

**Beyond Teachers:
Estimating Individual School Counselors' Effects on Educational Attainment**

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High school students face hundreds of choices that have significant long term effects on educational attainment and labor market outcomes. Students must decide which courses to take, how much effort to invest in school, whether and where to pursue postsecondary education, and what careers to explore. Many people, especially adolescents, lack the information and capacity needed to optimally navigate complex choices like these (Bhargava, Loewenstein & Snyder, 2017; Gennaioli & Shleifer, 2010; Hastings, Neilson & Zimmerman, 2015; Heller et al, 2017; Hoxby & Avery, 2013; Jensen, 2010).

Perhaps because of this complexity, many school systems employ school counselors.¹ High school counselors may help students understand the returns to education and careers, provide assistance which lowers the costs of applying to college, and recommend specific secondary and postsecondary pathways. In the U.S., for example, counselors are the second largest group of educators and public schools spend billions of dollars a year on them. Counselors typically serve many students, with average caseloads close to 250 students in high schools, so small changes in one counselor's effectiveness can impact many students.² Counselors' potential to affect college success and reduce educational inequity has drawn national attention and inspired policy changes, such as Michelle Obama's Reach Higher initiative and the expansion of counselor hiring in Colorado and New York City. The private college counseling industry is also rapidly growing, indicating both that people believe counselors play an important role in college outcomes and that publicly funded counseling is not sufficiently meeting demand for such services.³

This paper provides the first quantitative evidence on the causal effects of individual high school counselors. School counselors are largely neglected by the literature, especially compared to the huge volume written on teachers. I demonstrate that counselors are an important element of the education production function and that their effects are largely driven by providing students information and direct assistance, such as recommendation letters and SAT fee waivers. Counselors' effects on educational attainment appear similar in magnitude to teachers' effects.

I leverage the quasi-random assignment of students to counselors in many Massachusetts high schools to causally identify the impacts of individual counselors on student outcomes. In about a third of Massachusetts high schools, students are assigned to counselors based on the first letter (or two) of their last name. These assignments vary over time and across schools based on the distribution of student names in a school and the student to counselor ratio. I estimate the impact of a student's first assigned counselor on her outcomes by using these rules as an instrument and controlling for the first letter of the student's last name, year, school, demographics and eighth grade achievement. This paper consists of five main findings.

First, I show that counselors significantly vary in their influence on high school graduation, college enrollment, selectivity and persistence. The standard deviations of counselors' effects on high school graduation and four-year college attendance are about two percentage points. Their effects on college

¹ I sometimes refer to general high school counselors, now called school counselors, as guidance counselors for clarity. While the profession has moved away from the term "guidance counselor", I use it in this context since it is still used by many schools in my sample and it helps clarify the type of counselor on which my research is focused. More details on the preferred title for counselors is available here <https://www.schoolcounselor.org/asca/media/asca/Careers-Roles/GuidanceCounselorsSchoolCounselor.pdf>

² The Common Core of Data indicates that, in 2017, there was one secondary school counselor per 237 students. This may, however, understate caseloads since it includes secondary school counselors who are not guidance counselors. National survey data indicates that the average high school caseload is 286 students (Clinedinst & Patel, 2018).

³ There are more than 8,000 private college counselors, whose services cost approximately \$5,000 (Sklarow, 2018). There are also a growing number of non-profits providing college counseling to low-income and minority students.

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persistence are slightly smaller but still statistically significant. Leave-year-out estimates of effectiveness are valid out-of-sample predictors and they indicate similar benefits from assignment to a counselor predicted to be one standard deviation above average on a composite measure of effectiveness. Counselors also impact suspensions, AP and SAT test-taking as well as the type of college a student attends.

Second, counselor assignment matters most for students who are low-achieving and low-income. These students are the least likely to receive college information from their parents or social networks and are also less likely to graduate high school and attend college than their peers (Hoxby & Avery, 2013; Radford, 2013). For high achieving students, counselors are primarily important for increasing college selectivity. In general, good counselors are effective at improving all measures of educational attainment, however, counselors who improve student behavior in high school tend to be different from those who increase selective college attendance. This specialization is not surprising given counselors' large caseloads and the breadth of skills required to excel at all of their duties.

Third, counselors' effects on educational attainment appear driven by the information and direct assistance they provide students rather than through improved short-term skills. Counselors do not significantly vary in their effects on students' short-term cognitive skills and their effects on non-cognitive skills are not predictive of longer-term outcomes. Counselors' largest measurable effects are on college readiness and selectivity, and effectiveness on these dimensions is most predictive of students' educational attainment. This indicates that educators can influence students' long-term outcomes through channels other than short-term skills. They may increase educational attainment by providing students information about and improved access to education opportunities.

Fourth, I show that students benefit from being matched to a counselor of the same race and from having a counselor who attended a local college. Non-white students are more likely to graduate high school and attend college if assigned to a non-white counselor. Counselors who earned a bachelor's degree in Massachusetts also increase high school completion and college enrollment more than counselors educated elsewhere. This may be because locally educated counselors know more about the local college market or because they are more familiar with state graduation requirements and the needs of local students. Counselors also increase college attendance at the type of college they attended.

Finally, I provide evidence that the benefits, in terms of educational attainment, from improving access to effective counselors will likely be similar to or larger than those from reducing counselor caseloads. Consistent with research on class size, I find that students who share a counselor with more students have lower educational attainment (Angrist & Lavy, 1999; Krueger, 1999; Fredricksson et al, 2013). Much of the negative association between caseloads and student outcomes, however, disappears when I control for student or school characteristics. Using within school variation in caseloads, I find that hiring a new counselor in every Massachusetts high school will likely lead to smaller gains in educational attainment than increasing counselor effectiveness by one standard deviation.⁴ Increasing access to effective counselors will also likely have effects similar to many successful college-going interventions and to increasing teacher effectiveness.

⁴ Counselor caseloads in Massachusetts' high schools are near the national average for high schools. My analysis cannot speak to the benefits of dramatically reducing caseloads, the benefits of hiring an additional counselor in schools with caseloads well above the national average, or benefits which cannot be measured using administrative data.