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A critique of methods used to describe the overrepresentation of African Americans in the child welfare system

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ABSTRACT

The overrepresentation of minority children in the child welfare system has long been a troubling issue. Strategies to reduce this racial imbalance have typically focused on child welfare decision making at various time points in the course of a case, informed by descriptive statistics used to measure racial disproportionality and disparity at these key decision points. In this paper we make comparisons between two methods used to describe racial disproportionality and disparity in child welfare: one uses the general child population as its reference group and the other uses the child welfare population as it changes from one decision point to the next. This paper discusses and critiques these two methods, using the data from four states to illustrate the utility of each in describing racial overrepresentation in child welfare.

1. Introduction

The issue of overrepresentation of African American children in the child welfare system is a long-standing and thorny issue for child welfare practitioners and researchers. It has been well established that, in comparison to their numbers in the general child population, African American children make up a disproportionate share of the child welfare population (Courtney & Skyles, 2003; Hill, 2007; Hill, 2006). From this knowledge, the interventions proposed to fix the problem have been, for the most part, targeted to the child welfare system, suggesting that racial discrimination in the decisions of child welfare workers may be partly to blame for the numbers of African American children in out of home care (for a review, see Bartholet, 2009). As a result, interventions have included anti-racism trainings targeted to child welfare decision makers and statewide initiatives to increase the diversity of the child welfare workforce.

2. Statistics to describe disproportionate representation

Traditionally, two calculations have been used to measure and describe the disproportionate representation of African American children in the child welfare system: disproportionality (i.e. the over- or underrepresentation of children in a specific racial/ethnic group in comparison to their representation in the general population) and disparity (i.e. the comparison of one racial group's overrepresentation to a reference group, typically white populations). These methods have been applied at decision points within the child welfare system to describe the degree of disproportionality and disparity found at each stage.

2.1. Disproportionality Representation Index

Although these methods share some commonalities, there are several subtle yet crucial analytic differences between them. The Disproportionality Representation Index (DRI) is obtained by dividing the percentage of children of a racial group at each decision point by the percentage of children of that racial group in the general census population for the region under study. The statistic then describes the degree to which the racial group is over- or underrepresented at each decision making stage. A DRI value of 1.00 means the percentage of children is equal at the chosen decision point and in the general population. Any value above 1.00 indicates overrepresentation and anything under 1.00 indicates underrepresentation. For example, if African American children made up 38% of the cases in child maltreatment investigations and 17% of the general child population, the DRI would be 2.24. This means compared with the general population, African American children are involved in child maltreatment investigations at a rate 2.24 times greater than would be expected given their proportion of the general population.

2.2. Disparity Index

The Disparity Index (DI) is a parallel method that uses the DRI values to compare one racial or ethnic group's representativeness in the child welfare population to another racial or ethnic reference group. Here, the value is intended to represent the chances of the

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minority group being involved at some stage of the child welfare system as compared to a non-minority group (Shaw, Putnam-Hornstein, Magruder, & Needell, 2008). For example, if the DRI for African American children in child maltreatment investigation is 2.24 and the DRI for white, non-Hispanic children is .89, the DI is then 2.52. This means that African American children are 2.52 times more likely to be involved in a child maltreatment investigation than white, non-Hispanic children.

2.3. Decision point analysis

Together, the DRI and DI statistics are used to assess the degree of disproportionate representation at the central decision making junctures in the life of a case, a method commonly referred to as decision point analysis (Derezotes, Richardson, Bear King, Kleinschmitt-Rembert, & Pratt, 2008; Fluke, Yuan, Hedderson, & Curtis, 2003; Harris & Hackett, 2008; Hill, 2007). These points are conceptualized as the linear progression of a child welfare case as it moves through the system and the analysis provides a measure of the racial and ethnic composition at each of these points, including: child maltreatment investigation, substantiation, foster care entry, foster care exit, and re-entry to the system. Generally, a calculation is made at each decision point to show the degree of overrepresentation or disparity and whether the numbers are increasing or decreasing as the case moves through the system. While there has been debate about which measure is more appropriate to describe racial differences in child welfare, the Disproportionality Representation Index (also known as the disproportionality metric) and the Disparity Index are the two most frequently used calculations used to describe this problem (Fluke et al., 2003; Shaw et al., 2008).

The DRI and DI, calculated as described above, are referred to as the general population method, meaning that the base of their calculation relies on the racial composition of the general child population. Thus the DRI and DI, as currently calculated, describe a group's representation in the child welfare system at the various stages in the case with the general population as the reference point. The DRI does this directly by using general child population percentages as the denominator in its calculation and the DI does this indirectly by relying on the DRI values to calculate measures of disparity. The main strength of the DRI and DI for calculating racial overrepresentation is in the simplicity of interpreting the results. They are meant to be used as descriptive statistics indicating the degree to which African American children are over- or under-represented at various decision points and how their representation compares to that of different racial populations of children. They can be used to form a rough estimation of the likelihood of any African American child from the general child population to be involved in each stage of a child welfare case.

2.4. Limitations of the general population method

Yet, when the general population is used as the comparison point for each stage of child welfare decision making, a key confound exists that perhaps obscures the true degree of disproportionate representation in the child welfare system. Using the general population method, the initial disproportionate representation at the first decision point is carried through to later stages through the static denominator in the calculation, possibly creating a mismatch between the analytic method and actual child welfare practice. Regarding the latter, child welfare workers making case practice decisions at each stage (e.g. whether to substantiate the child maltreatment claim and whether to place the child in foster care) are making judgments based on the population of children at the preceding decision point and not against the general population of all children. This is a critical difference since solutions for addressing racial overrepresentation in child welfare typically focus on internal decisions made by child welfare professionals, often supported by descriptive statistics using the general population DRI and DI calculations (Clark, Buchanan, & Legters, 2008; Coakley, 2008; Dettlaff & Rycraft, 2010; Harris & Hackett, 2008; Hill, 2003; Hill, 2006; Miller & Ward, 2008). If the utility of the descriptive statistics is to elucidate child welfare decision making, the statistic should fairly recognize that the decision made at each point is influenced by the prior decision point, and as such, the denominator and reference population should be dynamic, changing as the case progresses through the system. Fig. 1 illustrates the decision points in a child welfare case from investigation to foster care entry with progressively smaller boxes to represent the shrinking numbers of children that make up each decision.

2.5. Advocating the alternative: decision chain method for describing overrepresentation

To account for this issue with the general population method, we advocate using a different descriptive technique that, instead of using the general population as the backdrop for every child welfare decision point, relies on the immediately preceding decision point to provide the denominator. This would serve to change the denominator for each calculation of the disproportionality statistic and suggests to a fair degree the decision making process of child welfare workers. While this methodology is not new (Ocasio & Morton, 2010; Ards, Myers, Malkis, & Zhou, 2003; Fluke et al., 2003) – the idea of changing the denominator to reflect changing decision point populations – it has rarely been used as an alternative or additive to the general population method in full-scale decision-point analyses. That is, the predominant use of this method has been as a singular calculation and not across multiple calculations. For example, Fluke et al. (2003) used a decision based denominator when constructing victimization DRI and DI statistics of children found to be victims of child abuse or neglect and Ards et al. (2003) constructed a decision based substantiation statistic in an examination of systemic bias. However, neither of these focused on the utility of decision based denominator calculations to paint an entirely different picture than the general population calculations and what that could mean for responses to overrepresentation in the child welfare system. Studies that have followed Fluke et al. (2003) and Ards et al. (2003) seeking to describe overrepresentation have relied exclusively on the general population calculations (e.g. Clark et al., 2008; Harris & Hackett, 2008; Hill, 2006).

As any child welfare case moves through the system, the population of children becomes smaller, as each subsequent decision is nested in the one that came before. Globally speaking, Child Protective Services workers decide whether or not an incident qualifies as substantiated child maltreatment based on the pool of investigations and whether or not a child should be placed in foster care based on the population of open child welfare cases. When making claims about child welfare decision making, the method must match the question. The decision chain method accomplishes this by recognizing the nested structure of child welfare decisions and making comparisons only to the pool of children inside the child welfare system at each decision point and not the general child population.

3. Method

Using data from the 2006 National Child Abuse and Neglect Data System (NCANDS) and the United States Census, this analysis presents a comparison of the general population and decision chain methods for calculating the disproportionality and disparity indices.

3.1. National Child Abuse and Neglect Data System

NCANDS uses administrative data submitted annually by state child welfare agencies to the Children's Bureau to measure various factors associated with reports of child maltreatment in the United

Fig. 1. Decision chain in child welfare services from investigation to foster care entry.

States. It is a federally funded initiative that provides case level data with information on each investigated report, including characteristics of the child and perpetrator, maltreatment type disposition, and service provision (National Data Archive on Child Abuse and Neglect, 2010). Relevant to this analysis, NCANDS provides racial and ethnic data for children at three decision points: child maltreatment investigation, substantiation decision, and foster care entry.

3.2. Sample

Using NCANDS, the 4 states with the highest numbers of total child maltreatment investigations were chosen for this descriptive analysis to illustrate differences in the two calculation methods. These states were from the West, Midwest, Southeast and Southwest regions of the United States. From these states, 106 counties were included in the analysis, which comprised over 850,000 investigations of child maltreatment. To avoid aggregation bias, measures are calculated at the county level and then averaged for each state to avoid inflated measures of overrepresentation that occur when failing to disaggregate counties with high concentrations of minority populations (Ards et al., 2003). Furthermore, counties with less than 2000 child welfare investigations for African American or white children were excluded from the analysis. The state averages are shown for illustrative purposes.

Using the United States Census, the African American and white, non-Hispanic population of children under 18 years of age was calculated for each county. These percentages were used in calculations that relied on the general population numbers.

4. Results

DRI and DI values were calculated using the general population and decision chain methods for comparison at the following decision points in the life of a child welfare case: investigations, substantiation decision, and foster care entry. The mean DRI and DI values are shown for each state using the general population method the in Table 1. Using the traditional method of calculation, both disparity and disproportionality grow from one decision point to the next and result in seemingly alarming rates of overrepresentation at the foster care entry stage. For example, in state C, African American children are represented in foster care entries at a rate of almost 4 times greater than what would be expected given their numbers in the general child population and are 6 times more likely than white, non-Hispanic children to enter foster care.

When using the decision chain method to calculate the DRI and DI values, a different picture emerges. The mean DRI and DI values are shown for each state using the decision chain method in Table 2. Note that the DRI and DI values for child maltreatment investigations are the same for both methods because the reference point is the general child population for both, substantiations use the investigations as the reference population while foster care entry uses all open cases. When using the prior decision point as the reference for later calculations the opposite trend is seen for the values. The DRI and DI actually decrease as the cases move through the system. The results here actually serve to return the DRI and DI values closer to 1 for every decision point after child maltreatment investigations suggesting that African American children are represented proportionately and treated equitably at the decision points investigated in this study.

The descriptive results indicate that changing the population – and therefore the denominator – for comparisons yields very different results. Using the general population method, both disproportionality and disparity increase as the cases progress through the system. However, when the decision chain method is utilized, the opposite occurs, the disproportionality and disparity indicators have a sharp decline from child maltreatment investigation to substantiation and then remain relatively constant to foster care entry. In Fig. 2, the DRI and DI values for each method are displayed side-by-side in a bar chart to visually represent the stark differences between the two calculation methods. The states included in the analysis are represented by the letters A–D and within each state the bars represent the DRI and DI values for each decision point included in our analysis.

5. Discussion

This descriptive study examined the differences between two similar but distinct methodological approaches for measuring racial disproportionality in the child welfare system. Our results indicate

Table 1
General population method Disproportionality Representation Index and Disparity Index mean values.

	State			
	A	B	C	D
Decision point	Mean (s.d.)			
Investigation DRI	2.41 (.62)	1.79 (.45)	2.61 (1.07)	1.81 (.54)
Investigation DI	4.00 (1.41)	1.96 (.56)	3.28 (1.26)	1.64 (.57)
Substantiation DRI	2.59 (.78)	1.81 (.49)	2.78 (1.02)	1.82 (.60)
Substantiation DI	4.23 (1.66)	2.00 (.70)	3.61 (1.20)	1.62 (.62)
Foster care DRI	3.45 (1.00)	1.92 (.68)	3.76 (2.11)	2.34 (1.29)
Foster care DI	4.91 (1.94)	2.21 (.95)	5.96 (3.33)	2.21 (1.40)

Table 2
Decision chain method Disproportionality Representation Index and Disparity Index mean values.

	State			
	A	B	C	D
Decision point	Mean (s.d.)			
Investigation DRI	2.41 (.62)	1.79 (.45)	2.61 (1.07)	1.81 (.54)
Investigation DI	4.00 (1.41)	1.96 (.56)	3.28 (1.26)	1.64 (.57)
Substantiation DRI	1.07 (.15)	1.01 (.11)	1.08 (.11)	1.00 (.11)
Substantiation DI	.63 (.68)	.61 (.58)	.75 (.44)	.33 (.23)
Foster care DRI	1.22 (.12)	1.04 (.21)	.93 (.09)	1.15 (.34)
Foster care DI	1.15 (.12)	1.10 (.30)	.89 (.17)	1.22 (.24)

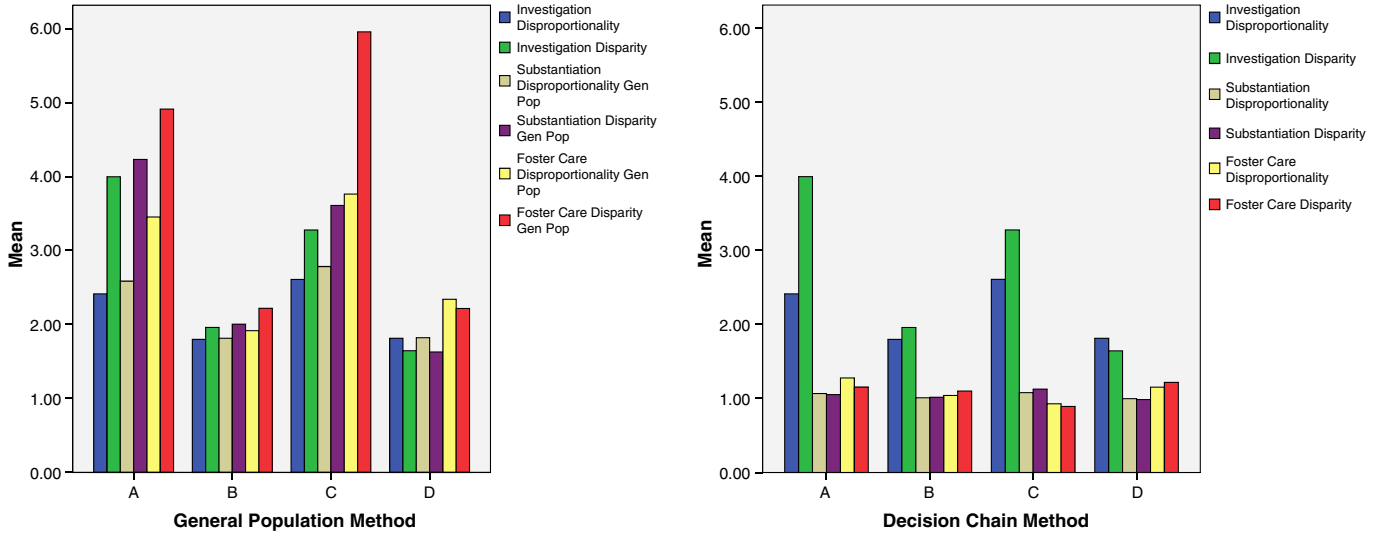

Fig. 2. Bar charts comparing general population and decision chain methods to describe disproportionality and disparity. Letters A–D represent the four states under analysis.

that descriptions of disproportionality and disparity in the child welfare system should be driven by the question one seeks to answer. If the question refers to the risk of a child residing in the general population being involved in the child welfare system, then the general population method is suited to the task. However, if the question refers to case practice decisions once a child enters the child welfare system, then the decision chain method is best suited.

Recent findings from the National Incidence Study of Child Abuse and Neglect-4 (NIS-4) and reinterpretations of NIS-2 and NIS-3 bolster the use of decision based disproportionality statistics. Previously, findings from the NIS-2 and NIS-3 were assumed to show no difference between the maltreatment rates of African American and white children and when this was considered with NCANDS data showing marked differences in the racial composition of the child welfare system, many attributed the difference to systemic bias. However, in Drake and Jonson-Reid's (2011) reanalysis of the NIS-2 and NIS-3 findings they show that in fact there was a practical difference between rates of maltreatment according to race with higher rates of maltreatment seen among African Americans. Findings from NIS-4 are similar and when compared to the race differential seen in NCANDS rates of actual maltreatment in the former are very similar to that of reported maltreatment in the latter (Drake, Jolley, Lanier, Fluke, Barth & Jonson-Reid, 2011; Drake & Jonson-Reid, 2011). If there exists an actual difference in the occurrence of child maltreatment according to race, then decision based calculations are helpful as they are concentrated on treatment received after entering the child welfare system.

5.1. Strengths and limitations

The strength in this analysis lies in addressing the biases inherent in using the general child population as the reference point for describing decision making within the child welfare system, after the investigation phase. Changing the conceptualization of the denominator affects the outcome in both the DRI and DI statistics. Using the general population and decision chain methods side-by-side allows for two very different ideas to be presented. First, the general population method describes the chances of a child residing in the general population being involved in the various stages of the child welfare system. Second, the decision chain method allows for a description of how child welfare workers are making decisions once a child comes to the attention of the system and whether those decisions reflect any inherent biases.

Using NCANDS data, we were limited in the decision points that we could include. Specifically, we were not able to include foster care exits, re-entry to the system and adoption, which might trend upwards again, as some studies have shown that African American children are at greater risk of having longer stays in foster care, being adopted at a slower pace, and re-entering foster care after exit (for a summary, see McRoy, 2005) while others have shown a more nuanced picture where considerations of geography and exit type actually show specific groups of African American children exiting the system more quickly than white children (Wulczyn, 2003). It is also important to point out that both the DRI and DI, regardless of how they are calculated, are simply making group comparisons and any imbalance should not necessarily be used to infer discrimination.

Reconceptualizing how we describe disproportionality and disparity may impact the intervention areas targeted to address this issue. When using the general population method to show disproportionality and disparity, the effect appears to be cumulative as the indices grow as cases progress from child maltreatment investigations to foster care entry. However, our results using the decision chain method indicate the opposite where the earliest decision point in the child welfare system evidences the greatest overrepresentation, what could fairly be considered the community's response to perceived maltreatment and not the system's decision about who is liable.

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