

Are Hispanic, Asian, Native American, or Language-Minority Children Overrepresented in Special Education?

Exceptional Children
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Paul L. Morgan¹, George Farkas², Michael Cook¹, Natasha M. Strassfeld³, Marianne M. Hillemeier¹, Wik Hung Pun¹, Yangyang Wang¹, and Deborah L. Schussler¹

Abstract

We conducted a best-evidence synthesis of 22 studies to examine whether systemic bias explained minority disproportionate overrepresentation in special education. Of the total regression model estimates, only 7/168 (4.2%), 14/208 (6.7%), 2/37 (5.4%), and 6/91 (6.6%) indicated statistically significant overrepresentation for Hispanic, Asian, Native American, and English language learner (ELL) or language-minority children, respectively. Among studies with the strongest internal and external validity, none of the 90 estimates (i.e., 0%) indicated overrepresentation attributable to racial or ethnic bias. Of the 18 estimates for language-minority and ELL children combined, only 3 (16.7%) indicated overrepresentation attributable to language use. Two of the 4 ELL-specific estimates (50%) indicated that children receiving English-as-a-second-language services may be overrepresented in special education. Overall, and replicating findings from a prior best-evidence synthesis, this synthesis indicated that children are underidentified as having disabilities based on their race or ethnicity and language use.

Minority children in the United States have often been reported to be disproportionately overrepresented in special education (Dunn, 1968; Zhang, Katsiyannis, Ju, & Roberts, 2014). Yet why this is occurring is currently in dispute. Anecdotal or descriptive reports (e.g., Dunn, 1968; U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs, 2016) and studies using aggregate-level data to control for alternative explanatory factors (e.g., Oswald, Coutinho, Best, & Singh, 1999; Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005) have led to conclusions that overrepresentation results from minority children being widely misidentified as disabled based on their race or ethnicity (Individuals With Disabilities Education Act [IDEA] regulations, 2016). Special education has been characterized as “discriminatory” (Skiba et al., 2005, p. 142), having

“systemic bias” (Oswald, Coutinho, Best, & Nguyen, 2001, p. 361), constituting a “legalized form of structural segregation and racism” (Blanchett, 2006, p. 25), and “institutionalized racism” (Codrington & Fairchild, 2012, p. 6), with minority overrepresentation viewed as “a persistent stain in the field” (Garrick Duhaney, 2014, p. 101). This “systemic bias” hypothesis (Donovan & Cross, 2002) posits that school-related factors, including discriminatory identification procedures, explain racial- or ethnic-minority children’s overrepresentation in special education.

¹The Pennsylvania State University

²University of California, Irvine

³New York University

Corresponding Author:

Paul L. Morgan, Department of Education Policy Studies, 310E Rackley, the Pennsylvania State University, University Park, PA 16802, USA.
E-mail: paulmorgan@psu.edu

Reports of minority overrepresentation and concerns that schools are misidentifying children as having disabilities based on their race or ethnicity have led increasingly to federal legislation and policy. IDEA (2006) was amended in both 1997 and 2004 to in part provide greater clarity to states regarding disproportionate overrepresentation in special education and ways to monitor for state trends in disproportionality. The U.S. Department of Education's "Equity in IDEA" rule recently expanded federal compliance monitoring requirements for minority overrepresentation in special education (IDEA regulations, 2016). This includes the use of a standard formula and "reasonable thresholds" of significant disproportionality based on race or ethnicity. States must identify and address any root causes of significant disproportionality, whether it is due to under- or overidentification of a racial or ethnic group (IDEA regulations, 2016). Additional changes to federal legislation and policy have been suggested (Skiba, 2013), including requiring schools to report any disproportionality instead of only that attributable to incorrect procedures, practices, or policies (Albrecht, Skiba, Losen, Chung, & Middelberg, 2012).

However, methodological weaknesses have been identified in the extant empirical work used to infer systemic bias in special education (e.g., Donovan & Cross, 2002; MacMillan & Reschly, 1998; Morgan et al., 2017). These weaknesses include the lack of control for factors known to increase the risk for disability identification and that racial- or ethnic-minority children are disproportionately more likely to experience (e.g., being born with very low birth weight, exposure to lead in the environment, experiencing poverty and the toxic stress resulting from chronic exposure to multiple risk factors; Goodlad, Marcus, & Fulton, 2013; Grunau, Whitfield, & Davis, 2002; O'Connor & Paley, 2009; Shaw, Owens, Giovannelli, & Winslow, 2001). This greater risk factor exposure itself is the result of societal inequities arising from the country's historical and ongoing oppression and marginalization of racial and ethnic minorities, including in housing and neighborhood segregation (Burdick-Will,

Raudenbush, Sampson, Sanbonmatsu, & Sharkey, 2011; Sharkey, 2013). This greater exposure is in turn associated with a greater risk for cognitive, academic, and behavioral impairments (e.g., Aarnoudse-Moens, Weisglas-Kuperus, van Goudoever, & Oosterlaan, 2009; Sirin, 2005), including prior to school entry (Hart & Risley, 1995; Vernon-Feagans, Garrett-Peters, Willoughby, & Mills-Koonce, 2012), and should contribute to lower school functioning (e.g., Donovan & Cross, 2002; Morsy & Rothstein, 2015) as well as an increased risk for school-based disability identification (Claycomb, Ryan, Miller, & Schakenberg-Ott, 2004; Van den Bergh & Marcoen, 2004). Instead of resulting from systemic bias in how schools identify children as having disabilities, overrepresentation in special education is hypothesized to largely result from minority children's well established greater exposure to the gestational and environmental factors, including prior to school entry, that increase the risk for cognitive, behavioral, or physical impairments. These impairments lead to academic struggles and a corresponding greater likelihood of being identified as having disabilities (Donovan & Cross, 2002; MacMillan & Reschly, 1998).

Consequently, strong evidence for the systemic bias hypothesis requires properly accounting for minority children's greater risk factor exposure, particularly as indicated by variability in individual-level academic achievement (Donovan & Cross, 2002; MacMillan & Reschly, 1998; National Research Council [NRC], 2004). Doing so should yield contrasts between otherwise similar or "similarly situated" children that are necessary for inferring racial bias and discrimination (NRC, 2004), including as it relates to school-based disability identification and special education service receipt (U.S. Department of Education Office of Civil Rights [OCR], 2016). Statistically controlling for individual-level academic achievement is especially necessary because achievement is "the key variable in special education eligibility for most students" (Hosp & Reschly, 2004, p. 196) and is known to be correlated with race, ethnicity, and language use in the United States (e.g., National Center

for Education Statistics [NCES], 2016). Low academic achievement is also potentially indicative of children's disability status (e.g., Geary, 2011; Landerl & Moll, 2010; Moll, Kunze, Neuhoﬀ, Bruder, & Schulte-Körne, 2014; Shaywitz, Shaywitz, Fletcher, & Escobar, 1990; Tomblin et al., 1997). As explained by an early NRC expert panel (Heller, Holtzman, & Messick, 1982), "to the extent that a greater proportion of minority children score below accepted norms on achievement measures used in particular schools, they will be over-represented in the pool of 'potential' special education children" (p. 15). In addition to strongly predicting the likelihood of disability identification (e.g., Morgan et al., 2015; Morgan, Farkas, Hillemeier, & Maczuga, 2012), individual-level academic achievement correlates with exposure to factors that increase the risk for disability but that are typically unobserved (e.g., phenylketonuria or other genetic disorders, low birth weight, fetal alcohol syndrome, maternal smoking and substance abuse, lead exposure during infancy and early childhood) by professionals making school-based special education eligibility determinations as well as by educational researchers. Using individual-level data helps avoid the "ecological fallacy" of spurious results obtained from using aggregate-level data to make individual-level inferences (Robinson, 1950). The lack of control for the strong confound of academic achievement prior to attributing minority overrepresentation to systemic bias has repeatedly been identified as a major methodological limitation of existing work examining minority disproportionate representation (MDR) in special education (Morgan et al., 2017), including by an NRC expert panel (Donovan & Cross, 2002).

Limitations of Prior Reviews

Despite the far-reaching implications for federal legislation and policy as well as educational research and practice, explicit and replicable syntheses of the empirical evidence of systemic bias

in special education are virtually nonexistent.

Despite the far-reaching implications for federal legislation and policy as well as educational research and practice, explicit and replicable syntheses of the empirical evidence of systemic bias in special education are virtually nonexistent. Most prior reviews instead have made scholarly contributions regarding disproportionate representation's history, legal cases, hypothesized mechanisms, and potential policy responses (e.g., Artiles, Kozleski, Trent, Osher, & Ortiz, 2010; Coutinho & Oswald, 2000; Donovan & Cross, 2002; Losen & Welner, 2001; Skiba et al., 2008; Waitoller, Artiles, & Cheney, 2010). Although explicit and replicable search procedures are known to limit bias in literature review reporting (Higgins & Green, 2011), only two syntheses have used such procedures (i.e., Morgan et al., 2017; Waitoller et al., 2010). Of these, only one used explicit search procedures to quantify how conflicting evidence of systemic bias in special education fluctuated based on the type of covariate adjustment for potential confounds (Morgan et al., 2017). The Morgan et al. (2017) synthesis yielded no evidence that Black children's overrepresentation in special education was explained by systemic bias. Instead, and among those studies with the strongest internal and external validity, Black children were repeatedly *less* likely to be identified as having disabilities than otherwise similar White children. Yet whether and to what extent systemic bias may be occurring for children of other racial or ethnic backgrounds as well as those who are language minorities was not examined.

Systematically evaluating the available evidence of systemic bias in special education for children of other racial- or ethnic-minority backgrounds or who are language minorities is both timely and important. To date, and as with children who are Black (Morgan et al., 2017), conflicting findings have been reported as to whether children who are Hispanic, Asian, Native American, or English language learners (ELL) or language minorities are

being inappropriately overidentified as having disabilities on the basis of their race, ethnicity, or language use. For example, children who are Hispanic (Ong-Dean, 2006; Sullivan & Bal, 2013), ELL or language minorities (Artiles, Rueda, Salazar, & Higareda, 2005; Samson & Lesaux, 2009), Asian (Strand & Lindsay, 2009), or Native American (Coutinho, Oswald, & Best, 2002; Morgan et al., 2012) have variously been found to be overrepresented, underrepresented, or as equally likely as Whites or non-ELL children to be represented in special education. The fluctuations have sometimes been thought to occur because of the specific time periods, grade levels, disability conditions, or localities under study but might alternatively—and more parsimoniously—depend on the relative rigor of the covariate adjustment used (Donovan & Cross, 2002; MacMillan & Reschly, 1998; Morgan et al., 2017). As studies increasingly control for potential confounds, the disproportionality estimates have sometimes reversed directionality from over- to underidentification based on race, ethnicity, and language use (Hibel, Farkas, & Morgan, 2010; Morgan et al., 2015). Finding that children who are Hispanic, Asian, Native American, or ELL or language minorities are not disproportionately overrepresented in special education based on their race, ethnicity, or language use—and instead may be less likely to be identified than otherwise similar White, English-speaking children—would replicate and extend recently reported findings for children who are Black (Morgan et al., 2017) as well as be consistent with findings from public health, where covariate adjustment for strong confounds (e.g., child-level symptomatology, family-level socioeconomic status [SES]) is more common (Flores & Committee on Pediatric Research, 2010). Although replication of new or controversial findings yields stronger scientific evidence as well as increases generalizability, which in turn results in better-informed policy making, replication currently occurs at a rate of only 0.5% and so is “far too rare” in special education (Makel et al., 2016, p. 205).

For policy makers, a best-evidence synthesis of the extent to which over- or underrepresentation is occurring for children across diverse racial-ethnic and language backgrounds would help efforts to ensure equity in IDEA. For example, replicated and extended findings of underidentification on the basis of race, ethnicity, and language use would further suggest that IDEA’s Child Find requirements may not currently be resulting in all children with disabilities in the United States being appropriately recognized and helped, including both prior to and following school entry, and that additional policies (e.g., universal screening) that strengthen Child Find may need to be considered. Establishing whether the directionality of the disproportionality estimates depend on the specific types of data and control variables used (e.g., aggregate- vs. individual-level covariates, whether academic achievement or sociodemographic confounds were accounted for) and the national representativeness of the data (which helps to ensure that the findings are widely generalizable and because IDEA is federal civil rights legislation) across a wider range of racial-ethnic and language-use backgrounds is timely. This is because the U.S. public school system is educating an increasingly diverse population, including especially understudied groups of children (i.e., Asians, ELLs, language minorities; NCES, 2016).

Study’s Purpose

We sought to evaluate whether and to what extent children who are Hispanic, Asian, Native American, or ELL or language minorities are disproportionately overrepresented in special education following increasing levels of covariate adjustment, thereby allowing for an examination of systemic bias in how children are being identified as having disabilities and so receiving special education services.

We sought to evaluate whether and to what extent children who are Hispanic, Asian, Native American, or ELL or language minorities are disproportionately overrepresented in special education following increasing levels of covariate adjustment, thereby allowing for an examination of systemic bias in how children are being identified as having disabilities and so receiving special education services. Examining estimates from studies that, to varying degrees, account for potential confounding factors should better establish the extent to which any observed disproportionality is attributable to children's race, ethnicity, or language use—and so due to systemic bias—and not instead explained by other factors (e.g., a greater exposure to poverty). We purposively designed this synthesis to replicate the methodology as well as extend recent work (i.e., Morgan et al., 2017) that synthesized the best available empirical studies examining whether Black children were disproportionately over- or under-identified as having disabilities based on their race or ethnicity. We did so by using the same search, inclusion, coding, and analytical protocols when investigating whether the directional estimates of disproportionality fluctuated on the basis of a study's methodology, including whether these estimates were based on analyses of individual-level data from nationally representative samples that controlled for the strong confound of individual-level academic achievement.

Method

We searched four electronic databases (i.e., ERIC, PsycINFO, Web of Science, PubMed) using the following search terms: *special education* and *disability identification* with the terms *minorities* or *minority group* or *racial minority* or *Hispanic* or *Latino* or *Native American* or *Indian-American* or *English Language Learner* or *ELL*. We hand-searched the three specific journals that most frequently published studies that we identified electronically (i.e., *Exceptional Children*, *The Journal of Special Education*, and

Remedial and Special Education). We also searched Google Scholar as well as specific web sites related to educational policy making or equality in educational access (i.e., the Civil Rights Project, the Equity Project, the National Education Policy Center). Our web-based search did not yield additional sources meeting our inclusion criteria, as detailed later. We also searched the reference lists of prior syntheses to identify empirical studies possibly meeting our inclusion criteria (e.g., Coutinho & Oswald, 2000; Waitoller et al., 2010).

We initially identified 77 studies. We then identified 10 additional studies (e.g., Hibel & Jasper, 2012; Mann, McCartney, & Park, 2007; Shiffrer, Muller, & Callahan, 2011; Yeh, Forness, Ho, McCabe, & Hough, 2004) through their citation in theoretical or empirical work. We included only studies examining special education service receipt following a formal eligibility determination from a multidisciplinary team. We excluded studies examining only teacher referral to special education. We included studies reporting directional estimates of disproportionality for special education generally as well as for specific IDEA-eligible conditions. We searched for studies published between January 1, 1998 and September 30, 2015. This timeframe provided an evaluation of the empirical evidence of MDR following (a) amendments to IDEA in 1997 and 2004 by the U.S. Congress to increase data collection and compliance monitoring of minority overrepresentation based on race or ethnicity and (b) MacMillan and Reschly's (1998) well-cited call for greater methodological rigor when examining to what extent MDR was explained by systemic bias. Research on MDR began increasing substantially after 1998 (Waitoller et al., 2010). However, we also searched the Waitoller et al. (2010) review's reference list so as to include any study meeting inclusion criteria that appeared since 1968. We did so in order to include older but possibly seminal studies. This additional search initially yielded 21 studies for inclusion consideration. However, none met our six-part inclusion criteria. In addition to the aforementioned procedures, and as a further check of search and coding fidelity, an

education policy doctoral student not involved in the original synthesis (Morgan et al., 2017) replicated the literature search using the same terms and databases described earlier. This independent and updated search yielded one additional study (Guarino, Buddin, Pham, & Cho, 2010). This search yielded 109 sources, of which 90 included samples of children formally identified as having disabilities.

Best-Evidence Methodology

We conducted an integrative synthesis based on Slavin's (1986) best-evidence methodology. A best-evidence synthesis identifies studies using explicit and justified inclusion criteria, reports on effect sizes, but also narratively reports on methodological and substantive issues of individual studies. A best-evidence synthesis focuses on studies with the strongest internal and external validity. We used a liberal methodological criterion for initial inclusion (e.g., MacMillan & Reschly, 1998) of use of at least one covariate in the reported analyses. To further examine how the regression model estimates fluctuated depending on the study's internal and external validity, we coded for whether the regression models (a) analyzed individual- or aggregate-level (e.g., districts) data, (b) adjusted for the strong confound of individual-level academic achievement, and (c) used nationally representative samples.

Inclusion Criteria

We evaluated the 90 studies using six inclusion criteria. Studies were included only if they met all six criteria.

Criterion 1: Numerical estimate. Studies were included if the study reported at least one numerical estimate of relative representation for two or more racial or ethnic groups of children (e.g., Hispanic vs. White children). We included studies examining disproportionate representation for ELL or language-minority children. We identified several studies providing numerical estimates of disproportionate representation of ELL (e.g., Samson & Lesaux, 2009) and for

language-minority children (Hibel & Jasper, 2012; Morgan et al., 2012; Shiffrer et al., 2011).

Criterion 2: Publication source. Studies were included that had (a) been published in peer-reviewed journals or (b) met doctoral dissertation requirements as indicated by signatures from a committee of faculty members. Including dissertations reduces publication and outcome-reporting bias (Pigott, Valentine, Polanin, Williams, & Canada, 2013).

Criteria 3 and 4: Empirical design. Studies were included if they (a) used a quantitative or mixed research design and (b) reported numerical estimates specifically for racial- or ethnic- or language-minority children. We excluded descriptive papers, position papers, other works examining MDR conceptually (e.g., Artiles, 1998; Daniels, 1998), and prior syntheses (Coutinho & Oswald, 2000; Skiba et al., 2008; Waitoller et al., 2010).

Criterion 5: Study setting. Studies were included if they took place in preschools, elementary schools, middle schools, or high schools.

Criterion 6: Use of at least one covariate. Included studies had to have used at least one covariate in the analysis to minimally correct their MDR estimates for potential confounding. This criterion excluded many studies (e.g., Artiles et al., 2005; Sweller, Graham, & Van Bergen, 2012; Zhang et al., 2014).

Study Inter-coder Agreement, Exclusion

Three doctoral students independently assessed whether the 90 studies met the review's six inclusion criteria. Agreement regarding whether the 90 studies met the six-part inclusion criteria was calculated by dividing the number of agreements by the number of agreements and disagreements between the three students. This agreement rate was 95.6%. An assistant professor judged whether or not to include any study initially excluded by any of the three students. This

Table 1. Number of Estimates Indicating Significant Overrepresentation of Hispanic, Asian, Native American, and ELL or Language-Minority Children in Special Education, Percentage of Total Estimates.

Racial-ethnic or language-minority group and type of data analyzed	Did not control for individual-level academics	Controlled for individual-level academics
Hispanic		
Aggregate level, not nationally representative	Ong-Dean (2006) 3/9 Total: 3/9 (33.3%)	n/a
Aggregate level, nationally representative	Coutinho, Oswald, & Best (2002) 1/2 Coutinho, Oswald, Best, & Forness (2002) 0/2 Oswald, Coutinho, Best, & Nguyen (2001) 0/2 Total: 1/6 (16.7%)	n/a
Individual level, not nationally representative	Guarino, Buddin, Pham, & Cho (2010) 1/1 ^a Muschkin, Ladd, & Dodge (2015) 0/8 ^a Sullivan & Bal (2013) 1/28 Sullivan & Bal (2013) 0/28 ^a Talbot, Fleming, Karabatsos, & Dobria (2011) 0/3 Talbot et al. (2011) 0/3 ^a Yeh, Forness, Ho, McCabe, & Hough (2004) 0/2 Total: 2/73 (2.7%)	Foran (2007) 0/6 Total: 0/6 (0%)
Individual level, nationally representative	Anderson, Howland, & McCoach (2015) 0/2 ^a Hibel, Farkas, & Morgan (2010) 0/8 Mann, McCartney, & Park (2007) 0/2 Morgan, Farkas, Hillemeier, & Maczuga (2012) 0/3 Morgan et al. (2015) 0/5 Shifrer, Muller, & Callahan (2011) 1/6 Total: 1/26 (3.8%)	Dragoo (2013) 0/1 Hibel, Faircloth, & Farkas (2008) 0/1 Hibel et al. (2008) 0/1 ^a Hibel et al. (2010) 0/8 Hibel et al. (2010) 0/20 ^a Hibel & Jasper (2012) 0/2 ^a Hibel & Jasper (2012) 0/2 Mann et al. (2007) 0/4 Morgan et al. (2012) 0/3 Morgan et al. (2015) 0/5 Ruedel (2008) 0/1 ^a Total: 0/48 (0%)
Asian		
Aggregate level, not nationally representative	n/a	n/a
Aggregate level, nationally representative	Coutinho, Oswald, & Best (2002) 0/2 Coutinho, Oswald, Best, & Forness (2002) 0/2 Oswald et al. (2001) 0/1 Total 0/5 (0%)	n/a
Individual level, not nationally representative	Guarino et al. (2010) 1/1 ^a Guarino et al. (2010) 0/2 ^b Muschkin et al. (2015) 0/8 ^a Sullivan & Bal (2013) 0/28 Sullivan & Bal (2013) 0/28 ^a Talbot et al. (2011) 0/3 Talbot et al. (2011) 0/3 ^a Yeh et al. (2004) 0/2 Total 1/75 (1.3%)	Foran (2007) 0/6 Foran (2007) 0/6 ^b Total 0/12 (0%)

(continued)

Table 1. (continued)

Racial-ethnic or language-minority group and type of data analyzed	Did not control for individual-level academics	Controlled for individual-level academics
Individual level, nationally representative	Anderson et al. (2015) 0/2 ^a Hibel et al. (2010) 0/8 Morgan et al. (2012) 0/3 Shifrer et al. (2011) 0/6 Strand & Lindsay (2009) 2/12 Strand & Lindsay (2009) 11/48 ^b Total 13/79 (16.5%)	Hibel et al. (2008) 0/1 Hibel et al. (2008) 0/1 ^a Hibel et al. (2010) 0/8 Hibel et al. (2010) 0/20 ^a Hibel & Jasper (2012) 0/2 ^a Hibel & Jasper (2012) 0/2 Morgan et al. (2012) 0/3 Total 0/37 (0%)
Native American		
Aggregate level, not nationally representative	n/a	n/a
Aggregate level, nationally representative	Coutinho, Oswald, & Best (2002) 2/2 Coutinho, Oswald, Best, & Forness (2002) 0/2 Oswald et al. (2001) 0/2 Total 2/6 (33.3%)	n/a
Individual level, not nationally representative	Guarino et al. (2010) 0/1 ^a Muschkin et al. (2015) 0/8 ^a Total 0/9 (0%)	Foran (2007) 0/6 Total 0/6 (0%)
Individual level, nationally representative	Anderson et al. (2015) 0/2 ^a Morgan et al. (2012) 0/3 Shifrer et al. (2011) 0/6 Total 0/11 (0%)	Hibel et al. (2008) 0/1 Hibel et al. (2008) 0/1 ^a Morgan et al. (2012) 0/3 Total 0/5 (0%)
ELL or language minority		
Aggregate level, not nationally representative	n/a	n/a
Aggregate level, nationally representative	n/a	n/a
Individual level, not nationally representative	Guarino et al. (2010) 0/1 ^{a,c} Sullivan & Bal (2013) 0/28 ^c Sullivan & Bal (2013) 0/28 ^a Total: 0/57 (0%)	n/a
Individual level, nationally representative	Hibel & Jasper (2012) 0/5 ^c Hibel & Jasper (2012) 0/2 ^d Samson & Lesaux (2009) 0/1 ^c Shifrer et al. (2011) 1/6 ^c Shifrer et al. (2011) 2/2 ^d Total: 3/16 (18.8%)	Hibel & Jasper (2012) 0/2 ^c Hibel & Jasper (2012) 0/2 ^{a,c} Hibel & Jasper (2012) 1/2 ^d Hibel & Jasper (2012) 1/2 ^{a,d} Morgan et al. (2012) 0/3 ^c Morgan et al. (2015) 0/5 ^c Samson & Lesaux (2009) 1/2 ^c Total: 3/18 (16.7%)

Note. Percentage of estimates indicates significant overrepresentation in parentheses at the bottom of each cell. ELL = English language learner; n/a = not applicable.

^aAnalyses with individual-level controls that also used at least one aggregate control.

^bOther Asian groups, such as Pacific Islander, Filipino, Chinese, Indian, and so on.

^cAnalyses that used language-minority status as a predictor for special education receipt.

^dAnalyses that used the receipt of English-as-a-second-language services as a predictor for special education services receipt.

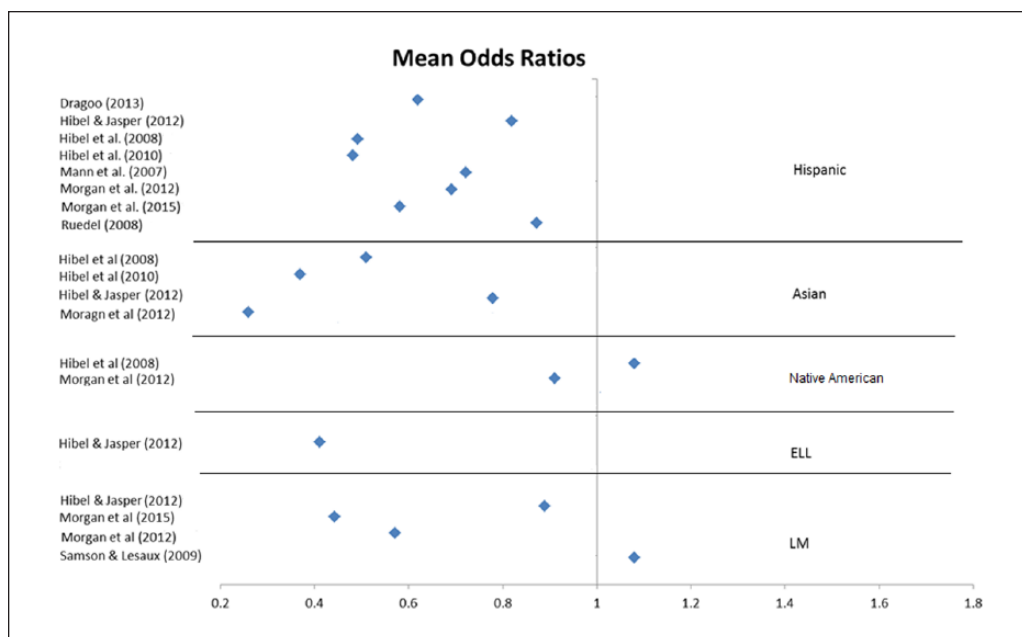


Figure 1. Mean odds ratios from included studies with the strongest internal and external validity. ELL = English language learners; LM = language minorities.

resulted in the inclusion of two studies. Based on this coding, a total of 22 studies were then included for analysis in this review. Some studies were excluded if the analyses included a covariate but did not report covariate-adjusted estimates of over- or underrepresentation of at least one minority group (e.g., Oswald et al., 1999; Zhang & Katsiyannis, 2002). Figure S1 and Table S1 of the online supplemental materials provide a flow diagram and descriptive information about included studies, respectively. The three doctoral students and the assistant professor then worked together in two teams and double-coded all 22 studies to obtain the overrepresentation estimates reported in Table 1. A statistical expert then independently confirmed this coding.

Analyses

Table 1 displays the number of statistically significant regression model estimates indicating statistically significant overrepresentation, separately for Hispanic, Asian, Native

American, and ELL or language-minority children. We further arranged Table 1 to display how the estimated regression coefficients fluctuated based on the internal and external validity of the included studies (i.e., analyses using individual- vs. aggregate-level data, individual-level control for academic achievement, nationally representative data). Estimates for Black children are reported elsewhere (Morgan et al., 2017). Studies often contributed more than one regression-based test of minority overrepresentation. Models reported in the included studies varied in whether they included all three best-evidence methodological features.

Table 1 is arranged by rows and columns to report estimates from the least to most internally and externally valid. The first row displays estimates from analyzing aggregate-level data from non-nationally representative samples. The rows then proceed down to estimates from studies that analyzed individual-level data from nationally representative samples. The first column reports estimates from studies that did not control for individual-level

academic achievement. The second column reports estimates from studies including controls for this strong confound.

Figure 1 displays mean odds ratio estimates from the best-available studies examining whether, respectively, Hispanic, Asian, Native American, ELL, and language minority children are disproportionately overrepresented in special education based on their race, ethnicity, or language use. These specific studies analyzed individual-level, nationally representative data and controlled for individual-level academic achievement. We calculated these averaged estimates (with the study-specific averages calculated based on every reported odds ratio regardless of its statistical significance) separately for studies that reported individual-level data analyses with school-level controls. We averaged the reported odds ratio coefficients by first taking their natural logs to put them in additive form, averaging these results, and then exponentiating this average.

Results

Estimates of Minority Overrepresentation Increasingly Corrected for Confounds

Throughout Table 1, 29 of the 504 regression models (i.e., 5.8%) indicated overrepresentation. More specifically, seven of 168 (i.e., 4.2%), 14 of 208 (i.e., 6.7%), two of 37 (i.e., 5.4%), and six of 91 (i.e., 6.6%) of the estimates indicated statistically significant overrepresentation for children who are Hispanic, Asian, Native American, and ELL or language minorities, respectively. These estimates fluctuated depending on the study's internal and external validity. Among the best-evidence studies that analyzed individual-level data from nationally representative samples, the results yielded no evidence (i.e., zero of 90, or 0%) of overrepresentation attributable to systemic bias based on race or ethnicity. Of the 18 estimates for ELL or language-minority children, three (i.e., 16.7%) indicated overrepresentation attributable to children's language use. We detail the results for each of the racial-ethnic and language-minority groups next.

Among the best-evidence studies that analyzed individual-level data from nationally representative samples, the results yielded no evidence (i.e., zero of 90, or 0%) of overrepresentation attributable to systemic bias based on race or ethnicity.

For children who are Hispanic, the percentage of estimates indicating overrepresentation in special education declined markedly as individual- instead of aggregate-level data were analyzed. One of the 26 (i.e., 3.8%) estimates from studies analyzing individual-level data from nationally representative samples indicated statistically significant overrepresentation. This particular regression model included only gender as a control variable. This was a particularly weak statistical control because gender is, on average, uncorrelated with race or ethnicity. None of the 48 estimates (i.e., 0%) from studies with the strongest internal and external validity (i.e., those analyzing individual-level data from nationally representative samples while controlling for individual-level academic achievement) indicated that Hispanic children were overrepresented in special education based on their race or ethnicity.

For children who are Asian, the coding again indicated no rigorous evidence of overrepresentation attributable to systemic bias. Of those studies analyzing individual-level data from nationally representative samples, 13 of the 79 estimates (16.5%) indicated statistically significant overrepresentation. This occurred, for example, for children who are Chinese identified with speech, language, and communication needs in the United Kingdom when SES but not academic achievement was controlled (Strand & Lindsay, 2009). None of the 37 available estimates (i.e., 0%) from studies analyzing individual-level data from nationally representative samples that included controls for individual-level academic achievement indicated that Asian children were overrepresented in special education based on their race or ethnicity.

Only two of the estimates for children who are Native American indicated that they were overrepresented in special education. Both estimates were obtained from analyses of aggregate-level data (i.e., Coutinho, Oswald, & Best, 2002). No further evidence of overrepresentation attributable to systemic bias was evident as studies further accounted for possible confounds. None of the five estimates (i.e., 0%) from studies analyzing individual-level, nationally representative data indicated that children who are Native American were overrepresented in special education based on their race or ethnicity.

For children who are ELL or language minorities, three of 16 estimates that used nationally representative and individual-level data indicated significant overrepresentation. Studies with the strongest internal and external validity suggested overrepresentation only for a small percentage (i.e., 16.7%) of the available estimates. We further coded these estimates on the basis of whether the children (a) were language minorities by background (e.g., raised in homes where a language other than English was spoken or were not themselves native English speakers) or, as an indicator of a more significant lack of English proficiency, (b) were receiving services for English as a second language (ESL). One of the available 14 estimates for language-minority children (i.e., 7.1%) indicated overrepresentation attributable to language use. Among the four best-available estimates for those receiving ESL services, two (i.e., 50%) indicated overrepresentation.

Estimates From the Best-Evidence Studies

Figure 1 displays mean odds ratios from Table 1's best available regression models. These odds ratios were from models with the strongest internal and external validity as a result of being based on nationally representative samples with controls for individual-level confounds including academic achievement. Mean estimates from these best-evidence studies consistently indicated that children were underidentified as having disabilities based on their

race, ethnicity, or language use. Specifically, children who are Asian were found to be underidentified across every best-evidence study that provided an estimate (i.e., four of four, or 100% of the mean estimates). Children who are Hispanic were also always found to be underidentified (eight of eight, or 100% of the mean estimates), though the size of this disparity was not as large as that for children who are Asian. Children who are ELL (one of one, or 100% of the mean estimates) or language minorities were consistently found to be underidentified (i.e., three of four, or 75% of the mean estimates). Children who are Native American were inconsistently underidentified as having disabilities, although mean estimates were available from only two best-evidence studies.

Discussion

Contrary to characterizations of special education as racially biased and discriminatory (e.g., Skiba et al., 2005), as well as to federal legislation and policy seeking to address minority overrepresentation based on race or ethnicity (e.g., IDEA regulations, 2016), our best-evidence synthesis yielded negligible empirical evidence that minority overrepresentation is occurring because of misidentification based on race, ethnicity, or language use. Overall, only 29 of the 504 (i.e., 5.8%) available estimates indicated overrepresentation among children who are Hispanic, Asian, Native American, and ELL or language minorities. The studies with the strongest internal and external validity yielded no statistically significant empirical evidence of overrepresentation attributable to systemic bias based on race or ethnicity (i.e., zero of 90, or 0%) and very little statistically significant empirical evidence of overrepresentation attributable to language use (i.e., three of 18, or 16.7%). Instead, the best-available estimates consistently indicated that minority children were underidentified as having disabilities based on race, ethnicity, or language use.

Limitations

Our synthesis has several limitations. Our inclusion criterion that studies include at least

one covariate when estimating for minority overrepresentation limited the empirical work available to synthesize. Such work investigating the disproportionate representation of children who are Native American or receiving ESL services was particularly lacking. Yet inclusion of covariates is methodologically necessary to examine the hypothesis that MDR is resulting from misidentification based on race, ethnicity, or language use and so due to systemic bias (Donovan & Cross, 2002; Morgan et al., 2017; NRC, 2004). Increased use of covariate adjustment in studies investigating MDR would clarify the extent to which overrepresentation in special education is attributable to children's race, ethnicity, or language use and not instead to other explanatory factors (e.g., differential exposure to poverty and its correlates). Especially needed are methodologically rigorous studies estimating MDR in analyses of individual-level data from nationally representative samples with individual-level controls for academic achievement (Donovan & Cross, 2002; Morgan et al., 2015, 2017).

We did not synthesize other types of MDR research (e.g., studies investigating racial bias in teacher referral). Some teachers may be racially biased in their referrals for special education, thereby contributing to minority children's greater likelihood of being misidentified as having disabilities for specific (e.g., behavioral but not academic) conditions (Fish, 2016). However, Hosp and Reschly's (2003) meta-analysis reported conflicting evidence regarding minority disproportionality in teacher referral rates, as have studies directly testing for racial bias in teacher referral for special education or pre-referral (MacMillan, Gresham, Lopez, & Bocian, 1996) or in the behavioral ratings of teachers more generally (Hosterman, DuPaul, & Jitendra, 2008). Abidin and Robinson (2002) reported that teachers tended to refer those children who are academically or behaviorally struggling.

We also were unable to report on potential moderators of disproportionality. This was because of the limited number of available studies using individual- and family-level

controls. Hypothesized moderators include geographic location (e.g., that U.S. states with histories of slavery, de jure or de facto housing segregation, and discrimination are more likely to overidentify otherwise similar minority children than states without such histories), disability type (e.g., that minorities are overidentified for more stigmatizing disability conditions, including intellectual disabilities and behavioral disorders), and how the disproportionality may fluctuate in regard to context and setting (e.g., that minority children with disabilities are more likely to be placed in segregated or restrictive settings than otherwise similar White children with disabilities; Artiles et al., 2005; Losen & Orfield, 2002; Oswald, Coutinho, & Best, 2002; Parrish, 2002; Skiba, Poloni-Stauginger, Gallini, Simmons, & Feggins-Azziz, 2006; Sullivan, 2013; Wiley, Brigham, Kauffman, & Bogan, 2013). These potential moderators should be investigated further, including in syntheses as additional empirical work becomes available.

Contributions

A methodological contribution of our synthesis is to demonstrate that the directionality of disproportionate representation attributable to race, ethnicity, or language use depends on the relative rigor of covariate adjustment being used. For example, studies relying on aggregate-level data and so weaker covariate adjustment are more likely to report that children who are Hispanic or Native American are overrepresented in special education (e.g., Coutinho, Oswald, & Best, 2002; Ong-Dean, 2006). In contrast, those few studies analyzing individual-level data and so stronger covariate adjustment repeatedly find that minority children are underidentified as having disabilities (e.g., Foran, 2007; Hibel et al., 2010; Morgan et al., 2012, 2015). These conflicting estimates may be the result of using aggregate-level data to make individual-level inferences. Doing so is known to yield spurious estimates due to the "ecological fallacy" from misspecified regression models (Robinson, 1950). Future research that analyzes individual-level data and

controls for individual-level confounds, particularly academic achievement, should better approximate contrasts between otherwise similar children (Morgan et al., 2015, 2017), which are needed in order to establish whether schools are misidentifying children as having disabilities based on their race, ethnicity, or national origin (U.S. Department of Education OCR, 2016). Doing so would provide stronger evidence of whether systemic bias resulting from discriminatory practices is occurring in special education (NRC, 2004). Our findings suggest that future work investigating whether schools are overidentifying minority children as having disabilities but that relies only on aggregate-level statistical controls is unlikely to accurately report the extent to which the disproportionality is due to discriminatory or biased disability identification procedures and not instead to minority children's well-established greater risk factor exposure. As a result, such work risks misinforming efforts to ensure equity among children with disabilities in their access to special education services by reporting spurious estimates (Donovan & Cross, 2002; MacMillan & Reschly, 1998; Morgan & Farkas, 2016a, b).

A substantive contribution of our synthesis is to increase emerging knowledge about the extensiveness of minority children's lack of special education service receipt, including across diverse contexts, research methodologies, and racial, ethnic, or language background characteristics. For example, our findings suggest that frequently reported racial disparities in disability identification in clinical settings (e.g., Flores & Committee for Pediatric Research, 2010; for a review of hypothesized mechanisms, see Zuckerman, Mattox, Sinche, Blaschke, & Bethell, 2014) also extends to school settings. Such disparities can occur even when minority children display relatively greater clinical needs (Miller, Nigg, & Miller, 2009). These disparities include inequities in use of evidence-based treatment (Morgan, Staff, Hillemeier Farkas, & Maczuga, 2013). Our findings are also consistent with evidence of minority underrepresentation in gifted education occurring among otherwise similarly high-achieving children

(Grissom & Redding, 2016). Our review's quantitative findings also support and extend recently reported qualitative findings in which middle-class Black parents attempting to obtain special education services for children with formally identified disabilities encounter "a system that reacted with little interest, ranging from slow responses to open antagonism and refusal" (Gillborn, Rollack, Vincent, & Ball, 2016, p. 53). Parents who are Hispanic, Asian, Native American, and language minorities may be having similar experiences. These findings replicate and extend findings from our recent synthesis (Morgan et al., 2017), in which the best available empirical evidence indicated that Black children were less likely to be identified as having disabilities than otherwise similar White children. Here, we find similar disparities for children across other racial and ethnic as well as language backgrounds, suggesting that underidentification based on race, ethnicity, and language use may be systemic. The only observed exception may be for children who are receiving ESL services, although the very limited number of estimates (i.e., two of four) allows for only a very tenuous inference. It may be that schools are attempting to provide additional services through special education to children viewed as having especially pronounced language-based difficulties.

Implications for Practice and Policy

For practitioners, our findings suggest the need to intensify the use of culturally sensitive and language-sensitive disability screening and evaluation procedures to ensure that the field's disability identification procedures, including as required through Child Find, are not differentially responsive to White, English-speaking children and their families (Guerrero, Rodriguez, & Flores, 2011). Minority parents of children with identified disabilities report experiencing high levels of stigma in their communities, poor access to care as a result of economic and language barriers, and school professionals who are resistant to their concerns "at virtually every stage" (Gillborn et al., 2016, p. 53). These stressors have

resulted in minority parents tending to normalize or deny their children's atypical functioning and becoming less trusting of professionals over time (Zuckerman, Mattox, et al., 2014; Zuckerman, Sinche et al., 2014).

Ensuring that minority children with disabilities are being appropriately recognized and helped may necessitate improving the cultural competence of school professionals (Delpit, 1995; Villegas & Lucas, 2002) as well as removing language barriers (Hibel & Jasper, 2012; Morgan et al., 2012, 2013) by providing interpreters fluent in a parent's primary language and translated written materials (Brotanek, Seeley, & Flores, 2008). Although written and spoken information about disability eligibility procedures should be widely accessible, this information often is presented in ways that are difficult to access, particularly by parents with lower educational backgrounds (Fitzgerald & Watkins, 2006; Mandic, Rudd, Hehir, & Acevedo-Garcia, 2012). School-to-community outreach programs may also help address cultural and language barriers (Flores, 2009; Madsen, Thompson, Adkins, & Crawford, 2013). Universal screening, which has been proposed as a method for addressing racial disparities in both gifted education (Card & Giuliano, 2015) and pediatric care (Payne & Puumala, 2013), may similarly help address racial disparities in special education as well as better meet IDEA's Child Find requirements.

Despite reporting and policy efforts to the contrary (e.g., IDEA regulations, 2016; Skiba et al., 2005), our review yields no evidence from studies with high internal and external validity that overrepresentation in the U.S. special education system is explained by widespread misidentification based on children's race or ethnicity. Instead, the weight of the limited but best-available evidence consistently indicates that minority children are less likely to receive special education services than otherwise similar White children. Federal legislation and policies designed to reduce minority overrepresentation due to concerns of racial or ethnic bias may be unintentionally exacerbating educational inequities by further limiting minority children's access to special

education services as well as to IDEA's extensive legal protections. Both this and our prior synthesis (Morgan et al., 2017) suggests that these policies and calls to action, although well intentioned, are not empirically justified and instead conflict with findings from the best available empirical studies. Future federal legislation, policies, and calls to action seeking to ensure equity in IDEA may be better directed by making sure that all children with disabilities, regardless of their race or ethnicity or language use, are appropriately recognized and provided with the special education services to which they have a civil right.

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References

- References marked with an asterisk indicate studies included in the synthesis.
- Aarnoudse-Moens, C. S. H., Weisglas-Kuperus, N., van Goudoever, J. B., & Oosterlaan, J. (2009). Meta-analysis of neurobehavioral outcomes in very preterm and/or very low birth weight children. *Pediatrics*, *124*, 717–728. doi:10.1542/peds.2008-2816
- Abidin, R. R., & Robinson, L. L. (2002). Stress, biases, or professionalism what drives teachers' referral judgments of students with challenging behaviors? *Journal of Emotional and Behavioral Disorders*, *10*, 204–212. doi:10.1177/10634266020100040201
- Albrecht, S. F., Skiba, R. J., Losen, D. J., Chung, C. G., & Middelberg, L. (2012). Federal

- policy on disproportionality in special education Is it moving us forward? *Journal of Disability Policy Studies*, 23, 14–25. doi:10.1177/1044207311407917
- *Anderson, J. A., Howland, A. A., & McCoach, D. B. (2015). Parental characteristics and resiliency in identification rates for special education. *Preventing School Failure: Alternative Education for Children and Youth*, 59, 63–72. doi:10.1080/1045988X.2013.837811
- Artiles, A. J. (1998). The dilemma of difference: Enriching the disproportionality discourse with theory and context. *The Journal of Special Education*, 32, 32–36. doi:10.1177/002246699803200105
- Artiles, A. J., Kozleski, E. B., Trent, S. C., Osher, D., & Ortiz, A. (2010). Justifying and explaining disproportionality, 1968–2008: A critique of underlying views of culture. *Exceptional Children*, 76, 279–299. doi:10.1177/001440291007600303
- Artiles, A. J., Rueda, R., Salazar, J. J., & Higareda, I. (2005). Within group diversity in minority disproportionate representation: English language learners in urban schools. *Exceptional Children*, 71, 283–300. doi:10.1177/001440290507100305
- Blanchett, W. J. (2006). Disproportionate representation of African American students in special education: Acknowledging the role of white privilege and racism. *Educational Researcher*, 35, 24–28. doi:10.3102/0013189X035006024
- Brotanek, J. M., Seeley, C. E., & Flores, G. (2008). The importance of cultural competency in general pediatrics. *Current Opinion in Pediatrics*, 20, 711–718. doi:10.1097/MOP.0b013e328317efff
- Burdick-Will, J., Ludwig, J., Raudenbush, S., Sampson, R., Sanbonmatsu, R., & Sharkey, P. (2011). Converging evidence for neighborhood effects on children's test scores: An experimental, quasi-experimental, and observational comparison. In G. Duncan & R. Murnane (Eds.), *Whither opportunity? Rising inequality, schools, and children's life chances* (pp. 255–276). New York, NY: Russell Sage.
- Card, D., & Giuliano, L. (2015). *Can universal screening increase the representation of low income and minority students in gifted education?* (No. w21519). Cambridge, MA: National Bureau of Economic Research. doi:10.3386/w21519
- Claycomb, C. D., Ryan, J. J., Miller, L. J., & Schakenberg-Ott, S. D. (2004). Relationships among attention deficit hyperactivity disorder, induced labor, and selected physiological and demographic variables. *Journal of Clinical Psychology*, 60, 689–693. doi:10.1002/jclp.10238
- Codrington, J., & Fairchild, H. H. (2012). *Special education and the mis-education of African American children: A call to action*. Washington, DC: Association of Black Psychologists.
- Coutinho, M. J., & Oswald, D. P. (2000). Disproportionate representation in special education: A synthesis and recommendations. *Journal of Child and Family Studies*, 9, 135–156. doi:10.1023/A:1009462820157
- *Coutinho, M. J., Oswald, D. P., & Best, A. M. (2002). The influence of socio-demographics and gender on the disproportionate identification of minority students as learning disabled. *Remedial and Special Education*, 23, 49–59. doi:10.1177/074193250202300107
- *Coutinho, M. J., Oswald, D. P., Best, A. M., & Forness, S. R. (2002). Gender and sociodemographic factors and the disproportionate identification of culturally and linguistically diverse students with emotional disturbance. *Behavioral Disorders*, 27, 109–125. doi.org/10.1177/019874290202700202
- Daniels, V. I. (1998). Minority students in gifted and special education programs: The case for educational equity. *The Journal of Special Education*, 32, 41–43. doi:10.1177/002246699803200107
- Delpit, L. D. (1995). *Other people's children: Cultural conflict in the classroom*. New York, NY: New Press.
- Donovan, S., & Cross, C. T. (Eds.). (2002). *Minority students in special and gifted education*. Washington, DC: National Academies Press.
- *Dragoo, K. E. (2013). *Characteristics, predictors, and growth trajectories of children who exit special education compared to their general and special education peers*. Available from ProQuest Dissertations and Theses database. (UMI No. 3599450)
- Dunn, L. M. (1968). Special education for the mildly retarded: Is much of it justifiable? *Exceptional Children*, 35, 5–22.
- Fish, R. E. (2016). The racialized construction of exceptionality: Experimental evidence of race/ethnicity effects on teachers' interventions. *Social Science Research*, 62, 317–334. doi:10.1016/j.ssresearch.2016.08.007
- Fitzgerald, J. L., & Watkins, M. W. (2006). Parents' rights in special education: The readability of

- procedural safeguards. *Exceptional Children*, 72, 497–510. doi:10.1177/001440290607200407
- Flores, G. (2009). Devising, implementing, and evaluating interventions to eliminate health care disparities in minority children. *Pediatrics*, 124, S214–S223. doi:10.1542/peds.2009-1100j
- Flores, G., & Committee on Pediatric Research. (2010). Technical report: Racial and ethnic disparities in health and health care of children. *Pediatrics*, 125, e979–e1020. doi:10.1542/peds.2010-0188
- *Foran, M. O. (2007). *Representational status of minority students in special education in the state of Rhode Island* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3276983)
- Garrick Duhaney, L. M. (2014). Disproportionate representation in special education: A persistent stain in the field. In F. E. Obiakor, & A. F. Rotatori (Eds.), *Multicultural education for learners with special needs in the twenty-first century* (pp. 101–124). Charlotte, NC: Information Age.
- Geary, D. C. (2011). Consequences, characteristics, and causes of mathematical learning disabilities and persistent low achievement in mathematics. *Journal of Developmental and Behavioral Pediatrics*, 32, 250–263. doi:10.1097/DBP.0b013e318209edef
- Gillborn, D., Rollock, N., Vincent, C., & Ball, S. J. (2016). The Black middle classes, education, racism, and dis/ability: An intersectional analysis. In D. J. Connor, B. A. Ferri, & S. A. Annamma (Eds.), *DisCrit: Disability studies and critical race theory in education* (pp. 35–54). New York, NY: Teachers College Press.
- Goodlad, J. K., Marcus, D. K., & Fulton, J. J. (2013). Lead and attention-deficit/hyperactivity disorder (ADHD) symptoms: A meta-analysis. *Clinical Psychology Review*, 33, 417–425. doi:10.1016/j.cpr.2013.01.009
- Grissom, J. A., & Redding, C. (2016). Discretion and disproportionality: Explaining the underrepresentation of high-achieving students of color in gifted programs. *AERA Open*, 2, 1–25. doi:10.1177/2332858415622175
- Grunau, R. E., Whitfield, M. F., & Davis, C. (2002). Pattern of learning disabilities in children with extremely low birth weight and broadly average intelligence. *Archives of Pediatrics & Adolescent Medicine*, 156, 615–620. doi:10.1001/archpedi.156.6.615
- *Guarino, C. M., Buddin, R., Pham, C., & Cho, M. (2010). Demographic factors associated with the early identification of children with special needs. *Topics in Early Childhood Special Education*, 30, 162–175. doi:10.1177/0271121409349273
- Guerrero, A. D., Rodriguez, M. A., & Flores, G. (2011). Disparities in provider elicitation of parents' developmental concerns for US children. *Pediatrics*, 128, 901–909. doi:10.1542/peds.2011-0030
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD: Brookes.
- Heller, K. A., Holtzman, W. H., & Messick, S. (Eds.). (Eds.). (1982). *Placing children in special education: A strategy for equity*. Washington, DC: National Academy Press.
- *Hibel, J., Faircloth, S. C., & Farkas, G. (2008). Unpacking the placement of American Indian and Alaska Native students in special education programs and services in the early grades: School readiness as a predictive variable. *Harvard Education Review*, 78, 498–528. doi:10.17763/haer.78.3.8w010nq4u83348q5
- *Hibel, J., Farkas, G., & Morgan, P. L. (2010). Who is placed into special education? *Sociology of Education*, 83, 312–332. doi:10.1177/00384040710383518
- *Hibel, J., & Jasper, A. D. (2012). Delayed special education placement for learning disabilities among children of immigrants. *Social Forces*, 91, 503–530. doi:10.1093/sf/sos092
- Higgins, J., & Green, S. (Eds.). (2011). *Handbook for systematic reviews of interventions*. Chichester, UK: Cochrane Collaboration.
- Hosp, J. L., & Reschly, D. J. (2003). Referral rates for intervention or assessment: A meta-analysis of racial differences. *The Journal of Special Education*, 37, 67–80. doi:10.1177/00224669030370020201
- Hosp, J. L., & Reschly, D. J. (2004). Disproportionate representation of minority students in special education: Academic, demographic, and economic predictors. *Exceptional Children*, 70, 185–199. doi:10.1177/001440290407000204
- Hosterman, S. J., DuPaul, G. J., & Jitendra, A. K. (2008). Teacher ratings of ADHD symptoms in ethnic minority students: Bias or behavioral difference? *School Psychology Quarterly*, 23, 418–435. doi:10.1037/a0012668
- IDEA regulations, 34 C.F.R. § 300 (2016).
- Individuals With Disabilities Education Act, 20 U.S.C. §§ 1400 *et seq.* (2006 & Supp. V. 2011).
- Landerl, K., & Moll, K. (2010). Comorbidity of learning disorders: Prevalence and familial transmission. *Journal of Child Psychology and*

- Psychiatry*, 51, 287–294. doi:10.1111/j.1469-7610.2009.02164.x
- Losen, D. J., & Orfield, G. (2002). *Racial inequality in special education*. Cambridge, MA: Harvard Education Press.
- Losen, D. J., & Welner, K. G. (2001). Disabling discrimination in our public schools: Comprehensive legal challenges to inappropriate and inadequate special education services for minority children. *Harvard Civil Rights–Civil Liberties Law Review*, 36, 407–460.
- MacMillan, D. L., Gresham, F. M., Lopez, M. F., & Bocian, K. M. (1996). Comparison of students nominated for prereferral interventions by ethnicity and gender. *The Journal of Special Education*, 30, 133–151. doi.org/10.1177/002246699603000202
- MacMillan, D. L., & Reschly, D. J. (1998). Overrepresentation of minority students: The case for greater specificity or reconsideration of the variables examined. *The Journal of Special Education*, 32, 15–24. doi:10.1177/002246699803200103
- Madsen, K., Thompson, H., Adkins, A., & Crawford, Y. (2013). School-community partnerships: A cluster-randomized trial of an after-school soccer program. *JAMA Pediatrics*, 167, 321–326. doi:10.1001/jama-pediatrics.2013.1071
- Makel, M. C., Plucker, J. A., Freeman, J., Lombardi, A., Simonsen, B., & Coyne, M. (2016). Replication of special education research: Necessary but far too rare. *Remedial and Special Education*, 37, 205–212. doi:10.1177/0741932516646083
- Mandic, C. G., Rudd, R., Hehir, T., & Acevedo-Garcia, D. (2012). Readability of special education procedural safeguards. *The Journal of Special Education*, 45, 195–203. doi:10.1177/0022466910362774
- *Mann, E. A., McCartney, K., & Park, J. M. (2007). Preschool predictors of the need for early remedial and special education services. *Elementary School Journal*, 107, 273–285. doi:10.1086/511707
- Miller, T. W., Nigg, J. T., & Miller, R. L. (2009). Attention deficit hyperactivity disorder in African American children: What can be concluded from the past ten years? *Clinical Psychology Review*, 29, 77–86. doi:10.1016/j.cpr.2008.10.001
- Moll, K., Kunze, S., Neuhoﬀ, N., Bruder, J., & Schulte-Körne, G. (2014). Specific learning disorder: Prevalence and gender differences. *PLoS One*, 9, e103537. doi:10.1371/journal.pone.0103537
- Morgan, P. L., & Farkas, G. (2016a). Are we helping all the children that we are supposed to be helping? *Educational Researcher*, 45, 226–228.
- Morgan, P. L., & Farkas, G. (2016b). Evidence of minority underrepresentation in special education and its implications for school psychologists. *NASP Communique*, 44, 30–33.
- Morgan, P. L., Farkas, G., Cook, M., Strassfeld, N. M., Hillemeier, M. M., Pun, W. H., & Schussler, D. L. (2017). Are Black children disproportionately overrepresented in special education? A best-evidence synthesis. *Exceptional Children*, 83, 181–198. doi.org/10.1177/0014402916664042
- *Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2012). Are minority children disproportionately represented in early intervention and early childhood special education? *Educational Researcher*, 41, 339–351. doi:10.3102/0013189X12459678
- *Morgan, P. L., Farkas, G., Hillemeier, M., Mattison, R., Li, H., & Cook, M. (2015). Minorities are disproportionately under-represented in special education: Longitudinal evidence across five disability conditions. *Educational Researcher*, 44, 278–292. doi:10.3102/0013189X15591157
- Morgan, P. L., Staff, J., Hillemeier, M. M., Farkas, G., & Maczuga, S. (2013). Racial and ethnic disparities in ADHD diagnosis from kindergarten to eighth grade. *Pediatrics*, 132, 85–93. doi:10.1542/peds.2012-2390
- Morsy, L., & Rothstein, R. (2015). *Five social disadvantages that depress student performance: why schools alone can't close achievement gaps* (Report). Washington, DC: Economic Policy Institute.
- *Muschkin, C. G., Ladd, H. F., & Dodge, K. A. (2015). Impact of North Carolina's early childhood initiatives on special education placements in third grade. *Educational Evaluation and Policy Analysis*, 37, 478–500. doi.org/10.3102/0162373714559096
- National Center for Education Statistics. (2016). *Achievement gaps* [Data file]. Retrieved from <https://nces.ed.gov/nationsreportcard/studies/gaps>
- National Research Council. (2004). *Measuring racial discrimination*. Washington, DC: National Academies Press.
- O'Connor, M. J., & Paley, B. (2009). Psychiatric conditions associated with prenatal alcohol

- exposure. *Developmental Disabilities Research Reviews*, 15, 225–234. doi:10.1002/ddrr.74
- *Ong-Dean, C. (2006). High roads and low roads: Learning disabilities in California, 1976–1998. *Sociological Perspectives*, 49, 91–113. doi:10.1525/sop.2006.49.1.91
- Oswald, D. P., Coutinho, M. J., & Best, A. M. (2002). Community and school predictors of overrepresentation of minority children in special education. In D. J. Losen & G. Orfield (Eds.), *Racial inequity in special education* (pp. 1–13). Cambridge, MA: Harvard Civil Rights Project.
- *Oswald, D. P., Coutinho, M. J., Best, A. M., & Nguyen, N. (2001). Impact of sociodemographic characteristics on the identification rates of minority students as having mental retardation. *Mental Retardation*, 39, 351–367. doi:10.1352/0047-6765(2001)039<0351:IOS COT>2.0.CO;2
- Oswald, D. P., Coutinho, M. J., Best, A. M., & Singh, N. (1999). Ethnic representation in special education, the influence of school-related economic and demographic variables. *The Journal of Special Education*, 32, 194–206. doi:10.1177/002246699903200401
- Parrish, T. (2002). Racial disparities in the identification, funding, and provision of special education. In D. J. Losen & G. Orfield (Eds.), *Racial inequality in special education* (pp. 15–37). Cambridge, MA: Harvard Education Press.
- Payne, N. R., & Puumala, S. E. (2013). Racial disparities in ordering laboratory and radiology tests for pediatric patients in the emergency department. *Pediatric Emergency Care*, 29, 598–606. doi:10.1097/PEC.0b013e31828e6489
- Pigott, T. D., Valentine, J. C., Polanin, J. R., Williams, R. T., & Canada, D. D. (2013). Outcome-reporting bias in education research. *Educational Researcher*, 42, 424–432. doi:10.3102/0013189X13507104
- Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review*, 15, 351. doi:10.2307/2087176
- *Ruedel, K. L. (2008). *Examining the impact of student-level and school-level variables on the disproportionate representation of minority students in special education using data from the Early Childhood Longitudinal Study–Kindergarten Cohort*. Available from ProQuest Dissertations and Theses database. (UMI No. 3341441)
- *Samson, J. F., & Lesaux, N. K. (2009). Language-minority learners in special education: Rates and predictors of identification for services. *Journal of Learning Disabilities*, 42, 148–162. doi:10.1177/0022219408326221
- Sharkey, P. (2013). *Stuck in place: Urban neighborhoods and the end of progress toward racial equality*. Chicago, IL: University of Chicago Press.
- Shaw, D. S., Owens, E. B., Giovannelli, J., & Winslow, E. B. (2001). Infant and toddler pathways leading to early externalizing disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40, 36–43. doi:10.1097/00004583-200101000-00014
- Shaywitz, S. E., Shaywitz, B. A., Fletcher, J. M., & Escobar, M. D. (1990). Prevalence of reading disability in boys and girls: Results of the Connecticut Longitudinal Study. *JAMA*, 264, 998–1002. doi:10.1001/jama.1990.03450080084036
- *Shifrer, D., Muller, C., & Callahan, R. (2011). Disproportionality and learning disabilities: Parsing apart race, socioeconomic status, and language. *Journal of Learning Disabilities*, 44, 246–257. doi:10.1177/0022219410374236
- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, 75, 417–453. doi:10.3102/00346543075003417
- Skiba, R. (2013). CCBED'S position summary on federal policy on disproportionality in special education. *Behavioral Disorders*, 38, 108–120. doi:10.1177/019874291303800202
- Skiba, R. J., Poloni-Staudinger, L., Gallini, S., Simmons, A. B., & Feggins-Azziz, R. (2006). Disparate access: The disproportionality of African American students with disabilities across educational environments. *Exceptional Children*, 72, 411–424. doi.org/10.1177/001440290607200402
- Skiba, R. J., Poloni-Staudinger, L., Simmons, A. B., Feggins-Azziz, L. R., & Chung, C. (2005). Unproven links: Can poverty explain ethnic disproportionality in special education? *The Journal of Special Education*, 39, 130–144. doi:10.1177/00224669050390030101
- Skiba, R. J., Simmons, A. B., Ritter, S., Gibb, A. C., Rausch, M. K., Cuadrado, J., & Chung, C. (2008). Achieving equity in special education: History, status, and current challenges. *Exceptional Children*, 74, 264–288. doi:10.1177/001440290807400301

- Slavin, R. E. (1986). Best-evidence synthesis: An alternative to meta-analytic and traditional reviews. *Educational Researcher*, 15, 5–11. doi:10.3102/0013189X015009005
- *Strand, S., & Lindsay, G. (2009). Evidence of ethnic disproportionality in special education in an English population. *The Journal of Special Education*, 43, 174–190. doi:10.1177/0022466908320461
- Sullivan, A. L. (2013). School-based autism identification: Prevalence, racial disparities, and systemic correlates. *School Psychology Review*, 42, 298–316.
- *Sullivan, A. L., & Bal, A. (2013). Disproportionality in special education: Effects of individual and school variables on disability risk. *Exceptional Children*, 79, 475–494. doi:10.1177/001440291307900406
- Sweller, N., Graham, L. J., & Van Bergen, P. (2012). The minority report: Disproportionate representation in Australia's largest education system. *Exceptional Children*, 79, 107–125. doi:10.1177/001440291207900106
- *Talbot, E., Fleming, J., Karabatsos, G., & Dobria, L. (2011). Making sense of minority student identification in special education: School context matters. *International Journal of Special Education*, 26, 150–170.
- Tomblin, J. B., Records, N. L., Buckwalter, P., Zhang, X., Smith, E., & O'Brien, M. (1997). Prevalence of specific language impairment in kindergarten children. *Journal of Speech, Language, and Hearing Research*, 40, 1245–1260. doi:10.1044/jslhr.4006.1245
- U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2016). *38th annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2016*. Washington, DC. Retrieved from <https://www2.ed.gov/about/reports/annual/osep/2016/parts-b-c/38th-arc-for-idea.pdf>
- U.S. Department of Education Office of Civil Rights. (2016). *Preventing racial discrimination in special education*. Retrieved from <https://www2.ed.gov/about/offices/list/ocr/letters/colleague-201612-racedisc-special-education.pdf>
- Van den Bergh, B. R., & Marcoen, A. (2004). High antenatal maternal anxiety is related to ADHD symptoms, externalizing problems, and anxiety in 8- and 9-year-olds. *Child Development*, 75, 1085–1097.
- Vernon-Feagans, L., Garrett-Peters, P., Willoughby, M., & Mills-Koonce, R. (2012). Chaos, poverty, and parenting: Predictors of early language development. *Early Childhood Research Quarterly*, 27, 339–351. doi:10.1016/j.ecresq.2011.11.001
- Villegas, A. M., & Lucas, T. (2002). Preparing culturally responsive teachers rethinking the curriculum. *Journal of Teacher Education*, 53, 20–32. doi:10.1177/0022487102053001003
- Waitoller, F. R., Artiles, A. J., & Cheney, D. A. (2010). The miner's canary: A review of overrepresentation research and explanations. *The Journal of Special Education*, 44, 29–49. doi:10.1177/0022466908329226
- Wiley, A. L., Brigham, F. J., Kauffman, J. M., & Bogan, J. E. (2013). Disproportionate poverty, conservatism, and the disproportionate identification of minority students with emotional and behavioral disorders. *Education and Treatment of Children*, 36, 29–50.
- *Yeh, M., Forness, S. R., Ho, J., McCabe, K., & Hough, R. L. (2004). Parental etiological explanations and disproportionate racial/ethnic representation in special education services for youths with emotional disturbance. *Behavioral Disorders*, 29, 348–358.
- Zhang, D., & Katsiyannis, A. (2002). Minority representation in special education: A persistent challenge. *Remedial and Special Education*, 23, 180–187. doi:10.1177/07419325020230030601
- Zhang, D., Katsiyannis, A., Ju, S., & Roberts, E. (2014). Minority representation in special education: 5-year trends. *Journal of Child and Family Studies*, 23, 118–127. doi:10.1007/s10826-012-9698-6.
- Zuckerman, K. E., Mattox, K. M., Sinche, B. K., Blaschke, G. S., & Bethell, C. (2014). Racial, ethnic, and language disparities in early childhood developmental/behavioral evaluations: A narrative review. *Clinical Pediatrics*, 53, 619–631. doi:10.1177/0009922813501378
- Zuckerman, K. E., Sinche, B., Mejia, A., Cobian, M., Becker, T., & Nicolaidis, C. (2014). Latino parents' perspectives on barriers to autism diagnosis. *Academic Pediatrics*, 14, 301–308. doi:10.1016/j.acap.2013.12.004

Supplemental Material

The supplemental material is available in the online version of the article.

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