Research into Factors Contributing to Discipline Use and Disproportionality in Major Urban Schools

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Citation

Abstract

Major urban high poverty schools frequently use exclusionary discipline (i.e., out of school suspensions) and apply these consequences disproportionately to African American students. We explored school demographic variables predicting these two outcomes using data from 433 major urban, high poverty schools. Results suggest a different set of predictors for the overall use of suspensions than for disproportionality. Specifically, four variables significantly predicted overall suspension use (office disciplinary referrals; the proportions of African American teachers, economically disadvantaged students, and African American students) whereas only one variable significantly predicted disproportionality (percentage economically disadvantaged students). Implications, limitations and future directions are provided.

Keywords: Disproportionality; Suspension; Expulsion; Discipline; Urban; African American

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Exclusionary discipline is frequently utilized in today's schools. In 2006 approximately 3.3 million students in the United States received out of school suspensions (Planty et al., 2009), and data suggest the practice is increasing. For example, in the state of Maryland a 58.7% increase in suspensions was documented from 1995 to 2003 (Krezmien, Leone, and Achilles, 2006). These practices are concerning considering the documented relationship between exclusionary discipline and a variety of unfavorable student outcomes (e.g., Costenbader & Markson, 1998; DeRidder, 1990; Gersch and Nolan, 1994; Rausch & Skiba, 2004; Safer, Heaton, & Parker, 1981).

Also concerning is the overrepresentation of minority students as recipients of such exclusionary discipline. Evidence of this phenomenon – referred to as disciplinary disproportionality – is abundant. For example, Constenbader and Markston (1998) found that African American students composed 23% of the student population but 45% of those receiving disciplinary actions. Even more startling, Mendez and Knoff (2003) found that African American males in a large Florida school district experienced approximately 2.5 times as many suspensions per 100 students as White males, and African American females in the same district experienced approximately 3.6 times as many suspensions per 100 students as White females. Other researchers have documented similar findings of disciplinary disproportionality (Garibaldi, 1992; Skiba, Peterson, & Williams, 1997; Skiba, Michael, Nardo, & Peterson, 2002; Thornton & Trent, 1988; Wu, Pink, Crain, & Moles, 1982).

Because the use of exclusionary discipline and the overrepresentation of minority students as recipients have both been thoroughly documented, recent research has become more specifically concerned with identifying factors that predict each phenomenon. For example, school administrator philosophy and beliefs (Christle, Nelson, & Jolivette, 2004; Mukuria, 2002;

Wu, 1980), ambiance of the physical school setting (Christle et al.), per pupil spending (Christle et al.), district SES (Fowler & Walberg, 1991), and public-versus-private school status (Farmer, 1999) are school-level variables that have been shown to impact disciplinary practices. In addition, several student-level variables have been linked to discipline use, including gender, (Mendez & Knoff, 2003; Skiba et al., 1997; Skiba & Peterson, 2000), student socioeconomic status (Wu et al., 1982), and student grade-level (Mendez and Knoff, 2003; Arcia, 2008).

School typology (urban, suburban, rural) is another factor that has recently been considered. Noltemeyer and Mcloughlin (in press) conducted a study to examine differences in disciplinary usage and disciplinary disproportionality based on school typology. Results suggested that, when compared to other school typologies, major urban districts with 'very high poverty levels' evidenced greater reliance on disciplinary techniques overall as well as higher levels of disciplinary disproportionality for African American students (even when controlling for student poverty level). We suggested a need for further research to identify the unique contribution of various characteristics of major urban, very high poverty schools that increase their likelihood of utilizing exclusionary discipline and disproportionally for African American students. We further recommended additional research aimed at determining the degree to which overall differences in exclusionary discipline rates explain differences in disciplinary disproportionality, as well as the degree to which differences in discipline rates can be explained by the ethnic composition of the student population.

This follow-up study addresses these issues using school-level demographic variables as predictors. Specifically, the purpose of our study is: (1) Determine which of five variables significantly predict overall *suspension usage* in major urban, very high poverty schools, and identify the relative contribution of each variable; (2) Determine which of six variables

significantly predict *suspension disproportionality* in major urban, very high poverty schools and identify the relative contribution of each variable.

Methods

First, the district identification numbers for all major urban, very high poverty schools in the state of Ohio (USA) were obtained using the "School Typology" database, available at http://www.ode.state.oh.us/. "Major urban, very high poverty" is one of nine school typologies identified by the Ohio Department of Education. This typology describes school districts in major cities with high population density, very high poverty, and a very high percentage of minority students (Ohio Department of Education, 2007).

Next, data on predictor variables were obtained using the Ohio Department of Education's Power Users Tool. This 'tool' allows for access to all schools in all public school districts in Ohio, disaggregated by desired characteristics (e.g., ethnicity). The following data were obtained for each of the 433 schools from the 12 major urban, high-poverty school districts in Ohio for the 2007-2008 school year: Percent African American teachers in the school (%AAT); total suspensions per 100 students at the school (SUSP); percent economically disadvantaged students at the school (%ED); percent African American students attending the school (%AAS); instructional expenditures per student (INSTR); suspensions per 100 White students; suspensions per 100 African American students; and, office disciplinary referrals per 100 students (ODR). These predictor variables were selected for inclusion due to previous research suggesting a possible relationship to suspension use or disciplinary disproportionality. Data for each predictor variable were exported to Microsoft Excel and then transferred to SPSS.

Once these variables were in SPSS, a new variable—called the *Relative Risk Ratio* (RISK) —was created by dividing the suspensions per 100 African American students by the suspensions per 100 White students. The relative risk ratio is a metric that compares an ethnic group's risk of receiving an exclusionary discipline action to the risk of a comparison group (Donovan & Cross, 2002). In our investigation, this number represents the risk of African American students compared to White students. White students were selected as the comparison population because they represent the majority of students attending school in Ohio. A relative risk ratio of 1.0 indicates that African American students and White students in the school are equally likely to receive an out-of-school suspension; in contrast, a relative risk ratio of 2.0 indicates African American students were twice as likely as White students to receive an out-of-school suspension. Ratios have frequently been used as used metric for assessing disproportionality (e.g., Krezmien et al., 2006; McNulty, Eitle & Eitle, 2004; Noltemeyer & Mcloughlin, in press; Rausch & Skiba, 2004). Latino, Asian American, Native American, and students from other ethnic groups were not included in any analyses due to small sample sizes.

Some schools did not have any values for suspensions per 100 African American students or for suspensions per 100 White students because (a) no White or African American students attended the school, or (b) White or African American students did attend the school, but none were suspended during the 2007-2008 school year. If either of these variables was empty or had a value of zero, the relative risk ratio was not calculated. As a result, the relative risk ratio was available for 206 schools. Analyses were conducted to determine how the participating schools differed from the non-participating schools. Most notably, results suggested that participating schools had a higher number of suspensions per 100 students (White, African American, and

total) as well as a higher number of ODRs per 100 students than non-participating schools. These findings should be considered when interpreting the results of the study.

Multiple regression analyses were run to answer each of the two research questions. Multiple regression was selected as the analysis technique because it allows for an examination of the effect of several predictor variables on a dependent variable. Stepwise procedures were used because there was no theoretical foundation for the relative contribution of each predictor variable to the dependent variable. The first multiple regression analysis examined the effect of five predictor variables on the overall number of suspensions per 100 students in the 346 schools for which all data were available. The second multiple regression analysis examined the effect of six predictor variables on the relative risk ratio in the 206 schools for which all data were available. This analysis included one more variable because the outcome variable from the first analysis (total suspensions per 100 students) was also used as a predictor.

Descriptive statistics and Pearson correlations were also calculated to provide more information about the variables in each of the analyses. In addition, partial eta squared – an estimate of effect size – was used to determine the percentage of variation in the dependent variables explained by the predictor variables in each analysis.

Ohio data comprise the data-set for this study because the state is a bellwether that reflects national educational and political trends (Noltemeyer, Brown, & Mcloughlin, 2010; Rubin, 1997) and the percentages of White and African American individuals statewide are approximately equal to national averages based on census data (United States Census Bureau, 2008).

Results

Examination of the Tolerance and VIF values for each of the two analyses indicates no concerns with multicollinearity of data. Additionally, because the η^2 and adjusted η^2 were close in value, both multiple regression models were judged to be reliable.

Results of the first regression analysis indicated that the best set of predictors for overall use of suspensions included the following variables: Office disciplinary referrals per 100 students; percent African American teachers; percent economically disadvantaged students; and percent African American students, $F(4, 341) = 18.51$, $p < .001$. This suggests that the linear combination of these variables significantly predicted the number of suspensions per 100 students in the sample of Ohio's major urban, high poverty schools during the 2007-2008 school year. Specifically, this set of variables predicted nearly 18% of the variability in suspension use ($\eta^2 = .18$). When considering the unique contribution of each of these predictor variables to total suspensions per 100 students, the number of office disciplinary referrals per 100 students explained 8.4% of the variability. The percent of African American teachers, the percent of economically disadvantaged students, and the percent of African American students each explained 3.5%, 3.9%, and 2.1% of the variability, respectively.

See Table 1 for descriptive statistics. As evidenced by these data, the participating schools averaged over 32 suspensions per 100 students and over 33 office disciplinary referrals per 100 students. In addition, the majority of students in the schools were economically disadvantaged and African American, whereas less than 25% of teachers were African American. Table 2 reveals a summary of the relationships between the predictor variables and total suspensions per 100 students. These results indicate the strength and direction of the relationships between each of the variables using Pearson correlations.

Table 1. *Descriptive Statistics for Variables in the First Multiple Regression Analysis*

	M	*SD*	N
Total Suspensions	32.51	46.24	346
%African American Teachers	21	17	346
%Economically Disadvantaged Students	75	19	346
%African American Students	59	31	346
Office Discipline Referrals per 100 Students	33.08	72.08	346
Instructional Expenditures per Student ($)	6945.47	1893.43	346

Table 2.

Pearson Correlations Between Variables in the First Multiple Regression Analysis

	SUSP	%AAT	%ED	%AAS	ODR	INSTR
Suspensions per 100 Students	1.000					
% African American Teachers	-.207	1.000				
%Economically Disadvantaged Students	.108	.139	1.000			
% African American Students	.126	.266	.207	1.000		
Office Discipline Referrals per 100 Students	.289	-.072	-.210	.008	1.000	
Instructional Expenditures per Student ($)	.035	.218	.243	.261	-.085	1.000

Results of the second regression analysis suggested the best set of predictors for disciplinary disproportionality (i.e., the relative risk ratio) included a single variable: Percentage of economically disadvantaged students F (1, 205) = 10.48, p =001. This variable explained almost 5% of the variability in the relative risk ratio during the 2007-2008 school year (η^2 = .049). See Table 3 for descriptive statistics on all variables in this analysis, and Table 4 for a summary of the relationship between the variables and the relative risk ratio.

Table 3 reviews descriptive statistics for this second analysis. The participating schools averaged over 42 suspensions and over 37 office disciplinary referrals per 100 students. In addition, over 75% of the students in the schools were economically disadvantaged, 47% were African American, and 17% of teachers were African American. Like Table 2, Table 4 summarizes the relationships between the predictor variables and the relative risk ratio using Pearson correlations.

Table 3.

Descriptive Statistics for Variables in the Second Multiple Regression Analysis

	M	*SD*	N
Relative Risk Ratio	2.88	2.32	206
Total Suspensions	42.45	49.48	206
%African American Teachers	17	15	206
%Economically Disadvantaged Students	76	19	206
%African American Students	47	26	206
Office Discipline Referrals per 100 Students	37.18	79.01	206
Instructional Expenditures per Student ($)	6672.56	1727.88	206

Table 4.

Pearson Correlations between Variables in the Second Multiple Regression Analysis

	RISK	%AAT	%ED	%AAS	ODR	INSTR	SUSP
Relative Risk Ratios	1.000						
%African American Teachers	-.036	1.000					
%Economically Disadvantaged Students	-.221	.191	1.000				
%African American Students	-.116	.109	.120	1.000			
Office Discipline Referrals per 100 Students	-.045	-.180	-.243	.082	1.000		
Instructional Expenditures per Student ($)	.047	.284	.240	.135	-.119	1.000	
Suspensions per 100 Students	-.127	-.143	.016	.341	.460	-.038	1.000

Discussion

Compared to other school typologies, major urban high poverty schools have been documented frequently to use exclusionary discipline (e.g., Adams, 1992; Noltemeyer & Mcloughlin, in press), and apply these techniques disproportionately to African American students (e.g., Noltemeyer & Mcloughlin, 2010). Our study sought to explore school

demographic variables that predict suspension use and disciplinary disproportionality. Results

suggest a different set of predictors for the overall use of suspensions than for disproportionality.

Overall Suspension Use

Four variables were found to predict overall suspension use: Office disciplinary referrals

per 100 students; percent African American teachers; percent economically disadvantaged

students; and percent African American students. The finding that office disciplinary referrals

was a significant predictor of overall suspension use makes intuitive sense considering referrals

that lead to suspensions begin in the classroom setting and typically require an initial referral to a

school administrator. Skiba et al. (1997) found that most behaviors prompting an office

disciplinary referral occurred in the classroom and were made by teachers. They also found that

nearly half of the referrals were written by small percentage of teachers who made high numbers

of referrals. These findings along with results of our investigation suggest that schools seeking to

minimize exclusionary discipline techniques – and thus its negative and unintended

consequences – should aim to provide teachers with professional development and supports to

prevent and handle behaviors within the classroom.

The finding that the percentage of economically disadvantaged students in a school

significantly predicts suspension use is also logical given previous research demonstrating a

positive relationship between the percentage of economically disadvantaged students in a district

and suspension use (e.g., Christle, Nelson & Jolivette, 2004; Fowler & Walberg, 1991; Mendez,

Knoff, & Ferron, 2002;). Poverty can increase stressors on a child and his or her family, which

may in turn increase the risk of poor behavioral outcomes. In addition, children living in poverty

may bring different experiences and beliefs than their middle- or upper-class teachers.

The ethnic composition of both teachers and students also predicted overall suspension rates. Specifically, a positive relationship emerged between the percentage of African American students and suspension rates, and a negative relationship emerged between the percentage of African American teachers and suspension rates. The relationship between African American students and suspension is expected given the documentation of disciplinary disproportionality over the past several decades (e.g., Constenbader and Markston, 1998; Garibaldi, 1992; Mendez and Knoff, 2003; Skiba et al., 1997; Skiba et al., 2002; Thornton & Trent, 1988; Wu et al.,1982).

Although the negative relationship between African American teachers and suspension use remains unexplained, speculations can be made based on other research. For example, when examining preservice teachers' perceptions about characteristics of effective teachers, Witcher and Onwuegbuzie (1999) found that minority preservice teachers less often endorsed behavior management skills (e.g., authoritative, good disciplinarian) as characteristic of effective teachers than did White preservice teachers. At the same time, they more often endorsed ethical behaviors (e.g., impartial, fair, unbiased) as characteristic of effective teachers than did their White counterparts. These results suggest there may be cultural differences in views on discipline and its application. In addition, Saft and Pianta (2001) found that when children and their teachers have the same ethnicity, teachers rated the relationships more positively. Because of the positive correlation between the percentage of African American teachers and students in this sample of urban schools, these more positive relationships and reduced potential for cultural incongruence could contribute to the findings.

Finally, instructional expenditure per student was not a significant predictor in the model. Christle et al. (2004) found that in one state higher per-pupil spending was linked to higher

suspension rates; however, they indicated these findings needed replication. In our study, a positive relationship was noted; however, it was extremely weak and not statistically significant.

Disproportionality in Suspension Use

Our findings related to disciplinary disproportionality provide less insight into factors contributing to the phenomenon. The only significant predictor of disproportionality in suspensions was the percentage of economically disadvantaged students in the schools; however, the relationship was opposite that found when considering overall suspension use. Specifically, as the percentage of economically disadvantaged students increased, disproportionality decreased. In addition, this variable explained very little of the proportion of variance in disproportionality. This weak and contradictory role of poverty is interesting, yet perhaps unsurprising; Skiba & Peterson (2000) in a study on the factors contributing to disproportionality in special education identification, found that poverty made a weak and inconsistent contribution, having a positive effect in some disability categories and a negative effect in others., Using multiple regression, they found that a district's level of poverty did not predict its overall disproportionality rates nor disproportionality in two disability categories; in two other disability categories it was a significant negative predictor, and in the final disability categories it was a significant positive predictor. Additionally, a more recent study (Pelham, 2007) suggested that professional development efforts aimed at increasing teachers' understanding of student poverty had no significant effects on disciplinary disproportionality, and in some cases actually led to a greater discrepancy in suspensions between African American and White students. When considering the findings of our study, it certainly appears that poverty level positively predicts overall suspension use and negatively predicts disproportionality rates.

It is surprising that reliance on suspensions and office disciplinary referrals did not significantly predict disciplinary disproportionality, particularly given evidence that suspension rates do predict disproportionality in special education identification (e.g., Skiba et al., 2004). Also, the percentage of African American teachers and the percentage of African American students did not significantly predict disciplinary disproportionality. Together, the failure of any of these variables to significantly predict disciplinary disproportionality – while they concurrently predict overall suspension rates – suggests that a different mechanism may explain overall discipline rates and disciplinary disproportionality.

Limitations

These data derive from a single Midwestern state in the USA; the degree to which our results accurately generalize to other states and other settings is unknown and should be considered with caution. In addition, we examined only major urban, very high poverty schools. Previous research has suggested predictors may vary based on school typology. It is important to conduct similar analyses on other school typologies to avoid generalizing the results to non-urban schools. Many schools in the sample had to be eliminated due either to an insufficient population of African American students or to an insufficient number of suspensions. It appears that the eliminated schools engaged in less exclusionary discipline than the participating schools; therefore, the analyses are really generalizable only to a circumscribed set of urban schools. Finally, the study relied on existing data and the degree to which suspensions were administered and documented consistently between schools is unknown.

Future Research

We anticipate these results contributing to the growing understanding of factors that contribute to exclusionary discipline and disciplinary disproportionality. Multiple avenues for

future research emerge from the study. Given prior contradictory results, coupled with our results, it is reasonable to assume that future research needs to move beyond an examination of poverty and attempt to capture the primary force behind disproportionality. In the case of overall suspension rates, it appears that although some contributing factors have been identified, there are further unstudied explanatory factors. With regard to disproportionality, it appears that none of the primary explanatory factors were captured using simple school-level demographic variables as predictors. Future research should explore other predictors. Most notably, it seems wise to move beyond demographic variables to explore the effect of process and attitudinal variables.

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