



Disentangling substantiation: The influence of race, income, and risk on the substantiation decision in child welfare

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ABSTRACT

Understanding the source of disparities found at decision-making points along the child welfare pathway is essential to understanding and addressing the overrepresentation of African American children. Although research has documented the existence of disparities, it has been less successful in identifying the explanatory factors behind them. Critiques of research examining these disparities have suggested that poverty is likely a stronger explanatory factor than race, yet analyses that include measures of poverty using data from child welfare systems have largely not been conducted. This study uses data from the Texas child welfare system to identify the factors contributing to disparities at the substantiation decision. Given the relationship between poverty and child maltreatment, the analyses control for the effect of family income, as well as other factors related to maltreatment, to better understand the effect of race on this decision-making point. Findings indicate that when family income is controlled, race is not a significant factor in the substantiation decision. However, when also controlling for caseworker perceptions of risk, race emerges as the stronger explanatory factor. This suggests not only an important relationship between race, income, and risk assessment, but also that disproportionality in the child welfare system is a complex phenomenon that cannot be explained by a single factor. These results further demonstrate that the effect of racial bias on decision-making remains an important consideration in understanding the overrepresentation of African American children.

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1. Introduction

Disproportionality in the child welfare system occurs when the proportion of one group in the child welfare population (i.e., children in foster care) is proportionately larger than the same group in the general population. This phenomenon has most significantly affected African American children, with the most recent national data indicating that African American children represent 30% of children in foster care, although they represent only 15% of children in the general population (U.S. Department of Health and Human Services, 2010a). This overrepresentation of African American children has been observed in the child welfare system for more than thirty years (Billingsley & Giovannoni, 1972), yet persists as a national concern (Hill, 2008).

Overrepresentation in the child welfare system results from disparities that occur at multiple decision-making points along the child welfare pathway (Chapin Hall Center for Children, 2008; Wulczyn & Lery, 2007). Beginning with the initial report of alleged maltreatment, children who are subjects of those reports become involved in a process in which multiple decisions are made that affect the likelihood of their entry into and exit from foster care. These include the decision to accept a report for investigation, the decision to substantiate allegations of maltreatment, the decision to provide services, the decision to place a child in out-of-home care, and the decision to enable a child to exit from out-of-home care. These decisions are made not only by child welfare caseworkers, but also by casework supervisors, police, judges, agency administrators, legal professionals, and policy makers. At each decision-making point, there exists the potential for disparities to occur that may result in differential outcomes that negatively affect African American children and contribute to their overrepresentation in this system.

Evidence exists that a significant disparity occurs at the point where initial reports of alleged maltreatment are made to child welfare agencies (Fluke, Yuan, Hedderson, & Curtis, 2003; Lu et al.,

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2004), though whether this is due to bias or to increased exposure to risk is currently under debate (e.g., Drake et al., 2011). Once this initial report is made, however, subsequent decisions made by professionals within the child welfare system can either amplify or diminish this initial disparity. Research examining decision-making points has documented disparities at each stage along the child welfare pathway, including acceptance for investigation (Zuravin, Orme, & Hegar, 1995), substantiation of alleged maltreatment (Ards, Myers, Malkis, Sugrue, & Zhou, 2003; Rolock & Testa, 2005), placement into out-of-home care (Rivaux et al. 2008; Wulczyn & Lery 2007), and exits from care (Hill, 2005; Lu et al., 2004). However, although research has documented these disparities, it has been less successful in identifying the explanatory factors behind them. At issue is whether race alone accounts for these disparities, or whether other factors may play stronger explanatory roles. Several studies have examined factors that may explain these disparities and findings have been mixed regarding the role of race. Some studies have found that race is a significant factor at various decision-making points (e.g., Hill, 2005; Lu et al., 2004; Rivaux et al., 2008), while others have found no significant effect for race when controlling for other factors (e.g., Goerge & Lee, 2005; Harris, Tittle, & Poertner, 2005). Still others have found that it is a combination of race with other factors that results in observed disparities (e.g., type of abuse by race; Gryzlak, Wells, & Johnson, 2005; severity of injury by race; Sedlak & Schultz, 2005; family structure by race, Harris & Courtney, 2003).

2. Occurrence of maltreatment and the substantiation decision

Decisions concerning the substantiation of alleged maltreatment have a significant impact on later decisions regarding placement into out-of-home care, as this decision involves the caseworker's assessment of whether alleged maltreatment has indeed occurred. More than 96% of children who are placed in out-of-home care are involved in investigations in which allegations of maltreatment are substantiated (U.S. Department of Health and Human Services, 2010b). Thus, this decision-making point represents a significant gateway for later decisions that affect placement disparities.

Over the past decade, several studies have examined rates of substantiation among racial groups and have determined that allegations of maltreatment involving African American children are substantiated disproportionately and at higher rates than other racial groups. For example, using data from the National Data Archive on Child Abuse and Neglect (NCANDS), Morton (1999) found that African American children are substantiated at a rate that is disproportionate to their percentage in the population in 40 states for which data were available. Using NCANDS data from five states in 2000, Fluke et al. (2003) found that African American children were more likely to be substantiated for allegations of maltreatment than White children in each of the five states examined. Additionally, Sabol, Coulton, and Polousky (2004) found that African American children were three times as likely as White children to be involved in a substantiated report prior to their tenth birthday.

Some studies have attempted to understand disparities in substantiation by controlling for various factors in order to isolate the main effects on substantiation and determine the effect of race. Using data from Minnesota, Ards et al. (2003) found that after controlling for factors including type of maltreatment, status of reporter, county demographics, and characteristics of the child and family, African American children were still more likely to be substantiated than White children. Rolock and Testa (2005) examined the effect of caseworkers' race on substantiation and found that cases involving African American children were more likely to be substantiated for allegations of maltreatment regardless of the race of the investigator. Other studies have conducted similar analyses, and have concluded that race is a significant predictor of substantiation even when controlling for other demographic and case characteristics

(Cappelleri, Eckenrode, & Powers, 1993; Drake, 1996; Eckenrode, Powers, Doris, Munsch, & Bolger, 1988; Zuravin et al., 1995). However, other studies have found no effect for race on substantiation after controlling for other factors (Ards, Chung, & Myers, 1999; Levine, Doueck, Freeman, & Compaan, 1996).

Recent controversy surrounding efforts to address disproportionality has brought increased attention to the issue of substantiation and the incidence of maltreatment. Bartholet (2009), in her paper *The Racial Disproportionality Movement in Child Welfare: False Facts and Dangerous Directions*, contends that the observed differences in rates of substantiation occur because African American children are in fact maltreated at higher rates than children of other races, and thus should be placed into foster care at higher rates than other children. She contends that higher rates of maltreatment in African American families are to be expected because African American children are more likely to be exposed to many of the risk factors associated with maltreatment, primary among these being poverty.

These claims were initially met with resistance, as prior research, most notably the federally funded National Incidence Studies of Child Abuse and Neglect (NIS), conducted in 1980 (NIS-1), 1986 (NIS-2), and 1993 (NIS-3), had consistently shown no significant differences in the actual incidence of maltreatment across children of different racial groups (Sedlak & Broadhurst, 1996; Sedlak & Schultz, 2005). However, findings from the recently released NIS-4 (Sedlak, McPherson, & Das, 2010; Sedlak, Mettenburg et al., 2010) found for the first time that rates of maltreatment for African American children were significantly higher than those for White or Hispanic children in several maltreatment categories. While there were differences according to maltreatment type, results of the NIS-4 found that African American children experienced significantly higher rates of physical abuse, overall abuse, and overall maltreatment under both the Harm and Endangerment Standards used by the NIS-4. In supplemental analyses of these race differences, the authors conclude that these observed differences are partly the result of greater precision of the NIS-4 estimates, as well as an increased gap in income between African American and White families since the NIS-3 (Sedlak, McPherson et al., 2010a).

3. Poverty, Risk, and Maltreatment

While findings from the NIS-4 appear to support the claims made by Bartholet, they do not completely explain away the disparities in substantiation rates consistently observed in child welfare systems, as few studies have attempted to control for the effect of poverty on substantiation. Among the studies previously reviewed, Ards et al. (2003) included the poverty rate of the county in which children lived, while Drake (1996) included employment status of parents, as well as a variable identifying whether families lived in poor neighborhoods. Yet, none of the prior studies examining substantiation have included a case level variable of family income. In their review of the literature on substantiation, Zuravin et al. (1995) make specific note of this, stating, "None of the studies that have examined ethnicity/race have included income or the interaction between income and race as predictors. Thus, it is impossible to determine whether reports on African American children were substantiated at a higher rate than those on Caucasian children because their families were poorer or for other reasons" (p. 564).

Although poverty does not cause maltreatment, considerable evidence suggests that maltreatment occurs disproportionately among poor families (Drake, Lee, & Jonson-Reid, 2009; Drake & Pandey, 1996; Freisthler, Bruce, & Needell, 2007). Findings from the NIS-4 indicate that children in low SES households experience some form of maltreatment at a rate more than 5 times the rate of other children (Sedlak, McPherson et al., 2010; Sedlak, Mettenburg et al., 2010). This is particularly relevant to understanding disparities in the child welfare system as African American families are more than twice as likely as

White families to live in poverty (Moore, Redd, Burkhauser, Mbwana, & Collins, 2009). African Americans also spend longer periods of time in poverty and have the lowest exit rate from poverty among all racial groups (Corcoran, 2001). Thus, any effort to examine the disparities that have been documented in the substantiation of maltreatment must include an examination of both race and socioeconomic status to fully understand the source of these disparities.

Additionally, none of the previous studies examining racial disparities in substantiation have included measures of caseworkers' perceptions of risk. Child maltreatment investigations are conducted to determine not only whether alleged maltreatment has occurred, but also to assess the risk of future maltreatment to guide decision making and plan for future services. Although the process of identifying the presence of current maltreatment and assessing risk of future maltreatment are separate functions, data informing these two processes are often collected simultaneously and may influence each other. In their review of the literature on substantiation, English, Marshall, Coghlan, Brummel, and Orme (2002, p. 819) state "the relationship between risk assessment and substantiation is far from clear in actual CPS practice" and contend that the evidence suggests some mixing of these concepts. In fact, multiple studies have documented that caseworkers' assessment of risk is a significant predictor of the substantiation decision (Cross & Casanueva, 2009; English, Marshall, Brummel, & Coghlan, 1998; English et al., 2002).

3.1. Summary

Understanding the source of disparities found at decision-making points along the child welfare pathway is essential to understanding and addressing disproportionality. Bartholet (2009) suggests that the more risk factors that are controlled for, including poverty, the less likely it is that studies examining racial disparities will find evidence of racial bias. Yet, sophisticated analyses that include measures of poverty and other indicators of risk have largely not been conducted at the substantiation decision-point using data from child welfare systems. This study uses data from the Texas child welfare system to identify the source of disparities found at the substantiation decision. Given the strong relationship between poverty and maltreatment, this study controls for the effect of family income, as well as other factors related to maltreatment, to better understand the effect of race on this decision-making point. Further, given the relationship between risk and substantiation, this study controls for risk in order to better understand the substantiation decision and, thus, its implications for placement.

4. Method

The sample used in these analyses included reports of alleged maltreatment with substantiation decisions from the Texas Department of Family and Protective Services (DFPS) from the period September 1, 2003 through February 28, 2005 ($n = 186,182$). Because referrals to DFPS often involve multiple victims in one family, we used the family or "case" as the unit of analysis. Where families had more than one investigation in the time frame, each investigation was treated as a separate case.

Variables included in the analysis were those factors available in the dataset that had been found in previous research to predict the substantiation decision, both in previous analyses of these data and in the extant literature (e.g., Cross & Casanueva, 2009; Drake et al., 2009; Drake & Pandey, 1996; English et al., 1998, 2002; Sedlak, McPherson et al., 2010; Sedlak, Mettenburg et al., 2010). The substantiation variable was computed from the caseworker's decision after investigating the allegation of maltreatment. Possible decisions include "reason to believe," "undetermined," "ruled out," or "administrative closure." Of these, only "reason to believe" was considered a substantiated case and all others were coded as unsubstantiated. The

primary variables used to predict substantiation included race/ethnicity, annual household income, and the caseworker's risk assessment score after investigating the report. Due to very small sample sizes in some racial/ethnic groups, race/ethnicity was collapsed into four categories: African American, Hispanic, White, and Other Race/Ethnicity. Annual income is reported on the family level and categories included "less than \$10,150," "\$10,150–20,549," "\$20,550–\$40,549," and "\$40,550 and greater." The risk assessment score is a composite score constructed by summing seven "Areas of Concern" reported by caseworkers after they investigate a reported allegation of maltreatment. The seven "Areas of Concern" are each scored separately on five-point scales where 1 is rated "not at all a concern" and 5 is rated "an extreme concern." The seven areas are child vulnerability, caregiver capability, quality of care, maltreatment pattern, home environment, social environment, and response to intervention. Other variables included in the multivariate models were socio-demographic variables and variables related to the initial report to DFPS. Socio-demographic variables included age group of the family's youngest child, number of children in the family, parent's marital status, and whether at least one parent was a teen parent. Report variables included the type of allegation, source of the report, and state region of the report. Allegation types included sexual abuse only, abandonment only, physical abuse only, neglect only, or multiple types of abuse. Report sources included (1) legal, medical, child welfare, (2) school or daycare, (3) relative, victim, family friend, (4) anonymous, or (5) other. The state region variable reflects a division of the state into eight large regions and was included as previous analyses of Texas data have found this variable to be an important predictor of case decisions (e.g., Rivaux et al., 2008).

Once descriptive analyses were examined, risk assessment mean distributions were analyzed by race/ethnicity and income for the two possible substantiation decisions, substantiated or not. Then, bivariate analyses were used to examine the relationships between race, income, and risk assessment, as well as how each of these independently predicted the substantiation decision. Bivariate analyses were conducted using either Pearson χ^2 or logistic regression analysis, as appropriate. Finally, multivariate logistic regression models were used to test whether race differentially predicts outcomes of maltreatment allegations, i.e., whether reports involving African American families would be more likely to be substantiated than reports involving White families. Logistic regression analysis allows for examination of potential predictors (e.g., race, income) of a dichotomous outcome (e.g., whether to substantiate a report or not). In logistic regression, odds ratios estimate the probability of a given outcome for different groups. If, for example, racial/ethnic groups are being compared on a given outcome and an odds ratio greater than 1.0 is obtained for a particular racial/ethnic group, this would indicate that the group is more likely to have that outcome than is the reference group. Conversely, if an odds ratio of less than 1.0 for that racial/ethnic group were obtained, this would indicate that the outcome is less likely for that group relative to the reference group.

5. Results

Of the sample used for analysis, 25.7% ($n = 47,600$) of cases were substantiated. Sample demographics are summarized in Table 1. Many families were quite poor with approximately one-third of families having a household income of less than \$10,150 and approximately another third of families with a household income between \$10,150 and \$20,549.

Fig. 1 displays the mean risk assessment scores by race and income for substantiated and unsubstantiated cases in the sample. As indicated in the figure, risk assessment scores vary by both race and income within the substantiation decision. Specifically, (1) risk assessment scores are higher for substantiated cases than for cases that were not substantiated; (2) risk assessment scores for low-

Table 1
Sample descriptives.

	N	Valid percentage
Race/ethnicity		
African American	36,659	19.7
Hispanic	72,053	38.7
Other	5,128	2.8
White	72,342	38.9
Income		
Less than \$10,150	60,873	32.7
\$10,150–20,549	62,921	33.8
\$20,550–40,549	48,541	26.1
\$40,550 +	13,820	7.4
Marital status		
Single parent	109,390	58.8
Married	76,793	41.2
Teen parents		
Teen parent	56,261	30.2
Other	129,922	69.8
Number of children		
One	52,368	28.1
Multiple	133,815	71.9
Report source		
Legal/Medical/DFPS	51,937	29.3
School/Daycare	37,405	21.1
Relative/Victim/Friend	53,581	30.2
Anonymous	14,115	8.0
Other	20,385	11.5
Allegation type		
Sexual abuse only	21,803	11.7
Abandonment only	1,610	0.9
Physical abuse only	49,059	26.4
Neglect only	62,932	33.8
Multiple maltreatment	50,777	27.3
Family region		
High Plains/Upper Rio Grande	14,207	7.6
Northwest/Upper South	10,291	5.5
Upper East/Southeast	17,795	9.6
Gulf Coast/Houston	35,436	19.0
Central	23,047	12.4
Upper South	20,601	11.1
Lower South	21,226	11.4
Dallas Metroplex	43,493	23.4

income groups are higher than for higher-income groups; and (3) risk assessment scores for some racial/ethnic groups are higher than for other racial/ethnic groups. The first finding of higher risk scores for substantiated cases is what would be expected. However, the other two findings suggest potential associations between race/ethnicity, income, and assessed risk. Specifically, the figure suggests that those with lower incomes were generally rated as being at higher risk and that, even within the type of substantiation decision made, racial/ethnic differences exist.

Bivariate analyses of the primary predictor variables (race, income, and risk) showed strong relationships between all of them, specifically: (1) race predicts risk assessment with Whites being predicted as highest risk ($F(3) = 85.92, p < 0.001$); (2) race and income are strongly related with African Americans and Hispanics showing much higher representation in the lower income categories than Whites or Others ($\chi^2(9) = 7979, p < 0.001$); and (3) income predicts risk assessment with lower income groups being assessed as higher risk ($F(3) = 1344.01, p < 0.001$). Also, all three of the primary predictor variables were found to predict substantiation, though some caution is warranted with the chi-square analyses since this statistic is vulnerable to large sample sizes, such as the one in this study. Table 2 summarizes the bivariate findings.

Table 3 presents results of two bivariate logistic regression analyses examining how race, income, risk, and other potential explanatory variables predict the substantiation decision. The first

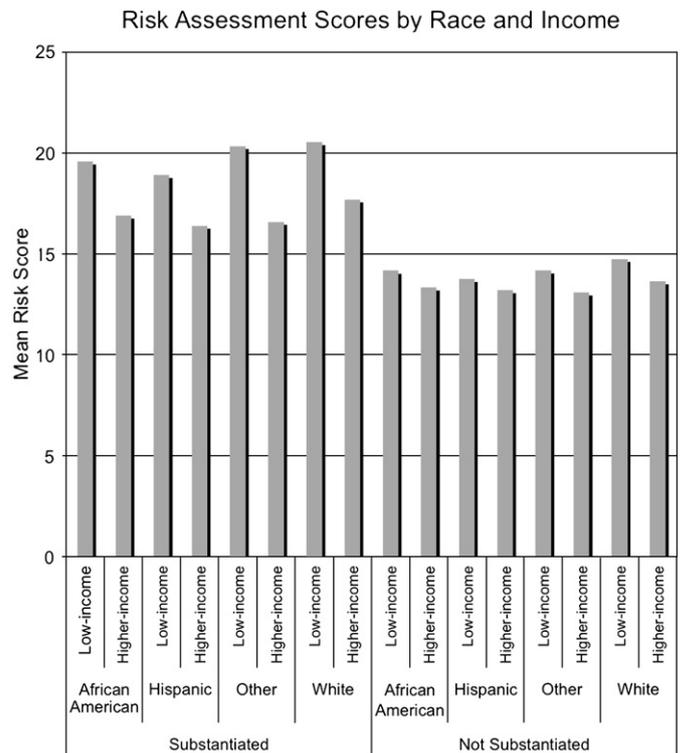


Fig. 1. Risk assessment scores by race and income.

model tests the hypothesis that all else being equal, African American families would be more likely to have reports substantiated than would other racial/ethnic groups. The second model adds risk assessment scores to see if assessed risk contributes to the substantiation decision over and above other included variables. The table includes the odds ratios and 95% confidence intervals estimating the relationship between predictors and case decisions.

The first model demonstrated acceptable model fit ($\chi^2(29) = 15,501.99, p < 0.001$). Race contributed significantly to the substantiation decision in this model only for the contrast between Hispanics and Whites, i.e., Hispanics were 8.9% less likely than were Whites to have cases substantiated ($OR = 0.911, p < 0.001$). Neither African Americans nor Other Race showed statistically significant differences from Whites in likelihood of substantiation. Family income was a significant predictor of the substantiation decision with all three lower-income groups (less than \$10,150, \$10,150–20,549, and \$20,550–40,549) having increased likelihood of substantiation compared to the highest income group (\$40,550 and greater). Specifically, the lowest income group was 95.6% more likely than the highest

Table 2
Bivariate analyses of predictor variables and substantiation.

	Category means	Test statistic	p
Risk by race		$F(3) = 85.92$	<.001
African American	15.53		
Hispanic	15.22		
Other	15.36		
Anglo	15.80		
Risk by income		$F(3) = 1344.01$	<.001
Less than \$10,149	16.76		
\$10,150–\$20,549	15.12		
\$20,550–\$40,549	14.48		
\$40,550 and greater	14.19		
Income by race		$\chi^2(9) = 7979$	<.001
Substantiation by race		$\chi^2(3) = 93.01$	<.001
Substantiation by income		$\chi^2(3) = 3,034$	<.001
Substantiation by risk		$OR = 1.197$	<.001

Table 3
Bivariate logistic regression results for the substantiation models.

	Model 1		Model 2	
	Without risk assessment		With risk assessment	
	Odds ratios and 95% confidence intervals	<i>p</i>	Odds ratios and 95% confidence intervals	<i>p</i>
Race				
African American	1.006 (0.974–1.039)	0.710	1.148 (1.104–1.193)	<.001
Hispanic	0.911 (0.885–0.938)	<.001	1.209 (1.167–1.252)	<.001
Other race/ethnicity	0.948 (0.883–1.018)	0.143	1.231 (1.127–1.346)	<.001
Anglo American ^a				
Income				
Less than \$10,150	1.956 (1.858–2.060)	<.001	0.936 (0.878–0.998)	0.042
\$10,150–20,549	1.290 (1.226–1.357)	<.001	0.850 (0.799–0.905)	<.001
\$20,550–40,549	1.103 (1.048–1.161)	<.001	0.896 (0.841–0.954)	0.001
\$40,550 and greater ^a			1.205 (1.201–1.209)	<.001
Risk assessment				
Age of oldest child			1.205 (1.201–1.209)	<.001
Less than 1 year	1.692 (1.632–1.755)	<.001	1.178 (1.126–1.233)	<.001
1–2 years	1.192 (1.151–1.235)	<.001	1.040 (0.996–1.086)	0.073
3–5 years	1.022 (0.989–1.056)	0.199	0.983 (0.944–1.023)	0.388
6–12 years ^a				
13–16 years	0.947 (0.912–0.984)	0.006	0.898 (0.858–0.940)	<.001
17 years	0.699 (0.618–0.791)	<.001	0.754 (0.651–0.874)	<.001
Parents marital status				
Not married	0.945 (0.923–0.969)	<.001	0.907 (0.880–0.934)	<.001
Married ^a				
Age of parent				
Teen parent	1.032 (1.006–1.058)	0.014	0.986 (0.956–1.016)	0.364
Not teen parent ^a				
Number of children				
Multiple children	1.115 (1.086–1.144)	<.001	0.961 (0.930–0.992)	0.015
Only one child ^a				
State region				
High Plains/Upper Rio Grande	0.927 (0.884–0.972)	0.002	1.633 (1.537–1.735)	<.001
Northwest/Upper South	1.020 (0.968–1.075)	0.450	1.087 (1.021–1.157)	0.009
Upper East/Southeast	0.674 (0.644–0.706)	<.001	0.982 (0.931–1.037)	0.520
Gulf Coast, Houston	0.910 (0.879–0.942)	<.001	1.395 (1.337–1.456)	<.001
Central	0.923 (0.888–0.961)	<.001	1.244 (1.186–1.306)	<.001
Upper South	0.817 (0.783–0.853)	<.001	0.961 (0.913–1.012)	0.135
Lower South	0.888 (0.850–0.928)	<.001	1.689 (1.598–1.787)	<.001
Dallas Metroplex ^a				
Report source				
Legal/medical/FPS	3.142 (3.051–3.236)	<.001	2.908 (2.805–3.014)	<.001
School/daycare	1.302 (1.255–1.350)	<.001	1.324 (1.268–1.383)	<.001
Anonymous	0.728 (0.691–0.767)	<.001	0.810 (0.762–0.862)	<.001
Other	1.307 (1.256–1.361)	<.001	1.230 (1.172–1.291)	<.001
Relative/victim/family friend ^a				
Allegation type				
Sexual abuse only	1.127 (1.083–1.173)	<.001	1.387 (1.320–1.457)	<.001
Abandonment	1.922 (1.706–2.165)	<.001	1.508 (1.289–1.764)	<.001
Multiple types of allegations	1.730 (1.682–1.780)	<.001	1.021 (0.986–1.057)	0.247
Physical abuse only	0.806 (0.781–0.832)	<.001	0.774 (0.744–0.805)	<.001
Neglect ^a				

^a Indicates reference category; significant differences are in bold.

income group to have a report substantiated (OR = 1.956, $p < 0.001$), while the two middle income groups were 29.0% (OR = 1.290, $p < 0.001$) and 10.3% (OR = 1.103, $p < 0.001$), respectively, more likely to have a report substantiated. The variables most strongly predictive of the substantiation decision, however, were report source and type of allegation. When compared to reports by family members or victims, reports by law enforcement/medical/DFPS (OR = 3.142, $p < 0.001$), reports by schools and daycares (OR = 1.302, $p < 0.001$), and reports by others (OR = 1.307, $p < 0.001$) had increased likelihood of substantiation, while anonymous reports had decreased likelihood of substantiation (OR = 0.728, $p < 0.001$). Allegations of abandonment

(OR = 1.922, $p < 0.001$) or multiple maltreatment (OR = 1.730, $p < 0.001$) were much more likely to be substantiated contrasted with allegations of neglect, while allegations of sexual abuse (OR = 1.127, $p < 0.001$) were somewhat more likely to be substantiated, and allegations of physical abuse were less likely (OR = 0.806, $p < 0.001$). Other variables that were statistically significant in predicting the substantiation decision were child's age, parents' marital status, teen parenthood, and the family living in certain regions of the state. However, the effect sizes for these variables were generally modest compared to those of race, income, risk assessment, report source, and type of allegation.

The second model demonstrated acceptable model fit ($\chi^2(30) = 25,844.92$, $p < 0.001$) and showed a considerably different pattern of significance than in the previous model. Race did contribute significantly to the substantiation decision in this model for all racial/ethnic contrasts, with all groups showing a higher likelihood of substantiation than Whites. Specifically, African Americans were 14.8% more likely (OR = 1.148, $p < 0.001$), Hispanic Americans were 20.9% more likely (OR = 1.209, $p < 0.001$), and Other Race/Ethnicity were 23.1% more likely (OR = 1.231, $p < 0.001$) to have reports substantiated when contrasted with Whites. Family income was also a significant predictor of the substantiation decision; however, in contrast to the first model, the three lower-income groups had decreased likelihoods of substantiation compared to the highest income group. Specifically, the lowest income group was 6.4% less likely than the highest income group to have a report substantiated (OR = 0.936, $p = 0.042$), while the middle two income groups were 14.5% (OR = 0.850, $p < 0.001$) and 10% (OR = 0.896, $p = 0.001$), respectively, less likely than the highest income group to have a report substantiated. Risk assessment also significantly predicted the substantiation decision with higher risk scores associated with increased likelihood of a report being substantiated (OR = 1.205, $p < 0.001$). The variables most predictive of the substantiation decision, however, were report source and type of allegation, as was seen in the first model. Other variables that were statistically significant in predicting the substantiation decision were child's age, parents' marital status, number of children, and region of the state. However, the effect sizes for these variables were generally modest compared to those of race, income, risk assessment score, report source, and type of allegation.

6. Discussion

In her critique of efforts to address disproportionality, Bartholet (2009) discusses the inherent difficulty of assessing the role of race as an independent causal factor in decisions made by child welfare systems. However, she contends that the more relevant non-racial explanations that are included in studies examining decision-making, the less likely it is that race will emerge as an explanatory factor. The results of the current study both support and refute this contention, suggesting that race interacts with other variables in a complicated manner that varies depending on the factors that are included in statistical models. Specifically, these findings suggest a complex relationship between race, income, and caseworkers' assessment of risk.

With a measure of family income included in the substantiation model, race was not a significant predictor of the substantiation decision. Rather, income emerged as the stronger explanatory factor with the lowest income category nearly twice as likely as the highest income category to predict substantiation. This finding lends support to Bartholet's suggestion that it is the disproportionately high number of African American children living in poverty and the associated risks, rather than their race itself, which contributes to their overrepresentation in the child welfare system. However, when caseworkers' assessment of risk was included in the model, the role of income and race as explanatory factors changed considerably. With risk and income included in the model, race emerged as a significant predictor, with all

racial/ethnic groups showing increased likelihood of substantiation in relation to Whites. Further, although income remained a significant predictor, the direction of this relationship reversed, with the lower income categories showing decreased odds of substantiation relative to the highest income category. This finding suggests not only an important relationship between race, income, and risk assessment, but also the importance of including measures of risk in analyses examining decision-making processes in child welfare.

These findings are consistent with previous research using Texas data that examined the decision to provide services or to remove children (Rivaux et al., 2008). In that study, the authors found that while controlling for risk and income, race was a significant predictor of the removal decision, with African American children significantly more likely than White children to be removed in lieu of receiving in-home services. Concerning the relationship between race, income, and risk, the authors found that lower income was associated with higher perceptions of risk. However, among cases opened for services and in which children were removed, African Americans were assessed as having *lower* risk than White families. The authors suggest that rather than racial bias directly influencing the assessment of risk, the observed disparities may be better explained by differences in the *decision threshold* caseworkers use when making decisions to remove a child or provide services, with the threshold higher for Whites than for African Americans.

Building from the prior work of Dagleish (2003, 2006), who used a signal detection framework (Tanner & Swets, 1954) to develop a model of assessment and decision-making, the authors argue that while individuals' assessments of risk can be similar, their decision thresholds may differ. Factors influencing the assessment are those associated with the current situation or case (e.g., income), while factors influencing the decision threshold are those from the decision makers' history or experience. This model is demonstrated in Fig. 2. In other words, the authors suggested that although income is a factor that influences risk assessment, it is not a factor that influences the decision threshold. Rather, the threshold is influenced by factors associated with the decision-maker, such as their perceptions of race. Thus, their findings suggested that although African Americans were assessed as having lower risk, there was a different threshold for taking action (i.e., removal or service provision) for African Americans than for Whites, with African Americans removed at a lower risk threshold than Whites.

This same logic can be applied to the current findings on substantiation. These findings indicate that lower income is associated with higher risk assessment scores. They also indicate that African American families involved in both substantiated and unsubstantiated cases were assessed by caseworkers as having lower risk than White families. Further, when controlling for risk, it is not poverty that significantly predicts substantiation, but rather race that emerges as the significant predictor. This suggests that although income may influence caseworkers' assessment of risk, it is not a factor that influences their decision to act. Rather, the findings suggest that there are racial differences in the threshold used by caseworkers in making the substantiation decision. Specifically, the decision threshold for substantiation is higher for Whites than it is for African Americans.

One possible explanation for these findings (as also suggested by Rivaux et al., 2008) is the fundamental attribution error (Ross, 1977), a concept from social psychology that refers to the tendency to undervalue situational explanations for the observed behaviors of others and to overvalue personal explanations, such as traits and attitudes. In the context of the substantiation decision, this would suggest that poverty (a situational factor) is underestimated in favor of race (a personal factor). Thus, although poverty may be an important factor to address when assessing risk, caseworkers may be assessing the risk associated with poverty differentially for poor African American families than for poor White families.

These findings have important implications that should be considered by child welfare systems. If the fundamental attribution error is occurring, how can this be mitigated? Additional training may be necessary to ensure that caseworkers understand the complex relationship between poverty, race, and risk for maltreatment. Although the empirical link between poverty and child maltreatment is well established, it is important that caseworkers not generalize the risk resulting from poverty across all families. Although living in poverty holds some inherent risks, those risks and the resulting stressors may be mitigated by strengths and other unique circumstances within each family. Thus, the specific risk factors resulting from poverty need to be assessed according to the dynamics of each unique family system. Further, it is important to evaluate the extent to which the risk resulting from poverty is being assessed differently for White and non-White families. If biases associated with African American families living in poverty are influencing the assessment of risk within those families, this needs to be understood and addressed.

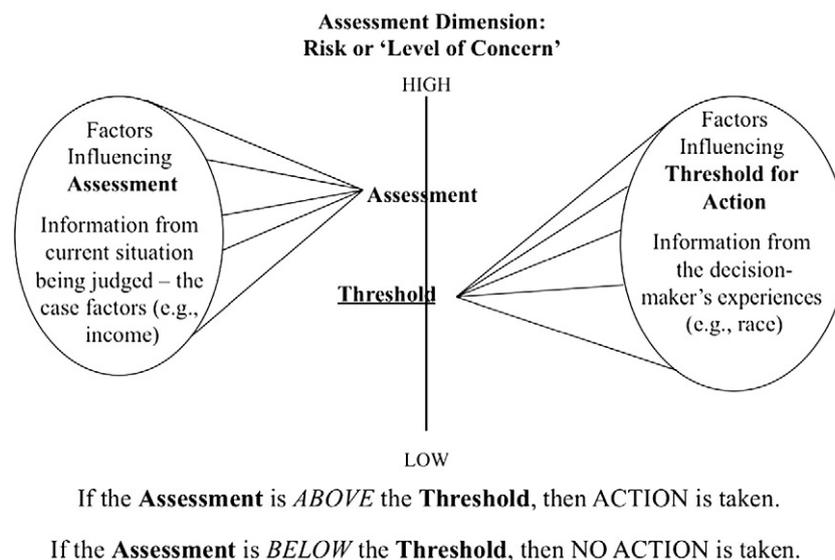


Fig. 2. A general model for assessing the situation and deciding what to do about it – Dagleish (2006).

Risk assessment tools may need to be enhanced to provide additional guidance for assessing the risk associated with poverty to ensure that objective criteria are used to identify the presence of risk in order to reduce the potential for bias to influence assessment.

Ultimately, the findings of these analyses indicate that disproportionality in the child welfare system is a complex phenomenon that cannot be explained by a single factor. The findings of this study demonstrate that, while race does predict the substantiation decision, other factors must be considered in examining the effect of race. In particular, this study found that the decision to substantiate a report of maltreatment is influenced by a combination of perceived risk and race. Furthermore, although race and risk were predictive of substantiation, the report source, type of maltreatment allegation, and region of the state were the strongest predictors in the final model. This is consistent with the decision-making ecology framework, developed by Baumann, Dagleish, Fluke, and Kern (2011), which suggests that it is a complex array of factors, including case factors, individual factors, organizational factors, and external factors, that influence the decision-making threshold, which then determines the outcome (e.g., substantiation). Future research can build upon the findings of the current study by including those additional factors.

Finally, the results of this study indicate that the effect of racial bias on decision-making remains an important consideration in efforts to address the overrepresentation of African American children in the child welfare system. Although poverty and the associated risk factors are clearly issues that need to be addressed by child welfare and affiliated systems, the results of these analyses suggest that they are not solely sufficient explanations of the observed disparities in child welfare systems. Future research, as well as efforts by child welfare systems, should continue to examine the impact of racial bias on decision-making and to identify strategies to reduce and eliminate this effect.

6.1. Limitations and future research

The analyses conducted in this study present some limitations that may be addressed in future research. First, it is possible that hierarchical effects may exist as the current analyses assessed multiple cases from the same family; future analyses may control for these effects. Second, the current study only addresses association, not causality. This may be addressed through future studies that model causal structures in child welfare decision-making processes. These studies should include additional variables, including caseworker, organizational, and community factors, in addition to the case-level factors examined in the current study, to determine the relative contribution of each of these factors on the decision-making process. The inclusion of these additional factors forms the basis of the decision-making ecology (Baumann et al., 2011), which allows for a more thorough examination of the decision-making process in order to develop interventions accordingly. Finally, additional research is needed to more fully understand the relationship between poverty, risk, and race and its effects on decision-making. As more is understood about this process, including the potential for the fundamental attribution error to influence risk assessment, advances in training and other strategies may emerge to mitigate against this effect.

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