Student Discipline Disparities in Virginia: District Spending and Racial Disparities in Discipline

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ABSTRACT

Large racial disparities in student discipline are thought to be directly contributing to disproportionate minority contact in the juvenile justice system. Little has been done to learn about what acts as a predictor of and gives rise to these disparities. The current research aims to add to this conversation by examining the relationship between racial disparities in reported student offenders, measured using risk ratio, and two budget variables: the proportion of budget going towards diversity inclusion and per-pupil expenditures. Specifically, the research asks: How does spending on specific diversity programs and overall spending on students affect racial disparities in student discipline? A meta-analysis was utilized to answer this question. Data on Black, Hispanic, and White male students with no disabilities were collected from 314 public high schools across 126 school districts in Virginia. To find the correlation between racial disparities in reported student offenders and specific diversity programs as well as overall spending on students, a Pearson’s r test for correlation was conducted. Disparities in student discipline were positively correlated with the proportion of budget going toward diversity inclusion, but this correlation was not statistically significant. On the other hand, disparities in student discipline had a statistically significant positive correlation with per-pupil expenditures. This positive correlation indicates that the wealth of a district acts as a predictor of levels of racial disparity in student discipline. This suggests that the demographics of a district or segregation within a district could contribute to or exacerbate the existence of such disparities.

Introduction

For decades, researchers have been examining disparities in education. Despite the literature and attempts at reform, disparities at several different levels have persisted. Not the least of these is student discipline. During the 2013-2014 school year, Black students in the United States faced out-of-school suspension at a rate nearly four times more than White students and expulsion more than twice as much as White students (National Center for Education Statistics, 2018). Furthermore, several studies investigating differences such as these have found that these racial disparities cannot be fully explained by offense-related factors (Skiba et al., 2014; Scott and Nadler, 2018; Riddle and Sinclair, 2019). Not only is the existence of these disparities concerning, but also their effects on the juvenile justice system. School disciplinary actions fuel the school-to-prison pipeline and disparities in these actions are a large contributor to disproportionate minority contact in the juvenile justice system (Schept et al., 2014; Hirschfield 2018).

While much research has been done on the existence of racial disparities in disciplinary outcomes and their relationship with several school factors, no studies have investigated how these disparities are impacted by district spending and their direct attempts to reduce disparities in their schools. Specifically, no studies have examined the per-pupil expenditures of school districts and the amount of funding they put towards programs meant to promote diversity. This study works to fill this gap by examining Virginia high schools for racial disciplinary outcome disparities and this district spending.
Disparities in Disciplinary Outcomes

Research has consistently found that race, gender, and disability status are predictors of school disciplinary outcomes. Male students tend to face harsher disciplinary outcomes than females, with one study finding that male students represented about two-thirds of disciplined students despite male students only making up about half of the public-school population (Ispa-Landa, 2017; Scott and Nadler, 2018). Students with disabilities face similar disparities. In the 2013-2014 school year, students with disabilities represented about one-fourth of students disciplined despite making up less than one-seventh of the total student population (Scott and Nadler, 2018).

Still, while gender and disability effects remain significant, studies examining disparities in discipline have found that race acts as the most predictive factor in student discipline and disciplinary patterns based on race persist when controlling for gender or disability status (Vincent et al., 2012; Scott and Nadler, 2018). Black, Hispanic, American Indian/Alaska Native (AI/AN), and multiracial students receive disproportionate disciplinary action compared to their White and Asian counterparts, with disparities between Black and White students typically being the greatest (Vincent et al. 2012; Skiba et al. 2014; Scott and Nadler, 2018).

Several studies have also found that despite accounting for other factors, race effects are not mitigated (Skiba et al., 2014; Scott and Nadler, 2018; Riddle & Sinclair, 2019). For example, through an analysis of data from the Civil Rights Data Collection along with a direct review of individual student discipline cases, Scott and Nadler (2018) found that Black students faced “disproportionate levels of discipline” even after controlling for offense type, school type, and school poverty. Skiba et al. (2014) studied the varying impacts of individual, behavioral, and school-level characteristics on disproportionality in out-of-school suspensions through a multilevel analysis which utilized both existing data from school disciplinary records and data from surveying principals on their attitudes towards discipline. This research supports the findings of Scott and Nadler, arguing that although offense type often indicates the severity of the consequence, this variable cannot account for the large racial disparities in disciplinary outcome (Skiba et al. 2014). Instead, they point to school-level variables such as school policies and administrative bias as the largest contributors to the observed disproportionality (Skiba et al. 2014). Riddle and Sinclair (2019) corroborate this point through a series of Bayesian multilevel logistic regressions which found county levels of both explicit and implicit bias to be directly associated with levels of racial disparity in student discipline. This finding points to the need for “interventions that focus on school policies and practices—principal leadership, achievement orientation, and the possible contributions of implicit bias—rather than on the characteristics of students or their behavior” in order to address these disparities (Skiba et al., 2014).

Student Discipline and the Juvenile Justice System

Increasingly harsh disciplinary policies such as policing in public schools and zero-tolerance policies have led many scholars to point out the formation of a school-to-prison pipeline (Nicholson-Crotty et al., 2009; Winn et al., 2011; Schept et al., 2014; Moody, 2016). Not only is there the concern that this pipeline is placing focus on over-punitive discipline policies in schools, but also that racial disparities in disciplinary action are directly fueling racial disparities in the juvenile justice system. This claim is substantiated by Nicholson-Crotty et al. (2009), who, through a meta-analysis of state and county-level data, corroborated the existence of significant disparities in student discipline and pointed to these disparities having a “significant and substantively meaningful impact on the juvenile justice referral rates of blacks relative to whites.” Furthermore, although disproportionate minority contact (DMC) in the juvenile justice system can be explained by more than just the school-to-prison pipeline, school disciplinary practices tend to exacerbate and reinforce these effects (Hirschfield, 2018). While student discipline may not directly lead to contact with the juvenile justice system through referral, students who face more punitive disciplinary actions are more likely to drop out and, in turn, more likely to be arrested later in their youth (Hirschfield, 2018). Reducing racial disparities in student discipline should prove to reduce the DMC in the juvenile justice system.
Diversity Inclusion Initiatives

While there is little argument over the existence of disparities in student discipline, successful strategies for eliminating these disparities remain unclear. Hirschfield (2018) suggests that efforts aimed at reducing suspension rates have the potential to reduce and eliminate DMC in the juvenile justice system. However, he warns that the accessibility and target audience of such programs is key in ensuring they meet this goal, as programs that are more accessible or targeted towards “well-off schools or White students…may actually exacerbate DMC, even as they dramatically reduce suspension” for Black students (Hirschfield, 2018). Furthermore, while these programs may reduce suspension rates, they address behavioral characteristics rather than school-level characteristics and, therefore, are less likely to impact disparities in student discipline. Instead, as suggested by Skiba et al. (2014) and Riddle and Sinclair (2019), strategies for reducing these disparities should focus on eliminating bias. One possible strategy is the implementation of diversity inclusion initiatives. These efforts seek to promote a diverse workforce, ensure equitable opportunities, and create a welcoming environment (Padamsee and Crowe, 2017). Such programs have become widespread over the past few decades in a variety of fields including education. Yet, some scholars argue that diversity programs alone are not enough to ensure equitable practices. For example, research looking at hotel diversity programs found that the implementation of diversity programs was only one small factor in improving the openness and cultural inclusivity of the workplace (Herdman and McMillen-Capehart, 2010). To that point, Padamsee and Crowe (2017) argue that practices must focus not only on diversity and inclusion, but also equity to truly be effective. If implemented properly in a school environment, such initiatives help to improve student-teacher relationships and learning environments (Padamsee and Crowe, 2017). Still, research into the efficacy of such programs is fairly undeveloped and the impact diversity inclusion efforts have on disparities in student discipline are unknown.

Gaps

The effects of race on student discipline have been widely examined and few scholars disagree that disparities exist. Several studies into these disparities have investigated the effects of school, county, and state characteristics. However, no research has examined how the spending of districts and their direct efforts to reduce disparities in education affect disparities in student discipline. While Skiba et al. (2014) and Riddle and Sinclair (2019) suggest that initiatives to reduce implicit and explicit bias may reduce disparities in student discipline, studies have not examined the merit of this suggestion and any such initiatives. One possible mitigator could be the implementation of diversity inclusion programs. While Padamsee et al. posit that such programs are the first step in creating an inclusive and equitable environment, they do so more generally by using qualitative data based on staff perceptions (Padamsee and Crowe, 2017). Spending on such initiatives can be used as an indicator of a district's commitment to ensuring a diverse and equitable school environment. While many districts brag about their diversity, few make concrete efforts such as the implementation of diversity inclusion. The current research works to fill this gap by looking at the relationship between racial disparities in discipline and school district spending. To do so, the following question is posed:

Is overall spending and spending specifically targeted towards diversity and inclusion programs correlated with racial disparities in student discipline?

To answer this, the question has been broken up into four more specific questions:

1. Is there a correlation between the recorded violation risk ratio for Black non-Hispanic students and the proportion of budget put towards diversity and inclusion initiatives by a school district?
2. Is there a correlation between the recorded violation risk ratio for Hispanic students and the proportion of budget put towards diversity and inclusion initiatives by a school district?
3. Is there a correlation between the recorded violation risk ratio for Black non-Hispanic students and per-pupil expenditures by a school district?
4. Is there a correlation between the recorded violation risk ratio for Hispanic students and per-pupil expenditures by a school district?

Methods

To understand the relationship between racial disparities in student discipline and monetary initiatives, this paper uses a meta-analysis using data from the Virginia Department of Education’s (VDOE) Safe Schools Information Resource (SSIR) and the operating budgets of Virginia school districts. This meta-analysis allowed for a large amount of data to be collected spanning multiple years and covering all of Virginia. Moreover, it allowed for data to be collected confidentially on a typically sensitive issue. Though this method cannot show causation and does not guarantee that all desired information is available, it still proved most beneficial for answering the questions posed.

When studying the correlation between racial disparities in student discipline and budgeted initiatives, levels of disparity that exist in school districts had to first be defined. Disparities were first determined by compiling and analyzing data on individual student offenders from the VDOE’s SSIR, a database that compiles information from public schools on disciplinary infractions and actions taken. The database was filtered to include information from 2015-2019 from all public high schools in all Virginia districts on male students with no disabilities. Male students were examined because they make up the largest proportion of disciplinary referrals. Students with no disabilities were looked at in order to act as a control, since disability status often unfairly influences student discipline. Furthermore, there is a wide range of disabilities, some which may skew disciplinary outcomes more than others. The three demographic groups examined were Black, Hispanic, and White students. For the purposes of this study, the only minority groups considered were Black and Hispanic students as they are the largest minority groups. This ensured sufficient data for all demographic groups examined was available. For each high school, data was compiled on total individual student offenders, individual student offenders by demographic group, total student population, and student population by demographic group. This information was then used to determine the levels of racial disproportionality and disparity at each high school. Risk index and risk ratio were used as measures of disproportionality and disparity, respectively. Risk index indicates the level of risk that a student belonging to a certain demographic group is for being reported for a disciplinary offense. Risk index is given by the equation: 

\[ I = \frac{p_n}{p_N} \]

where \( p_n \) represents the proportion of the examined demographic group out of the total individual student offenders and \( p_N \) represents the proportion of the examined demographic group out of the total student population. Risk index was calculated for Black, Hispanic, and White students. These risk indices can be used to calculate risk ratio, which is given by the equation:

\[ RR = \frac{I_A}{I_B} \]

where \( I_A \) and \( I_B \) denote, respectively, the risk index for the demographic group being examined and the risk index for White students. This ratio describes how many times as likely the demographic group being examined is to be reported for a disciplinary offense compared to their White counterparts. For the purpose of this measure, White students are used as the point of comparison as they consistently face lower disciplinary action than their Black and Hispanic peers. Risk ratio was calculated for Black and Hispanic students for each school and averaged for each district.

After determining levels of racial disparity in student discipline throughout Virginia school districts, an analysis of school budgets was performed. To do so, the ten districts with the highest average risk ratio and the ten districts with the lowest average risk ratio were sampled given that all necessary budget information was available for each district. This portion of the analysis examined two key budget variables: the proportion of budget going towards diversity inclusion initiatives and per-pupil expenditures. Diversity inclusion is defined as any initiative meant to create a more equitable and welcoming environment for all. In a school setting, these efforts can be seen through the hire of diversity liaisons or the implementation of diversity training programs, to name a few examples. Per-pupil expenditures are defined as the average government expenditure per student in a given school district. These expenditures often include expenses such as textbooks, class materials, and teacher salaries. Per-pupil expenditures act as an
indicator of the wealth and resources of a district. For each district, the budgets for fiscal years 2016-2019 were considered for data on total operating funds, per-pupil expenditures, and the amount of money spent on diversity inclusion initiatives. In order to identify diversity inclusion initiatives, the keywords diversity/diverse, culture/cultural, minority, equity/equitable, disparity, and disproportionality were used to pinpoint possible efforts going towards this cause. Which initiatives truly fell under diversity inclusion was then at the discretion of the researcher. The proportion of each budget going towards diversity inclusion was then calculated as the total money spent on diversity inclusion divided by the total operating fund. This allowed for districts with different-sized operating budgets to be compared.

Along with the descriptive analyses, a Pearson’s r test for correlation was performed to examine the relationship between risk ratio and diversity inclusion as well as risk ratio and per-pupil expenditures. Statistical significance was determined at an alpha level of 0.05.

**Results**

The final analysis examining racial disparities in student discipline studied 314 public high schools across 126 school districts in Virginia. Twenty of these districts were sampled for further analysis and four operating budgets from each district were reviewed.

**Table 1. Descriptive Analysis.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk ratio Black students</td>
<td>2.35</td>
<td>2.22</td>
<td>0.75</td>
<td>5.11</td>
</tr>
<tr>
<td>Risk ratio Hispanic students</td>
<td>1.54</td>
<td>1.42</td>
<td>0.67</td>
<td>4.51</td>
</tr>
<tr>
<td>% of budget towards diversity inclusion</td>
<td>0.05</td>
<td>0</td>
<td>0.096</td>
<td>0.35</td>
</tr>
<tr>
<td>Per-pupil expenditures (dollars)</td>
<td>12,508.39</td>
<td>11,770.88</td>
<td>8,976.75</td>
<td>2,483.14</td>
</tr>
</tbody>
</table>

**Table 2. Pearson’s r Test for Correlation for the Relationship Between Risk Ratios and Budget Variables.**

<table>
<thead>
<tr>
<th>Demographic Group</th>
<th>Test Variable</th>
<th>Diversity Inclusion Initiatives</th>
<th>Per Pupil Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Students</td>
<td>Coefficient (r):</td>
<td>0.42</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>p-value:</td>
<td>0.06</td>
<td>0.002*</td>
</tr>
<tr>
<td>Hispanic Students</td>
<td>Coefficient (r):</td>
<td>0.28</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>p-value:</td>
<td>0.3</td>
<td>0.001*</td>
</tr>
</tbody>
</table>

1Asterisk indicates the p-value is statistically significant at an alpha level of 0.05.
Table I shows the descriptive statistics for the key variables. This includes mean and median as measures of central tendency and standard deviation and range as measures of dispersion. Results of this descriptive analysis found that Black high schoolers in Virginia had a notably higher chance of being reported for a disciplinary offense compared to their White peers (2.4 times as likely). In one district (Arlington County), this number reached as high as five times as likely, and at some schools (Yorktown High School, Arlington County; Broad Run High School, Loudoun County), greater than seven times as likely. The likelihood of Hispanic high school students in Virginia being reported for a disciplinary offense compared to White students was also significantly large (1.5 times as likely). In some districts (Charlottesville City) and schools (Charlottesville High, Charlottesville City; Stone Bridge High, Loudoun County) this number reached as high as four times as likely. Risk ratios for both Black and Hispanic students varied greatly across districts as shown by the results for standard deviation and range (Table I).

The results for the Pearson’s r test for correlation are shown in Table II. The risk ratios for both demographic groups were shown to be positively correlated with the proportion of budget going towards diversity inclusion, with the strength of the correlation varying slightly between the two. Neither correlation was found to be statistically significant at an alpha level of 0.05. The risk ratios for both demographic groups were also found to be positively correlated with per-pupil expenditures. While the strength of the two correlations varied slightly, both were statistically significant at an alpha level of 0.05. Wealthier districts were more likely to have greater levels of racial disparity in reported student offenders.

This relationship can be seen in Figure I which shows the correlation between per-pupil expenditures and risk indices for the three demographic groups examined. Both risk indices for Black and Hispanic students are positively correlated with per-pupil expenditures. Conversely, the risk index for White students is negatively correlated with per-pupil expenditures. This means that, in wealthier districts, while minority students experience a greater risk of being reported for a disciplinary offense, White students experience less risk. Therefore, as per-pupil expenditures increase, the risk indices for the two minority groups diverge from the risk indices for White students leading to greater disparities.
Discussion

The results of the current research support past studies that have pointed out the large racial disparities that exist in student discipline. While many conversations have recently centered around the issue of racial disparities and inequity in the education system, the need for change remains ever-present.

Although the results indicated a positive correlation between racial disparities in student discipline and diversity inclusion initiatives, this correlation was not statistically significant. At first glance, this correlation seems counterintuitive. However, this could be because schools that have larger levels of disparity see a greater need to implement diversity inclusion initiatives. If a district has significant disparities it becomes more difficult to ignore which would push them to put a solution in place. In fact, despite the positive correlation found, it is still possible that diversity inclusion initiatives can help mitigate this issue or are successful in reducing disparities in other areas of education. Given the results for the correlation between risk ratios and per-pupil expenditures, it is likely that this also contributes to the relationship between risk ratios and diversity inclusion spending as wealthier counties are more likely to have expendable funds to pay for initiatives such as diversity inclusion. Because the current research was unable to examine trends over time, speculations can only be drawn about the racial disparities in student discipline in districts based on their diversity inclusion spending, not about the efficacy of such spending on reducing racial disparities. Moreover, caution must be exercised since the researcher had to make judgements about what counted as diversity inclusion spending. Still, these results point to the need for districts to reevaluate and investigate their spending on these initiatives rather than treat it as an immediate and guaranteed solution. Lastly, these results do not indicate the inaccuracy of Skiba et al. (2014) and Riddle and Sinclair’s (2019) suggestions that initiatives reducing bias should help reduce disparities. Instead, they indicate that the current approaches to diversity inclusion may not truly be effective at reducing bias.

The risk ratios for both demographic groups were very strongly positively correlated with per-pupil expenditures and these relationships were statistically significant. Although it is unreasonable to assume that per-pupil expenditures have a direct impact on racial disparities in discipline, there is likely a common third variable causing this correlation. Because per-pupil expenditures are an indication of a district’s wealth and resources, and wealthier districts tend to be more predominantly White, it is likely that the demographics of a district are impactful on these disparities. For example, Arlington County, a predominantly White county, had some of the greatest levels of disparities in reported student offenders, as well as the highest average per-pupil expenditures over the four years examined. The district itself is segregated across the North and South, with the two high schools in North Arlington (Washington-Liberty and Yorktown) being predominantly White institutions and the high school in South Arlington (Wakefield) a majority-minority school. This difference manifests itself when comparing the risk ratios of these schools with the risk ratio for Black students at Washington-Liberty being nearly three units greater than that at Wakefield and the risk ratio for Black students at Yorktown more than four units greater than that at Wakefield. This suggests that the demographics of a district play a role in racial disparities in student discipline. If this is the case, and the demographics between different schools in a school district vary widely as they do in Arlington, this could point to the need for districts to craft different solutions to disparities in discipline for different schools. Therefore, future solutions not only need to look at how to effectively reduce administrative bias, but also should take into account the characteristics and needs of each individual school that is affected.

The implications of the current research point to future areas of focus when addressing this issue. Specifically, future research should investigate the relationship between disparities and per-pupil expenditures further. This should include examining the correlation between disparities in discipline and the demographics of a district as well as possible segregation between the schools in that district. Along with student demographics, teacher demographics of a district and schools within that district should be examined.

Future research should also inquire into the effects of diversity inclusion initiatives over time as the current research was unable to address that. Additionally, research could question the differences in efficacy between different types of diversity inclusion programs.
Lastly, future research should conduct a closer examination of how school districts are truly spending their money. Schools tend to use buzzwords in their budget books such as “diverse” and “equitable,” but often do not actually put that money into meaningful initiatives that promote those values. The current research was limited in this way, and as a result, it made accurately calculating the amount of money going towards diversity inclusion difficult. Collecting data on this topic directly from the schools could provide more accurate results and better insight into the effectiveness of diversity inclusion initiatives in a school environment.

Conclusion

Based on the analysis of the VDOE data, it is clear that racial disparities in student discipline are abundant throughout Virginia high schools. Furthermore, the strong correlation between such disparities and per-pupil expenditures suggests that the wealth of a district acts as a predictor of the levels of disparities that exist within their disciplinary systems, with minority students in wealthier districts facing higher risk of disciplinary action. Although these results begin to point to possible factors that contribute to racial disparities in student discipline, much more work needs to be done to better understand this issue and find ways to truly solve it.

Continuing to investigate the racial disparities in student discipline is key in order to understand how to eliminate them. This study serves as a basis for future research to look into eradicating these disparities and as insight into how to begin to reevaluate our approach to this issue.

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