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Urban Education 2011 46: 1526 originally published online 22 August 2011

DOI: 10.1177/0042085911416014

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Urban Education
46(6) 1526–1552
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DOI: 10.1177/0042085911416014
<http://ue.sagepub.com>



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Abstract

Despite decades of research examining the disproportionate representation of racial minority students in special education, our understanding of the complexity of disproportionality remains incomplete and much of the previous research was designed without a clear theoretical framework. This exploratory study applied a structural theoretical lens as a means of understanding racial inequity in special education across analytical scales, racial groups, and disability categories. The findings confirm differential risk of educational disability across racial groups. Based on the theory adopted, several hypotheses were tested regarding the relations of relative risk to district structural features, with conflicting results found.

Keywords

special education, disability, disproportionality, disproportionate representation, structural theory

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The implications of the intersections of race, culture, gender, and disability for urban education has been repeatedly emphasized, especially the problems of overrepresentation and segregation of racial minority students in special education (Blanchett, Klinger & Harry, 2009; Blanchett, Mumford & Floyd, 2005; Kozleski & Smith, 2009; Shealey & Lue, 2006). This disproportionality has been a persistent and controversial issue throughout literature, law, and practice since the late 1960s; yet, the complexity of this problem is not fully understood. Disproportionality is generally observed in the high-incidence categories of learning disabilities (LD), emotional disabilities (ED), and mental retardation (MR), which together constitute 59% of the students receiving special education (Data Accountability Center, 2010). In addition, these categories are regarded as the most subjective of the educational disabilities due to the reliance on professional judgment in identification as opposed to physical markers or medical diagnoses (Donovan & Cross, 2002). The literature reveals fairly consistent national patterns—relative to White students, African American students are overrepresented as MR and ED, and Native American students are overrepresented as LD, while Latino and Asian American/Pacific Islander students are proportionately or underrepresented in the high-incidence categories. The research, however, is relatively constrained. For example, a recent review of the empirical studies of disproportionality from 1968 to 2006 ($n = 42$) found that many (40%) focused solely on the representation of African American students in special education, while nearly a quarter examined identification patterns in the LD category exclusively, and many studies examined only the southern region of the United States (Waitoller, Artiles, & Cheney, 2010).

It is not surprising, then, that despite decades of research in this area, our understanding of the complexity of disproportionality remains incomplete and imprecise. There are considerable discrepancies in racial minority representation at the state and district/local educational agency (LEA) levels; yet “[f]ormal studies to evaluate these discrepancies have been limited” (Skiba et al., 2008, p. 270). For example, many analyses aggregated data at the national level such that any local distinctions were lost and national aggregates indicated parity despite substantial variations in identification patterns at the state, district, and school levels that would otherwise suggest considerable inequity. Accordingly, analyses across analytical scales are needed. Furthermore, additional investigations are needed to understand the patterns of representation for understudied racial groups, such as Native Americans, Latinos, and Asians, as well as the lesser studied disability categories, to better understand the local contexts and contingencies of this long-standing problem. This includes studies in demographically varied

localities because much of the existing literature has focused on national patterns samples from the southern United States (Waitoller et al., 2010), which may not be applicable to the increasing diversity characterizing urban education contexts. It is generally assumed that disproportionality is only a problem in the high-incidence disabilities, but some analyses (Donovan & Cross, 2002; Strand & Lindsay, 2008) suggest that such a characterization of the problem may ignore more fine-grained patterns of differential identification, thereby limiting our understanding of the causes and multidimensionality of disproportionality. That is divergent patterns of differential risk across the types of disability suggest different proximal and distal causes. Finally, there is a need to strengthen how this problem is theorized. Although the research to date has offered valuable evidence about factors associated with disproportionality, these studies were often designed without a clear theoretical framework or hypothesized relations among factors (Eitle, 2002). The present study expands on the existing knowledge base around disproportionality and addresses the aforesaid gaps in the literature by explicitly applying structural theory as a means of understanding racial inequity in special education across analytical scales, racial groups, and disability categories in a diverse state.

A key argument for the design of this study is that although the research knowledge about this problem is accumulating, most studies' explanations of the problem are not explicitly grounded in theoretical frameworks. We distinguish between *explaining* and *theorizing* research findings. The former refers to making sense of trends and patterns in reported findings without necessarily overtly locating the evidence in a theoretical landscape or explicitly using theoretical tools to interpret the data. Thus, explanations are neither clearly grounded in nor benefit from the systematic application of sets of propositions and principles to analyze and explain phenomena, which is what defines a theory. The most prevalent explanation reported in Waitoller and colleagues' (2010) review focused on the role of professional practices, which accounted for almost two thirds of published studies. For instance, researchers examined the role of educators' biases, assessment issues, and decision-making processes in eligibility meetings, consistent with the notion that personal bias and cultural dissonance contribute to disproportionality (Cartledge, 2005). However, evidence of racial bias in referrals is mixed and there is little indication of statistical bias in current psychoeducational testing (Reynolds & Carson, 2005; Skiba, Knestling, & Bush, 2002).

A second common explanation is related to the role of sociodemographic characteristics of students, communities, and LEAs, comprising approximately one third of published disproportionality studies (Waitoller et al., 2010).

These factors have been significantly related to disproportionality, particularly the percentage of racial minority student enrollment (Coutinho, Oswald, & Best, 2002; Finn, 1982; Parrish, 2002). The latter finding has been interpreted as support for a systemic bias hypothesis; that is, that the causes of disproportionality lie in structural inequalities and systemic factors that affect the experiences of individuals from minority groups (Oswald, Coutinho, Best, & Nguyen, 2001); however, this finding has not been theoretically framed to elucidate the mechanisms by which such inequalities are created or how these factors affect students' experiences such that disproportionality occurs. This research seemingly subscribes to structural theories and most utilized LEA-level data from national databases (e.g., Office of Civil Rights, National Center for Educational Statistics) to examine relations between demographic, socioeconomic, health, and academic variables and outcomes, but most did not articulate explicitly their theoretical commitments. Moreover, while the basis of disproportionality in sociohistorical race relations and discrimination are present in the literature (Skiba et al., 2008), no coherent theoretical framework for understanding disproportionality has been offered.

Applying Structural Theory to Understand Disproportionality

Structural theory provides a framework for understanding the roots of disproportionality and the mechanisms through which disproportionality occurs by locating the basis of racial inequity in the structure of society and racialized social systems rather than in the beliefs or actions of individuals (Conyers, 2002; Essed, 1991; Omi & Winant, 1986). That is, educational, economic, political, and social, stratification is predicated, at least in part, on racial categorization that results in particular relations between groups within social systems (Bonilla-Silva, 1996) and come to be reflected in people's beliefs and behaviors. Race relations are at the heart of educational stratification (Oakes & Gupton, 1995) and disproportionality can be conceptualized as a means of maintaining educational stratification (Artiles, 1998).

In this theory, stratification refers to the patterned and differential distribution of resources, life chances, and costs/benefits among groups of the population (Jenkins, 1991). These social systems are dynamic, hierarchical, and socially constructed, resulting in racial ideology (or racism) that influences the behaviors of individuals within the system. There are no universal manifestations of inequity and the nature of the relations in any given locale is dependent on the sociohistorical context (Jenkins). The importance of the social construction of the categories is particularly salient in the consideration

of disproportionality because of the convergence of race and disability, the latter of which is based largely on the judgment of professionals within schools and clinical settings. Thus, professional actions that arise within these stratified systems may result in differential treatment of certain groups within those systems.

Due to racialization and stratification, the racial group in the position of most power benefits from greater social estimation (e.g., being viewed as smarter or better behaved), economic returns (e.g., higher pay), political positions, occupational prospects, and authority in determining social norms and physical boundaries (i.e., segregation; Bonilla-Silva, 1996). Structural theory allows for the consideration of institutional racism—biased racial outcomes associated with policies and practices—that may intentionally or unintentionally have racially disproportionate consequences (such as special education disproportionality) and can collectively reinforce advantage or disadvantage (Fulbright-Anderson, Lawrence, Sutton, Susi, & Kubisch, 2005). Institutional racism has also been defined by Macpherson (1999) as follows:

The collective failure of an organization to provide an appropriate and professional service to people because of their colour, culture, or ethnic origin. It can be seen or detected in processes, attitudes and behaviour which amount to discrimination through unwitting prejudice, ignorance, thoughtlessness and racist stereotyping which disadvantage minority ethnic people. (p. 28)

Notably, the relevance of the concept of institutional racism is in “its recognition that racism is more than just individual prejudice, but also in its understanding that individual intent is irrelevant” so that change efforts that focus only on individuals (e.g., professional development for teachers to improve cultural knowledge) will be ineffective because they fail to address the institution (Beratan, 2008, pp. 339-340) within which educators and students operate. This concept also accounts for how such seemingly equity-minded policy, such as the Individuals with Disabilities Education Act, comes to act as a mechanism for the marginalization of racial minority students through the process of transposition (Beratan). Indeed, many argue that the intersection of race and disability results in disability serving as a legal justification of segregation deemed unacceptable based on race alone (e.g., Reid & Knight, 2006).

Structural theory also involves the notion of racial competition; that is, there is competition for limited resources, which results in the use of racial ideology to advantage White communities (Anyon, 2009). In the context of

educational inequity generally and special education disproportionality specifically increased competition for educational resources such as effective teachers, quality facilities and materials, and program funding leads to ideology, policies, and practices that disadvantage students from racial minority backgrounds to secure certain advantages for their White peers. This notion has also been used to explain the causes and consequences of tracking, White flight, and other education phenomena relevant to educational inequity (for other examples, see Blanchett, 2009 and Eitle, 2002). As Anyon (2009) notes, from a structural perspective, the sorting process that underpins special education identification and placement and schools' patterns of allocating human and material resources is primarily concerned with reproducing racial and economic hierarchies within the broader social system that serves the interests of the dominant group. The stigmatization and exclusionary practices involved in special education for many minority students reduces the competition for otherwise scarce resources and operates as second-generation discrimination (Rocha & Hawes, 2009). The process of categorization of students initially acts as a means of stratifying students, and the results of the stratification—that is, differences in knowledge attainment and achievement—serve as justification for continued differential placement and long-term disparities in outcomes (e.g., college enrollment, employment, etc.).

The importance of time and place are also central to structural theory. While current racial phenomena are shaped by historical factors, the experiences of individuals must be understood by examining contemporary social structures (Bonilla-Silva, 1996), including public policies and institutional practices that privilege some groups over others and support persistent inequality (Fulbright-Anderson et al., 2005). As Eitle (2002) noted, “parents, teachers, counselors and other school personnel are embedded in localities that shape their racial ideologies, beliefs about intelligence, ability to act in a discriminatory way, and opportunity to activate cultural and social resources” (p. 599).

Researchers are just beginning to trace how stratification processes vary across localities, an important analytic shift considering that “while federal laws and court orders have influenced the provision of special education and school desegregation, the implementation of programs have often remained largely local and therefore not uniform across school districts” (Eitle, 2002, p. 578). From this perspective, policies are negotiated, adapted, or appropriated according to local conditions (Levinson & Sutton, 2001), which compels the study of educational problems at multiple levels. The importance of place in understanding variations in educational disparities is

increasingly emphasized, with location understood as a structure through which stratification is negotiated inasmuch as intergroup competition is partially based on geographically bound resource availability (Johnson, 2008). Different patterns of inequity emerge through the convergence of the different actors, resources, and sociohistorical factors in a given locale relative to others. For instance, some research has shown educational stratification to be greatest in heterogeneous communities because majority group parents demand increased student differentiation (Johnson, 2008), presumably to secure certain academic privileges for their own children by encouraging the tracking of others into less desirable placements. In settings where minority populations are large and/or where their representation in positions of authority is high, disparities in access are reduced because political resources are more equitably distributed between groups (Eitle, 2002). Research has shown that increases in minority teachers are associated with increased academic success for students of all minority groups across a variety of indicators (e.g., reductions in low track placements, special education identification, and suspension, and increasing rates of graduation identification; Rocha & Hawes, 2009). Taken together, this may account for findings indicating that disproportionality increases as minority enrollment increases to a certain proportion of the total population, beyond which disparity then begins to decrease (Gaviria-Soto & Castro-Morera, 2005).

The Present Study

The present study addresses the aforementioned gaps in the literature. First, it aims to strengthen the theoretical refinement of the disproportionality problem by framing the study from a structural perspective. Second, we set out to understand disproportionality across analytical scales (i.e., state and district), racial groups, and disabilities to examine the complex local context of this problem using a sample derived from Arizona data. This state has an increasingly diverse student population that surpasses national trends, particularly in the representation of Latino and Native American students, both understudied in the current disproportionality literature. The analysis is guided by two research questions:

Research Question 1: To what extent are racial minority students disproportionately represented in special education across analytical scales and disability categories?

Research Question 2: To what extent is disproportionality for the different race-disability groupings (e.g., Latino students identified as MR) predicted by the structural factors of LEAs?

The proportion of students eligible for free/reduced lunch, student-teacher ratio, and district size were used as indicators of resource availability. School district racial structures were operationalized by the proportions of racial minority teachers and students. These factors were selected based on their previous inclusion in the empirical literature on disproportionality and their fit with the concepts within structural theory, recognizing that identification patterns are influenced in part by the socioeconomic, demographic conditions, and organization of communities and LEAs. Previous studies provide support for the relations of certain factors to disproportionality, but few provide theoretical explanations for the findings (Eitle, 2002) and results have largely been limited to analyses of the disproportionate representation of African American students. Results have shown that such sociodemographic factors were strongly associated with the proportion of students identified for special education, but that the impact differed depending on the groups and categories studied, sometimes resulting in contradictory findings. Structural theory provides a unified approach for making sense of research findings and a means of bringing together the sometimes contradictory findings from this body of literature. It accounts for the multiply-determined nature of disproportionality and the importance of context. Thus, patterns and predictors of disproportionality may differ across localities, but the root causes are the same. From a structural theoretical perspective, such complexity is expected given variations in sociocultural context and the resulting race relations. Here, we attempted to clarify the impact of structural factors common within the disproportionality literature to examine the relationship across multiple groups and categories within a single locale.

Hypotheses

First, we expected that variations in disproportionality would be observed across the two levels of analysis (i.e., state and LEA), with evidence of disproportionality primarily in the more subjective categories because they are the most susceptible to the influence of racial ideologies and norms regarding behavior and ability (Hypothesis 1). Consistent with the notion of racial competition, disproportionality would be more common for the smaller minority groups (Hypothesis 2). It has been theorized that this link exists “because minority groups are more likely to have political power in school

districts with large minority enrollments and because in districts that are already racially isolated there are few White students left to segregate from black students” (Eitle, 2002, p. 580), and this is supported within the existing knowledge base for African American students in the high-incidence categories (Eitle, 2002; Meier, Stewart, & England, 1989; Oswald, Coutinho, & Best, 2002). We built on these studies to test this hypothesis with *multiple* racial groups and disability categories at the state and LEA-levels. It was not expected that patterns and predictors to be the same across all groups because of sociohistorical differences in race relations and current societal dynamics between groups. While special education is influenced by federal policy, implementation occurs at the local level and varies across LEAs; as a result, stratification (i.e., disproportionality) is also likely to vary across LEAs and states (Eitle, 2002), as has been indicated within the literature (Artiles, Rueda, Salazar, & Higareda, 2005; Donovan & Cross, 2002). Thus, given the importance of place and the impact of differences in racial, socioeconomic, and organizational structures across LEAs, it was expected that substantial variability will be observed across LEAs.

In addition, structural theory guided our hypotheses regarding the relations of the selected predictors. Based on our theoretical framework, we posited that the proportion of students receiving free/reduced lunch would be negatively related to inequities in special education at the LEA-level (Hypothesis 3). This variable is often utilized as a surrogate index of poverty and individual resources. Lower levels of disparity were expected in high poverty schools due to limited resources and opportunities to learn for all students (Skiba et al., 2008). In such settings, racial competition is intensified and special education may actually be regarded as one of the few means of securing academic support, versus low poverty settings in which other resources are generally available and special education operates as a means of segregation. This hypothesis is consistent with the early disproportionality research (Meier et al., 1989) and more recent work finding that disproportionality was reduced in high poverty settings, and was actually higher in low poverty settings for African Americans identified as ED, MR (Coutinho et al., 2002; Oswald, Coutinho, Best, & Singh, 1999; Oswald et al., 2001; Oswald et al., 2002), SLD, and SLI (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005).

In addition, we hypothesized that district size would be negatively related to racial inequity in special education (Hypothesis 4) because as district size increases, so does the availability of resources, such that competition is less of a necessity for advantaged groups to secure desired resources (Eitle, 2002). Consequently, stratification via special education identification would be less

common. Accordingly, we also conjectured that student–teacher ratio would demonstrate a positive relationship to racial disproportionality in special education (Hypothesis 5) because this ratio is a measure of resource availability, as teachers are a critical human resource within schools. Smaller student–teacher ratios generally indicate greater resource availability, and consistent with the reasoning above, would be expected to be related to reduced disparities in special education identification.

Finally, we expected that the proportion of racial minority students (Hypothesis 6) and teachers (Hypothesis 7) would have negative relationships with disproportionality rates. Research on political behavior suggests that as minority representation increases, so do efforts to stratify (Rocha & Hawes, 2009), yet so does White flight, resulting in reduced efforts to secure educational resources within the district, and where minority representation is high, their authority within the educational community also increases (Eitle, 2002). The demographics variables utilized in this study are common proxies for political resources within communities (Polinard, Wrinke, & Meier, 1995). Studies of limited samples have been found for African American students in special education as the proportion of African American teachers in the district increases (Serwatka, Deering, & Grant, 1995). As such, it was expected that in LEAs with large minority enrollments or large proportions of minority teachers, inequity in special education identification will be reduced relative to LEAs in which minority students are in the numerical and political minority and more exposed to the consequences of racial competition with the dominant advantaged group.

Method

Data Source

Data on general and special education enrollment for the 2004–2005 academic year were drawn from publicly available annual reports (Arizona Department of Education, 2005) summarizing the distribution of students from five racial categories (i.e., White, African American, Latino, Native American, and Asian) in the total enrollment and in each of the state’s 14 disability categories. All five racial groups were included in the analysis because of the diversity in the state’s population. The disability categories of interest in this study included the high-incidence categories of mild mental retardation (MIMR), specific learning disability (SLD), speech/language impairment (SLI), and emotionally disabled (ED) as well as the low-incidence categories of autism, hearing impairment (HI), multiple disabilities (MD), moderate mental retardation (MOMR), severe mental retardation

(SMR), orthopedic impairment (OI), other health impairment (OHI), traumatic brain injury (TBI), visual impairment (VI), and special education overall (SPED; i.e., all students in special education, regardless of specific categories). All disability categories were defined under state statute (Arizona Revised Statute, 2007). One category, deaf-blind, was excluded because of the low numbers of students identified ($n = 50$ or 0.00005%) for the entire state.

Context

This study took place in Arizona, a southwestern state of nearly 1.1 million students. In the present study, we focused on the 2004-2005 academic year. This was the year the reauthorization of IDEA included new regulations requiring states to monitor and address disproportionality. In response, the state established criteria for identifying LEAs with disproportionate representation and required LEAs with significant disproportionality to examine and correct inappropriate practices. Thus, this study will serve as a baseline to understand how structural factors shape disproportionality patterns in a diverse state undergoing efforts to reduce racial disparities in special education. During the 2004-2005 academic year, the total enrollment was 1,043,298, of which 48% ($n = 504,114$) were White, 5% ($n = 52,128$) African American, 38% ($n = 398,750$) Latino, 6% ($n = 64,215$) Native American, and 2% ($n = 24,091$) Asian. In addition, approximately 44% of all students were eligible for free or reduced lunch.

Sample

The initial sample for LEA-level analyses included all of the traditional public LEAs in the state to provide a comprehensive review of racial minority representation in the state's special education programs. Charters were excluded given issues in the exclusion of students with disabilities from charter schools that may have confounded the analysis (Miron, Urschel, Mathis, & Tornquist, 2010). Within the state, LEAs are organized as unified districts of grades kindergarten (K) through 12 ($n = 76$), elementary districts of Grades K through 6 or 8 ($n = 92$), and high school districts of Grades 8 through 12 ($n = 15$). The original data file included 216 LEAs. LEAs were excluded from the analyses if total enrollment and special education enrollment were incongruous ($n = 6$), all of the students belonged to a single racial group ($n = 7$), or there were fewer than 10 students in the second largest racial group ($n = 20$) as the analysis could not be completed reliably with such small cell sizes (Bollmer, Bethel, Garrison-Morgren, & Brauen, 2007).

The remaining sample included 183 LEAs, with a total of 943,369 students, of whom 48% were White, 39% were Latino, 5.5% were Native American, 5% were African American, and 2% were Asian. There were no significant differences between the demographics of the state and the LEA sample ($\chi^2 = 0.05$, $df = 4$, $p > .99$).

Data Analysis

Oswald et al. (1999) defined disproportionality as “the extent to which membership in a given [racial] group affects the probability of being placed in a specific disability category” (p. 198). This definition was employed in the present study because it allows for the consideration of both over- and under-representation common in (Artiles et al., 2005; Coutinho et al., 2002). District enrollment data were used to compute risk indexes for each racial group by disability category. The risk index indicates the percentage of students in each group who are identified in a given category (e.g., 1.09% of Black students are identified as MIMR in this sample). These calculations were then used to generate relative risk ratios for each of the racial minority groups for overall special education identification in each disability category.

The relative risk ratio, the ratio of the risk for the target group and risk for a comparison group (e.g., 1.09% of Black students were identified as MIMR, compared to .45% of White students, resulting in a relative risk of 2.42; that is, Black students were 2.42 times as likely to be identified as MIMR than White students), was used as an indicator of disproportionality. The relative risk ratio was calculated for the four racial minority groups for overall special education identification and in each disability category using White students as the comparison group following the rationale of Artiles and colleagues (2005), which, consistent with our theoretical framework, stated,

- (a) White students have been traditionally used as a comparison group in equity analyses because they are the dominant group in society who have not had systematic problems with access and opportunity issues,
- (b) White students have been used historically as a contrast group in this literature that facilitates trend analyses, and
- (c) White students can be used as a stable contrast group because various cultural and linguistic groups are compared to the same group. (p. 289)

In addition, White students have been used as the comparison group in previous disproportionality studies (e.g., Artiles et al., 2005; Hosp & Reschly, 2004). To avoid contributing to the confusion regarding the interpretation of risk ratios (Skiba et al., 2008), we have delineated specific cut scores to guide

the interpretation of results. We defined overrepresentation as a risk ratio value greater than or equal to 1.5 and underrepresentation was defined by a value less than or equal to 0.50. There is no consensus in the literature as to best address this problem; cutoffs range from 1.2., 1.5 (Skiba et al., 2005), and 2.0 (Parrish, 2002) in the empirical literature, and from 1.0 to more than 4.0 in state policy (Sullivan, Kozleski, & Smith, 2008). The values used here were selected to serve as a meaningful way to quantify disproportionality within the context of equity considerations, while recognizing the arbitrariness of the specified criteria, coupled with the significance of how disproportionality is operationalized.

The relative risk ratios were then used as to compute correlations to the district factors and as the outcome variable in ordinary least squares (OLS) regression. The log of the relative risk ratio was used because the relative risk ratio is not normally distributed and must be transformed to meet the assumptions of inferential statistics (Skiba et al., 2005). This method has been used in several other studies (Coutinho et al., 2002; Finn, 1982; Hosp & Reschly, 2004; Oswald et al., 1999, 2001, 2002). OLS regression was used to examine the relationship between the LEA-level relative risk of identification in the categories in which disparities were most common and the predictors chosen. All variables were standardized to meet the assumptions of inferential statistics (Skiba et al., 2005).

The predictors in this study included the proportion of students who were identified as racial minorities, the proportion of teachers who were identified as racial minorities, the proportion of students receiving free or reduced lunch, district size, and student-teacher ratio. These variables have been explored in previous research and have been found to be related to disproportionality for some groups in some disability categories. The specific predictor variables were chosen to evaluate the structural/systemic explanation regarding the disproportionate representation of minority students in special education. Bivariate correlations were computed and a variance inflation factor (VIF) was calculated for each predictor in the models to evaluate multicollinearity. All VIFs were of acceptable values (<4), indicating that multicollinearity was not a concern (Cohen, Cohen, West, & Aiken, 2003).

Results

Results for the first research question regarding disproportionality across analytical scale, racial groups, and disability categories are displayed in Table 1. Throughout the state, 11.5% of students were identified for special education. Risk was greatest for African American and Native American students, of whom 13.95% and 14.43% were identified as disabled, respectively.

Table 1. Patterns of Disproportionality: State-level Relative Risk Ratios (RRR) and Percentage of LEAs With Over- and Underrepresentation

	African American			Latino			Native American			Asian/PI		
	State RRR	LEAs <0.50	LEAs >1.5	State RRR	LEAs <0.50	LEAs >1.5	State RRR	LEAs <0.50	LEAs >1.5	State RRR	LEAs <0.50	LEAs >1.5
SPED	1.22	17.50	23.8	0.96	11.18	9.7	1.26	16.46	23.8	0.58	53.10	9.7
SLD	1.38	27.50	29.7	1.19	9.41	19.5	1.71	21.34	39.5	0.42	68.28	5.9
SLI	0.82	43.75	9.2	0.86	21.76	9.7	0.90	39.02	15.7	0.79	53.79	9.7
ED	1.48	37.50	18.9	0.37	57.65	5.9	0.65	51.22	11.4	0.21	79.31	2.7
MIMR	2.42	35.00	27.0	1.38	21.18	15.7	1.49	20.73	16.8	0.69	61.38	4.9
OHI	0.85	48.75	10.8	0.40	50.59	3.2	0.45	59.15	5.4	0.40	73.10	3.2
Autism	0.89	43.13	6.6	0.42	46.47	3.2	0.03	39.63	3.8	0.11	53.10	5.9
HI	0.76	35.00	1.1	1.12	20.00	8.6	1.71	29.88	4.3	1.71	35.17	5.9
MD	1.30	37.50	9.7	0.95	25.29	5.9	1.70	21.34	11.4	0.07	52.41	5.4
MOMR	1.53	41.25	10.8	1.35	24.71	15.1	1.41	43.29	10.8	0.94	53.79	4.9
SMR	1.67	31.88	6.5	1.33	20.59	8.1	2.00	34.14	5.9	1.17	41.38	4.9
OI	0.71	35.63	4.9	0.71	27.65	4.3	1.00	37.20	4.3	1.14	38.62	5.9
TBI	1.00	31.88	1.6	0.75	20.59	5.4	1.50	28.66	4.9	*	35.86	2.2
VI	0.86	27.50	2.7	0.71	23.53	2.7	1.57	28.66	3.8	1.00	33.79	2.7

Note: Risk ratios greater than or equal to 1.5 are bolded; those less than or equal to 0.50 are italicized. White students serve as the comparison group, and are thus not included in the table, so RRR of 1.0 indicates parity (e.g., equivalent risk) with this group. SPED = special education; SLD = specific learning disability; SLI = speech/language impairment; ED = emotional disabilities; MIMR = mild mental retardation; OHI = other health impairment; HI = hearing impairment; MD = multiple disabilities; MOMR = moderate mental retardation; SMR = severe mental retardation; OI = orthopedic impairment; TBI = traumatic brain injury; VI = visual impairment.

Latino students were equally likely to be identified relative to their White peers and Asian students were substantially less likely to be identified. At the state level, substantial overrepresentation was most common for Native American students, followed by African American students, and underrepresentation was common for Asian students. Among Native American students, relative risk was elevated for identification in the following categories: SLD, HI, MD, SMR, TBI, and VI. This tendency for overrepresentation in the medically related categories is notable given the tendency for overrepresentation to be observed only in the subjective, or soft, disability categories. African American students were more likely to be identified in each of the mental retardation categories. Overrepresentation was not consistently observed for any one racial group or within any particular disability category

at the state level. Underrepresentation was common in the categories of OHI and autism, as indicated by low risk ratios for Latino, Native American, and Asian students.

At the LEA-level, underrepresentation was frequently observed in most categories, as indicated by substantial percentages of LEAs with risk ratios less than 0.50. Elevated relative risk at the LEA level was most common for African American and Native American students in the high-incidence categories of SLD and MIMR, but was generally infrequent, occurring in less than one tenth of LEAs, across the low-incidence categories. Together, these patterns suggest that identification practices in a small number of large districts drive state level identification patterns.

Results of the analyses concerning the relations between disproportionality and the selected structural predictors are presented in Table 2. Only those categories in which both overrepresentation and underrepresentation were common were included in this stage of the analysis. Bivariate correlational analysis revealed that the proportion of students receiving free/reduced lunch was consistently negatively correlated to relative risk ($p < .05$) for Latino and Native American students in the high incidence categories and for African American students identified as MIMR. However, this variable was rarely a significant predictor in the regression analysis, with the exception of predicting relative risk for African American students identified as SLD and in special education generally. LEA size generally demonstrated negative correlations with relative risk across groups and categories particularly African American and Latino students identified as SLD but was infrequently a significant predictor. Student-teacher ratio was not generally correlated with relative risk—with the exception of Native American students identified as SLD—but was a significant predictor for Latino students' relative risk in three categories; however, the relationship differed among the categories.

The most consistent correlate and predictor of relative risk across racial groups and categories was the proportion of racial minority students within an LEA. This variable consistently demonstrated a significant negative relationship to relative risk, indicating that as minority enrollment increased so did racial minority students' relative risk of being identified for special education. In contrast, while the proportion of minority teachers was frequently a significant correlate to decreased relative risk across groups and categories, it was not generally a significant predictor of relative risk in the regression models. However, in the instances where it was predictor, it was a positive relationship, thereby indicating an increase in relative risk as the proportion of minority teachers increased.

Table 2. Correlations (*r*) and OLS Regression Results: Standardized Regression Coefficients (β) and R^2

	C		% minority students		% minority teachers		LEA size		Student-teacher ratio		R^2	ΔR^2
	<i>r</i>	β	<i>r</i>	β	<i>r</i>	β	<i>r</i>	β	<i>r</i>	β		
African American												
Special education	.12	.34**	-.22**	-.65***	-.19*	.19	-.25*	-.09	-.18	.07	.17	.13
SLD	.04	.43**	-.07	-.68***	-.05	.33**	-.32**	-.07	-.12	.09	.20	.16
ED	-.18	.30	-.37**	-.62**	-.34**	.04	-.47***	-.35***	-.19	.19	.33	.28
MIMR	-.33**	-.21	-.36***	-.23	-.31**	-.01	-.18	-.22	.10	.15	.19	.12
Latino												
Special education	-.27***	.20	-.34***	-.65***	-.15*	.43***	.06	-.09	-.05	.22**	.21	.19
SLD	-.28***	.17	-.31***	-.54***	-.22**	.22*	.13	-.08	.06	.30***	.19	.17
ED	-.26*	-.04	-.38**	-.58*	-.24	.29	-.27*	-.42**	-.08	.06	.28	.18
MIMR	-.31**	-.04	-.30**	-.51**	-.08	.35*	.00	.06	-.19	-.24*	.18	.14
Native American												
Special education	-.32***	-.19	-.26**	-.23	-.19*	.25	-.03	.00	-.18	-.19*	.11	.07
SLD	-.26**	-.05	-.28**	-.33	-.21*	.15	-.24**	-.10	-.25***	-.11	.11	.07
ED	-.29	-.11	-.35**	-.51*	-.24	.25	-.40**	-.38**	-.06	.06	.25	.19
MIMR	-.37**	-.21	-.44***	-.28	-.37**	.02	-.12	-.17	.10	.08	.19	.12

Note: SLD = specific learning disability; ED = emotional disabilities; MIMR = mild mental retardation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

Recognizing that theory building and testing are critical to good research, a strong theoretical framework is needed to organize and integrate the disproportionality knowledge base to clarify the problem, predict outcomes, and guide change efforts. The present study begins moving the disproportionality literature from describing the problem to positing why it persists and testing these hypotheses. This study sought to apply educational stratification theory to understand the extent and predictors of racial disproportionality. Our goal was to better understand the persistent problem of disproportionality through the application of this theoretical tool as we examined patterns and predictors of racial disproportionality in identification across scales, racial groups, and disability categories in a diverse state. Based on the theoretical framework presented, we posited the following hypotheses (indicated in italics) regarding the patterns and relations for this sample:

Hypothesis 1: Variations in disproportionality would be observed across the two levels of analyses.

This hypothesis was confirmed by descriptive analyses showing that while substantial disproportionality was not observed at the state level across disability categories and groups (i.e., only 9 of 56 relative risk ratios greater than or equal to 1.5), over- and underrepresentation were frequent at the LEA level, with more than a third of LEAs demonstrating substantial over- or underrepresentation in 43 of the 56 race-disability groupings examined.

Hypothesis 2: Patterns of disproportionality would differ across groups and LEAs, with disproportionality more common for the smaller minority groups.

The results generally confirmed this hypothesis, as severity and frequency of disproportionality, particularly substantial overrepresentation, was greatest for the minority groups constituting the smallest proportions of the population (i.e., African American, Native Americans, and Asians), and was less pronounced for Latino students who represent approximately 40% of the state's student population and would thus have greater political power within the community. Latino students were substantially underrepresented in three disability categories at the state level and were frequently underrepresented at the LEA level in many categories.

Hypothesis 3: The proportion of students receiving free/reduced lunch would be negatively related to disproportionality.

This variable was consistently negatively correlated to relative risk across racial groups and disability categories, but was not a significant predictor in most of the models, and where it was significant, the relationship was positive (i.e., African American students identified as SLD and for special education generally). Therefore, this hypothesis was not confirmed. It may be that this particular variable was not the most appropriate indicator of resource availability or that the dynamics are more nuanced than previously presumed.

Hypothesis 4: District size would be negatively related to racial inequity in special education.

This hypothesis was confirmed as this variable generally showed a negative correlation to relative risk but was an infrequent and weak predictor. It may be that size alone is a poor indicator of district resources. Greater consideration of appropriate measures of resource availability are needed.

Hypothesis 5: Student–teacher ratio would demonstrate a positive relationship to racial disproportionality.

This hypothesis was not confirmed as this variable demonstrated weak correlations but was an inconsistent, but significant predictor for Latino students' identification. It may be that teacher characteristics and competence are more salient than sheer ratio, particularly in a locale where instructional practices are severely restricted by state policies, such as English-only legislation.

Hypothesis 6: The proportion of racial minority students would have negative relationships with disproportionality.

This hypothesis was confirmed as this variable was consistently negatively correlated to relative risk across categories and was a consistent significant predictor of relative risk.

Hypothesis 7: The proportion of racial minority teachers would have negative relationships with disproportionality.

This hypothesis was not confirmed because this variable demonstrated weak correlations but was a significant positive predictor for Latino students' identification as SLD, MIMR, and for special education generally, as well as African American students as SLD, suggesting that the theorized relation did not hold consistently for this data set. It may be that, like student representation, teacher representation must reach critical mass before there is an effect on policy and practice. In this sample, the proportion of minority teachers was generally low in most LEAs ($M = 17.55$, $SD 17.34$), with the LEAs employing an average of 288 teachers, of whom fewer than 48 were racial minorities. Thus, the expected influence of racial minority teachers in such settings would be limited. Indeed, racial minority teachers represented a majority of the faculty in few LEAs (6%). Restriction of range might have affected results. It might also be that teachers funnel students to special education in the hopes of securing additional assistance, particularly where other resources are lacking. Additional research is needed to understand the referral and eligibility determination process.

Within the analyses, there are instances in which the correlations and regression models yielded somewhat conflicting results. Though not uncommon, it is unclear which represents the true relationship between the variables studied. Moreover, apparent discrepancies between state-level relative risk and distribution of LEA risk ratios suggests that patterns of identification in a small number of districts have a disproportionate impact on state figures. Across models, these predictors accounted for between 7% and 28% of the total variance in relative risk. Given the multitude of proximal and distal factors that impact relative risk, this underscores the importance of structural characteristics of school systems in explaining patterns of disproportionality.

While the present findings do not confirm every hypothesis, they highlight the importance of and need for such work, particularly in examining disproportionality across scales and analytic groups. The findings suggest differential risk of educational disability across racial groups, as indicated by state-level risk ratios and variability in identification at the district level. Though controversial, the notions of racialization and institutional racism are evident and particularly convincing given the observed relation between relative risk and the demographics of student enrollment. Were disparities in special education representation due to differential individual susceptibility, we would not expect to see such results. Yet this is one of the most consistently replicated findings in the empirical literature. The complexity of the results across and within analytical scales suggests that more fine-grained data and sophisticated modeling are warranted to adequately reflect the relationships of these factors.

Like most studies of disproportionality, this study does not allow for the analysis of student-level data because the data were drawn from LEA aggregates, which may not accurately estimate the relationships under consideration. This sample only included the public LEAs in the state and only those with relatively diverse student populations because of the selection criteria utilized. This excluded nearly 10% of the state's student population because of the large number of charter schools in the state as well as over 20% of the Native American students in the state because many attend racially homogeneous LEAs. Future research should examine the representation of this group in depth given its unique sociohistorical context. There may be unknown substantive differences between the LEAs sampled and the excluded LEAs and charter schools, which may constitute different contexts because of the divergent policies and practices relative to traditional school systems. This study also relied on data published by the state department of education as reported by each of the LEAs. Questions about accuracy of the data reporting should be addressed systematically in future studies. Despite these limitations, this study provided valuable insights into local contexts of disproportionality. We broadened many previous study designs by studying both state *and* LEA disproportionality simultaneously, thereby allowing the comparison of patterns at both levels. We also included all disability and ethnic group reporting categories. The results reveal trends that differ from reported national patterns, underscoring the fact that reliance on national data ignores important local trends.

The present study demonstrates the value of interpreting research findings using a particular theoretical tool and represents a step forward from the common *explanations* of racial inequity in special education. Such tools are necessary if we are to move toward understanding the mechanisms by which educational stratification is perpetuated within a seemingly equity-minded system such as special education *and* if we are to begin identifying potential solutions. While the specific analyses presented here do not necessarily represent startling findings as far as the patterns and predictors addressed—although some of the patterns uncovered are unique—the theoretical framework applied herein has the potential to enhance our understanding of this persistent problem and to guide future research via a unified theoretical tool. The need for a theoretical framework for understanding persistent racial inequity and special education, and the limitations produced by the long-standing lack thereof, have been recognized (Skiba et al., 2008). There is also a need to shift the focus of our efforts to resolve persistent inequities, acknowledging that decades of reform have been largely ineffective and true change will require systemic efforts (Kozleski & Smith, 2009). Consistent

with the concept of institutional racism, remedying special education disproportionality requires moving beyond explanations of individual bias and actions, and the resulting focus on professional development, to address the broader policies and practices at the organizational level.

The study findings support the recommendation to assess disproportionality, both in research and practice, at multiple scales across ethnic groups and disability categories as patterns can vary considerably depending on how the data are examined (Artiles & Rueda, 2002). The fact that although state-level data indicate overrepresentation of certain groups in some disability categories (e.g., African Americans, Latinos), a substantial proportion of LEAs reflected underrepresentation placement patterns for those groups also supports the need to use multiple analytic levels. By and large, significant disproportionality was not observed in the low-incidence categories, with some exceptions, particularly for Native American students. Findings of overrepresentation among categories such as severe MR and hearing impairment, contradict our primary proposition, but do not necessarily disconfirm the stated theory. This group's particular history and continued sociopolitical, structural, and economic dynamics create a constellation of general health and environmental conditions (e.g., community exposure to hazardous waste, substandard housing) that contribute to a number of biological and environmental risk factors that are increasingly linked to Native American's higher incidence of health problems and physical disability generally (Hofrichter, 2004). The application of a structural theory's concept of racial exploitation as the mechanism driving stratification should be explored as a means of making sense of such patterns.

These findings also point to the continued need to examine how policies are negotiated, adapted, or appropriated within and across zones of mediation, those dynamic contexts in which the various forces shaping social behavior operate (Welner, 2001). Hence, this concept represents a tool for conceptualizing the various factors that intersect within a locality to shape particular issues and create the boundaries for change within systems. Such factors include four types of zones: (a) inertial (e.g., temporal and macro-level factors), (b) technical (i.e., resources, knowledge, and skills), (c) political (e.g., policy, leadership, community, funding), and (d) normative (e.g., beliefs, expectations, and values; Welner, 2001)—each of which represents a target for research *and* reform. Welner (2001) emphasizes that it is the adaptation, or appropriation, of policy at the local level that produces changes in practice that lead equity-policy to produce inequitable outcomes, because such policies implicate deeply entrenched, contentious issues of race, culture, and power. Research that begins to capture the multifaceted, multilayered

nature of the zones of mediation is needed to better understand the role various factors play and the convergence or intersection of those factors in creating or hindering progress toward equity.

A theoretical perspective focused on local exigencies, grounded within a sociohistorical framework that recognizes historical and macro-level forces, is necessary to adequately elucidate special education disproportionality. Indeed, such a shift from global structural explanations to those that capture both the communalities and dynamic complexity of what happens in schools can be seen in the literature around tracking (Oakes & Guiton, 1995). Because the implementation and change are local, largely nonuniform processes (Eitle, 2002), more fine-grained analyses of the implications of racial and political-economic structures are needed to understand the complex linkages to educational identification and placement patterns. This might include examination of the unique characteristics of ethnic and/or linguistic groups and their subgroups within particular localities and the implications of variations in demographic and socioeconomic profiles for differences in patterns of inequity. Careful sample selection and description, for instance, might help us to understand how local structures mediate identification odds for distinct groups. Likewise, it is important to consider the ecological circumstances and cultural practices created or discouraged in light of such structures and their impact on patterns of identification. Although it has been suggested “that social class, and not ethnicity, would explain more variance in the rates of detection for these high-incidence disabilities” (MacMillan & Reschly, 1998, p. 20), the available evidence portrays a very complex picture that, we argue, calls for in-depth analyses of local conditions and practices related to racial stratification and further articulation of structural theory as it applies to inequity in special education. The application of the notion of zones of mediation implies the importance of recognizing the influence of local factors (historical, political, normative, etc.), including local racial structures to the extent that they influence educational practices, processes, and decisions, as well as external forces, in creating the bounds of the zones of mediation.

Disproportionality is a complex problem that has long troubled our field. It is inextricably tied to conceptualizations of difference, susceptible to local conditions, and shaped by macro-level forces. The study findings lend further support for the need to assess the complex permutations of this problem at multiple levels of analysis as well as the elucidation of local patterns of representation that ultimately shape the educational experiences of racial minority students. It is necessary that we explore what is happening at the local level that contributes to parity and disproportionality so that we can take the

actions necessary to prevent continued inequity and marginalization of minority students within our nation's schools. Theoretical tools provide a powerful means of understanding the roots of this perplexing problem and offer a critical lens for understanding how supposedly equity-minded policies, such as special education law, become a means for perpetuating racial inequity, and offer a means of conceptualizing the factors that either foster or impede positive change.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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