The Allocation of Support Personnel in North Carolina

In this research brief, we examine the ratios of support personnel (i.e. school counselors, psychologists, and social workers) to students in North Carolina, assess whether support personnel are equitably distributed to schools with greater student need, and track how support personnel resources have changed over time. These analyses are particularly relevant given the role of support personnel in helping schools meet the needs of the whole child. We find that: (1) states and school districts need to account for level of effort when calculating support personnel ratios; (2) on average, North Carolina school districts concentrate support personnel in relatively high-need schools; and (3) over the course of the last decade, high-need schools have faced markedly sharper cuts in support personnel resources than schools with fewer economically-disadvantaged or under-represented minority students.

Introduction

School counselors, psychologists, and social workers (i.e. student support personnel) benefit the socio-emotional and academic development of students, especially in schools with large populations of economically-disadvantaged and under-represented minority students. As such, states and school districts have an obligation to adequately staff schools with support personnel and to ensure that support personnel are equitably distributed across schools. Meeting this obligation is particularly important since schools today are educating more at-risk students and being asked to address an increasingly broad set of student needs.

In this research brief, we examine the ratios of support personnel to students in North Carolina public schools (NCPS), assess whether support personnel are equitably distributed to schools with greater student need, and track how support personnel resources have changed over time.

With these analyses we provide more accurate support personnel ratios, highlight opportunities and challenges for high-need schools, and gain insight into the ways that support personnel resources vary as states and districts experience fiscal downturns and recoveries. Our work may have direct implications for state/district-level school funding, regulations on support personnel ratios, and how district and school leaders allocate personnel resources.

Background

In our research we focus on traditional (non-charter) and magnet public schools in North Carolina during the 2007–08 through 2015–16 school years.[1] Annually, this sample includes approximately 1,375 elementary schools, 420 middle schools, and 475 high schools. These schools enroll 1.4 million students and employ approximately 4,100 school counselors, 650 school psychologists, and 920 school social workers.

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[1] We exclude special education, alternative education, vocational education, and hospital schools from our analyses because they have significantly higher concentrations of support personnel.

A key contribution of our work is calculating more accurate support personnel ratios. Traditional body count ratios simply divide the number of school counselors, psychologists, or social workers at a school by the school's enrollment. While traditional body count ratios are straightforward to calculate and communicate, they do not consider level of effort at a given school. This is problematic if support personnel work part-time across multiple schools. As a result, traditional body count ratios may overestimate the intensity of support personnel resources available to students.

To calculate more accurate support personnel ratios, we use licensure and certified salary files from the North Carolina Department of Public Instruction. Specifically, we combine licensure and salary files to identify school employees who hold a support personnel license—school counselor, psychologist, or social worker—and who were paid in that role in a given year. Importantly, salary data also allow us to track the number of pay periods support personnel work at a given school and their full-time equivalency (FTE) status during each of those pay periods. With pay period and FTE data, we calculate the number of 'FTE units' that support personnel worked at a given school. For example, a school counselor employed at a school for 10 pay periods at 100 percent FTE worked 1,000 FTE units. For each school in our sample, we sum these FTE units for school counselors, psychologists, and social workers and for all support personnel combined. We divide these summed FTE units by a school's average daily membership to create our FTE support personnel ratios. These ratios capture the number of FTE support personnel per 1,000 students at the school.

What are the ratios of support personnel to students in NCPS?

Using data from 2007-08 through 2015-16, the top panel of Table 1 displays FTE ratios for support personnel in public (non-charter) elementary, middle, and high schools in North Carolina. These data show that high schools have the greatest concentration of counseling resources—4.57 FTE school counselors per 1,000 students compared to 2.53 and 3.08 FTE school counselors per 1,000 students in elementary and middle schools, respectively. School psychologists are concentrated in elementary schools while school social workers are evenly distributed across school levels. These data speak to the specific roles that support personnel fill in college and career advising (counselors in high schools) and determining students' eligibility for special education and mental health services (psychologists in elementary schools). Overall, elementary schools average 3.86 FTE support personnel per 1,000 students. Middle and high schools average 4.21 and 5.47 FTE support personnel per 1,000 students, respectively.

Table 1: Student Support Personnel Ratios (2007–08 through 2015–16)

	Elementary Schools	Middle Schools	High Schools
FTE Ratios			
School Counselors	2.532	3.085	4.570
School Psychologists	0.599	0.364	0.168
School Social Workers	0.728	0.756	0.731
All Support Personnel	3.860	4.206	5.469
Traditional Body Count Ratios			
School Counselors	1:350	1:300	1:206
School Psychologists	1:824	1:1264	1:1954
School Social Workers	1:749	1:884	1:915
All Support Personnel	1:185	1:190	1:155
Adjusted Body Count Ratios			
School Counselors	1:395	1:324	1:219
School Psychologists	1:1669	1:2747	1:5952
School Social Workers	1:1374	1:1323	1:1368
All Support Personnel	1:259	1:238	1:183

Note: The top panel of this table displays FTE ratios for student support personnel in elementary, middle, and high schools. FTE ratios are expressed as the number of FTE personnel per 1,000 students. The middle panel of this table displays traditional body count ratios for student support personnel. The bottom panel of this table displays adjusted body count ratios for student support personnel. We adjust the student counts in these ratios based on the FTE ratios in the top panel of this table. All ratios in Table 1 use data from the 2007-08 through 2015-16 school years.

The middle panel of Table 1 presents traditional body count ratios for school counselors, psychologists, and social workers and for all support personnel combined. We calculated these ratios by identifying the number of support personnel employed at a given school and dividing that value by the school's average daily membership. Like the FTE ratios, traditional body count ratios indicate that school counselors are concentrated in high schools. They also show that school psychologists and social workers are more concentrated in elementary schools. For instance, there is one school counselor per 206 high school students and one school psychologist per 824 elementary school students. Across all support personnel, traditional body count ratios are 1:185 students in elementary schools, 1:190 students in middle schools, and 1:155 students in high schools.

Because traditional body count ratios may overestimate the intensity of support personnel resources, the bottom panel of Table 1 displays adjusted body count ratios. For these calculations we held constant the number of support personnel and adjusted the number of students based on the FTE ratios. Comparing the middle and bottom panels of Table 1, adjustments show that traditional body count ratios only slightly overestimate the intensity of school counseling resources. However, there are large differences between the traditional and adjusted body count ratios for school psychologists and social workers. These differences are explained by school psychologists and social workers working part-time across multiple schools. For instance, within a given year, school counselors work in an average of 1.10 schools, school psychologists work in an average of 1.99 schools, and school social workers work in an average of 1.59 schools. Traditional body count ratios count these support personnel as '1' but FTE ratios capture true level of effort.

Are support personnel equitably distributed to high-need schools in North Carolina?

Using data from 2007-08 through 2015-16, Figures 1 and 2 display FTE ratios for support personnel in high-poverty and high-minority elementary, middle, and high schools versus non-high-poverty and non-high-minority schools.[2] Across school levels, FTE ratios for support personnel are significantly higher in high-need environments. For example, high-poverty middle schools average 5.19 FTE support personnel per 1,000 students; non-high-poverty middle schools average 3.88 FTE support personnel per 1,000 students. Data are similar for the percentage of under-represented minority students—high-minority high schools average 6.46 FTE support personnel per 1,000 students while non-high-minority high schools average 5.14 FTE support personnel per 1,000 students. Collectively, these data indicate that North Carolina school districts concentrate student support personnel in schools with greater student need.[3]

Figure 1: Support Personnel FTE Ratios in High-Poverty Schools (2007-08 through 2015-16)
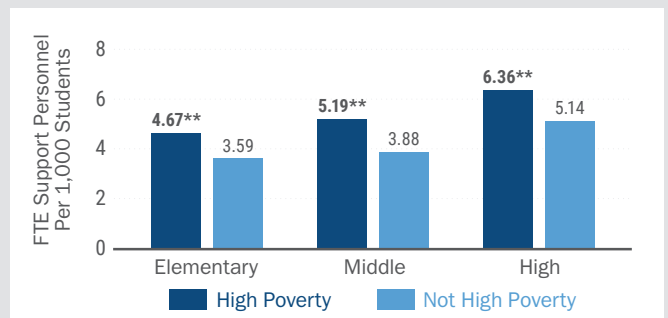
Note: *Using data from 2007-08 through 2015-16, this figure displays FTE ratios for student support personnel in high-poverty vs. non-high-poverty schools. '**' indicates statistically significant differences between high-poverty and non-high-poverty schools at the 0.001 level.*

Figure 2: Support Personnel FTE Ratios in High-Minority Schools (2007-08 through 2015-16)
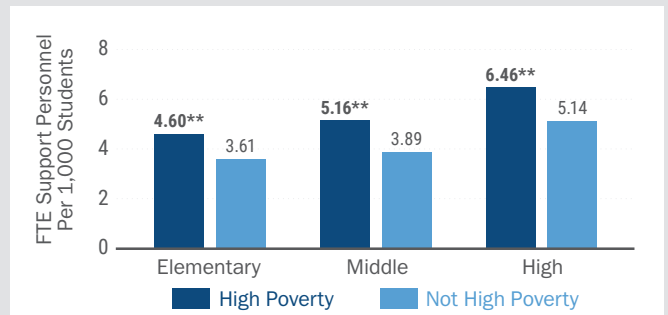
Note: *Using data from 2007-08 through 2015-16, this figure displays FTE ratios for student support personnel in high-minority vs. non-high-minority schools. '**' indicates statistically significant differences between high-minority and non-high-minority schools at the 0.001 level.*
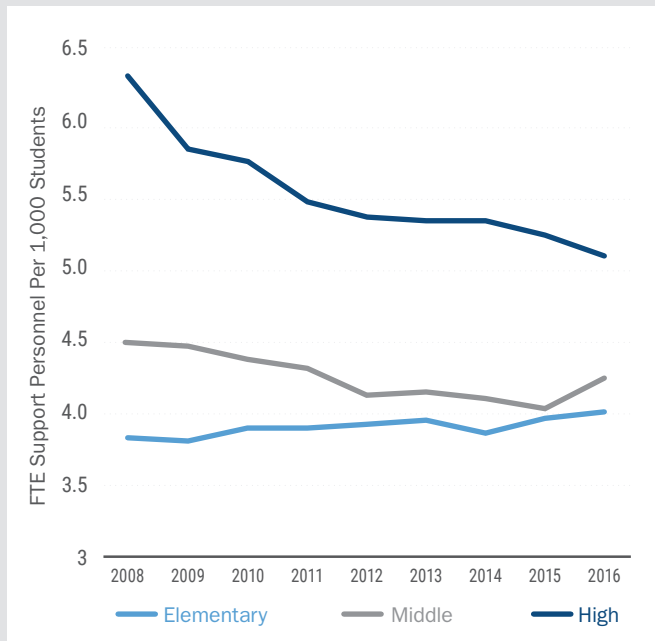
[2] We define high-poverty schools as those in the top quartile for the percentage of economically-disadvantaged students; high-minority schools are those in the top quartile for the percentage of under-represented minority students.

[3] In more rigorous analyses we regress FTE ratios for support personnel on the percentage of economically-disadvantaged and under-represented minority students. These models also include other school controls and a school district fixed effect. Results from these models are comparable to the descriptive data in Figures 1 and 2.

# What are the trends in support personnel ratios over time?

It is likely that support personnel resources have fluctuated over time, especially with the onset of the Great Recession and the financial strain it placed on North Carolina schools. Therefore, Figure 3 displays FTE ratios for support personnel in elementary, middle, and high schools across our nine-year study period. Over time, there has been a modest rise in the intensity of support personnel ratios in elementary schools, from 3.79 FTE support personnel per 1,000 students in 2008 to 3.96 FTE support personnel per 1,000 students in 2016. Conversely, middle and high schools have experienced drops in support personnel ratios. FTE ratios in middle schools decreased from 4.45 per 1,000 students in 2008 to 3.99 per 1,000 students in 2015. This ratio spiked back up to 4.20 per 1,000 students in 2016. High schools have experienced the sharpest drops in support personnel, from 6.27 FTE support personnel per 1,000 students in 2008 to 5.05 FTE support personnel per 1,000 students in 2016.[4]

Figure 4: Support Personnel FTE Ratios by High-Poverty Status (2007-08 through 2015-16)
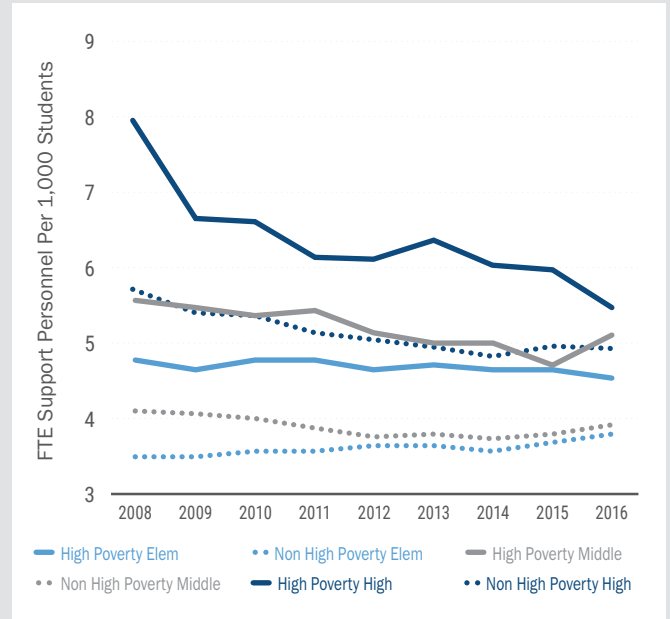
Note: *For high-poverty and non-high-poverty elementary, middle, and high schools, this figure displays average FTE ratios for student support personnel in the 2007-08 through 2015-16 school years.*

Figure 3: Support Personnel FTE Ratios (2007-08 through 2015-16)

Note: *This figure displays average FTE student support ratios in elementary, middle, and high schools in the 2007-08 through 2015-16 school years.*

To extend our analyses on support personnel trends, Figure 4 displays FTE ratios for high-poverty and non-high-poverty elementary, middle, and high schools in each year of our study period.[5] Trends in elementary schools differ by high-poverty status. High-poverty elementary schools experienced a modest decline in FTE ratios during the study period while non-high-poverty elementary schools experienced a nine percent increase in FTE ratios. FTE ratios for support personnel in high-poverty and non-high-poverty middle schools decreased between 2008 and 2016. However, the percentage decrease in FTE ratios was twice as large in high-poverty middle schools (8.6 versus 4.2 percent). Likewise, the percentage decrease in FTE ratios in high-poverty high schools was more than two times greater than the percentage decrease in FTE ratios in non-high-poverty high schools (31.7 versus 13.8 percent). These data, paired with the values in Figures 1 and 2, indicate that North Carolina school districts concentrate support personnel in high-need schools but also make larger cuts in support personnel resources from these high-need environments.

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[4] When we examine FTE ratios by support personnel position, we find that FTE ratios have increased for elementary school counselors and social workers during the study period. FTE ratios for school counselors, psychologists, and social workers are all down in middle and high schools.

[5] Results are comparable in high-minority and non-high-minority schools.

Discussion

Support personnel play an integral role in helping schools meet the needs of the whole child. As such, it is important that districts adequately staff schools with counselors, psychologists, and social workers, especially when these schools serve a high-need student population. This motivated our analyses of support personnel ratios in North Carolina. Before considering the implications of our findings, it is important to underscore the primary limitation of this work: ratios, even more accurately calculated FTE ratios, may not measure students' access to nor quality of interactions with support personnel. FTE ratios are an indicator of quantity but are not necessarily a measure of quality in support personnel.

Overall, there are three key takeaways from our analyses. First, ratios of support personnel to students need more precise measurement. Traditional body count ratios do not take level of effort into account, and thus, overestimate the intensity of support personnel resources available to students. States and districts need to calculate more accurate ratios and communicate those ratios to stakeholders. This can enable evidence-based decision-making regarding the allocation of support personnel. Second, North Carolina school districts concentrate support personnel in high-need schools. This is encouraging since high-need schools often require more resources and supports to meet student needs. Finally, states and districts need to ensure that support personnel in high-need schools are better protected during fiscal downturns. High-need schools in North Carolina experienced much larger cuts in support personnel over our study period. This may leave these schools less well-equipped to provide personalized attention and services to students.

For more research on this topic

Carey, J. & Dimmitt, C. (2012). School counseling and student outcomes: Summary of six statewide studies. *Professional School Counseling, 16*(2), 146-153.

Carrell, S., & Hoekstra, M. (2014). Are school counselors an effective educational input? *Economic Letters, 125*, 66-69.

Reback, R. (2010). Non-instructional spending improves noncognitive outcomes: Discontinuity evidence from a unique elementary school counselor financing system. *Education Finance and Policy, 5*(2), 105-137.

Woods, C.S. & Domina, T. (2014). The school counselor caseload and the high school–to–college pipeline. *Teachers College Record, 116(1)*, 1–30.

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