomes (substantiation or out-of-home placement) on county characteristics and control variables separately for each racial/ethnic subgroup.

Results

Demographics

Tables 1 and 2 provide the descriptive statistics for the total substantiation (see Table 1) and out-of-home placement (see Table 2) samples. The information is provided for the entire sample and then broken out for White, Black, American Indian/Alaskan Native, Asian, Native Hawaiian/Pacific Islander, multiracial, and Hispanic children. As shown in Table 1, there were

Table 1. Descriptive Statistics for Substantiation Sample

Variables	Total sample, <i>M (SD)</i> or <i>N</i> = 4,110,519	White (45.26 of total), <i>M (SD)</i> or <i>N</i> = 1,996,589	Black (22.49 of total), <i>M (SD)</i> or <i>N</i> = 924,329	American Indian (1.05 of total), <i>M (SD)</i> or <i>N</i> = 43,208	Asian (.92 of total), <i>M (SD)</i> or <i>N</i> = 37,688	Hawaiian/PI (0.17 of total), <i>M (SD)</i> or <i>N</i> = 6,981	Multiracial (4.12 of total), <i>M (SD)</i> or <i>N</i> = 169,309	Hispanic (22.68 of total), <i>M (SD)</i> or <i>N</i> = 923,415
Substantiated	21.79	20.27	22.03	23.09	21.08	23.76	23.13	24.50
Individual controls								
Male child (%)	50.01	50.15	50.17	49.04	50.90	50.82	50.16	49.52
Child age	8.03 (5.05)	8.09 (5.05)	8.05 (5.14)	7.33 (5.02)	8.97 (5.01)	8.24 (4.99)	7.13 (4.89)	8.01 (4.99)
Prior victim (%)	25.02	26.68	25.08	25.22	10.79	16.96	31.65	20.80
No maltreatment allegations (%)	8.86	6.70	10.88	5.58	11.4	13.85	6.63	11.87
Neglect (%)	51.11	53.05	50.46	63.88	41.49	41.10	54.38	46.89
Physical abuse (%)	12.19	11.81	13.56	9.37	17.48	16.86	12.42	11.48
Sexual abuse (%)	4.44	4.91	3.56	2.87	3.50	3.70	3.56	4.60
Emotional abuse (%)	2.55	2.23	1.71	3.06	5.54	5.04	2.62	3.89
Multiple maltreatment types (%)	15.59	14.75	13.90	13.80	17.74	13.15	17.39	18.75
Other maltreatment type (%)	5.26	6.55	5.93	1.44	2.85	6.30	3.00	2.52
Reporter: social services (%)	7.25	6.97	8.51	8.78	6.43	6.44	8.86	6.23
Reporter: medical/mental health (%)	12.22	11.50	11.43	11.72	15.59	13.11	12.06	14.48
Reporter: law (%)	16.77	16.17	16.97	20.89	17.53	19.78	16.80	17.60
Reporter: education/child care (%)	16.87	15.48	16.49	14.56	31.13	26.57	14.18	20.17
Reporter: foster parent (%)	3.11	3.13	3.45	4.35	2.10	3.01	3.73	2.61
Reporter: other voluntary reporter (%)	19.33	22.42	17.25	16.01	7.97	11.95	21.28	15.08
Reporter: anonymous (%)	9.25	9.54	9.36	5.45	4.11	5.26	8.73	9.05
Reporter: unknown (%)	15.20	14.79	16.54	18.24	15.14	13.88	14.36	14.78
County variables								
Single-headed households >20 Children in poverty (%)	.35 (.08)	.34 (.07)	.39 (.08)	.37 (.08)	.33 (.07)	.32 (.06)	.35 (.06)	.35 (.07)
Percent Black	.12 (.12)	.09 (.10)	.21 (.14)	.05 (.08)	.11 (.09)	.08 (.09)	.10 (.10)	.10 (.09)
Percent American Indian	.01 (.03)	.01 (.02)	.01 (.02)	.11 (.18)	.01 (.01)	.01 (.02)	.01 (.04)	.01 (.02)
Percent Hispanic	.17 (.18)	.11 (.12)	.16 (.15)	.12 (.13)	.25 (.16)	.20 (.15)	.12 (.13)	.34 (.20)
Juvenile arrests/1,000 children	10.98 (8.75)	10.16 (8.51)	10.70 (8.72)	15.07 (10.67)	11.88 (8.08)	13.09 (8.35)	10.73 (7.92)	12.80 (9.06)

Note. PI = Pacific Islander. County variables are standardized.

Table 2. Descriptive Statistics for Out-of-Home Placement Sample

Variables	Total sample, <i>M (SD)</i> or <i>N</i> = 3,619,387	White (48.81 of total sample), <i>M (SD)</i> or <i>N</i> = 1,769,659	Black (21.26 of total sample), <i>M (SD)</i> or <i>N</i> = 769,354	American Indian (1.05 of total sample), <i>M (SD)</i> or <i>N</i> = 38,110	Asian (.87 of total sample), <i>M (SD)</i> or <i>N</i> = 31,540	Hawaiian/PI (0.18 of total sample), <i>M (SD)</i> or <i>N</i> = 6,638	Multi-racial (4.19 of total sample), <i>M (SD)</i> or <i>N</i> = 151,658	Hispanic (23.44 of total sample), <i>M (SD)</i> or <i>N</i> = 852,428
Out-of-home placement (%)	7.86	6.98	8.05	12.99	6.12	8.84	10.59	8.84
Individual controls								
Male child (%)	49.93	50.06	50.11	48.89	50.66	50.71	50.15	50.00
Child age	7.98 (5.04)	8.07 (5.04)	8.02 (5.13)	7.28 (5.01)	8.88 (5.01)	8.26 (5.00)	7.14 (4.89)	7.93 (4.97)
Prior victim (%)	24.40	26.00	24.64	25.14	10.27	17.40	31.76	20.10
No maltreatment allegations (%)	9.68	7.30	12.27	6.28	13.19	14.43	7.21	12.73
Neglect (%)	47.20	49.65	44.65	60.88	35.74	38.76	50.96	43.63
Physical abuse (%)	13.47	12.92	15.59	9.77	20.35	17.45	13.57	12.56
Sexual abuse (%)	4.78	5.19	3.94	2.73	3.96	3.75	3.76	4.98
Emotional abuse (%)	2.82	2.44	1.93	3.45	6.56	5.27	2.85	4.23
Multiple maltreatment types (%)	16.30	15.35	14.78	15.26	16.92	13.65	18.46	19.30
Other maltreatment type (%)	5.75	7.15	6.84	1.63	3.28	6.69	3.19	2.57
Reporter: social services (%)	16.79	9.42	11.31	13.60	6.50	9.42	12.21	7.62
Reporter: medical/mental health (%)	5.75	12.09	12.51	12.81	166.85	13.47	12.76	15.24
Reporter: law (%)	17.88	17.13	18.66	22.84	19.23	20.59	17.73	18.48
Reporter: education/child care (%)	17.58	16.22	17.58	15.81	31.23	27.54	14.93	20.35
Reporter: foster parent (%)	.29	.31	.32	.47	.19	.32	.37	.23
Reporter: other voluntary reporter (%)	20.38	23.48	18.77	17.06	7.82	12.35	22.30	15.73
Reporter: anonymous (%)	9.43	9.74	9.71	5.52	3.89	5.45	8.79	9.06
Reporter: unknown (%)	11.90	11.61	11.14	11.89	14.29	10.86	10.91	13.29
County variables								
Percent single-headed households	.35 (.07)	.34 (.07)	.39 (.08)	.35 (.07)	.32 (.06)	.32 (.06)	.35 (.06)	.34 (.06)
>20 children in poverty (%)	4.74	3.20	5.21	9.26	2.79	1.04	2.35	7.86
Percent Black	.11 (.12)	.08 (.10)	.20 (.14)	.03 (.05)	.09 (.08)	.07 (.08)	.10 (.10)	.09 (.07)
Percent American Indian	.01 (.03)	.01 (.02)	.00 (.01)	.10 (.18)	.01 (.01)	.01 (.02)	.02 (.04)	.01 (.02)
Percent Hispanic	.18 (.18)	.11 (.13)	.16 (.16)	.12 (.14)	.26 (.16)	.21 (.15)	.13 (.13)	.36 (.21)
Juvenile arrests/1,000 children	10.99 (9.03)	10.19 (8.81)	10.39 (9.00)	14.96 (10.73)	11.89 (8.06)	13.17 (8.45)	10.76 (8.19)	13.01 (9.24)

Note. County variables are standardized. *SD* = Standard Deviation.

differences in the rates of substantiation across children. Hispanic children had the highest rate of substantiation, with about 25% of children being substantiated, followed by Native Hawaiian/Pacific Islander children (24%), then American Indian/Alaskan Native and multiracial children (23%), Black children (22%), Asian children (21%), and finally White children (20%).

The descriptive statistics for the out-of-home placement sample are very similar to the substantiation sample; see Table 2 for more information. Overall, about 8% of children in the sample were removed into out-of-home care. This ranged from 6% of Asian children to 13% of American Indian/Alaskan Native children in the sample.

Main Effect of Race

Table 3 provides the results of the first two models, which use multilevel logistic regression to examine associations between

race/ethnicity and substantiation (M1) and race/ethnicity and out-of-home placement (M2). Compared to White/non-Hispanic children, the odds of substantiation were 3% higher for Black children (adjusted odds ratio [AOR] = 1.03, 95% CI [1.02, 1.04]), 20% higher for American Indian/Alaskan Native children (AOR = 1.20, 95% confidence interval [CI] [1.17, 1.24]), 12% higher for Native Hawaiian/Pacific Islander children (AOR = 1.12, 95% CI [1.03, 1.16]), 16% higher for multiracial children (AOR = 1.16, 95% CI [1.14, 1.17]), and 9% higher for Hispanic children (AOR = 1.09, 95% CI [1.08, 1.09]). For Asian children, the odds of substantiation were 5% lower than for White/non-Hispanic children (AOR = 0.95, 95% CI [1.03, 1.16]). Notably, in some cases these coefficients indicate relatively modest effects compared with differences in national rates, and in other cases, the results are very similar (indicating that case, county, and state factors explain some disparities more than others). For example, our bivariate data would suggest that compared with White children, the odds of substan-

Table 3. Multilevel Logistic Regressions Examining Race/Ethnicity, Substantiation, and Out-of-Home Placement

Variables	M1 race and substantiation, AOR [95% CI], N = 4,110,519	M2 race and out-of-home placement, AOR [95% CI], N = 3,619,387
Race		
Black	1.031 [1.023, 1.038]*	1.150 [1.136, 1.164]*
American Indian/Alaska Native	1.202 [1.169, 1.235]*	1.232 [1.187, 1.277]*
Asian	.946 [.920, .972]*	.659 [.628, .692]*
Hawaiian/Pacific Islander	1.091 [1.026, 1.159]*	.939 [.857, 1.029]
Multiracial	1.151 [1.136, 1.166]*	1.429 [1.402, 1.456]*
Hispanic (any race)	1.085 [1.077, 1.094]*	.973 [.961, .985]*
Individual controls		
Male child	.957 [.952, .961]*	.972 [.964, .980]*
Child age	.963 [.962, .963]*	.953 [.952, .954]*
Prior victim	1.444 [1.435, 1.452]*	2.860 [2.834, 2.887]*
Neglect	1.428 [1.413, 1.433]*	2.692 [2.643, 2.742]*
Physical abuse	.869 [.858, .881]*	1.612 [1.577, 1.647]*
Sexual abuse	1.557 [1.533, 1.580]*	1.445 [1.405, 1.486]*
Emotional abuse	.955 [.937, .974]*	.951 [.919, .985]*
Multiple maltreatment types	1.922 [1.900, 1.945]*	2.923 [2.865, 2.982]*
Other maltreatment type	.535 [.524, .545]*	.727 [.700, .754]*
Reporter: medical/mental health	.868 [.860, .877]*	.660 [.650, .670]*
Reporter: law	1.938 [1.920, 1.956]*	.789 [.778, .800]*
Reporter: education/child care	.536 [.531, .541]*	.343 [.337, .349]*
Reporter: foster parent	.592 [.566, .619]*	1.189 [1.120, 1.258]*
Reporter: other voluntary reporter	.425 [.420, .429]*	.366 [.361, .372]*
Reporter: anonymous	.305 [.301, .309]*	.298 [.292, .303]*
Reporter: unknown	.477 [.471, .482]*	.529 [.521, .538]*
County variables		
Percent single-headed households	1.038 [1.026, 1.050]*	1.086 [1.066, 1.106]*
Child poverty rate	.945 [.911, .979]*	.897 [.848, .948]*
Percent Black	.962 [.949, .975]*	.904 [.885, .924]*
Percent Hispanic	.998 [.982, 1.015]	.993 [.967, 1.019]
Percent American Indian	1.000 [.993, 1.006]	1.000 [.992, 1.009]
Juvenile arrest rate	.985 [.974, .996]*	.971 [.955, .987]*
Rural	1.102 [1.082, 1.123]*	.967 [.939, .994]*

Note. AOR = adjusted odds ratio; CI = confidence interval. White, non-Hispanic is comparison group for race, “no maltreatment allegations” is the comparison group for maltreatment types, and “social services reporters” is the comparison group for reporter type. In addition to the variables in the table, all models control for state and year fixed-effects and % missing race.

* $p < .05$.

tiation are about 11% higher for Black children, 28% higher for Hispanic children, and 23% higher for Native Hawaiian/Pacific Islander children, much larger than the 3%, 9%, and 12% increases in odds indicated in the multivariate models. Yet, for American Indian/Alaskan Native and multiracial children, differences in substantiation found in the bivariate data are very similar to those found in the multivariate models. Also notable, the bivariate statistics indicated slightly higher substantiation rates for Asians versus Whites, whereas the multivariate models indicated lower rates.

Turning to county characteristics, we found that living in a county with a greater percentage of single-headed households or a rural county was associated with greater odds of substantiation. Specifically, a 1-SD increase in the percent of single-headed households was associated with a 4% increase in the odds of substantiation ($AOR = 1.04$, 95% CI [1.026, 1.050]), and living in a rural county was associated with 10% higher odds, ($AOR = 1.10$, 95% CI [1.08, 1.12]). High child poverty counties were associated

with a 5% decrease in the odds of substantiation ($AOR = 0.95$, 95% CI [0.91, 0.98]). In addition, both percent Black ($AOR = 0.96$, 95% CI [0.95, 0.98]) and the juvenile arrest rate ($AOR = 0.99$, 95% CI [0.97, 0.99]) were associated with lower odds of substantiation (a 1-SD increase was associated with a 4% and 1% decline, respectively). (Note that in an exploratory additional analysis [results not shown], we removed percent single-headed households from our model to examine whether poverty and/or percent Black residents would change directions [due to multicollinearity] and they did not.)

There were more pronounced racial differences in the probability of out-of-home placement. Compared with White children, odds of out-of-home placement were 15% higher for Black children ($AOR = 1.15$, 95% CI [1.14, 1.16]), 23% higher for American Indian/Alaskan Native children ($AOR = 1.23$, 95% CI [1.19, 1.28]), and 43% higher for multiracial children ($AOR = 1.43$, 95% CI [1.40, 1.46]). Asian children had odds 34% lower ($AOR = 0.66$, 95% CI [0.63, 0.69]) and Hispanic children had odds 3% lower

than White children ($AOR = 0.97$, 95% CI [0.96, 0.99]) who had the lowest odds of out-of-home placement. There were no differences in the odds of out-of-home placement for White and Native Hawaiian/Pacific Islander children. Again, these differences were often much less pronounced than in the bivariate data (where county, state, and case factors were not taken into account). The bivariate data indicated that American Indian/Alaskan Native children had nearly double the odds of out-of-home placement as compared with White children, a gap three times larger than found in the multivariate models. Similarly, the higher odds of out-of-home placement among Hispanic children found in the bivariate data were entirely reversed. Importantly, there was almost no difference between the estimated difference in odds of out-of-home placement for Black (vs. White) children in the bivariate and multivariate data.

In terms of the county-level variables, children in counties with a greater percentage of single-headed households had 9% greater odds ($AOR = 1.09$, 95% CI [1.07, 1.11]) of being removed, whereas children in counties with a greater percentage of Black residents ($AOR = 0.90$, 95% CI [0.89, 0.92]), a high level of poverty ($AOR = 0.90$, 95% CI [0.85, 0.95]), a higher rate of juvenile arrests ($AOR = 0.97$, 95% CI [0.96, 0.99]), and rural counties ($AOR = 0.97$, 95% CI [0.94, 0.99]) had 10%, 10%, and 3% lower odds of removal, respectively.

County-Level Characteristics and Substantiation by Race/Ethnicity

Table 4 examines the relationship between the county-level factors and substantiation by race/ethnicity of the child (M3–M9). For all groups, the percentage of single-headed households was associated with increased odds of substantiation (not statistically significant for Hawaiian/Pacific Islander). A high child poverty rate was associated with 14% lower odds of substantiation for Black ($AOR = 0.86$, 95% CI [0.82, 0.92]), 26% for Asian ($AOR = 0.74$, 95% CI [0.56, 0.99]), and 12% for multiracial children ($AOR = 0.88$, 95% CI [0.79, 0.98]) only (though coefficients were also large and <1 for American Indian/Alaskan Native children). Percent Black was associated with lower odds of substantiation for White children only ($AOR = 0.95$, 95% CI [0.94, 0.97]; 5% lower odds). Percent American Indian/Alaskan Native was associated with lower odds of substantiation for multiracial children only ($AOR = 0.97$; 95% CI [0.96, 0.99]; 3% lower odds). Rural county was associated with 10% higher odds of substantiation among White ($AOR = 1.10$, 95% CI [1.09, 1.13]), 7% higher odds among Black ($AOR = 1.07$, 95% CI [1.03, 1.11]), 12% higher odds among multiracial ($AOR = 1.12$, 95% CI [1.07, 1.12]), and 9% higher odds among Hispanic ($AOR = 1.09$, 95% CI [1.05, 1.12]) children.

County-Level Characteristics and Out-of-Home Placement by Race/Ethnicity

Table 5 provides the results of the out-of-home placement models (M10–M16) examining the role of county factors by race/ethnicity. As with substantiation, percent single-headed households was associated with increased odds of out-of-home placement for all groups except Native Hawaiian/Pacific Islander children (though trended in the same direction). High child poverty

rate was associated with 15% lower odds of out-of-home placement among Black children ($AOR = 0.85$, 95% CI [0.78, 0.94]) and 7% lower odds among White children ($AOR = 0.93$, 95% CI [0.87, 0.99]), and had no association with out-of-home placement for any other group. Percent Black was associated with 8% lower odds of out-of-home placement for White ($AOR = 0.92$, 95% CI [0.89, 0.94]), 87% lower odds among multiracial ($AOR = 0.93$, 95% CI [0.89, 0.98]), and 9% lower odds among Hispanic children ($AOR = 0.91$, 95% CI [0.87, 0.95]), and 22% higher odds of out-of-home placement among American Indian/Alaskan Native children ($AOR = 1.22$, 95% CI [1.05, 1.41]); it was not associated with out-of-home placement for Black, Asian, or Hawaiian/Pacific Islander children. Percent Hispanic was associated with 6% lower odds of out-of-home placement for Hispanic children ($AOR = 0.94$, 95% CI [0.91, 0.98]). Percent American Indian/Alaskan Native was associated with 51% higher odds of out-of-home placement for Asian children ($AOR = 1.51$, 95% CI [1.05, 1.26]). For all groups except American Indian/Alaskan Native, Hawaiian/Pacific Islander, and multiracial children, the juvenile arrest rate was associated with lower odds of out-of-home placement.

Discussion

Results revealed that a child's race and ethnicity are associated with their likelihood of being substantiated or removed from the home, net of child, case, and county characteristics, and state of residence. Black, American Indian/Alaskan Native, and multiracial children all had significantly greater odds of substantiation and out-of-home placement when compared with non-Hispanic White children. Native Hawaiian/Pacific Islander and Hispanic children had greater odds of substantiation, but not out-of-home placement. To the contrary, Asian children had lower odds of substantiation and out-of-home placement as compared with non-Hispanic White children. Though not widely studied, most existing studies that include Asian children have found them to be at lower risk of investigation, substantiation, and foster care placement (Bywaters, Brady, Sparks, & Bos, 2016; Kim et al., 2017; King et al., 2017; Wildeman & Emanuel, 2014; Wildeman et al., 2014).

Thus, geography alone cannot fully account for racial disproportionality in out-of-home placement among the investigated population. Notably, because investigation does not fully account for underlying risk, we cannot say for certain that observed differences are solely driven by bias. Nevertheless, it is interesting that we do not observe higher rates of out-of-home placement among Hispanic children. Although others have described a "Hispanic paradox," in which Hispanic children experience more favorable outcomes than would be expected given their socioeconomic disadvantages (Drake et al., 2011), it is also worth noting that Hispanic (and Asian) populations do not have the same history of state-sanctioned discrimination and violence that American Indian/Alaskan Natives and Black populations do. This has resulted in entrenched and longstanding stereotypes linking Black and American Indian/Alaskan Native people with perceived character deficits, such as laziness and criminality (Lintner, 2004), which may affect how caseworkers and judges perceive risk to children. Moreover, this history may shape the quality of interactions with governmental agents. One of the factors caseworkers

Table 4. Multilevel Logistic Regression Examining Associations Between County Factors and Substantiation by Race/Ethnicity

Variables	M3 White and substantiation, AOR [95% CI], N = 1,996,589	M4 Black and substantiation, AOR [95% CI], N = 924,329	M5 American Indian and substantiation, AOR [95% CI], N = 43,202	M6 Asian and substantiation, AOR [95% CI], N = 37,688	M7 Hawaiian/PI and substantiation, AOR [95% CI], N = 6,962	M8 Multi-racial and substantiation, AOR [95% CI], N = 169,309	M9 Hispanic and substantiation, AOR [95% CI], N = 932,415
County variables							
Percent single-headed households	1.039* [1.025, 1.052]	1.056* [1.034, 1.080]	1.103* [1.041, 1.167]	1.182* [1.106, 1.264]	1.054 [915, 1.213]	1.038* [1.008, 1.069]	1.072* [1.049, 1.095]
Child poverty rate	.968 [929, 1.009]	.864* [815, .916]	.854 [703, 1.037]	.743* [558, .990]	.918 [459, 1.834]	.880* [789, .980]	.985 [863, 1.000]
Percent Black	.950* [936, .965]	1.005 [984, 1.027]	.914 [830, 1.008]	.939 [863, 1.022]	.896 [754, 1.066]	.985 [953, 1.019]	.988 [963, 1.014]
Percent Hispanic	.987 [966, 1.008]	1.039* [1.005, 1.075]	1.090* [1.007, 1.181]	1.038 [955, 1.128]	1.085 [920, 1.279]	1.022 [979, 1.066]	1.027* [1.004, 1.050]
Percent American Indian	.991 [981, 1.002]	.995 [971, 1.020]	1.001 [988, 1.015]	1.028 [928, 1.138]	.930 [821, 1.054]	.976* [958, .994]	.995 [981, 1.009]
Juvenile arrest rate	.983* [971, .995]	1.006 [987, 1.025]	.988 [950, 1.028]	1.010 [948, 1.076]	.915 [804, 1.042]	.987 [960, 1.014]	.985 [966, 1.004]
Rural	1.109* [1.087, 1.132]	1.072* [1.034, 1.112]	1.000 [912, 1.097]	1.153 [958, 1.387]	1.051 [795, 1.390]	1.117* [1.067, 1.117]	1.085* [1.047, 1.124]
Individual controls							
Male child	.960* [953, .967]	.967* [957, .977]	.943* [897, .991]	.953 [902, 1.006]	1.160 [932, 1.445]	.976 [953, 1.000]	.939* [929, .948]
Child age	.963* [962, .964]	.957* [956, .958]	.952* [947, .957]	.976* [971, .981]	.976* [963, .988]	.954* [952, .957]	.969* [968, .970]
Prior victim	1.521* [1.508, 1.535]	1.468* [1.450, 1.487]	1.615* [1.523, 1.712]	1.576* [1.453, 1.710]	1.244* [1.050, 1.475]	1.326* [1.289, 1.363]	1.299* [1.283, 1.315]
Neglect	1.390* [1.367, 1.414]	1.249* [1.224, 1.274]	1.442* [1.263, 1.647]	1.431* [1.291, 1.587]	1.160 [932, 1.445]	1.402* [1.323, 1.484]	1.688* [1.655, 1.722]
Physical abuse	.873* [855, .891]	.961* [938, .985]	.929 [790, 1.089]	.753* [666, .851]	.789 [609, 1.022]	.911* [851, .974]	.724* [706, .743]
Sexual abuse	1.654* [1.617, 1.693]	1.428* [1.281, 1.476]	1.773* [1.458, 2.156]	1.413* [1.194, 1.671]	1.532* [1.075, 2.186]	1.260* [1.157, 1.373]	1.486* [1.443, 1.531]
Emotional abuse	1.051* [1.019, 1.084]	.896* [856, .938]	.917 [753, 1.115]	.688* [587, .806]	1.217 [870, 1.702]	.930 [843, 1.027]	.909* [879, .940]
Multiple maltreatment types	1.932* [1.896, 1.970]	1.628* [1.590, 1.666]	2.046* [1.771, 2.364]	1.736* [1.555, 1.937]	1.879* [1.462, 2.413]	2.046* [1.923, 2.177]	2.128* [2.084, 2.174]
Other maltreatment type	.303* [293, .312]	.685* [663, .708]	.627* [462, .852]	.873 [688, 1.107]	.685 [461, 1.019]	.751* [680, .830]	1.007 [967, 1.050]
Reporter: medical/mental health	.828* [816, .841]	.988 [968, 1.008]	.874* [795, .961]	.766* [686, .856]	1.346* [1.041, 1.740]	.886* [846, .928]	.867* [849, .885]
Reporter: law	1.870* [1.845, 1.895]	1.908* [1.873, 1.944]	1.845* [1.699, 2.003]	2.199* [1.982, 2.439]	2.780* [2.200, 3.514]	1.819* [1.745, 1.897]	2.135* [2.094, 2.176]
Reporter: education/child care	.500* [492, .507]	.601* [589, .613]	.495* [449, .547]	.546* [493, .605]	.732* [573, .935]	.545* [519, .571]	.559* [548, .570]
Reporter: foster parent	.596* [558, .636]	.565* [516, .619]	.644* [443, .936]	.489* [264, .907]	.591 [179, 1.946]	.523* [425, .642]	.628* [569, .692]
Reporter: other							
voluntary reporter	.432* [426, .438]	.388* [380, .396]	.476* [434, .524]	.449* [392, .515]	.586* [441, .777]	.412* [394, .430]	.432* [423, .442]
Reporter: anonymous	.312* [306, .318]	.286* [279, .294]	.380* [331, .436]	.272* [225, .329]	.489* [331, .721]	.300* [282, .319]	.312* [304, .321]
Reporter: unknown	.418* [411, .425]	.450* [435, .456]	.407* [367, .452]	.698* [621, .784]	.688* [517, .916]	.429* [407, .452]	.616* [603, .630]

Note. AOR = adjusted odds ratio; CI = confidence interval; PI = Pacific Islander. In addition to the variables in the table, all models control for state and year fixed-effects and % missing race.
* $p < .05$.

Table 5. Multilevel Logistic Regression Examining Associations Between County Factors and Out-of-Home Placement by Race/Ethnicity

Variables	M10 White and placement, AOR [95% CI], N = 1,769,659	M11 Black and placement, AOR [95% CI], N = 769,354	M12 American Indian and placement, AOR [95% CI], N = 38,065	M13 Asian and placement, AOR [95% CI], N = 31,450	M14 Hawaiian/PI and placement, AOR [95% CI], N = 6,395	M15 Multiracial and placement, AOR [95% CI], N = 151,658	M16 Hispanic and placement, AOR [95% CI], N = 852,428
County variables							
Percent single-headed households	1.086* [1.064, 1.109]	1.055* [1.016, 1.093]	1.094* [1.020, 1.173]	1.182* [1.048, 1.333]	1.121 [884, 1.421]	1.080* [1.034, 1.128]	1.153* [1.116, 1.192]
Child poverty rate	.926* [.867, .989]	.852* [.775, .937]	1.095 [.852, 1.408]	1.045 [.722, 1.513]	.182 [.023, 1.471]	.949 [.811, 1.112]	.935 [.836, 1.046]
Percent Black	.917* [.894, .941]	.970 [.935, 1.006]	1.218* [1.052, 1.410]	.879 [.743, 1.041]	.918 [.644, 1.307]	.930* [.885, .978]	.906* [.868, .945]
Percent Hispanic	1.018 [.985, 1.053]	1.048 [.993, 1.106]	1.089 [.986, 1.202]	1.095 [.962, 1.247]	.941 [.716, 1.238]	.990 [.931, 1.053]	.944* [.913, .977]
Percent American Indian	.994 [.979, 1.052]	.950 [.896, 1.006]	.994 [.977, 1.011]	1.514* [1.054, 1.258]	.921 [.677, 1.226]	.980 [.956, 1.004]	.993 [.974, 1.012]
Juvenile arrest rate	.971* [.953, .989]	.962 [.934, .991]	1.007 [.959, 1.056]	.940 [.848, 1.042]	1.003 [.813, 1.237]	.950* [.914, .987]	.953* [.927, .980]
Rural	.971 [.941, 1.002]	.967 [.910, 1.027]	.951 [.844, 1.070]	.813 [.585, 1.129]	.904 [.577, 1.417]	1.005 [.939, 1.076]	1.038 [.983, 1.096]
Individual controls							
Male child	.986* [.974, .998]	.959* [.943, .976]	.940 [.881, 1.002]	.958* [.869, 1.057]	.956 [.791, 1.156]	.955* [.922, .989]	.965* [.950, .980]
Child age	.944* [.943, .945]	.970* [.968, .972]	.940* [.934, .947]	.986* [.977, .996]	.982 [.964, 1.001]	.945* [.941, .948]	.954* [.953, .956]
Prior victim	2.685* [2.648, 2.722]	2.867* [2.811, 2.924]	1.964* [1.822, 2.118]	4.235* [3.757, 4.775]	3.613* [2.865, 4.557]	1.997* [1.921, 2.077]	3.448* [3.387, 3.510]
Neglect	2.942* [2.842, 3.045]	2.415* [2.327, 2.506]	6.344* [4.957, 8.118]	2.430* [2.002, 2.951]	2.584* [1.761, 3.792]	2.717* [2.479, 2.978]	2.743* [2.662, 2.827]
Physical abuse	1.709* [1.644, 1.777]	1.709* [1.638, 1.783]	3.447* [2.616, 4.541]	1.369* [1.092, 1.717]	1.577* [1.014, 2.454]	1.719* [1.549, 1.907]	1.422* [1.367, 1.479]
Sexual abuse	1.586* [1.515, 1.661]	1.561* [1.473, 1.654]	4.168* [3.003, 5.785]	1.722* [1.266, 2.340]	1.268 [.655, 2.455]	1.740* [1.525, 1.986]	1.186* [1.123, 1.252]
Emotional abuse	1.220* [1.147, 1.297]	.984 [.922, 1.060]	2.266* [1.597, 3.216]	.702* [.515, .955]	.753 [.362, 1.564]	1.089 [.928, 1.278]	.773* [.732, .817]
Multiple maltreatment types	3.502* [3.376, 3.633]	2.843* [2.730, 2.961]	6.589* [5.088, 8.535]	2.270* [1.846, 2.791]	3.462* [2.293, 5.225]	3.247* [2.945, 3.581]	2.453* [2.374, 2.533]
Other maltreatment type	.676* [.639, .717]	.822* [.768, .881]	2.452* [1.560, 3.855]	.919 [.553, 1.527]	.840 [.466, 1.515]	.965 [.822, 1.132]	.821* [.751, .898]
Reporter: medical/ mental health	.693* [.677, .709]	.691* [.669, .713]	.811* [.718, .914]	.461* [.381, .558]	.699 [.483, 1.012]	.732* [.687, .780]	.586* [.569, .603]
Reporter: law	.840* [.822, .857]	.729* [.708, .750]	.968 [.871, 1.075]	.772* [.648, .920]	.996 [.716, 1.389]	.868* [.819, .920]	.738* [.718, .759]
Reporter: education/ child care	.386* [.376, .395]	.339* [.327, .350]	.413* [.361, .473]	.277* [.228, .335]	.516* [.365, .730]	.385* [.359, .414]	.284* [.275, .293]
Reporter: foster parent	1.203* [1.106, 1.309]	1.399* [1.251, 1.566]	.883 [.576, 1.353]	1.144 [.497, 2.636]	.728 [.830, 6.394]	.786 [.609, 1.015]	1.070 [.933, 1.228]
Reporter: other voluntary reporter	.373* [.365, .381]	.350* [.339, .362]	.525* [.465, .592]	.465* [.369, .586]	.561* [.372, .845]	.365* [.343, .389]	.361* [.350, .373]
Reporter: anonymous	.329* [.320, .338]	.248* [.238, .258]	.418* [.350, .500]	.255* [.184, .355]	.471* [.285, .778]	.328* [.302, .356]	.277* [.267, .288]
Reporter: unknown	.517* [.504, .530]	.515* [.498, .534]	.672* [.592, .762]	.563* [.466, .681]	.798 [.545, 1.168]	.539* [.503, .578]	.529* [.513, .545]

Note. AOR = adjusted odds ratio; CI = confidence interval; PI = Pacific Islander. In addition to the variables in the table, all models control for state and year fixed-effects and % missing race.
* $p < .05$.

weigh when evaluating substantiation and out-of-home placement decisions is the cooperativeness of the parents (Jones, 1993). Populations whose historical or current experiences with governmental authorities are largely negative may be—perhaps justifiably—more hostile and less willing to cooperate voluntarily. For example, research has shown that cultural mistrust among Black and American Indian/Alaskan Native (but not Hispanic and Asian) adults affects help-seeking and cooperation with medical interventions (Ahluwalia, 1991; Whaley, 2001). Future research should examine the quality of interactions that Black and American Indian/Alaskan Native families have with the CPS system and, if necessary, evaluate options for improving relationships between agencies and the communities they serve.

We also note that American Indian and Alaskan Native children are subject to different protocols for removal to out-of-home care under federal law recognizing tribal authority over Indian children who are members of, or eligible for membership in, federally recognized tribes (Indian Child Welfare Act, 1978). This means that tribal courts may determine the removal of an Indian child, or monitor and otherwise inform state court proceedings at their discretion. The effects of tribal involvement or exclusive jurisdiction on the decision to remove a child is not clear; however, to the extent that we would expect less negative bias against Indian families in tribal courts than state or local courts, whether the removal request was heard in tribal court may be an important factor. Unfortunately, we do not have that information available to us; however, there are plans from the federal government to require the collection and reporting of numerous additional Indian Child Welfare Act-related information in AFCARS in the coming years (Administration for Children & Families, 2018). Thus, future researchers may be able to address these unresolved questions.

Several county characteristics were associated with substantiation and out-of-home placement, but often in different ways than has been found in past research focused on substantiation within the general population (not only those investigated by CPS). County-level poverty, percentage of Black residents, and the juvenile arrest rate were associated with lower odds of substantiation and out-of-home placement among investigated children, whereas percent single-headed households was associated with higher odds of both outcomes. Although many prior studies have used factor analysis to proxy county-level disadvantage linked community disadvantage (which is often composed of poverty rate, percent single-headed households, and percent Black residents) to child maltreatment (Maguire-Jack, 2014) and substantiations specifically (Irwin, 2009), these prior studies investigated maltreatment and substantiations among the general population of children and not among investigated children.

As we stated earlier, risk characteristics should be more strongly associated with CPS involvement (at all levels) among the general population, but may take on a different meaning for decision-making about those already investigated for maltreatment. Indeed, substantiation is not an objective measure of whether maltreatment occurred or whether a child is at risk of harm (Drake, 1996). Rather, because substantiation often precedes the provision of services (either in-home or through foster care), the decision to substantiate may also reflect the availability of or perceived need for services (Child Welfare Information Gateway, 2003; Font & Maguire-Jack, 2015). In highly disadvantaged areas, where the demand for child welfare services is high, the threshold for inter-

vention may be raised, such that the probability of substantiation and out-of-home placement conditional on investigation is lower than in comparatively advantaged areas. Similarly, it is possible that where there are the greatest constraints to effective parenting, the expectations of parents are correspondingly lower. In other words, agencies may evaluate the risks to children under a “community standard” rather than that of an ideal environment.

We also found that living in a rural county was associated with greater odds of substantiation, but with lower odds of out-of-home placement. We cannot determine with certainty why this was the case, but it is possible that the unique contexts of rural counties place greater constraints on the use of foster care. That is, although rural areas may face fewer challenges related to workload burden than urban areas and caseworkers often provide direct in-home services to families, they have fewer resources (including fewer foster homes) available for out-of-home placements (Child Welfare Information Gateway, 2018).

Additionally, the results of this study lend support to the idea that county characteristics matter differently for CPS decision-making based on the race and ethnicity of the child in question. The percentage of Black residents is associated with reduced odds of substantiation among White children, and reduced odds of out-of-home placement among White, multiracial, and Hispanic children. Percentage of Black residents is not predictive of substantiation or out-of-home placement for Black children. In counties with high percentages of Hispanic residents, Black, American Indian/Alaskan Native, and Hispanic children have higher odds of substantiation, but Hispanic children have a lower likelihood of out-of-home placement. These findings suggest that being a non-Black in a county with more Black residents is associated with lower rates of substantiation and out-of-home placement for several racial groups, but it is not relevant for Black children. Although a White child does not experience higher odds of substantiation or out-of-home placement from living in a more diverse county, when American Indian/Alaskan Native children live in more diverse counties (higher percentages of Black or Hispanic residents) they have higher rates of substantiation and out-of-home placement (with higher percentages of Black residents). Interestingly, although Hispanic children have a higher rate of substantiation in counties with a higher percentage of Hispanic children, they also have a lower out-of-home placement rate.

In terms of county-level poverty, Black, Asian, and multiracial children have lower odds of substantiation, whereas Black and White children have lower odds of out-of-home placement. Although poverty was not uniformly associated with lower odds of substantiation and out-of-home placement across groups, the finding that living in a high-poverty county is related to lower rates of substantiation and placement among investigated children may be due to limited resources in such communities, thus raising the threshold for what constitutes problematic parenting.

The effect of single-headed households is startling in light of the finding that living in a higher poverty county is associated with lower odds of substantiation and placement. At the county level, high proportions of single-headed households increased the likelihood of substantiation and out-of-home placement for all racial and ethnic groups except for Native Hawaiian/Pacific Islander children. Typically, it would be expected that higher rates of single-headed households would be indicative of a higher poverty rate because single parents are likely to have less financial resources than two-headed households, yet these related constructs having seemingly opposite

effects. It may be that the increased risk associated with single-headed households may not stem from lower income, but rather from lack of social capital, heightened stress, or having less emergency child care options. In the face of deficit support and options to “tag-team” parent—giving one the opportunity to step away from a situation in which anger or frustration is experienced—single parents may be more likely to rely on corporal punishment (Taylor, Hamvas, & Paris, 2011) or to leave their children unattended (Coohey, 1998). More research is needed to tease out the mechanisms by which county-level poverty and proportion of single-headed households impact child welfare decisional processes.

Greater juvenile justice involvement at the county level was associated with lower odds of child out-of-home placement for White, Multiracial, and Asian children, in addition to being associated with lower odds of substantiation for White children. A few possible explanations exist for this finding. First, the high juvenile arrest rate may be indicative of a greater pattern of violence at the community level, which could potentially overshadow less visible in-home forms of violence, such as child maltreatment. Second, we note that children who are maltreated are more likely to be delinquent or reach the attention of the juvenile justice system (Evans & Burton, 2013; Smith & Thornberry, 1995) and this overlap could affect how each system responds. In areas with a greater rate of juvenile arrests, children exposed to or at risk of maltreatment may be caught up in the juvenile justice system before reaching the attention of CPS. Similarly, cross-over youth (those simultaneously involved in both CPS and juvenile justice systems) may have lower rates of out-of-home placement through CPS if they are placed out-of-home through the juvenile justice system rather than the CPS system. Lastly, this association could reflect reverse causality: the incidence of juvenile crime may be lower in areas where CPS more frequently provides services (in-home or out-of-home) to protect children from recurrent maltreatment.

Implications

Categorizations of race and ethnicity are used inconsistently across states and counties. To better understand how states and their CPS systems use the information, standardized definitions and classifications of race and ethnicity are needed. This is especially true regarding the recording of Hispanic ethnicity as it intersects with different racial groupings. With standardized definitions and protocols for classification, the relevance of these constructs within child serving systems can be more easily examined.

A better understanding of how CPS workers use information about a child’s environmental context to make substantiation and out-of-home placement decisions is needed. Further, not enough is known about how the neighborhood and county environments impact the rate at which children of different racial or ethnic groups are reported to the child welfare system. More research is needed to determine whether county factors impact reporting patterns and, if so, in what ways those disparities contribute to observed disparities in substantiation and out-of-home placement decisions. Additionally, community-level interventions may help improve community conditions that affect the likelihood that a child is maltreated or removed from their home.

Strengths and Limitations

This study was among the first to study racial disparities nationally with complete information by county. Because CPS is organized at the county level and racial composition varies significantly across county, studies of racial and ethnic disparities that cannot account for the county in which the case occurred are unable to separate geographic disparities from racial and ethnic disparities. In addition, by modeling outcomes at the child level, we avoid the problems of aggregate data, including within-county heterogeneity. By leveraging complete county identifiers and child level data, and including racial and ethnic groups commonly excluded in the literature on racial disparities, this study provides new information on the size and context of disparities in substantiation and out-of-home placement.

Nevertheless, we caution that this study contains important limitations. First, we cannot fully differentiate between actual differences in maltreatment behaviors and differences in decision-making. Administrative data tend to contain fairly reductive information about maltreatment risks (e.g., type of maltreatment without reference to severity or frequency) and little to no information about key risk factors (e.g., poverty). As a result, there may be omitted variables that bias our findings by failing to adequately adjust for differences in risk characteristics across racial and ethnic groups. Second, the dataset is also limited in that some states do not provide race data or allow for linkages across NCANDS and AFCARS, thus we do not have a true population dataset. Third, although county-level factors are important to consider given that CPS agencies are largely organized by county, there is significant variability within counties in terms of poverty, racial composition, and other attributes. These factors may play a different role at the neighborhood level. Fourth, the models fail to account for spatial autocorrelation, making it impossible for the researchers to gauge the impact of neighboring county effects on observed trends. Finally, individuals may select a county of residence for a variety of reasons that are unobserved and could potentially relate to the individual’s propensity to maltreat.

Conclusion

This study was the first to examine factors influencing substantiation and out-of-home placement by race in a national sample with information from counties with fewer than 1,000 maltreatment reports. Despite decades of study and a large body of research, the sources of racial and ethnic disparities in CPS decision-making remain disputed, thus providing little information for states and counties to seek meaningful reforms. As child welfare agencies move into an era of predictive analytics (Teixeira & Boyas, 2017)—that is, using data to model and attempt to predict the outcomes that will occur for a child—understanding the limitations and biases that may be built into the data that are used to build such models is critical for ensuring their legitimacy. Among investigated children, the context in which children live differentially affects their likelihood of having their case substantiated or of being removed into out-of-home care depending on their race. Further research is needed to understand the cause of these differences so that protective services can ensure equitable outcomes for all children.

Keywords: decision-making ecology; child welfare; racial disproportionality

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