

ABSTRACT

CLAYTON, ASHLEY BROOKE. *Assisting Students in the College Choice Process: Three Essays on the Role and Effectiveness of College Advising Professionals in Public High Schools.* (Under the direction of Dr. Paul D. Umbach).

To address the importance of college access and the gaps in scholarship concerning college advising, this study is comprised of three essays, each focused on college advising professionals in public high schools. Though the majority of research in this area has focused on traditional school counselors, these studies examined the role and effectiveness of specialized college advising professionals whose primary responsibility is assisting students in the college choice process. Several analytical techniques are employed across the three essays, including both quantitative and qualitative methods. The first essay utilizes qualitative methods to explore the role and advising strategies of exemplary college advising professionals in public high schools. The second essay uses a difference-in-differences approach to examine the effects of a College Advising Corps program on academic preparation and SAT participation in partner high schools. The third essay utilizes a nationally-representative sample of high schools students. For this essay, the treatment group consists of students who attend schools that have a college counselor and the control group does not. The findings from these studies inform research, practice, and policy concerning the emerging role of college advising professionals and their impact in the lives of public high school students. The three essays presented in this dissertation begin a new and important conversation about school-based college advising for students in public high schools.

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Assisting Students in the College Choice Process: Three Essays on the Role and Effectiveness of College Advising Professionals in Public High Schools

by
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A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Educational Research and Policy Analysis

Raleigh, North Carolina

2016

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DEDICATION

To my fellow Hokies whose lives and dreams were tragically taken too soon.

NeVer forgeT / Live for 32

BIOGRAPHY

Ashley Brooke Clayton is a native of Williamsburg, Virginia. After completing her bachelor's degree in Interior Design at Virginia Tech, she accepted a position in the Office of Undergraduate Admissions. She originally took the position as a gratifying opportunity to recruit for Virginia Tech and did not have long-term plans to work in higher education. During that time, she visited over 100 high schools in 10 eastern states for recruitment purposes. It was truly an eye opening experience, where she first became aware of the vast educational disparities in our nation. Ashley found that some students were well-prepared for college and had individualized college advising while others were less informed about the college admissions process. Although she had only planned to work in college admissions temporarily before returning to the interior design profession, her awareness of these higher education issues shifted her career path.

As she aimed to further her career in the higher education field, she pursued her master's degree in Higher Education Administration from Florida International University (FIU). Located in Miami, FIU is one of the largest Hispanic Serving Institutions in the nation. The diversity of the institution and higher education program facilitated rich classroom discussions and cross-cultural friendships. In the master's program, she was able to gain more knowledge about college access, financial aid, undergraduate admissions policies, and high school to college transition issues facing underrepresented students. In addition to the coursework, she had the opportunity to serve as a graduate assistant in the Upward Bound/Pre-college Office.

After graduating with her master's degree, Ashley served as an Academic/Career Coordinator with a TRiO Upward Bound program. Upward Bound is one of the most established pre-college programs that is funded by the federal government. The barriers to college were evident in the students that she advised, who were mostly African American and came from predominantly low-income households. She witnessed first-hand the struggles and obstacles these students faced as they were trying to enter college.

Her desire to learn more about college access and underrepresented student populations eventually led her to pursue further graduate work. As a Ph.D. student in the Educational Research and Policy Analysis program at North Carolina State University, she worked as a graduate research assistant. Her research agenda broadly focuses on postsecondary outcomes for underserved student populations with an emphasis on college access and success. She examines the systems and barriers that students from nontraditional and underrepresented backgrounds face as they attempt to enroll and persist in higher education.

Upon graduation, Ashley will begin a postdoctoral research and teaching appointment at the Institute of Higher Education at the University of Georgia. After she completes her postdoc, she plans to pursue a tenure-track faculty position in a higher education program. When she is not working on her research, she can be found traveling internationally, dancing bachata and merengue, volunteering at a college fair, or relaxing on a boat in the Caribbean.

ACKNOWLEDGMENTS

Completing this dissertation would not have been possible without the support and encouragement of many individuals. First and foremost, I would like to thank my Heavenly Father for giving me the opportunity and strength to pursue a doctoral degree. Thank You for sustaining me through some of my longest nights and hardest days. In many ways the dissertation is viewed as an individual process, but I would not have been able to do this without my tribe of mentors, colleagues, friends, and family.

I want to express my sincere gratitude to my dissertation chair, Dr. Paul Umbach. For the past four years, you have been my advisor and supervisor, but more importantly, you have been a true mentor. When starting the Ph.D. program, I often questioned my ability and was nervous that I had no prior statistical training, but you always saw potential in me. Thank you for believing in me, bringing me in on countless research projects, pushing me to apply for grants, encouraging me to sit at the table, and helping me build confidence. I genuinely believe my success in this process is largely owed to your investment in me. I look forward to the day that I can give back to my students in the same way that you have mentored me.

Thank you to the three members of my dissertation committee. I often heard remarks about how “tough” my committee was, but I knew you all would push me to do my best work. I want to thank Dr. Stephen Porter for his rigorous methodological training and for pushing me to think more critically. You have a gift for teaching, and your class on quasi-experimental methods was my favorite. Thank you for always talking to me like I was

capable of understanding, even when I didn't have a clue. I am grateful for Dr. Joy Gaston Gayles, whom I look up to both professionally and personally. Thank you for teaching me what it means to be a PhDiva and for always encouraging me to be my true self. In the academic world, I often felt as though I didn't fit the "scholar" stereotype, and you taught me that the mold was made to be broken. Lastly, I want to thank Dr. Andrew McEachin for serving on my committee and for being a great sounding board. Even though your time at NC State was short, you were always available to answer any questions that I had during the dissertation process. I am also grateful for all of your advice on the job market and for being a great example to me.

Thank you to my NC State colleagues. I am thankful to have shared this experience with an amazing cohort of fellow students who have grown to be my close friends. Thank you to my counterparts in the fabulous five: Racheal Brooks, Becky Crandall, Mary Medina, and Shauna Morin. Our bond extended beyond the classroom, and it was helpful to have colleagues that understood the PhD transition. I love that we built a community of support and celebrated one another's victories. I am also thankful for my other cohort friends, Ashley Grantham, Thomas Greene, and Mark Hall. I learned a lot from you all, and I am grateful to share this experience with you. A special thank you to my PhD bestie, Mary Medina. We started together, pushed each other through each stage of the process, proposed on the same day, and finished together. Thank you for being there for me, peer-editing my papers, giving me encouraging pep-talks, joining me in the library, and going out Latin

dancing with me. We shared a special bond, and I could not imagine going on this journey without having you by my side.

I am grateful for my classmates, faculty, and staff in the College of Education. Those who know me well know that I am highly extroverted and I love working with others. I want to especially thank these colleagues for all of their support and for working with me throughout the process: Alicia, Alessandra, Beth, Difei, Lauren, Nichole, Marvin, Melissa, Renee, Taheera, Yaxin, and Yulissa. I am also grateful to several faculty members who invested in me during my time at NC State. Thank you to Drs. Tiffany Davis, Anna Egalite, and Deleon Gray. A special thank you to Dr. Davis, who has grown to be a close friend over the years. We have logged countless hours working and laughing together, and you were always someone that I could count on. Thank you to the administration and staff who often checked in on my progress. Thank you to Dr. Mary Ann Danowitz, Dr. Demetrius Richmond, and Ms. Shana Scott for always making sure I was on track. Thank you to the faculty in the Higher Education program for your work and dedication to make our program one the best in the nation. I could not imagine being anywhere else!

Thank you to the organizations and individuals who provided me with the resources and assistance to successfully finish this dissertation. A special thank you to the Association for Institutional Research for their generous financial support that allowed me to focus on my research. Thank you to the Director of the Carolina College Advising Corps, Yolanda Keith, for your key partnership in my second study. I have enjoyed working with you on research and talking with you about college access. Thank you to the U.S. Department of Education,

NC Department of Public Instruction, and the participants who provided the data for these studies. Thank you to Dr. Tara Thompson for your editing assistance. Lastly, I want to thank North Carolina State University. I appreciate the financial funding that allowed me to pursue my Ph.D. full-time. I am also grateful for the James B. Hunt Library, which became my second home during the writing process. Having this beautifully designed space to work in was a dream for this Type-A doctoral student with an interior design background.

Thank you to my current and former colleagues who have supported me on this journey. Thank you to the Virginia Tech Office of Undergraduate Admissions for giving me my first job in higher education, which ultimately redirected my career path. A special thank you to Mildred Johnson, who was my first professional mentor and encouraged me to pursue a Master's degree in Higher Education. Thank you to my colleagues at Florida International University, especially my Pre-college/Upward Bound family, my classmates, and faculty members. A special thank you to Drs. Benjamin Baez and Glenda Musoba for planting the Ph.D. seed in me. I had never considered getting a Ph.D. until you told me that I was capable. Thank you to my Roanoke College Upward Bound family. Having the opportunity to work with students from this program was one of the most challenging, yet rewarding experiences of my professional career. I often think of you when I am conducting research on college access and appreciate the times we shared. A special thank you to Theresa Jackson and JaCynthia March-Brewer. I learned so much from you both, and I am forever grateful that you brought me into the Upward Bound family. Last, I want to thank my colleagues at the *Journal of Higher Education*. Thank you to Scott Thomas, Penny Pasque,

Tom Nelson Laird, Rocío Mendoza, and Christina Ryan-Rodriguez, who have been a constant source of encouragement over the last two years.

Thank you to all my close friends who have pushed me to achieve this dream. To my closest girlfriends Alicia Aliff, Caroline Ickes, Desiree Kameka, Elina Shustef, Kelly Simcox, Kristal Bland, Kristen Vlattas, Maria Dunn, and Sarah Abee, you all are so important to me and have been loyal friends to me for many years. Thank you for encouraging me to achieve my educational goals and for keeping me grounded. I look forward to spending quality time with you all now that this dissertation process is complete. A special thank you to Kelly for being so involved in my Ph.D. process and for always being just a phone call away.

Thank you to the members of my family who have supported me on this journey. Thank you to my siblings, Daniel Clayton, Anna Tuftee, and Spencer Tuftee. A special thank you to my brother, Daniel. It was such a blessing to have my brother in Raleigh with me as I worked on my Ph.D. The weekly dinners, concerts, and house parties helped get me through the hard times. A special thank you to my stepfather, Dave Tuftee, for your unwavering support over the years. Thank you to my extended family members Annie, Courtney, Daryl, Debbie, Evelyn, Jennifer, Julie, Kaylin, Michelle, and Robin for supporting me throughout the process and checking on me often.

In closing, I want to thank my parents, who have been my biggest fans since I was a little girl. Thank you to my mother, Sue Tuftee, who is the most loving and selfless woman I know. You gave me the upbringing, childhood, love, security, and opportunities you never

had. Thank you for allowing me to dream and express my individuality from a young age. Thank you for showing me I could be a tomboy and yet girly at the same time. You have continuously believed in me, supported my adventurous spirit, and had faith that I would be successful. This degree is as much your accomplishment as it is mine. Thank you to my father, Daniel Clayton III. You have by far been the most involved with my postsecondary journey. Thank you for proofreading countless papers at the last minute and being genuinely interested in my academics. Thank you for all of your encouraging talks and handwritten notes. Further, thank you for providing me with the opportunity to go to college and making it an expectation in our home. I will never forget that you told me in elementary school that I could be the first female president. It was the confidence that you instilled in me at a young age that led me to pursue my dreams and ultimately earn this degree.

TABLE OF CONTENTS

LIST OF TABLES	xiv
LIST OF FIGURES	xv
INTRODUCTION	1
Essay One	3
Essay Two	4
Essay Three	5
References	6
EXPLORING THE ROLE OF COLLEGE ADVISING PROFESSIONALS IN PUBLIC HIGH SCHOOLS: AN EXEMPLARY MULTIPLE CASE STUDY	8
Purpose of the Study	10
Literature Review	11
School Counselors	11
College Advising Professionals	13
Conceptual Framework	14
Methodology	16
Exemplary Multiple Case Study	16
Sample Selection	17
College Advising Corps	18
GEAR UP	18
School district	18
Data Collection	19
Data Analysis	19
Validity and Reliability	20
Researcher’s Role and Ethical Considerations	21
Limitations	21
Individual Cases	22
Sonya: “Puller of Solutions”	24
Taylor: “So Close in Age”	24
Erin: “Help Students Achieve What I Was Able to Achieve”	25
Beverly: Teacher of “Life Skills”	25
Liz: “Not a Straight Line Process”	26
Charlotte: “Middle Person”	27
Adele: “Empowering Students with Information”	27
Findings	28
Training Needs Improvement, but Informal Training is Valuable	28
Challenging Yet Rewarding	31
A Myriad of Services Provided	33
High School and Community Context Shapes Approach	35
Strong Belief that the Position is Essential	38
Discussion and Implications	40

Practice.....	41
Training and Education	42
Policy	43
Future Research	44
References	47
PREPARING STUDENTS FOR POSTSECONDARY ENROLLMENT: A DIFFERENCE-IN-DIFFERENCE ANALYSIS OF COLLEGE ADVISING ON COLLEGE READINESS	52
College Advising Corps	54
Carolina College Advising Corps	55
Purpose of the Study	56
Literature Review	57
College Readiness.....	57
College Advising.....	58
Conceptual Framework.....	60
Research Questions.....	64
Methodology	65
Research Design	65
Data	67
Variables	68
Empirical Strategy	72
Counterfactual.....	74
Results	74
Course Enrollment Model.....	76
SAT Participation Model	76
SAT Score Model	77
Time Trend Assumption.....	78
Sensitivity Analyses.....	80
Limitations.....	81
Discussion and Implications.....	82
Future Research	86
References	88
COLLEGE ASSISTANCE FOR PUBLIC HIGH SCHOOL STUDENTS: DO COLLEGE COUNSELORS IMPROVE POSTSECONDARY ACCESS?	94
Purpose and Significance of the Study	96
Background on College Counseling	97
School Counselors	98
Pre-college Programs.....	99
Private College Counseling Programs	100
College Counselors/Advisors in High Schools.....	101
Conceptual Framework.....	102
Research Questions.....	105

Methodology	106
Data and Sample	106
Variables	108
Treatment variables	108
Outcome variables	109
Covariates	110
<i>School-level covariates</i>	111
<i>Student-level covariates</i>	112
Estimation Strategy	113
Stage 1: Calculate propensities	114
Stage 2: Inverse probability weighting	116
Stage 3: Survey weighting	118
Empirical Models	118
College application models	119
FAFSA completion model	120
College enrollment model	121
Results	122
College Application Counselor	123
College Selection Counselor	124
Either College Counselor	125
Both College Counselors	125
Limitations	126
Discussion and Implications	128
Future Research	132
References	134
CONCLUSION	143
Policy	143
Practice	144
Future Research	145
References	147
APPENDICES	148
Appendix A: College Advising Professional Interview Protocol	149
Appendix B: School-Level Covariates	150
Appendix C: Student-Level Covariates	151
Appendix D: Histograms of Common Support	153
Appendix E: Reduction of Standardized Bias	155
Appendix F: Full Model: College Application Counselor Treatment	163
Appendix G: Full Model: College Selection Counselor Treatment	166
Appendix H: Full Model: Either College Counselor Treatment	169
Appendix I: Full Model: Both College Counselors Treatment	172

LIST OF TABLES

Table 2.1	<i>Individual Case Details</i>	23
Table 2.2	<i>High School Context</i>	36
Table 3.1	<i>Outcome Variables by Treatment and Control Groups</i>	69
Table 3.2	<i>Control Variables – Descriptive Statistics Across all Years</i>	71
Table 3.3	<i>Fixed Effects Model Results</i>	75
Table 3.4	<i>Time Trend Assumption for Three Outcomes</i>	79
Table 3.5	<i>Sensitivity Analyses on Placebo Outcomes</i>	81
Table 4.1	<i>HSLs:09 Variables of Interest and Collection Timeline</i>	107
Table 4.2	<i>Average Propensities of Full Sample</i>	115
Table 4.3	<i>Distribution of Propensities Before and After Weighting</i>	117
Table 4.4	<i>Population Average Treatment Effects of College Counselors</i>	123

LIST OF FIGURES

- Figure 2.1.* Hypothesized model of how college advising professionals create college related social capital (adapted from Stephan, 2013).16
- Figure 3.1.* Perna's (2006) multilevel conceptual model of student college choice.61
- Figure 4.1.* Perna's (2006) multilevel conceptual model of student college choice.103

INTRODUCTION

This dissertation is comprised of three essays on the role and effectiveness of college advising professionals in public high schools. Assisting students with the complex college admissions process is an important, but often overlooked priority. Typically, across public high schools in the United States, there is not a staff member who is held accountable for college advising and enrollment (McDonough, 2005; National Association for College Admission Counseling [NACAC], 2011). Traditionally, school counselors have been tasked with assisting students with college aspirations; however, many school counselors are overworked and have other competing priorities (McDonough, 2005). “Especially in low-performing high schools, [school] counselors often have numerous other noncollege-related responsibilities, including scheduling, testing, and providing personal and nonacademic counseling, and may not be trained in the nuances of college and financial aid processes” (Perna & Kurban, 2013, p. 22). Further, training in school counseling degree programs has not historically included preparation in college advising specifically (McDonough, 2005).

In comparison to private schools, public schools devote significantly fewer resources and less attention to college counseling (McDonough, 2005). The majority of private schools have a staff member who assists students with college advising and enrollment exclusively, compared to less than one third of public schools (NACAC, 2011). Though most private schools continue to invest in college advising, some public schools are also beginning to add more college advising initiatives. Some public high schools have followed the approach of private schools and have invested in a dedicated staff member whose primary responsibility is to assist with college enrollment. Other public high schools have a dedicated college and

career center that is staffed with a coordinator who oversees college and career advising (Perna et al., 2008). Another approach has been to provide students in public schools with college advising services through federally-funded grant programs that place college advising professionals in high schools. Last, several non-profit organizations have developed initiatives to place college advisors in target high schools to assist students with the college choice process. Though new programs and initiatives have been developed in recent years, gaps in the traditional college advising services provided at the public high school level still remain.

The three essays presented in this dissertation begin a new and important conversation about college advising in the public high school context. Together, these studies examine the role and effectiveness of college advising professionals whose primary responsibility is to assist students in the college choice process. The first essay utilizes qualitative methods to explore the role and advising strategies of exemplar college advising professionals in public high schools. The findings from this first study are designed to provide background about the emerging role and significance of these additional staff members. The next two studies employ quasi-experimental research methods to understand the causal impact of college advising professionals on several college access related outcomes. In particular, the second essay examines the effect of having a college adviser in a high school on academic preparation and SAT participation using a difference-in-differences approach. The third study utilizes a nationally-representative sample of high schools students. In this third study, the treatment group consists of students who attend schools that have a college counselor, and the control group does not have this resource.

Essay One

The first study employed qualitative methods to explore the role and advising strategies of college advising professionals. Using an exemplary multiple case study design, each individual case was considered to be a strong example of the phenomenon of interest (Yin, 2012). This study sought to examine the role and practices of exemplary college advising professionals from several school-level models to help inform future policy on college advising in public high schools. This multiple case study had a single, overarching central question: *What are the experiences and practices of exemplary college advising professionals in public high schools?* To further articulate the central question, this study asked questions about the college advising professionals' (a) training and background, (b) experience working with students in the college choice process, and (c) program or initiative that funds the position.

Seven college advising professionals from the three different advising initiatives participated in this study. The role and experiences of the college advising professionals were unique to the program/initiative and high school context where the professional worked. Five themes were identified in the cross-case analysis: (a) Training Needs Improvement, but Informal Training is Valuable; (b) Challenging Yet Rewarding; (c) A Myriad of Services Provided; (d) High School and Community Context Shapes Approach; and (e) Strong Belief that Position is Essential. Overall, the findings of this study indicate that college advising professionals are providing substantial college-related resources, enjoy their positions, and need additional training.

Essay Two

The second study focused on the effectiveness of the Carolina College Advising Corps (CCAC) on two key steps in the college enrollment process. This study examined the effect of having a CCAC college adviser in a partner high school on academic preparation and SAT test-taking behaviors. This study focused on concrete proximal outcomes beyond mere college aspirations, as self-reported aspirations are not always a realistic predictor of college enrollment. Guided by Perna's (2006) conceptual model of college choice, this study examined the effects of the college adviser treatment within the high school context (Layer 2) and asked two research questions: *To what extent does the presence of a college adviser in a partner high school have an effect on student participation in advanced college preparatory courses? To what extent does the presence of a college adviser in a partner high school have an effect on student participation and performance on the SAT test?*

This study used a difference-in-differences research design, which compares treatment and control groups over time using pre- and post-intervention panel data. The treatment group consisted of partner high schools in North Carolina that received the Carolina College Advising Corps treatment, and the control group included public schools in the state that did not have this resource. Contrary to the hypothesis, the presence of a college adviser did not significantly increase the percentage of students enrolled in college preparatory courses. However, there is evidence to suggest that college advisers had a significant impact on the SAT test-taking behaviors of students in partner high schools. The presence of a college adviser in a partner high school was related to an increase in SAT participation rates and a decrease in average SAT scores.

Essay Three

The third study examined the effect of having a college counselor in a public high school on three primary college access outcomes: college applications, Free Application for Federal Student Aid (FAFSA) completion, and postsecondary enrollment. This study used a nationally-representative sample of public high school students from the High School Longitudinal Study of 2009. The research questions were guided by Perna's (2006) conceptual model of college choice, as this study examined the effects of the college counselor treatment within the high school context (Layer 2). There were three primary research questions: *To what extent does having a college counselor in a high school affect students' college application behaviors? To what extent does having a college counselor in a high school affect students' completion of the FAFSA? To what extent does having a college counselor in a high school affect students' postsecondary enrollment?*

Using inverse probability weighting (a type of propensity score method) combined with multilevel modeling, this study compared the postsecondary application and enrollment outcomes of students who attended public high schools with a college counselor to a comparison group of students who did not have this additional resource. The college counselor treatment had no effect on FAFSA completion or the number of college applications a student completes. However, the college counselor did have a positive significant effect on students applying to college and enrolling in college. For two average students, one with a college counselor and one without, students with the college counselor are approximately 2 percentage points more likely to apply to college and approximately 3 percentage points more likely to enroll at a postsecondary institution after high school.

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EXPLORING THE ROLE OF COLLEGE ADVISING PROFESSIONALS IN PUBLIC HIGH SCHOOLS: AN EXEMPLARY MULTIPLE CASE STUDY

With an increased emphasis on college attendance and the expansion of institutions of higher education in the past four decades (Jones, 2013), more value has been placed on the role of college advising¹ in our nation's high schools (McDonough, 2005b). Unfortunately, “few staff members have college preparatory responsibilities as their main job, nor is there a regularly identifiable K-12 staff member who is held accountable for graduates' college enrollment” (McDonough, 2005b, p. 69). Traditionally, school counselors² have been tasked with assisting high school students who aspire to attend college. However, college advising is often not included in counselor education programs; therefore, many school counselors are not adequately trained in this area (Hossler, Schmit, & Vesper, 1999; McDonough, 2002, 2005b). Further, many counselors are overworked and have other competing priorities (McDonough, 2005b; Perna & Kurban, 2013). While college advising tasks are often left to school counselors, this default practice may not be the best approach.

The nature of college counseling services varies across school-type (Perna et al., 2008). A large-scale survey administered by NACAC (2011) found that public school counselors spend 23% of their time on college counseling, in contrast to private school counselors who spend 55% of their time on this same task. In contrast to public schools, private preparatory schools have developed counseling positions exclusively for the purposes

¹ The term “college counseling” is often used in previous literature. For the purposes of this paper, I use the term “advising” more frequently.

² “School counselors” were historically referred to as “guidance counselors,” and some literature may still use the outdated title.

of college counseling and outsourced their mental health components to private therapists (Powell, 1996). Nationwide, “only 26 percent of public schools reported employing at least one counselor (full- or part-time) whose exclusive responsibility was to provide college counseling, compared to 73 percent of private schools” (NACAC, 2011, p. 6). Public and private schools also differ in how they ranked the priorities of their counseling departments. Public schools ranked “helping students with their academic achievement in high school” as the most important, yet private schools ranked “helping students plan and prepare for postsecondary education” as their top priority (NACAC, 2011, p. 31). Because they have smaller counselor-to-student ratios, additional resources devoted to college advising, and high quality practices, private schools have traditionally better assisted students with their college aspirations (McDonough, 1997, 2005b; Powell, 1996).

While private schools continue to invest in college advising-related efforts, some public schools are adding similar initiatives. College advising services are overwhelmingly more available to students from higher income backgrounds who can afford private schools or independent counselors (McDonough, 2005b), and students from low-income, first-generation, and minority backgrounds who are underserved by higher education (Bragg, 2013; Perna & Kurban, 2013) plausibly do not have the financial resources to afford these additional college advising resources. Therefore, the few college advising services available to public school students at no charge are critical resources for advancing the college access mission. The nature of college counseling varies greatly across and within high schools (Perna et al., 2008); thus gaining a better understanding of the established college advising initiatives that could potentially be added to more public schools is important

There are several initiatives that seek to close the public high school college advising gap. Following the approach of the majority of private schools (NACAC, 2011), some public high schools and districts have hired specialized staff specifically to assist with college counseling activities. Some high schools have a dedicated college and career center with a staff member who oversees college and career advising (Perna et al., 2008). Another approach has been to provide students in public schools with college advising services through federally-funded programs such as GEAR UP (Gaining Early Awareness and Readiness for Undergraduate Programs). In the past decade, several non-profit organizations have developed initiatives to place college advising staff in target high schools to assist students (e.g. College Advising Corps). These new initiatives that have developed in recent years, are attempting to address the lack of college advising services provided at the public high school level.

Purpose of the Study

This study addresses the gap in the college access and choice literature by examining the role of college advising professionals³ in public high schools. The purpose of this multiple case study was to explore the role and advising strategies of exemplary college advising professionals in public high schools from various advising models. Past research has examined the role that traditional school counselors' play in the college choice process; however, studying college advising professionals in public schools is a relatively new and

³ The term "college advising professional" is used broadly to define staff members whose primary responsibility is assisting students in the college choice process. These are not traditional school counselors.

understudied area in the literature. This study is significant, because it adds to the literature on college advising, informs educational policy; and informs training and practice.

Literature Review

High school personnel can be influential in providing access to resources and helping students navigate the college application process (Hossler et al., 1999; McDonough, 1997; Stanton-Salazar, 1997). McDonough (1997) explains that, “organizational habitus shows how high schools’ organizational cultures are linked to wider socioeconomic status cultures, how social class operates through high schools to shape students’ perceptions of appropriate college choices, thereby affecting patterns of educational attainment” (p. 107). The organization of public high schools and investments in college advising vary greatly across schools (Perna et al., 2008). The majority of public schools have school counselors who provide the college advising services, along with their other duties; whereas, relatively less public schools have a staff member who dedicated to college advising (McDonough 2005a, 2005b; Perna et al., 2008).

School Counselors

Many research studies focus on college counseling in the context of public high school guidance counselors (Linnehan et al., 2006; McDonough, 1997, 2002, 2005a, 2005b; McDonough & Calderone, 2006; McKillip, Rawls, & Berry, 2012; Perna et al., 2008; Venezia & Kirst, 2005). McDonough (2005b) describes the reality of high school counseling:

Counselors are the logical choice to be the K-12 staff member responsible for college access preparation and assistance and are often assumed to be handling this role, yet

they are inappropriately trained and structurally constrained from being able to fulfill this role in public high schools. (p. 69)

Educational programs for school counselors have historically not included training in college counseling (Hossler et al., 1999; McDonough 2002, 2005b). As evidenced in practitioner journals, early debates occurred regarding college counseling responsibilities as part of the guidance counseling profession (Muro, 1965). Since then, supporters and critics have fallen on both sides of the issue of whether college counseling should be part of a school counselor's responsibilities. Literature on the role of school counselors in the early 1990s indicates that college counseling was simply an information-giving task (Cole, 1991). College counseling initiatives are sometimes seen in conflict with school counselors' identities as mental health professionals (Carroll, 1985; McDonough 2005a, 2005b).

In addition to receiving little training, guidance counselors also have limited time given their large student loads (McDonough, 2005a, 2005b). Though the American School Counselor Association (2011) recommends a maximum student-to-counselor ratio of 250:1, in the 2010-2011 school year, the national average in public schools was 471:1. Further, school counselors "often have numerous other non-college-related responsibilities, including scheduling, testing, and providing personal and nonacademic counseling, and may not be trained in the nuances of college and financial aid processes" (Perna & Kurban, 2013, p. 22).

Researchers have found that supportive school counselors can be especially influential in helping students with the college search and application process (Hossler et al., 1999; McDonough, 1997). However, the nature of college counseling services varies greatly across and within schools (Linnehan et al., 2006; Venezia & Kirst, 2005). Specifically,

college counseling is more common for students in advanced college preparatory tracks (McDonough, 2005a; Venezia & Kirst, 2005) and of higher socioeconomic status (Linnehan et al., 2006). Further, college counseling is less available in schools with predominantly minority and/or low-income populations (McDonough, 1997, 2005a); whereas, private preparatory schools invest significant resources in their college counseling operations (McDonough, 2005b).

College Advising Professionals

There is very limited research on college advising professionals within the high school context. Perna et al. (2008) conducted a multiple case study that examined the nature of college counseling initiatives across 15 public high schools and explored “the ways that the state, district, and school context shape the availability and nature of college counseling in U.S. public high schools” (p. 133). The study found differences in the number of students per counselor and the availability of college counseling across schools and states. Some public schools had a dedicated staff member in a college and career center. Many public schools have resource constraints that limit their college counseling initiatives (Perna et al., 2008). The study recommends, “that structural changes (including changes in federal and state financial aid policies), district policies pertaining to counseling, and relationships with higher education institutions are required to ensure that all students receive sufficient college counseling” (p. 133).

There are a few initiatives that fall under the “coaching” model, in which a college coach or advisor is assigned to a high school to assist students with the college enrollment process (Stephan & Rosenbaum, 2013). The College Advising Corps is one of the largest

initiatives of this type is and places recent college graduates into high-need public high schools to serve as college advisers (College Advising Corps, 2014). In one county in North Carolina, schools who added a college adviser saw an increase in college attendance of approximately 14 percentage points compared to control schools in the same county (Carolina College Advising Corps, 2012).

Stephan and Rosenbaum (2013) examined the college coach program in Chicago Public Schools, where coaches were not randomly assigned to high schools but were “distributed fairly evenly across high schools in terms of socioeconomic composition, racial composition, and academic achievement” (p. 204). Using a difference-in-difference design, their study found that compared to schools without a college coach, the coached schools had greater gains in college enrollment. Specifically, schools with the college coach treatment saw increased college enrollment by 1.7 percentage points, increased college applications by 4.7 percentage points, and increased FAFSA completion by 2.6 percentage points compared to non-coached schools (Stephan & Rosenbaum, 2013). Stephan (2013) also conducted a qualitative study on the coach program and developed a model from the findings. Stephan found that relative to traditional counselors, the coaches “advising strategies: (1) changed the social relations around the college enrollment process, which (2) created or enhanced college-related resources that (3) led to an increase in the number of students who completed college actions.” (p. 115)

Conceptual Framework

This study is framed by social capital theory (Bourdieu, 1986; Coleman, 1988). The concept of social capital refers to “relations among persons that facilitate action” (Coleman,

1988, p. S100). In the context of college choice, social capital refers to an individual's access to social networks that provide high school students with information about and assistance applying to college (Coleman, 1988; Deil-Aman & Turley, 2007; Perna, 2006). Specifically, school social capital (Lin, 2001) encompasses the social connections and networks within schools that students can access to enhance their life outcomes. Lin (2001) explains, "Social capital consists of resources embedded in social relations and social structures, which can be mobilized when an actor wishes to increase the likelihood of success in a purposive action" (p. 24). Because school personnel are significant sources of social capital (Croninger & Lee, 2001), this study examines the role of exemplary college advising professionals as a source of school-based social capital.

In a related study, Stephan (2013) described how a college coaching program works and analyzed the key aspects of the coaches' advising process. A conceptual model of how coaches create social capital emerged from Stephan's qualitative study: "Based on Bourdieu's definition, college-related social capital is defined here as resources available through social relations that students can invest to improve their college enrollment outcomes" (p. 115). Similarly, this study examines the role of college advising professionals in public high schools and seeks to understand their unique role. Figure 2.1, adapted from Stephan's (2013) proposed model, illustrates how college advising professionals can change social relations and social capital resources within high schools.

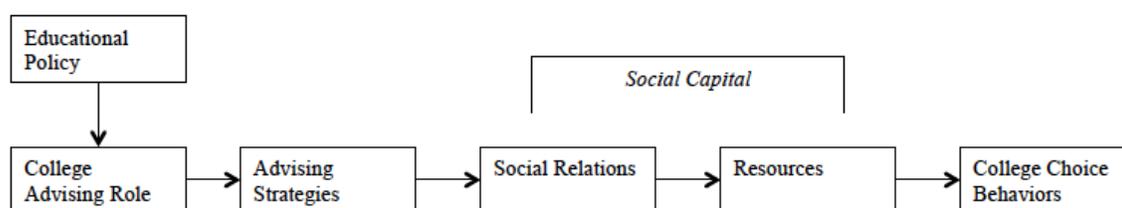


Figure 2.1. Hypothesized model of how college advising professionals create college-related social capital (adapted from Stephan, 2013).

Methodology

Qualitative research methods were chosen for this study because the purpose was to gain an understanding of the role of college advising professionals and how they assist students with the college choice process. A qualitative approach is appropriate because this study aims to hear the voices and explore the professional experiences of staff members whose primary responsibility is to help public high school students enroll in college. This study has a single, overarching central question (Creswell, 2013): *What are the experiences and practices of exemplary college advising professionals in public high schools?* To further articulate the central question, this study asks questions about the college advising professionals' (a) training and background, (b) experience working with students in the college choice process, and (c) program or initiative that funds the position.

Exemplary Multiple Case Study

An exemplary multiple case study approach was selected as the research design for this study. According to Creswell (2013), case study research explores a real-life, bounded system (case) by collecting many forms of qualitative data. A case study approach is appropriate for this study for two primary reasons. First, multiple forms of qualitative data

are needed to understand the role of the college advising professionals. Second, though the college advising professionals all had the same primary job function, their roles were different based on the program/initiative that funded their position and the high school in which they worked. A multiple case study approach is appropriate for this study because I examined several cases of the same phenomenon: a college advising professional bounded within the context

Sample Selection

To be eligible for the study, participants had to be public high school staff members whose primary responsibility is assisting students with the college choice process. I used purposeful sampling methods to have a diverse group of college advising professionals who operate under different models and are considered exemplary examples. Depending on the structure of the initiative, I contacted the program director or the school district office and asked for recommendations of exemplary examples. Particularly, I asked supervisors to identify 1-2 college advising professionals in their program or district whom they consider to be exemplary examples. I asked them for participants that they would consider to be their best examples, had at least a year of advising experience, and who they felt went “above and beyond” in their positions. College advising professionals who participated in the study signed a consent form, received a \$30 gift card, and were asked to provide materials, documents, and resources that they use. For confidentiality purposes, participants were given a pseudonym, and the names of schools and districts are omitted. Seven college advising professionals from the three different initiatives participated in this study.

College Advising Corps. The College Advising Corps is a non-profit organization that places well-trained college advisers in the nation’s underserved high schools to increase college-going rates (College Advising Corps [CAC], 2014). The College Advising Corps has partner institutions of higher education that coordinate the recruiting and training of college advisers. CAC Program A (pseudonym) is located at a land-grant university and recently became a program partner. CAC Program A started with less than 10 college advisers in the inaugural year and has grown to over 20 advisers in less than five years. CAC Program B (pseudonym), located at a public research university, started with four college advisers and has grown to over 30 advisers in less than 10 years.

GEAR UP. Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) is a federally-funded grant program designed to increase the number of low-income students who are prepared, enroll, and succeed in higher education. GEAR UP offers “grants to state and partnerships to provide services at high-poverty middle and high schools” (U.S. Department of Education, 2015). The GEAR UP grantee that participated in this study is a state-level program that began less than five years ago. GEAR UP provides numerous services to students, families, and educators in target high schools across the state.

School district. Several school districts in the nation hire staff members in addition to school counselors to assist with college advising initiatives. The school district in this study has over 20 high schools and is located in a large suburban county. Each high school in the county has a College and Career Center⁴ that is staffed with a specialist who assists

⁴ The participants referred to the centers as “College and Career Centers,” but the title at the district office is technically “Career Center.”

students with career decisions and postsecondary plans. The position was created over 20 years ago and is considered a support position. The district required a separate IRB application prior to suggesting participants for the study⁵.

Data Collection

I collected multiple sources of data to further inform the research question and to gain a clear understanding of the cases (Creswell, 2013; Stake, 1995; Yin, 2014). As the primary researcher, I conducted all interviews, collected data, and took field notes. The primary mode of data collection was one-on-one semi-structured interviews with each participant lasting approximately 45 minutes. The interview protocol included questions about their training, career path, and role with assisting students (Appendix A). The interviews were audio recorded and conducted during May-November 2015. Six of the seven interviews took place at the high schools, and one interview took place off-site in a private conference room. Site visits were conducted at all seven high schools to gain an understanding of the college advising space and school environment. Six of the seven participants provided documents, including information about the college advising initiative and college-related resources available to students. Additionally, electronic information from the schools' websites and U.S. Department of Education were gathered.

Data Analysis

For the data analysis, I poured through the data and worked from the “ground up” (Yin, 2104). First, all interviews were transcribed verbatim. I organized the data and read

⁵ The school district did not want to identify exemplary examples but provided the names of College and Career Center Specialists who had “significant experience in college advising.”

through the transcripts to get an understanding of the interview content and documents as recommended for qualitative data analysis (Creswell, 2013; Yin, 2014). I used open-coding to initially code each interview transcript and to develop a preliminary codebook. Next, I conducted a second round of axial coding to further develop the codebook. Using the finalized codebook, I recoded the transcripts with the final codes and categories. After all coding was completed, each participant was first analyzed as an individual case. I actively examined and re-examined the multiple sources of data to deepen my understanding of each case individually, and themes within each case were identified during the analysis (Creswell, 2013; Stake, 2006). Second, I conducted a cross-case analysis to compare all of the cases and to identify emerging themes. I went through the codebook, grouped codes and categories, and recorded preliminary themes. Through this process of grouping codes together I was able to reflect back on the transcripts and interview questions to determine the major themes in the data.

Validity and Reliability

Two validation strategies were employed, including triangulation and theme validation. Data was collected from several different sources including interviews, documents, and websites. To triangulate the data, I examined how the sources strengthen the validity of the case study (Yin, 2014). I used supportive evidence from the interview transcripts and other data sources to validate and modify each theme. Reliability refers to “the consistency and repeatability of the research procedures used in a case study” (Yin, 2014, p. 240). To ensure reliability, I took field notes throughout the data collection process, used high quality audio recording devices, and had the interviews transcribed verbatim. I

also attempted to outline the study's research design as clearly as possible so that another researcher could conduct a similar research study (Yin, 2014).

Researcher's Role and Ethical Considerations

In this qualitative study, I assumed the role of the research instrument as I worked with human subjects. According to Creswell (2013), researchers "position themselves" in the qualitative study by conveying their background and "how it informs their interpretation of the information in a study, and what they have to gain from the study" (p. 47). Both my personal and professional experiences have significantly shaped my research agenda. When I worked as an Admissions Advisor at Virginia Tech, I visited over 100 high schools on the east coast. Some students were well-prepared for college and had individualized college advising, and others were obviously less informed about the college admissions process. In addition to working in college admissions, I also worked for three years with a TRiO Upward Bound program where I assisted high school students in the college choice process. The barriers to college were evident in the students I advised who were mostly African American and came from predominantly low-income households. I witnessed first-hand the struggles and obstacles these students faced as they tried to enter college.

Limitations

I will address several limitations to this study. First, defining an exemplary case is challenging. While I made a concerted effort to find strong cases, there could be some bias in the selected cases. Second, some of the interviews were conducted at the end of one school year in the spring, while other participants did not interview until the fall semester. This could have impacted the stories and experiences that participants shared, given the

college choice process cycle. Third, all of the participants were female, and six of the seven participants identified as White. Although supervisors recommended all of the participants, diverse perspectives are less represented. For example, both College Advising Corps programs had many male and African American advisers, but only White female advisers were recommended. This raises some concerns about my approach in asking Directors to identify potential participants and who is considered an exemplary example. I assumed that my sample would have been more racially diverse, but I could have used a more purposeful sampling technique to ensure that the sample was representative of the programs' demographics. Fourth, I recognize that my past work in college admissions and pre-college programs could have impacted my interpretation of data and themes. Last, this study is limited because it only provides the perspective of the college advising professionals and not the students they serve.

Individual Cases

The college advising professional within the high school context and initiative bound each of the seven cases in this study. Table 2.1 provides an overview of the seven cases. The within-case findings will be presented prior to presenting the cross-case themes.

Table 2.1

Individual Case Details

Case	Position Title	Program or Initiative	Ethnicity & Gender	Highest Level of Education	Years in Current Position	Years in College Advising
Sonya	College Adviser	College Advising Corps Program A	White Female	Bachelor's Degree (Sociology)	1	1
Taylor	College Adviser	College Advising Corps Program A	White Female	Bachelor's Degree (Communication)	1	1
Erin	College Adviser	College Advising Corps Program B	White Female	Bachelor's degree (Sociology)	2	2
Beverly	Family & Community Facilitator	GEAR UP	White Female	Bachelor's Degree (International Studies)	3	3
Liz	Family & Community Facilitator	GEAR UP	White Female	Bachelor's degree (Psychology)	2	4
Charlotte	College & Career Center Specialist	School District	White Female	Bachelor's degree (Psychology)	5	7
Adele	College & Career Center Specialist	School District	Hispanic Female	Human Resource Management (Development)	1	11

Sonya: “Puller of Solutions”

Sonya is a College Adviser with CAC Program A and works at a predominantly Black rural high school. Sonya became interested in college access through her involvement in social justice issues while in college. She said that the high school she serves is “sort of the black sheep, redheaded stepchild of the county,” and that the principal is glad that the CAC program is there to build the college culture. Sonya loves working with her students and stated, “I think students think that I often pull solutions sort of out of thin air when those pathways are actually there, they just haven't been able to have access to them.” According to Sonya, most students do not have much family history of college attendance, are low-income, and often face financial barriers to college. Her private office is located in the main office suite, and she works closely with the school counselor. She plans to pursue a master’s degree in Higher Education after she finishes her second year as a college adviser and hopes to continue working with first-generation students.

Taylor: “So Close in Age”

Taylor is a College Adviser with CAC Program A and works at a diverse rural high school where nearly half of the population is African American. She is the first college adviser at the school, and she had concerns about looking young and students thinking that she was just another student. However, as she adjusted to the school and her new position, she gained more confidence. She stated, “It’s been a really good experience to be close in age to them and I don’t think it’d be the same experience if I were older.” This supports the philosophy behind the near-peer model of the CAC program. Taylor has her own office space in the student services suite, in addition to a college and career center classroom that

she uses for workshops and college admissions presentations. Overall, she feels the administration, teachers, and school counselors support her role at the school. After she finishes her second year as a college adviser, she plans to enroll in a Higher Education graduate program and hopes to work with college students.

Erin: “Help Students Achieve What I Was Able To Achieve”

Erin has been a College Adviser with CAC Program B for two years. She splits her time between two predominantly White rural high schools in the same county. Erin was a low-income first-generation college student herself and can relate well to the students she is working with. She explained that she was drawn to the position because she wanted “to help students achieve what I was able to achieve by going to college.” One of the most challenging aspects of her job is feeling that she does not have enough time to work with all of the students she wishes. She feels she has helped many students navigate the complex college process who otherwise would have been lost or overwhelmed. She has a private office that is located in the main office suite. She feels that the administration is very supportive of her position and that she has a great working relationship with the school counselors. After her time in the college adviser position, she hopes to find a similar job working in the college access field.

Beverly: Teacher of “Life Skills”

Beverly has been a GEAR UP Family and Community Facilitator at a medium-sized rural high school for the past three years. She has a background in social work, which she feels prepared her well for her GEAR UP position. Beverly feels that students are very capable but often need some extra assistance in writing professional emails and articulating

themselves in a business-like manner. She does not believe in handholding and wants to teach students these essential life skills to help them effectively transition to college. Each month, Beverly hosts at least one event focused on educating families and the local community. However, the majority of her time is spent working in the high school where she facilitates student activities and programming. Regarding the new position and how it was received at her high school, she states, “We've been very welcomed and I think that teachers and administrators and counselors are glad to have an additional resource.” She shares a large classroom with the other GEAR UP Facilitator where students often gather for workshops and lunch groups.

Liz: “Not a Straight Line Process”

Liz is in her second year as a GEAR UP Family & Community facilitator at two low-income rural high schools. Before working with GEAR UP, she served as a CAC college adviser for two years, which she says prepared her the best for her current college advising role. Her office is conveniently located in a suite that includes individual offices for the two GEAR UP staff members and the scholarship manager. Unfortunately, she feels the administration at this high school is not that supportive of the GEAR UP program. Also, she explained that the college staff operates separately from the school counseling department, and sometimes there has been tension over who handles certain aspects of the college advising process. Liz explained how she helps students: “Generally, my job is helping kids figure out what they're going to do when they graduate high school ... help them figure out all the steps along the way because it's such not a straight line process.” Liz is passionate about college access and believes college advising positions should be a funding priority.

Charlotte: “Middle Person”

Charlotte is a College and Career Center Specialist at an academically competitive high-socioeconomic suburban high school. She has worked at two different high schools in the same position for seven total years. The students at her school experience a high level of stress and anxiety because the expectations for academic performance and college enrollment are extremely high. She explained that the parents have high expectations, and she stated, “A lot of [parents] are so worried that they're not going to be able to tell their friends at cocktail parties, my child is going to X school.” Her position mainly involves college advising and working with college admissions representatives. She has numerous admissions representatives come to visit with students in the College and Career Center each year, and she has strong working relationships with admissions offices. She explains that her role is to be the “middle person” between the students and the college admissions offices.

Adele: “Empowering Students with Information”

Adele is a College and Career Center Specialist in a racially diverse suburban high school. She has worked in this same role for over 10 years at three different high schools in the same county. Adele was the only participant in this study with a graduate degree and had the most college advising experience. She sees that the career advising and college advising components of her job are both equally important. She states, “When you talk about a possible career then what's the next step, where are you going to get this education and training.” She feels that she is a resource for students and is able to empower them with information. She also has a great working relationship with the school counselors at her high school. She indicates that the career and college advising always begins and ends with the

school counselor and that her position is an *additional* resource there to provide further support to students and the school counselors.

Findings

The role and experiences of the college advising professionals in this study were unique to the program/initiative and high school context where they worked. After conducting the cross-case analysis, I identified five themes in the data: (a) Training Needs Improvement, but Informal Training is Valuable; (b) Challenging Yet Rewarding; (c) A Myriad of Services Provided; (d) High School and Community Context Shapes Approach; and (e) Strong Belief that Position is Essential. These five themes highlight the key findings across the role and experiences of college advising professionals.

Training Needs Improvement, but Informal Training is Valuable

The college advising professionals all had different educational backgrounds, and only one had a master's degree. There was also variation in the amount and types of training that college advising professionals received. The College Advising Corps program provided five to six weeks of summer training prior to advisers starting in their positions; whereas, GEAR UP provided less formal training as coordinators began at different times. The College and Career Center Specialists have monthly training meetings during which they collaborate and share ideas. Overall, the participants discussed the importance of training and how many aspects of their position were learned on-the-job.

The college advising professionals expressed that more training could be provided, especially in the area of financial aid. Sonya described the financial aid process as “blurry and difficult to navigate.” Many of the professionals had some training on financial aid but

expressed that they still felt underprepared. Beverly stated, “I think that every time I’ve ever gone to a training on financial aid, I always think it’s going to be really helpful and it’s never actually very helpful.” Further, Taylor expressed, “We did have a lot of training on financial aid, but I still wasn’t prepared when it was time, but not because the training wasn’t thorough, just because it’s – you can’t account for every situation in a training.” Similarly, Liz felt confused by the financial aid training and having to figure out a lot on her own. She stated:

I think that those trainings are never very effective because they just talk about financial aid as if you already understand. That was probably the least effective and I think you need to fill [the forms] out and to actually go through scenarios and have much more in-depth financial aid training because it’s probably the most confusing thing we have to deal with.

The participants expressed the importance of informal training. Many college advising professionals had past experiences in advising or in positions where they worked with youth. Liz, who was a CAC college adviser for two years prior to working with GEAR UP, stated, “My training from doing it for two years was much more substantial than the training I got with this particular program.” The participants indicated that many aspects of their profession were learned on-the-job. Despite her past experience working with youth, Charlotte animatedly described her transition to position, “My first year I just had to figure it out as I went and sometimes I felt like I was drinking from a fire hose is the easiest way to explain it, you kind of learn as you go.”

The college advising professionals discussed the importance of learning from their colleagues in the field. Erin talked about having former advisers in training with her and explained, “Hearing those experiences and being able to interact with those veterans, I think, was the best part of training and prepared me more than anything else.” As Sonya reflected back on her training, she had similar thoughts:

The most helpful was talking to other college advisers, hands down. Especially college advisers who served the same populations as I do, who could tell me specifically and in great detail the kind of challenges that the students face and the sort of barriers that are sort of preventing them from going to college.

Adele and Charlotte also discussed the importance of the network of College and Career Center Specialists in their school districts and said that the most helpful training was “the unity that we have with our colleagues ... the [other] Career Center specialists.” Charlotte explained, “We also have a great network, because we're all so close and we have monthly and quarterly meetings ... and we're all assigned a mentor in the county, so another college or career center specialist who works with us.” Liz said that attending conferences and training sessions gave her the opportunity to learn from others in the field, which she felt was “the most helpful, because you can have idea sharing, so you see what someone else is doing in their respective county and then you can say, oh, I want to do that here, ‘how did you do it?’” Overall, learning on-the-job and from other colleagues in the field was critical to their success.

Challenging Yet Rewarding

The second theme that emerged from this study was that the college advising profession requires hard work and is often challenging, but is still very rewarding. Beverly clearly explained this dichotomy, “I mean it’s very rewarding, it’s also very time consuming. If you want an 8:00 to 5:00 job, this is probably not the place for you. I think you just have to be available.” Sonya talked about not turning students away during school hours but then having to take work home to catch up. Many of the professionals talked about the extra hours they worked outside of their set schedule, which included staying after school to assist students.

Several of the participants mentioned that they felt they were underpaid. Liz said, “The pay is not good ... we're paid less than teachers and we're 12 month employees. So we work longer and we get paid less.” Both College and Career Center Specialists indicated that they were not paid much. Charlotte was concerned about the district funding and stated, “We're not paid a lot, so hopefully we won't ever be cut from the budget.” Adele further explained that they get paid less than school counselors and teachers because they are classified differently. She said, “So the [school] counselors are with the teacher salary scale. And so for instance, if I were in a teacher’s scale, I would get more because I have a master’s [degree].”

All of the college advising professionals indicated that they enjoyed their profession and helping students with the college choice process. Taylor liked the near-peer model of the CAC program and stated, “I think it’s been a really good post-graduation job because it is so fresh, being in college is so fresh in my mind that I can relate to them.” Erin enthusiastically

said, “I love what I'm doing and I'm excited that I'm here. Hopefully I'll be able to find something that is similar to this job in the future because I really do love what I'm doing!”

Charlotte said:

I get up every day and come to work and feel like I'm not coming to a job. There's never a day that I really don't want to be here ... the relationships I have with the admissions people, with my students, it's amazing.

Overall, all the college advising professionals seemed to genuinely enjoy their profession. Further, all the CAC college advisers that had term restrictions all had future plans of working in college access or with college students.

The college advising professionals often discussed how rewarding it was for them to make a difference in the lives of students. Liz said, “That's the rewarding part because you know that you made a difference in this one person's life, you're going to make them fulfill their dreams, and if you weren't there, that might not have happened.” Adele shared similar sentiments, “I make a difference in the life of a student and that could be by empowering them with information. This is like no other job in the world, I think this is like the best job in the world.” Further, Erin articulated what drew her to the position, “For me, I come from a background, low-income, first generation background, and so the thought of being able to help students achieve what I was able to achieve by going to college really drew me to this position.” All of the college advising professionals had a desire to help students reach their goals and dreams.

Students receiving college acceptances was one of the most rewarding aspects of the college advising profession. Beverly shared a story about a student that she helped:

I have a student that I work with who has a child ... I guess maybe she thought that she wouldn't go to school and she was sitting at my desk when she confirmed her decision to attend the school that she's going to go to next year and she said, "oh my gosh, I'm going to college!" and I said, "please don't make me cry in the middle of the day".

When asked about the most rewarding aspect of her position, Sonya expressed:

When they come into my office all bashful and they're hiding something behind their back and I'm like, "what is that?" and they slide their acceptance letter across the [desk] and we start freaking out and crying and it gets really exciting.

Each of the participants shared stories about students' college acceptances and how that was one of the most rewarding aspects of their work. This theme verifies that although the work is often stressful and challenging, the college advising professionals each sincerely enjoy what they are doing in the lives of students.

A Myriad of Services Provided

The participants provided numerous college advising services and used inventive strategies to connect with students. The college advising professionals all worked with students one-on-one in their office or center. Students could set up individual appointments in advance, but they would often stop by without an appointment. Erin described meeting with students: "[I] do one-on-one meetings whenever a student comes in and needs – has specific questions. That's most of what my time is spent doing." Sonya talked about the two-way process of connecting with students: "So it's kind of like a mixture of both, some kids will just come to us and some we have to kind of go and try and find them and get them

to listen to us as much as we can.” Charlotte explained that she has an open-door policy: “It’s completely voluntary, any student who walks in the door ... I will work with them.”

The college advising professionals facilitated classroom presentations, workshops, college admission representative visits, parent nights, and college tours. The classroom presentations allowed them to reach a larger group of students and were often targeted toward a specific grade level. The college advising professionals also stayed after school to work with students on college applications and financial aid. Adele explained that she stays after school to help students with the FAFSA: “I’ll say ... ‘the career center will be open from 4:00pm to 7:00pm, sign up!’ I’ll have a couple of nights that I’ll work.” Beverly described helping students with applications:

We did application afternoons throughout the year ... almost once a month. And that’s just open to any student that needs help with – whether it’s scholarship, an actual college application, whether it’s financial aid, anything they need help with college, we’re there from 3:00 to 4:30 p.m.

Additionally, the college advising professionals often stayed after school to host parent nights. They tried to find a balance between taking students out of class and working with them after school.

College advising professionals provided assistance with admissions requirements and college options. Liz explained the process of helping students find college matches: “So we try and really emphasize researching, looking at schools, figuring out what can you actually, realistically get into. I talk about ... safety schools, reach schools, match schools.” Adele and Charlotte used tools such as scattergrams to show a student their GPA and SAT/ACT

scores compared to college acceptances at certain colleges. Sonya discussed how she talks with students about being more competitive for admission: “I share ... individual information about college, what that looks like, how that matches with their GPA and their test scores, what they can do differently over the next year to ... get to where they need to go.”

The college advising professionals also used a variety of methods to share information with students. Traditional methods of disseminating information such as handouts, newsletters, paper mailings and school announcements were utilized. However, they were creative in reaching the younger generation and often used electronic methods, such as social media, text messaging, and voicemail services. Taylor explained, “I have an Instagram and Twitter that I will post about events, like if we're having a campus tour ... or if there's a parent night.” Several of the schools had a web portal that allowed students to sign-up for college visits and utilize other college-related resources.

High School and Community Context Shapes Approach

The context of the high school and community significantly shaped the approach and focus of the college advising professionals. Each case was bounded by the high school and the structure of the program/initiative that funded their position. Though participants worked for the same programs or districts, their job often varied based on the demographics of the student population or the culture at the school. Table 2.2 provides an overview of the school context.

Table 2.2

High School Context

Case	Position Title	High School Served	Title 1	School Size	American Indian/Alaskan	Asian/Pacific Islander	Black	Hispanic	White	Two or more races	Free/Reduced Lunch	Locale
Sonya	College Adviser	HS	Yes	Very Small	0%	0%	65%	5%	25%	< 5%	70%	Rural, Distant
Taylor	College Adviser	HS	Yes	Small	0%	< 5%	50%	5%	45%	< 5%	50%	Town, Distant
Erin	College Adviser	HS A	No	Large	0%	< 5%	< 5%	5%	90%	< 5%	45%	Suburb, midsize
		HS B	No	Very Small	0%	< 5%	5%	10%	85%	< 5%	50%	Suburb, midsize
Beverly	Family & Community Facilitator	HS	Yes	Medium	< 5%	0%	35%	10%	50%	5%	55%	Town, Distant
Liz	Family & Community Facilitator	HS A	Yes	Large	15%	< 5%	50%	< 5%	30%	5%	70%	Town, Distant
		HS B	Yes	Very Small	15%	5%	25%	5%	40%	5%	70%	Town, Distant
Charlotte	College and Career Center Specialist	HS	No	Very Large	0%	20%	< 5%	5%	70%	5%	< 5%	Suburb, large
Adele	College and Career Center Specialist	HS	No	Very Large	0%	25%	5%	15%	50%	5%	15%	Suburb, large

Note. School size refers to student count: very small (less than 500), small (500-1,000), medium (1,000-1,500), large (1,500-2,000), very large (over 2,000). Percentages over 2% were rounded to the nearest 5%. Source: Common Core of Data (<https://nces.ed.gov/ccd/schoolsearch>)

The college advising professionals often had a period of adjustment where they had to take time to understand the school context. Sonya discussed her transition: “I had one [SAT/ACT workshop] and it was not very successful – because it was very early on, when I first started here, and I hadn’t really adapted to the environment and understanding when students could or could not meet.” Charlotte explained that different school contexts shaped her position:

So we're called College and Career center Specialists. So when I initially came in I anticipated doing a lot of career support for students ... that's what I would say I did the first high school I was at. And then after transferring here, I pretty much only do college [advising], very little outside of that.

Many of the college advising professionals work in low-income schools, and students are often faced with financial barriers to college. Several of the schools actually provided free lunch to all students. When asked about the barriers that students face when accessing college, Erin said, “I think financial situations, low income students typically have the hardest time, they just don’t know what resources are out there or how to access them.” In contrast, Charlotte worked at a more affluent high school: “the parents are very successful, very highly educated. The parents – a lot of them are very, very wealthy. So they just have incredible resources.”

The community in which the high school is located often shaped the students’ college and career aspirations. Sonya explained that many of her students were first-generation:

I seem to find that I am the only person in their sphere of adults that has spoken with them at all about [college]. They also have no idea about careers because what they

see in their community are the careers that they're aware of and they think that they have access to. Even if they excel in science, they might only want to be a mechanic because dad was a mechanic, grandfather was a mechanic, neighbor's best friend's dad is a mechanic.

Beverly also worked at a rural high school where a lot of the students are first-generation. She explained, "Well here, you're in a rural area. One of the things that is – a lot of them are first generation. I think even being so close to so many institutions, a lot of them have never visited a college." Liz also described the community context: "I don't think it's a lack of information, I think it's just a lack of support from the community."

The parental involvement in the college choice process also varied across schools. Sonya explained, "Parents just have no idea and have no idea how to encourage their students. Also, I think I'm seeing just in general a lack of parental involvement just as high school goes on." On the other hand, the parent involvement was the highest at Charlotte's school. She stated, "They're very involved. We have five parent coffees per month; this is also unique to [this high school]. We have to go to their houses and present and they'll have a group of 20, 30, 40, 50 moms and dads." Depending on the type and level of parental involvement, advisers often tailored services to best meet the needs of their students.

Strong Belief that the Position is Essential

In addition to enjoying their positions, the college advising professionals also expressed that there is a significant need for these types of positions. All of the participants worked with admissions representatives to schedule high school visits. Charlotte talked a lot about her relationship with admissions offices and how her role facilitated strong connections

with admissions representatives compared to other schools. She stated, “I think for the admissions people we're invaluable because they will tell us, ‘we will show up at a high school and there's nobody to meet with us and here, we'll always meet with you’”.

They expressed that they have the time and training to adequately assist students with college advising. They often discussed how the school counselors were not able to assist students in college advising in the ways that their position allowed. Liz explained her role in contrast to the school counselors:

What I would hope the state and other people recognize is that this type of work is so necessary. Guidance counselors are 4 to 1,500 [students]. There's no way you can do what we do. My whole job is college advising and I also do some other stuff, but that's 90% of my day. If you expect a counselor to do all of this and to be a counselor and all the other responsibilities they have, it's impossible.

Many discussed how school counselors did not have that same training or time to assist students with college in addition to their numerous responsibilities. Erin explained why she feels that these positions are needed in addition to school counselors:

I feel like it's very needed because ... first of all, I feel like I've had a lot more training than guidance counselors have in the whole college application process, so I know some more of the details than they know. With a school this size ... they have time constraints ... not that they wouldn't be able to do it, I just don't feel like students would get the attention and be able to get all of their questions answered.

Beverly further discussed how school counselors have numerous responsibilities and do not have the time to give to college advising. She stated, “The counselors have so many more

responsibilities as far as scheduling and all of those things ... and so the fact that we are here all the time just to help them with college is what they're happy about."

There was a deep-rooted belief that their work was important and should be funded. Charlotte and Adele were both concerned about the possibility of the position being cut from the district budget. Charlotte stated, "If they got rid of this position it'd be a real disservice because ... every year the [school] counselors have more and more added to their plate, higher expectations, state mandates that they can't keep up with all of it." Notably, the participants in this study felt that their position was important and that they were able to provide essential college advising services that school counselors could not.

Discussion and Implications

The findings from this study begin a new and important dialogue about the role and experiences of college advising professionals in public high schools. The findings from this study suggest that college advising professionals provide substantial resources to students that can increase college access. Aligned with social capital theory (Bourdieu, 1986; Coleman, 1988), college advising professionals appear to provide an important source of school social capital (Lin, 2001) for high school students. This position adds to students' social network and may potentially enhance their college enrollment outcomes by providing information and assistance with the college choice process. For low-income and minority students who often attend schools where college advising services are less available (McDonough, 1997, 2005a), embedding a college advising staff member within the structure of high school would likely increase a student's social capital. We are able to learn much from the participants in this study because they are each considered exemplary examples and

have significant experience in college advising. These findings have important implications for practice, training and education, and policy.

Practice

The findings from this study confirm previous findings that traditional school counselors may not have the adequate time to assist students in the college choice process given the numerous other demands of their position (McDonough, 2005b). College advising professionals are able to focus exclusively on building a college culture, advising students about college options and financial aid, and providing application assistance. Because school counselors have many competing priorities, schools may need additional staff members such as the college advising professionals in this study to assist students in the college choice process. The division of labor between the school counselors and college advising professionals seemed to work well at the majority of schools. Notably, each case in this study is considered to be an exemplar, and they all seemed to give extra effort in assisting students.

This study finds that exemplary college advising professionals provide numerous college-related resources such as one-on-one application assistance, financial aid literacy, college advising, and test preparation. Further, student's college-related social capital is enhanced through social relations with college admissions offices and college tours. This study supports Stephan's (2013) proposed model that shows how college advising professionals can change social relations and social capital resources within high schools. Across these exemplary cases, each participant clearly had a genuine passion to help students, and each stayed after hours, made concerted efforts to meet with students, and had

an open-door policy. Some best practices include adjusting programs to meet the needs of the students within the high school context, coming up with creative ways to reach out to students about college, making an effort to reach out to students who might not take the initiative to schedule an appointment, and providing personal assistance with college and financial aid applications.

Training and Education

This study also provides insight about the training and education of college advising professionals. The findings from this study indicate that on-the-job training and learning from other professionals in the field are extremely important to the development of the college advising professional, and participants indicated several areas for which further training would be helpful. Training needs to be improved in the area of financial aid because the majority of the participants indicated that they felt least prepared to assist students in this area. Programs should do more than just provide basic financial aid information in training. A more comprehensive financial aid training could include working through financial aid scenarios, filling out actual financial aid forms, and providing more details on the process. Further, policies around financial aid, college entrance testing, and college admissions are constantly changing; therefore, on-going training is needed.

In addition to training, the college advising professionals in this study all earned various postsecondary degrees, and only one had a graduate degree. Notably, most professions within the K-12 context (e.g., school counselors, principals, and teachers) have prescribed educational requirements, such as specialized master's degrees. However, there is no clear credentialing process for college advising professionals. Because school counselor

education programs have historically not included training in college advising (Hossler et al., 1999; McDonough 2002, 2005b), specializations in the area of college advising could potentially be developed. College advising professionals have the appropriate training and education to help students effectively. If this position continues to grow in public high schools across the nation, then graduate education programs, professional development, and specialized training need to be expanded to formalize this profession. Developing a certificate program through which certain classes would be required and individuals could become certified college advising professionals is one possibility.

Policy

Last, the findings from this study can help inform educational policy for our nation's public high schools. College enrollment of high school graduates is not currently built into the K-12 accountability system (McDonough, 2005b), which is evidenced by the lack of college advising in public schools as compared to private schools. Private preparatory schools continue to invest significant resources in their college advising operations and often have a dedicated staff member to assist with college advising (McDonough, 2005b; NACAC, 2011); therefore, education policymakers need to ensure that public high school students are also provided with equitable college advising resources. The findings of this study suggest that exemplary college advising professionals are providing significant college-related resources beyond traditional school counseling, which should encourage more public high schools to invest in this additional staff member. Public high schools and districts could potentially replicate these positions and exemplary practices to better assist students.

Additionally, many different sources provide funding for these advising positions. Some districts in the nation fund positions such as the College and Career Center Specialists, but there was concern from the participants that this position could potentially be cut from the budget. These positions are often seen as additional resources, and the federal government or non-profit organizations fund many of them. This raises many questions about who should invest in these types of staff members. If postsecondary degree attainment is a priority in our nation, then the K-12 system should have more systems of accountability to ensure that students have adequate college advising services in public high schools.

Future Research

McDonough's (2002, 2005a, 2005b) work started an important conversation about college advising resources in public high schools, and this research seeks to extend this literature by examining the role of college advising professionals. While pre-collegiate programs like TRiO have been around since the 1950s, non-profits and federally-funded initiatives have only focused on school-based college advising services in the past couple of decades. Much of the current literature examines cohort initiatives that only assist specific groups of students, largely outside of school. More research needs to be conducted to understand school-based models that place college advising professionals directly in public high schools to serve all students. Though this study examined the role of college advising professionals from several different initiatives, future work could focus solely on one program to gain a better understanding of their structure and practices.

Future qualitative research should examine the students' experiences working with college advising professionals. Understanding how students perceive the role and assistance

is important. To better understand the college advising services provided, researchers should conduct observations of one-on-one student meetings, classroom presentations, and workshops. Policymakers and administrators will make better decisions about the best way to structure these positions within the high school context if they gain a more holistic understanding of how these individuals assist students. Future research is needed to understand the most effective, potentially replicable college advising practices.

Future research should also explore the division of labor between the school counselor and the college advising professional. Though most participants indicated that there was a good working relationship, a couple of them mentioned that there was some tension or that there was no clear division of labor. It would be worthwhile to explore how the school counselors and administration perceive this additional resource. Though past literature often focuses on the role of school counselors, more current research is needed to understand the school counseling profession regarding college readiness and enrollment responsibilities.

More quantitative research should be conducted to better understand the effectiveness of these additional staff members beyond traditional school counselors. Though the college advising professionals in this study explained the importance of their positions, future quantitative research should examine the causal effect of this additional resource on college readiness and matriculation. Indeed, there are numerous quantitative studies on pre-collegiate initiatives, but unfortunately, there is a lack of empirical evidence about the causal impacts (Corwin et al., 2005; DesJardins & Flaster, 2013). As new programs develop and

school districts decide to fund college advising staff members, rigorous research evaluations should be conducted to help inform future educational policy.

Last, the majority of private schools invest in a college advising staff member (NACAC, 2011); therefore, more research should be conducted to understand their best practices. This study focused on public school college advising professionals because this resource is less available. However, understanding and possibly learning from the college advising practices at private schools could potentially inform the practice at public schools in the nation. As private schools continue to invest money in additional college-related resources for students, we need to understand which practices could potentially be replicated and funded in the public school sector to close the college access gap.

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**PREPARING STUDENTS FOR POSTSECONDARY ENROLLMENT:
A DIFFERENCE-IN-DIFFERENCE ANALYSIS OF COLLEGE ADVISING ON
COLLEGE READINESS**

Over the last few decades, the number of students enrolling in college has increased substantially, yet postsecondary enrollment continues to vary based on socio-economic status, race/ethnicity, and other demographic characteristics (Baum, Ma, & Payea, 2010; Perna & Kurban, 2013). This is a concern because postsecondary education can be a promising path out of poverty and provides students a pathway to greater economic opportunities. The variation in college preparation during high school is one reason for these perpetual imbalances in postsecondary enrollment. Unfortunately, “across the spectrum of public systems of K-12 education, the college enrollment of graduates is not built into any school accountability system” (McDonough, 2005b, p. 69). This becomes problematic because students might lack the proper guidance and information needed to successfully transition from high school to college.

“Given the decentralized nature of US postsecondary education, high schools are the only place where all students have the opportunity to come into contact with information on the complexities of college preparation and application” (Conley, 2007, p. 26). However, many high schools, especially those with low college-going rates, lack sufficient college-related counseling, which contributes to inequities in college access (McDonough, 2005a; Perna et al., 2008). In public schools, there is not typically a designated staff member who has college preparatory responsibilities as his or her primary job or someone who is held accountable for college enrollment (McDonough, 2005b). Often, high school guidance

counselors are tasked with assisting students with college aspirations; however, many counselors have other competing responsibilities and are overworked (McDonough, 2005b). As Perna & Kurban (2013) explain, “Especially in low-performing high schools, counselors often have numerous other noncollege-related responsibilities, including scheduling, testing, and providing personal and nonacademic counseling, and may not be trained in the nuances of college and financial aid processes” (p. 22). Though guidance counselors might be the logical choice to assist with college counseling efforts, schools might need additional resources to support students with the college choice process.

The path to college involves many complex steps, and high school students need assistance to understand and complete these steps to enroll successfully (Klasik, 2012). Plausibly, some traditional approaches that are designed to increase college access focus too narrowly on college enrollment without adequate attention to the steps required for college readiness (Swail & Perna, 2002). Research confirms “a lack of information and a lack of understanding about the process of applying for college and for financial aid result in sub-optimal college-going decisions” (Bowen, Kurzweil, & Tobin, 2005, p. 318). Aspirations to go to college are not enough if the proper steps are not taken to enroll. For example, high school students must take specific college preparatory courses, apply for financial aid, take entrance exams, and submit college applications. Though a high number of students aspire to go to college, many of them, unfortunately, do not enroll because they fail to complete some part of the application process (Avery & Kane, 2004). Experimental research suggests that personally assisting students with aspects of the college enrollment process, specifically

filling out forms such as applications for admission and financial aid, can increase college enrollment (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2012).

In recent years, new college advising/coaching initiatives aimed at assisting students with the college enrollment process have been developed. Though private schools devote more time to college advising and the majority of them employ a staff member dedicated to college advising, recent college advising initiatives seek to close this gap. Several school-level coaching models, such as the College Advising Corps and the Coach Program at Chicago Public schools, place college advisers/coaches in public schools. “Although coaching programs differ, the approach typically assigns an advisor to a high school to work with school staff and assist students with the nonacademic tasks required to navigate the college enrollment process” (Stephan & Rosenbaum, 2013). These newer college advising models attempt to address the lack of college advising services provided at public high schools. This article examines the impact of a college advising/coaching model by employing a rigorous research evaluation approach.

College Advising Corps

Founded in 2005, the College Advising Corps (CAC) is a privately-funded non-profit college access initiative. Originally called the College Guide Program, the initiative was first launched at the University of Virginia in 2005. The Jack Kent Cooke Foundation provided initial funding for the Advising Corps (Virginia College Advising Corp [VCAC], 2012). Since the founding of the Advising Corps, the initiative has expanded to over 20 partner institutions in 14 states across the nation. The mission of the College Advising Corps is to increase the number of low-income, first-generation, and underrepresented high school

students who enter and complete higher education (CAC, 2014). In order to accomplish this mission, each partner institution recruits and trains recent college graduates to serve as full-time college advisers in underserved high schools for two-year appointments.

In the 2013-2014 academic year, the Advising Corps program had a total of 375 college advisers serving 423 high schools. The advisers participate in a training program at their respective institutions in addition to a weeklong training at the national level (CAC, 2014). Once trained, the college advisers are placed in high schools to provide advising and encouragement to help students navigate the complex college admissions process (CAC, 2014). Specifically, advisers assist students with a range of college-readiness activities including the college search and application process, standardized test registration and preparation, and financial aid and scholarship applications (Horng et al., 2013, p. 56). Further, the Advising Corps operates as “a full school model in which the advisers work with any student who requests assistance as opposed to a cohort-based model in which the adviser only works with a subset of students from the school” (Horng et al., p. 56).

Carolina College Advising Corps. This study focuses specifically on the effects of the Carolina College Advising Corps (CCAC), a constituent program at the University of North Carolina at Chapel Hill (UNC-CH). Originally, UNC-CH was the only partner institution in the state of North Carolina; however, several more partner institutions joined the College Advising Corps in the 2014-2015 academic year. The Carolina College Advising Corps was founded in 2007 and started with 4 advisers serving 8 high schools across the state. The program has continually expanded and now has over 30 advisers serving over 50 high schools. The Carolina College Advising Corps targets underserved public high schools

in North Carolina that have at-risk student populations. Specifically, the target population consists of high school students from populations that are historically underrepresented in higher education, including low-income and first-generation students (CCAC, 2012).

Purpose of the Study

The purpose of this study was to examine the effects of the Carolina College Advising Corps on two primary college readiness outcomes. Specifically, this study examined the effect of a college adviser in a high school on academic preparation and college entrance exams. Scholars argue that one of the greatest predictors of college enrollment is academic preparation (Perna, 2004, 2006). According to Perna's (2006) conceptual model, academic preparation is associated with a student's demand for higher education, which is central to human capital theory. This study also examined the effect of having a college adviser on SAT participation rates and scores at the partner high schools. The majority of institutions of higher education require a college entrance exam; therefore, this is a key step in the college choice process. Though many students indicate that they aspire to go to college, they often do not take the SAT or apply for admission (Avery & Kane, 2004). Importantly, this study examined more concrete outcomes beyond college aspirations, as aspirations are not always a realistic predictor of college enrollment. To examine the effectiveness of interventions and programs, a broad range of outcomes beyond actual enrollment such as academic preparation should be assessed (Perna, 2006). Notably, this study contributes to the current literature on college access by examining the effects of a college adviser using a quasi-experimental research design.

Literature Review

The review of the literature draws from several key areas that bring context to this study on the College Advising Corps. The two main bodies of literature that inform this study are college readiness (outcome) and college advising (treatment).

College Readiness

Before deciding to enroll in college, students make a series of choices that impact their college-going behavior (Paulsen, 2001). Students who enroll in college, by and large, must complete five major steps including aspiring to attend college in 10th grade, maintaining college aspirations in 12th grade, taking the SAT or ACT, attaining minimal college qualifications, and applying for college (Klasik, 2012, p. 542). If key parts of the application process are not completed, then students will not enroll in college (Avery & Kane, 2004). According to Cabrera and La Nasa (2001), students must complete at least three critical tasks, which includes meeting minimal college qualifications (e.g., taking rigorous coursework, GPA, class rank, and SAT scores). The National Association for College Admission Counseling (2010) reports that “grades in college preparatory courses and strength of curriculum were considered by colleges to be the top factors in the admission decision, followed closely by admission test scores” (p. 22). This study examines two key outcomes related to college readiness and the application process: participation in advanced college preparatory course and taking the SAT.

Research has consistently shown that a key component of college readiness and enrollment is academic preparation and achievement (Perna, 2004; 2005). Academic preparation and achievement are positively associated with standardized college admissions

exams (Horn & Kojaku, 2001) and enrollment rates (Perna, 2000; Perna & Titus, 2004).

Though academic preparation is key to college enrollment, low-income and other disadvantaged groups often attend high schools with less rigorous course offerings (Perna, 2005). This study examines how having a college adviser in a high school affects participation rates in advanced college preparatory courses.

While many students aspire to attend college, the complex application process is often a barrier to enrollment (Klasik, 2012). Research has shown that taking the SAT or ACT is a strong predictor of completing college applications and enrolling in postsecondary education (Avery & Kane, 2004; Klasik, 2012). This study examined how having a college adviser in a high school affects SAT participation rates. Taking the SAT is a key step in the college admissions process. Klasik (2012) argues that taking the right courses and the SAT test are the groundwork for applying to college, and it is critical that students are aware of the requirements for admission early enough in their high school career to have time to complete the steps.

College Advising

Many research studies focus on college advising in the context of public high school counselors (Linnehan, 2006; McDonough, 1997, 2002, 2005a, 2005b; McDonough & Calderone, 2006; McKillip, Rawls, & Barry, 2012; Perna et al., 2008; Venezia & Kirst, 2005). According to McDonough (2005b):

[School] counselors are the logical choice to be the K-12 staff member responsible for college access preparation and assistance and are often assumed to be handling

this role, yet they are inappropriately trained and structurally constrained from being able to fulfill this role in public high schools. (p. 69)

Historically, educational programs for school counselors have not included specific training in college counseling (Hossler et al., 1999; McDonough 2002, 2005b). In addition to having little training, guidance counselors also have limited time when their large student loads are accounted for (McDonough, 2005a, 2005b). For example, though the American School Counselor Association (2011) recommends a maximum student-to-counselor ratio of 250:1, in the 2010-2011 school year, the national average in public schools was 471:1. Further, guidance counselors “often have numerous other noncollege-related responsibilities, including scheduling, testing, and providing personal and nonacademic counseling, and may not be trained in the nuances of college and financial aid processes” (Perna & Kurban, 2013, p. 22).

Studies have found that supportive school counselors can be influential in helping students with the college search and application process (McDonough, 1997; Hossler et al., 1999). However, the availability and nature of college counseling varies greatly across and within schools (Linnehan, 2006; Venezia & Kirst, 2005). Specifically, college counseling is more common for students who are in advanced college preparatory tracks (McDonough, 2005a; Venezia & Kirst, 2005) and of higher socioeconomic status (Linnehan, 2006). Further, college counseling is less available in schools with predominantly minority and/or low-income populations (McDonough, 1997; 2005a); whereas, private preparatory schools invest significant resources in their college counseling operations (McDonough, 2005b).

Very limited research on college advising professionals within the public high school context exists. The College Advising Corps is one model, which recruits and trains recent college graduates to serve as full-time college advisers in partner high schools. Preliminary results from a nationwide evaluation found that schools served by a college adviser see an 8-12 percentage point increase in college enrollment rates (CAC, 2014). A research team at Stanford University conducted an evaluation in Caldwell County, North Carolina, and found that college attendance in partner high schools increased by approximately 14 percentage points as compared to control schools within the county (CAC, 2014). Some research has also been conducted on the college coaching model in Chicago Public Schools where coaches are assigned to high schools to assist students with college enrollment. In this study, coaches were not randomly assigned to high schools, though they were “distributed fairly evenly across high schools in terms of socioeconomic composition, racial composition, and academic achievement” (Stephan & Rosenbaum, 2013, p. 204). Using a difference-in-differences design, this study found that compared to schools without a college coach, the coached schools had greater gains in college enrollment. Specifically, schools with the college coach had increased college enrollment by 1.7 percentage points, increased college applications by 4.7 percentage points, and increased FAFSA completion by 2.6 percentage points compared to non-coached schools (Stephan & Rosenbaum, 2013).

Conceptual Framework

This study is framed by Perna’s (2006) multilevel conceptual model of college choice (Figure 3.1). Perna developed the model after an extensive review and synthesis of prior research addressing students’ college enrollment behaviors. This model assumes that four

nested contextual layers influence students' college-choice decision: (1) the individual's habitus; (2) school and community context; (3) the higher education context; and (4) the broader social, economic, and policy context. This study draws primarily on the first two layers, as the focus is on college advising within the high school context (Layer 2).

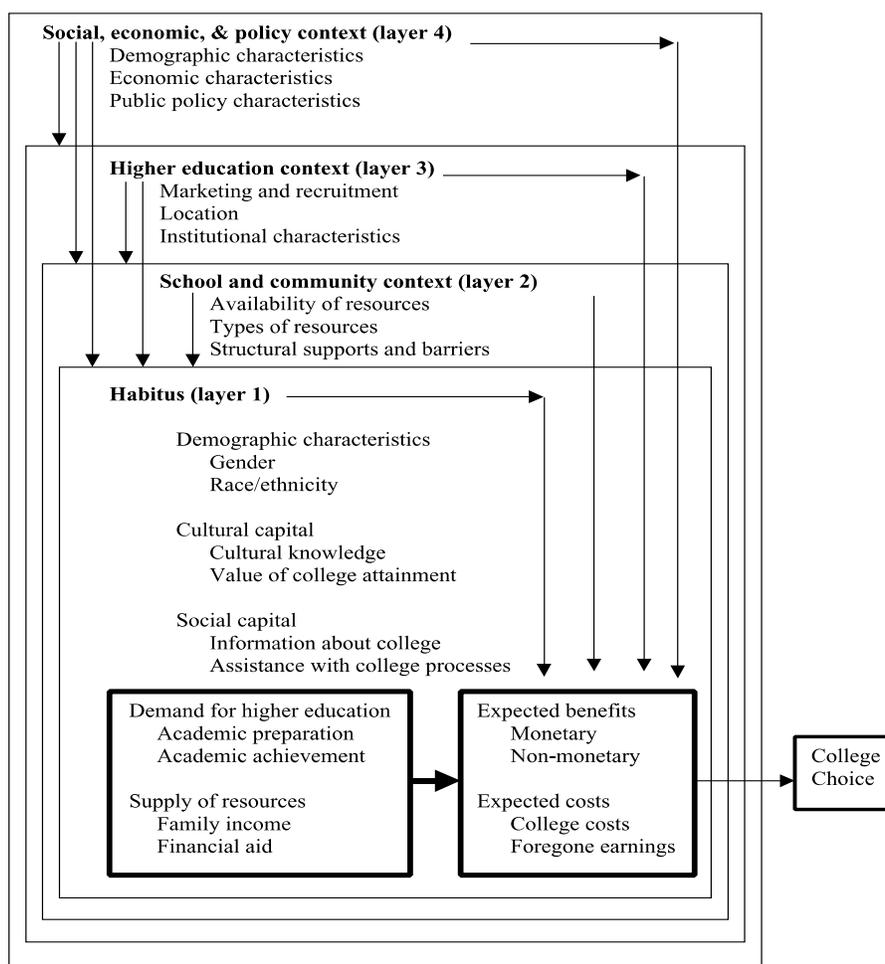


Figure 3.1. Perna's (2006) multilevel conceptual model of student college choice.

The economic theory of human capital is at the core of the model, which assumes that students' college choice behaviors are based on a comparison of the expected benefits with

the expected costs (Becker, 1993; Perna, 2006). This theory suggests that students decide to pursue higher education based on expected costs (time, tuition, and foregone earnings) and benefits (such as employment opportunities and better future salary). Therefore, a student's decision to invest in a college education will be worthwhile if the expected benefits outweigh the costs (Paulsen, 2001). Perna's (2006) model also considers that college choice decisions are influenced by both a student's supply of resources and demand for education. Students who have greater academic preparation and achievement are more likely to have a higher demand for postsecondary education compared to those that have had less academic preparation in high school. A student's supply of financial resources, such as family income and financial aid, will also impact their college enrollment decisions.

The individual habitus is the first layer of Perna's (2006) conceptual model (Layer 1). The habitus refers to an individual's internalized system of thoughts, beliefs, and perceptions that are shaped by their immediate environment and inevitably impacts students' college aspirations and attitudes (Bourdieu & Passeron, 1977; McDonough, 1997; Perna, 2006). An individual's habitus includes demographic characteristics like gender, race/ethnicity, socioeconomic status, and accumulated social and cultural capital. Social capital refers to "relations among persons that facilitate action" (Coleman, 1988, p. S100). In the context of college choice, social capital refers to an individual's access to social networks that provide information and assistance to attend college (Coleman, 1988; Deil-Amen & Turley, 2007; Perna, 2006). Though this study is focused on the effect of college advising on students' college readiness, recognizing that students' individual habitus (Layer 1) still has a very strong influence on college aspirations and choice is important. Even with the presence of a

college adviser in the high school, a student's individual beliefs as shaped by their immediate environment could potentially have a stronger influence on their behavior. Further, a student's habitus might strongly influence the decisions they make about which courses to take in high school and about participating in college entrance exams. If a student is not encouraged to do these things in their family environment, he or she may not be as prepared to apply and enroll in college.

Layer 2 of Perna's (2006) model is the school and community context. This current study focuses primarily on the school context because as the college adviser can be considered as a school resource and support for students. The school and community context layer is based on McDonough's (1997) concept of "organizational habitus," which identifies ways that schools and communities facilitate or impede the college choice process. School personnel, such as a college adviser, can be influential in providing access to resources and helping students navigate the college application process (Hossler et al., 1999; McDonough; Stanton-Salazar, 1997). However, some findings suggest that the school environment may restrict college enrollment for low-income and minority students (Stanton-Salazar, 1997). Guided by Perna's model, this study assumes that a college adviser in the high school would be considered a structural support that would help students prepare for college. If students have a college adviser in their high school, they should have greater assistance preparing for the college application process, which could likely lead to increased participation in college preparatory courses and SAT testing.

Research Questions

I ask two main research questions to understand the effects of the Carolina College Advising Corps on students' demand for education. Measuring the proximal effects of the program is important because preparing for college will likely lead to increased college enrollment. Though the ultimate goal of the College Advising Corps is to increase college access, one might expect that the presence of a college adviser would plausibly increase participation in certain college readiness benchmarks. The research questions are guided by Perna's (2006) conceptual model of college choice, as this model indicates that Layer 2 of the four layers influences a student's college choice behavior. Specifically, this study examines the effects of the college adviser treatment within the high school context (Layer 2) on college readiness. This study seeks to answer the following two research questions:

1. To what extent does the presence of a college adviser in a partner high school have an effect on student participation in advanced college preparatory courses?
2. To what extent does the presence of a college adviser in a partner high school have an effect on student participation and performance on the SAT test?

I hypothesize that the presence of a college adviser in a partner high school will increase the percentage of students participating in college preparatory courses and both SAT participation and performance. According to Perna's (2006) conceptual model that is guiding this study, the "differences in the demand for higher education are expected to reflect differences across group in academic preparation" (p. 108). Therefore, rigorous academic preparation is a strong predictor of postsecondary enrollment (Perna, 2004). With the college adviser providing increased information about college (social capital) and the value of

college attainment (human capital), I predict that students will participate in college preparatory courses and the SAT at higher rates, thereby increasing their demand for higher education.

Methodology

Though a vast amount of research focuses on college aspirations, access, and counseling in general, the current study adds to the literature by examining the causal effects of the College Advising Corps intervention. To date, there have been few published empirical quantitative research studies on the effects of college advising professionals in public high schools. I used a quasi-experimental research design and school-level panel data to explore the effects of the College Advising Corps. I also utilized an impact evaluation approach, which examined whether the changes in college-going behaviors are indeed attributable to the College Advising Corps intervention and not to other factors (Khandker, Koolwal, & Samad, 2010).

Research Design

To best examine the impact of the College Advising Corps on college access outcomes, one would conduct a true experiment. Randomized field experiments are considered the “gold standard” to assess causal effects because they address critical issues such as endogeneity, omitted variable bias, and selection bias (Khandker et al., 2010; Rossi et al., 2004). To conduct a true field experiment, a researcher would randomly assign college advisers to high schools across the state. Therefore, high schools in the treatment group would have a college adviser; whereas, high schools in the control group would not receive the college adviser treatment. Random assignment results in a greater confidence that any

observed differences between treated high schools and control high schools on college access are attributable to the college adviser intervention and not some other confounding variable.

Randomly assigning college advisers is not the current practice of the Carolina College Advising Corps because high schools must choose to participate in the program and must demonstrate a need for a college adviser. Further, random assignment can conceivably pose both ethical and logistical limitations. In cases where random assignment is not practical, researchers can employ quasi-experimental methods to examine the causal impacts of educational outcomes. This study used a difference-in-differences research design, which “compares treatment and comparison groups in terms of outcome changes over time relative to the outcomes observed for a preintervention baseline” (Khandker, Koolwal, & Samad, 2010, p. 72). This study utilized a school-level analysis of the program effects where the treatment group consisted of high schools in the state that receive the college adviser treatment, and the control group is all other public schools that do not have a college adviser.

The problem of unobservable variables that are not included in the analysis is one of the major issues that researchers have to consider when studying causal effects. Two types of unobservable variables can be problematic when estimating impacts in nonrandomized studies, including time-invariant unit variables and time-varying variables. Halaby (2004) explains, “Panel data offer certain advantages for dealing with such unobservables, but these advantages can only be realized through statistical methods that capitalize on the structure of observations that extend across units and over time” (p. 508). The use of the difference-in-differences method addresses the issues of time-invariant factors at the high school (e.g.,

location and public), and the model controls for time-varying covariates (e.g., funding, Title I status, and demographic percentages).

Data

This study used two surveys from the U.S. Department of Education's Common Core of Data (CCD). The CCD Public Elementary/Secondary School Universe Survey Data provides basic information and descriptive statistics on public schools, students, and teachers. The Local Education Agency (School District) Finance Survey (F-33) provided school finance information. I merged the two CCD surveys with publicly available school-level data collected by North Carolina's Department of Public Instruction. Last, using historical data provided by the CCAC program, I added the treatment variable to the dataset to indicate which years a college adviser was present in each of the partner high schools.

The analytical sample included data from all public high schools⁶ in the state from the academic years 2002-2003 through 2011-2012. The College Advising Corps began in 2007; therefore, these academic years provide sufficient pre- and post-intervention data. More recent years are not included in the analysis to avoid contamination, as the ACT test became a requirement for all high school Juniors in the state, which could conceivably negatively affect the SAT participation rate. Schools that were not open during all 10 years of the study, were classified as alternative education, or did not have 12th grade were not included. Dropping schools that did not include data for all 10 years helped to ensure that the results of the models are the true effects and are not driven by the yearly changes in the composition of

⁶ Schools in the study are primarily referred to as high schools. However, there are some schools that have grade spans that include elementary and middle school.

the sample. Further, charter schools were not included in the analytical sample because most of them were not open during all 10 years of the study and CCAC college advisers do not serve this school type. The final sample included 326 public high schools of which 36 were CCAC partner high schools (treatment group).

Variables

The treatment variable in this study is the College Advising Corps intervention. As described early, the Carolina College Advising Corps placed college advisers in partner high schools beginning in 2007. Each year, the initiative has grown and added more advisers and partner high schools. The CCAC Director provided historical information about which years a college adviser was present in the partner high schools. The presence of a college adviser in the high school indicates that the partner high school was in the treatment group; whereas, the control schools did not have the college adviser treatment.

This panel study has three key outcome variables of interest. The three proximal outcome variables, academic preparation, SAT participation, and SAT score, are captured by the high school-level data from the state's department of public instruction (see Table 3.1). Academic preparation refers to the percentage of all course enrollments at a high school that are classified as advanced college preparatory courses. Advanced college preparatory courses include Advanced Placement (AP), International Baccalaureate (IB), community college, and university course enrollments. SAT participation refers to the percentage of high school seniors who took the SAT. Last, the average SAT score, which includes the combined score on the SAT critical reading and SAT mathematics. Each of these variables is reported at the high school level across all 10 years of the study.

Table 3.1

Outcome Variables by Treatment and Control Groups

Variables	Description	High Schools	AY 02-03	midpoint	AY 11-12
Adv. College Prep Course Participation %	percentage of total enrollments in college prep courses	Control	2.55	3.49	4.23
		Treatment	2.25	2.39	2.75
SAT Participation %	percentage of high school seniors who took the SAT test	Control	57.88	58.08	59.06
		Treatment	53.88	50.58	55.00
Average SAT Score	average total SAT test score (combined critical reading & mathematics)	Control	986.57	982.25	973.51
		Treatment	913.22	895.06	867.34

Note. This table reports the mean of each outcome variable by treatment and control group for three points in time: academic year 2002-2003, midpoint, and academic year 2011-2012. The midpoint reports the mean for the control high schools in 2006. For the treatment high schools, the midpoint is the mean for the first year of treatment, which varies by school. While several schools received treatment starting in 2007, the majority of partner high schools started treatment after 2008.

In this study, controlling for time-varying variables, which could potentially be associated with both the treatment and outcome variables, was important. Even with the addition of a college adviser in a high school, there are still many factors that could be associated with the outcome variables of interest. Controlling for variables that could

potentially impact the outcome variables is an important step to understand the true effects of the college adviser intervention. This study controlled for factors that change from year to year at the high school level that could potentially impact the college readiness and SAT outcomes (see Table 3.2). Perna's (2006) conceptual model discusses several factors that influence students' college enrollment decisions.

Guided by Layer 1 of Perna's (2006) conceptual framework, the model controlled for shifts in student demographic characteristics of the high school. Specifically, the model controlled for shifts in racial/ethnic populations at each school. The model also controlled for shifts in students' family income by including the percentage of students in each high school receiving free and reduced lunch. Though these habitus variables were not the primary focus of this study, prior research has confirmed that these demographic variables influence postsecondary outcomes.

Guided by Layer 2 of Perna's (2006) conceptual model, the estimation strategy also controlled for school context variables. First, the availability of resources was captured by Title I status and per pupil expenditures. Including these two school resource variables accounts for any shifts in Title I status and shifts in LEA funding. The models controlled for shifts in school size, which could potentially be associated with class sizes and availability of resources. The models also controlled for teacher quality, which is a potential source of social capital for students and could ultimately be associated with the college-related outcome variables. The model controlled for three measures of teacher quality, including the percentage of licensed teacher, the percentage of teachers with less than three years of teaching experience, and yearly teacher turnover rate.

Table 3.2

Control Variables – Descriptive Statistics Across all Years

Variables	Description	Control Schools		Treatment Schools	
		Mean	SD	Mean	SD
% Free/Red Lunch	% of students who receive free or reduced lunch	36.92	16.63	53.41	18.80
% Asian	% of Asian students at the school	1.78	2.66	1.66	2.44
% Black	% of Black students at the school	26.20	20.00	51.21	30.27
% Hispanic	% of Hispanic students at the school	6.33	5.45	9.15	9.74
% Native American	% of Native American students at the school	1.36	6.31	2.09	8.31
Title I Status	Title I eligible school (1=yes, 0=no)	0.22	0.41	0.32	0.47
School Membership	Total number of students in the school	1112.55	521.02	1050.23	448.28
% Licensed Teachers	% of classroom teachers with licenses	89.15	7.63	82.65	9.85
% Teachers 0-3 years	% of teachers who have taught for 0-3 years	19.35	7.62	23.96	7.72
Teacher Turnover Rate	% teachers who left the classroom in the past year	16.02	7.11	19.73	8.35
Per Pupil Expenditures	Total LEA expenditures / LEA membership	8924.13	1528.80	9072.84	1368.60

Empirical Strategy

I employed a difference-in-differences research design to analyze the effects of the College Advising Corps treatment. Using high school-level longitudinal data, this approach “relies on a comparison of participants and nonparticipants before and after the intervention” and assumes the “unobserved heterogeneity is time invariant, so the bias cancels out through differencing” (Khandker et al., 2010, p. 72). Through this technique, the analysis calculated the difference in the outcome variable before and after the intervention for the treatment group (1st difference) and subtracted the difference in the outcome variable before and after the intervention for the control group (2nd difference). Essentially, this approach calculated the difference between the differences to estimate the effect of the College Advising Corps intervention on the three college readiness outcomes. Partner high schools in the treatment group had the CAC college adviser and were compared to high schools without a college adviser. The analysis included data from five years prior to the introduction of the intervention and several years after.

The addition of a college adviser in a high school represents a plausible shift that allows the difference-in-differences model to estimate the impact of the College Advising Corps on college preparatory course participation, SAT participation, and average SAT scores. The regression equation for this study is:

$$Y_{st} = \alpha + \beta_1(\text{CollegeAdviser}_s * \text{Post}_t) + X_{st} + Z_{st} + \delta_s + \tau_t + \varepsilon_{st}$$

The variable, Y_{st} is the outcome variable (college preparatory course participation rate, SAT participation rate, average SAT score) at each high school (s) over time (t). This regression equation captures the treatment effect in the coefficient of the interaction term. This term

consists of two dummy variables: one that indicates whether or not the high school is in the treatment condition and another variable that indicates the time period, either before or after the intervention. $CollegeAdviser_s$ is a dummy variable that indicates if a high school has a college adviser, and $Post_t$ is another dummy variable that denotes years when the college adviser was in the high school. The $CollegeAdviser_s * Post_t$ has a value of “1” in the years where there is a college adviser present in the partner high school and takes a “0” otherwise. Specifically, the interaction term coefficient, $\beta_1 (CollegeAdviser_s * Post_t)$, captures the effect on the CCAC college adviser on college readiness, SAT participation, and SAT scores.

This analysis also controlled for both high school (δ_s) and year fixed effects (τ_t). High school fixed effects reduced selection bias by capturing the effect of unobserved heterogeneity that does not vary over time (e.g., location, district). Year fixed effects reduced omitted variable bias by accounting for changes that occur over time to all high schools. An example is any policy that may impact college aspirations and impact all students, such as shifts in federal financial aid or college application week initiatives. X_{st} is a vector of time-variant student-demographic controls, including percentage of minority students within the schools (Asian, Native American, Black, and Latino) and percentage of students eligible for free or reduced lunch. Z_{st} is a vector of time-variant school-context controls, including school size, Title I status, and teacher quality (turnover rate, percentage of licensed teachers, and percentage of teachers with less than 3 years of experience), and per pupil expenditures. Lastly, ε_{st} is the error term, and standard errors are clustered at the school level.

Counterfactual

Determining what would have happened to participants in the treatment group had the intervention not existed is one of the major challenges of impact evaluation (Khandker et al., 2010, p. 22). For this study, I wanted to know what would have happened to students in the partner high schools in the absence of the college adviser. This outcome, in the absence of the intervention, is referred to as the counterfactual. All other public high schools in the state without the CCAC adviser intervention were the comparison group.

Results

The results for this study are organized by the two primary research questions and outcomes of interest. The first model shows the results of the College Advising Corps treatment on advanced college preparatory course enrollment. The second and third models present the findings from the SAT participation and score models. The final models are displayed in Table 3.3. Next, the results from the time-trend assumption are reported. Finally, a series of sensitivity analyses were conducted to test that validity of findings.

Table 3.3

Fixed Effects Model Results

	Adv. College Prep Course %	SAT Participation %	Average SAT Score
College Adviser	-0.350 (0.252)	3.583* (1.446)	-14.976*** (3.530)
% Free/Red Lunch	-0.001 (0.005)	-0.031 (0.020)	-0.079 (0.070)
% Asian	0.572* (0.261)	-0.332 (0.246)	2.825*** (0.727)
% Black	-0.010 (0.021)	-0.152* (0.060)	-1.534*** (0.193)
% Hispanic	-0.001 (0.029)	-0.300** (0.102)	-1.192*** (0.313)
% Native American	-0.015 (0.056)	-0.042 (0.238)	-2.759** (0.974)
Title I Status	-0.215 (0.139)	-1.371* (0.612)	-6.760*** (2.011)
School Membership	0.000 (0.000)	0.000 (0.001)	0.006 (0.004)
% Licensed Teachers	0.032* (0.015)	0.084 (0.044)	0.135 (0.123)
% Teachers 0-3 years	0.022 (0.012)	0.03 (0.037)	-0.226* (0.112)
Teacher Turnover Rate	0.000 (0.005)	0.029 (0.029)	-0.131 (0.083)
Per Pupil Expenditures	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)
Constant	-1.088 (2.134)	54.729*** (4.952)	1018.653*** (15.696)
School & Year Fixed Effects	Yes	Yes	Yes
Adjusted R-squared	0.226	0.143	0.158
Number of Schools	317	326	326
N	3145	3217	3214

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. The effect of the treatment is represented by the College Adviser coefficient.

Course Enrollment Model

The first model tested the impact of the college adviser on advanced college preparatory course enrollment. Specifically, these models examined if the presence of a college adviser has an impact on the percentage of all course enrollments at a high school that are classified as advanced college preparatory courses. Of the 326 high schools in the analytical sample, nine schools had an advanced college preparatory course enrollment rate of 0% for five or more years of the study. These nine high schools (four CAC partner high schools) were excluded from this analysis because these courses were likely not offered at the respective high schools.

The fixed effects model shows that the college adviser was not a significant predictor of advanced college preparatory course enrollment, $\beta_1 = -.350$, $t(316) = -2.47$, $p > .05$. Contrary to the hypothesis, the presence of a college adviser in a high school does not have a significant effect on the percentage of students enrolled in college preparatory courses. The percentage of Asian students and licensed teachers were positively associated with advanced college preparatory course enrollments. No other control variables were significant predictors in this first model.

SAT Participation Model

The second model tested the impact of the college adviser on SAT participation. This model examined if the presence of a college adviser had an impact on the percentage of senior students in a high school that took the SAT test. The average SAT participation rate across the 326 schools in the model was 56.22% with a standard deviation of 14.39%.

Across all 10 years of the study, the average SAT participation rate was 57% for control high schools and 52% for treatment high schools.

As predicted, the college adviser was a significant positive effect on SAT participation. In the fixed effects model, the college adviser was a significant predictor of SAT participation, $\beta_1 = 3.583$, $t(325) = 2.48$ $p < .05$. As predicted, the presence of a college adviser in a high school significantly increases the percentage of students who take the SAT test. Compared to control high schools, partner high schools with a college adviser are predicted to increase SAT participation rates by almost 4 percentage points. This is approximately one-fourth of a standard deviation increase.

Two control variables were significantly associated with the SAT participation percentage. The percentage of Black and Hispanic students in a school is negatively associated with SAT participation rates. A 1% increase in Black students is associated with a .15% decrease in SAT participation rates. Similarly, a 1% increase in Hispanic students is associated with a .30% decrease in SAT participation rates. Title I status was a significant negative predictor of SAT participation rates. Compared to non-Title I high schools, Title I high schools are predicted to have SAT participation rates that are 1.4% lower.

SAT Score Model

The third model examined the impact of the college adviser on average SAT scores. This model examined if the presence of a college adviser had an impact on the average SAT score of students in each high school. The average SAT score includes the combined SAT critical reading and SAT mathematics sections only. Scores from the writing portion of the SAT are not included, as this portion of the test was added after the start of the study and is

often not used in the admission process. The average SAT score across the 326 schools in the model was 976 (critical reading and math combined) with a standard deviation of 77.

The college adviser had a negative effect on SAT score. In the fixed effects model, the college adviser was a significant negative predictor of SAT scores, $\beta_1 = -14.976$, $t(325) = -4.24$, $p < .001$. Contrary to the prediction, the presence of a college adviser in a high school significantly decreases the average SAT score. Compared to control high schools, partner high schools with a college adviser are predicted to decrease the average SAT by approximately 15 points. This is approximately one-fifth of a standard deviation decrease.

Six of the control variables were significantly associated with the average SAT score in a high school. Compared to White students, all four racial/ethnic minority groups were significantly associated with SAT scores. A higher percentage of Asian students was positively associated with SAT scores; whereas, a higher percentage of Black, Hispanic, and Native American students was a negative predictor of SAT scores. Lastly, Title I status and the percentage of teachers with less than three years of experience were both negative predictors of average SAT score.

Time Trend Assumption

A difference-in-differences analysis is based on strong assumptions. In particular, the parallel time trend assumption assumes “that in absence of the treatment, the average outcomes for treated and controls would have followed parallel paths over time” (Abadie, 2005, pp. 1-2). This parallel trend assumption must hold for the difference-in-differences estimate to be accurate: “This assumption may be implausible if pre-treatment characteristics that are thought to be associated with the dynamics of the outcome variable are unbalanced

between the treated and the untreated group” (Abadie, 2005, p. 2). I ran a series of tests to verify that there were no significant differences in trends among treatment and control groups prior to the College Advising Corps intervention on all three outcome variables.

Table 3.4

Time Trend Assumption for Three Outcomes

	Adv. College Prep Course Participation %	SAT Participation %	Average SAT Score
T - 1 year	-0.389 (0.362)	1.374 (1.757)	-5.097 (5.714)
T - 2 years	-0.349 (0.371)	-2.643 (1.514)	-2.471 (6.398)
T - 3 years	-0.43 (0.283)	-2.1 (1.675)	-0.187 (5.970)
T - 4 years	-0.510* (0.205)	-3.568* (1.756)	-3.927 (5.730)
T - 5 years	-0.233 (0.201)	-0.503 (1.380)	-2.964 (6.061)
Constant	-1.103 (2.134)	54.658*** (4.961)	1018.515*** (15.730)
Controls	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes
Within R-squared	0.231	0.148	0.163
Number of Schools	317	326	326
N	3145	3217	3214

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. This table presents the findings of the time-trend assumption across all three outcome variables. The coefficients of interest are represented by T minus the number of years prior to treatment. In the five years prior to treatment, there were only two years where the slopes of the treatment and control groups were significantly different.

Table 3.4 displays the results of these tests. In the five years prior to treatment, there were only two years where the slopes of the treatment and control groups were significantly different. Notably, I did not find any significant differences in the treatment and control group trends in the three years prior to treatment across all three outcome variables. Overall, I conclude that treatment and control groups were on similar trajectories prior to the start of the College Advising Corps treatment.

Sensitivity Analyses

In addition to checking the time-trend assumption, I conducted a series of sensitivity analyses to further examine the validity of the findings. I selected a number of pseudo-outcomes that should not be impacted by the college adviser. Table 3.5 displays the coefficient of the college adviser treatment on ten pseudo-outcome measures. Each model includes the previous set of control variables and both school and year fixed effects. Across 10 outcomes, there is only one significant finding, which is not surprising given the number of statistical tests. As there is only one significant finding (short-term suspensions), we can conclude that the significant findings on the outcomes of interest are more reliable.

Table 3.5

Sensitivity Analyses on Placebo Outcomes

Outcome Variables	$\beta_1(\text{CollegeAdviser}_s * \text{Post}_t)$	Standard Error	Adjusted R-squared	N
Books per Student	-0.360	(0.467)	0.046	3211
English I Course Size	-0.219	(0.412)	0.135	3214
Algebra I Course Size	-0.485	(0.426)	0.179	3208
School Attendance	-0.234	(0.199)	0.043	3233
Short-Term Suspensions	10.765*	(4.293)	0.041	3233
Long-Term Suspensions	-0.160	(0.158)	0.033	3233
Expulsions	-0.014	(0.022)	0.015	3233
Acts of Crime	0.199	(0.153)	0.018	3231
Algebra I Test Performance	-0.883	(0.956)	0.509	3211
English I Test Performance	1.638	(2.032)	0.375	3215

* $p < .05$, ** $p < .01$, *** $p < .001$

Note. This table reports the results of the sensitivity analyses on ten placebo outcomes. Across the ten models, there is only one significant finding (short-term suspensions). From this we can conclude that the findings on the outcomes of interest are more reliable.

Limitations

This study has several limitations. First, this study is limited to only proximal outcomes because college enrollment data is not readily available. Studying postsecondary outcomes of high school students can be challenging because most states do not have comprehensive longitudinal data systems that links college enrollment information to K-12 data. Typically, K-12 data is housed in a state department of instruction, and higher

education data is collected separately. Recently, the federal government began helping states build longitudinal databases containing cross-sector educational data on their students (DesJardins & Flaster, 2013). Though the state started collecting enrollment data in the last few years, the data were not available during the time period of the study. Second, this study is limited to SAT participation and does not capture ACT test-taking behaviors. The state dataset only collects SAT information and, unfortunately, does not have ACT information, which does not provide a clear picture of overall college entrance exams. Further, this study is limited because though the students in the treatment schools have access to a college adviser, this study does not capture frequency or infrequency of student/adviser interactions. The College Advising Corps has an intention to treat students in partner high schools; however, that does not mean that students personally received the treatment (assistance from college adviser).

Discussion and Implications

This quasi-experimental research study adds to the limited empirical research on college advisers in public high schools. The findings suggest that public high school students are responsive to college advisers. This research expands on the college choice literature and examines a key layer in Perna's (2006) multilevel conceptual model of student college choice. In addition to adding to the current literature, the findings from the study have implications for both policy and practice.

According to Perna's framework (2006), the college adviser would be considered a resource in the school context (Layer 2) that ultimately influences students' college choice behaviors. This study provides some evidence that the college adviser has an impact on one

of the steps (SAT testing) of the college enrollment process. Developed ten years ago, Perna's model highlights the role of traditional school counselors in the school context layer. As the development of school-based college coaching and advising models have grown in the past decade, the model could be further expanded to include these resources in the school context layer. Further, as the college advising landscape in high schools changes, more research on these initiatives should be conducted to further expand our understanding of the school-context (Layer 2) on college-choice behaviors.

This study provides evidence that CAC college advisers have a significant impact on the SAT test-taking behaviors of students in partner high schools. These findings contribute to limited research on the effects of school-based college advising professionals. Specifically, this study adds to important research (e.g. Stephan & Rosenbaum, 2013) that examines the effects of college advisers/coaches on college readiness and choice. This study also adds to the limited literature on the specific tasks and steps necessary to complete postsecondary enrollment (Cabrera and La Nasa, 2001; Klasik, 2012, Paulsen, 2001). Specifically, this study examines two of five major steps (taking the SAT test and attaining minimal college qualifications) that, according to Klasik (2012) must be completed prior to enrollment. Overall, these proximal outcomes related to college readiness and the numerous steps in the college enrollment process are important to study. Interventions, such as the College Advising Corps, should focus on assisting students with the necessary steps in order for college enrollment to increase.

The findings related to SAT testing behavior were both significant. The presence of a college adviser in a partner high school is related to an increase in SAT participation rates

and a decrease in average SAT scores. Though this inverse SAT relationship may not be intuitive, there could be a logical explanation. As college advisers are increasing SAT participation rates by close to 4% at a high school, they are likely reaching a particular subset of students that would not have taken the SAT without the college adviser's help. These students who would not have taken the SAT without the presence of a college adviser may plausibly score lower on the SAT because they may have had less preparation, guidance, study time, or attempts at the test. These students at the margins who are taking the test might be scoring lower and, therefore, pulling the school's SAT average down. I argue that the significant negative effect of the college adviser on SAT scores is potentially a positive finding because the college adviser is reaching students who would otherwise not take a college entrance exam and go to college.

However, more attention should be placed on SAT/ACT preparation for public school students, especially at the partner high schools that have higher percentages of students who are historically underserved by postsecondary education. The average SAT score at partner high schools is close to 100 points lower than the control high schools, 986 compared to 899 respectively. Merely taking the SAT is not enough because students need to have competitive scores to be eligible for college admission. College advisers could offer more SAT/ACT preparation workshops and encourage students to these tests multiple times to improve scores.

There was not a significant effect of the college adviser on the percentage of advanced college preparatory course enrollments. This raises several questions about both course offerings and the college advising practices. Across all study years, the percentage of

total course enrollments that were classified as advanced college preparatory is relatively low. An average of 3.5% of course enrollments at control high schools and 2.4% of course enrollments at treatment high schools were advanced college preparatory courses. The null finding on course enrollment could possibly reveal a problem with low college prep course offerings at a high school. A college adviser can help students register for the SAT, but might be less successful in getting more students to enroll in college preparatory courses because the offerings are so small. There could also be other explanations for the null finding on college preparatory course enrollment that are related to the college advising role. College advisers might need to spend more time discussing admissions requirements and the importance of academic readiness and taking the appropriate courses. They might not focus as much on course enrollments because course scheduling is typically one of the school counselors' responsibilities (McDonough, 2005b; Perna & Kurban, 2013). While students might be encouraged by the college adviser to take more advanced courses, ultimately the college adviser is not directly assisting students in course enrollment. Further, it is likely easier to get a student to take a one-time college entrance test, than it is to change their academic curriculum.

Overall, the findings suggest that addition of a college adviser in a public high school increases SAT participation. This finding is important and supports the practice of the additional college advising resource in the high school. Additionally, the findings suggest that as the college adviser increases SAT participation the average SAT score decreases. A decrease in the average SAT score is an unintended consequence when students who would otherwise not take the SAT are encouraged to by the college adviser to take the test. A lower

average SAT score is a welcomed but unintended consequence of increased SAT participation; therefore, we should be careful about evaluating high schools on SAT performance.

These findings also have several implications for policy and practice. As the College Advising Corps and other college advising initiatives are being developed, there are important policy considerations for the future of public education. External donors fund the College Advising Corps, and this raises several questions about investments in college advising in public education. Should districts or the federal government fund this additional college advising resource? In 2008, Senator Hillary Clinton introduced the COACH Act to “recruit and train recent graduates of 4-year institutions of higher education, and place the graduates in high schools, to increase the number of low- and middle-income high-achieving high school students who are entering and succeeding at a college” (S. 3027, 2008). Although this bill was not passed, it shows that the federal government is considering the importance of college advising initiatives. If research continues to show significant positive effects of college advising on the college choice process and external donors are willing to invest significant resources in these initiatives, future policy should address ways to make college advising more accessible for all public school students in the nation.

Future Research

The proximal college readiness outcomes in this study are relatively understudied in the college choice literature. This study seeks to extend the research on the steps of the college enrollment process (e.g. Klasik, 2012) and college advising in public high schools (e.g. McDonough, 2002; 2005a, 2005b; Perna et al., 2008; Stephan & Rosenbaum, 2013).

Overall, more empirical research focused on college readiness, college advising professionals, and the impact of personal assistance in the college choice process is needed.

First, more research should be conducted to understand college readiness and the steps to college enrollment. There is a need for research to explore interventions and programs that address the college readiness and ACT and SAT test-taking behaviors. According to Perna's (2006) model, the school context can provide resources and support to prepare students for college. As shifts in AP/IB course offers and college entrance exam policies occur, more research can explore the effects of college readiness on enrollment.

Second, additional research should focus on the College Advising Corps and other school-based college advising initiatives. College advising professionals, such as the CAC college advisers, are an additional resource beyond the traditional school counselors. More research should examine the effects of college advising professionals on both college readiness and enrollment outcomes. While this resource is less available in public schools, more research can explore the effects of college advising to better inform educational investments and policy.

Finally, there is a need to understand the additional services that a college adviser provides that school counselors are not currently providing. As college counseling services vary both within and across high schools (Perna et al., 2008), more research should further examine the college advising practices in public high schools. Future research should extend Bettinger et al.'s (2012) findings on the role that personal assistance plays in the college enrollment process. An empirical understanding of how college advising professionals assist students with college applications, financial aid, and college selection is needed.

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**COLLEGE ASSISTANCE FOR PUBLIC HIGH SCHOOL STUDENTS:
DO COLLEGE COUNSELORS IMPROVE POSTSECONDARY ACCESS?**

Although strides have been made to promote more equity in college access, many student populations, particularly low-income, first-generation, and ethnic/racial minorities, are still highly underrepresented in higher education (Perna & Kurban, 2013; Ross et al., 2012). Many high schools, especially those with low college-going rates, lack sufficient college-related counseling, which contributes to this enrollment problem (McDonough, 2005a; Perna et al., 2008). Public schools typically lack a designated staff member who has college preparatory responsibilities as their primary job, or they may not always employ someone who is held accountable for college enrollment (McDonough, 2005b; National Association for College Admission Counseling [NACAC], 2011). A designated staff member whose primary responsibility is college counseling only exists in some select high schools, predominantly those public schools with greater resources (McDonough, 2005b).

By default, school counselors are often tasked with assisting students who have college aspirations; however, many school counselors are overworked and have other competing priorities (McDonough, 2005b). According to Perna and Kurban (2013), “Especially in low-performing high schools, [school] counselors often have numerous other noncollege-related responsibilities, including scheduling, testing, and providing personal and nonacademic counseling, and may not be trained in the nuances of college and financial aid processes” (p. 22). Further, school counselors often lack sufficient training in college counseling. Historically, training in school counseling has not included preparation in college counseling specifically (McDonough, 2005b). Therefore, as school counselors lack

both time and training to assist students with the college choice process, schools might need additional staff that can be dedicated solely to college counseling.

More targeted college counseling and advising could be a potential solution to assist students with the complex postsecondary application and enrollment process. Before deciding to enroll in college, students make a series of choices and complete certain tasks that impact their college-going behavior (Klasik, 2012; Paulsen, 2001). Evidence confirms that “a lack of information and a lack of understanding about the process of applying for college and for financial aid result in sub-optimal college-going decisions” (Bowen, Kurzweil, & Tobin, 2005, p. 318). Though a high number of students aspire to go to college, many of them, unfortunately, do not enroll because they fail to complete some part of the application process (Avery & Kane, 2004). Personally assisting students with aspects of the college enrollment process, particularly filling out forms such as applications for admission and financial aid, can increase college enrollment (Bettinger et al., 2012). Experimental evidence also confirms that providing high-achieving, low-income students with customized information on the college application process and net costs resulted in higher application and acceptance rates (Hoxby & Turner, 2013).

Unfortunately, there are also large gaps in the nature and availability of college counseling services across school-type (Perna et al., 2008). Nationwide, only about one-in-four public high schools report having a counselor whose primary responsibility is to provide college counseling compared to nearly three out of four private schools (NACAC, 2011). In recent years, new pre-collegiate initiatives aimed at increasing college access for public school students have developed. Many of these initiatives focus on counseling, coaching,

and advising students in the college choice process (Stephan & Rosenbaum, 2013). Some public high schools have added college counselors/advisors whose primary responsibility is assisting students with the college choice process. These individuals serve as resources for students beyond the traditional school counselors. Relatively few studies have examined the effects of college counselors in public schools, and more research is needed to better inform practice and policy as it pertains to college counseling.

Purpose and Significance of the Study

The purpose of this study is to explore the effect of having a college counselor in a public high school on three primary college access outcomes: college applications, Free Application for Federal Student Aid (FAFSA) completion, and postsecondary enrollment. This study uses an inverse probability weighting approach to compare the postsecondary application and enrollment outcomes of students who attended public high schools that had a college counselor to a comparison group who did not have this additional resource. This study seeks to address the impact of having a college counselor by comparing similar treatment and control groups of students who either had access to a college counselor or did not. Further, this research will be the first that examines the causal impact of college counselors on postsecondary outcomes using a nationally-representative sample of high school students.

This study is significant as it begins a new conversation on college counseling in the high school context. The primary research conducted on college counseling focuses on traditional school counselors in the high school. This study will look at a counseling treatment that is more specialized and focused on assisting students with college application

and selection. Though many traditional high school counselors help students with college, they are often tasked with numerous competing responsibilities. Prior national longitudinal surveys, such as the Educational Longitudinal Study of 2002 (ELS:2002) and the High School and Beyond (HS&B) study, did not specifically ask if there was a counselor in the high school whose primary responsibility was college counseling. Many surveys ask questions about traditional school counselors, yet they do not ask if there is a specific college counselor treatment. This study will use the High School Longitudinal Study of 2009 (HSL:09), which has two specific questions that address the presence of a college counselor in the high school.

In recent years, increasing concern about the rigor of educational research exists because many prior studies on precollege outreach programs do not make causal inferences (DesJardins & Flaster, 2013): “This concern is fundamentally about having better evidence for making decisions about what programs and practices do or do not work. The need for such evidence leads to causal questions” (Schneider et al., 2007, p. 1). Therefore, this study used a quasi-experimental research design to examine the effects of a college counselor on both postsecondary applications and enrollment outcomes. These causal effects can be conceivably difficult to study because the treatment effect is obviously challenging to isolate. Using a quasi-experimental design such as inverse probability weighting allows researchers to compare similar groups with and without the treatment.

Background on College Counseling

Counseling students on postsecondary options takes place in various contexts across the United States. College counseling can occur in a pre-college program in which a high

school student is involved, or it may take place with a school counselor at the high school. Additionally, parents may invest in private college counseling services to assist their children with the college application and enrollment process. The following sections will review the literature and findings on college counseling in various contexts.

School Counselors

Many research studies focus on college counseling in the context of school counselors in public high schools (Linnehan et al., 2006; McDonough, 1997, 2002, 2005a, 2005b; McDonough & Calderone, 2006; McKillip et al., 2012; Perna et al., 2008; Venezia & Kirst, 2005). According to McDonough (2005b):

Counselors are the logical choice to be the K-12 staff member responsible for college access preparation and assistance and are often assumed to be handling this role, yet they are inappropriately trained and structurally constrained from being able to fulfill this role in public high schools. (p. 69)

Historically, educational programs for school counselors have not specifically included training in college counseling (Hossler et al., 1999; McDonough 2002, 2005b). In addition to having little training, school counselors also have limited time to devote to college counseling given their large student loads (McDonough, 2005a, 2005b). For example, while the American School Counselor Association (2011) recommends a maximum student-to-counselor ratio of 250:1, in the 2010-2011 school year, the national average in public schools was 471:1. Last, guidance counselors “often have numerous other noncollege-related responsibilities, including scheduling, testing, and providing personal and nonacademic

counseling, and may not be trained in the nuances of college and financial aid processes” (Perna & Kurban, 2013, p. 22).

Studies have found that supportive school counselors can be especially influential in helping students with the college search and application process (Hossler et al., 1999; McDonough, 1997). However, the nature of college counseling services varies greatly across and within schools (Linnehan et al., 2006; Venezia & Kirst, 2005). Specifically, college counseling is more common for students in advanced college preparatory tracks (McDonough, 2005a; Venezia & Kirst, 2005) and of higher socioeconomic status (Linnehan et al., 2006). Further, college counseling is less available in schools with predominantly minority and/or low-income populations (McDonough, 1997; 2005a); whereas, private preparatory schools invest significant resources in their college counseling operations (McDonough, 2005b).

Pre-college Programs

Numerous college preparatory programs in the United States exist that assist high school students in preparing for college. College counseling is at the core of these initiatives, as staff members counsel students on the college application and enrollment process. These programs range from large, federally funded programs to smaller local or state-funded programs (Corwin et al., 2005; Swail & Perna, 2002). The overarching goals for college preparatory programs typically focus on preparing students for academic achievement and ultimately college enrollment (Cabrera et al., 2006; Corwin et al., 2005; Swail & Perna, 2002). Many of these programs target students from populations that are underrepresented in higher education (Corwin et al., 2005; Swail & Perna, 2002). The largest college preparatory

programs are funded by the U.S. Department of Education and exist to assist disadvantaged student populations who have been historically underrepresented in higher education. While some students may have access to federally-funded college preparatory programs such as Upward Bound, these programs serve less than 10% of eligible students nationwide (Gladieux & Swail, 1999).

Private College Counseling Programs

A couple of studies have examined the effects of private college counseling programs for low-income students. One pilot study successfully randomized college counseling services to high-achieving, low-income high school students (Avery, 2010). Results from this study found that students who received the college counseling treatment submitted more college applications overall and were more likely to enroll in “Most Competitive” institutions according to Barron’s college rankings (Avery, 2010).

A more recent quasi-experimental study used a regression-discontinuity approach to examine the effects of the college advising program, Bottom Line, by capitalizing on a cutoff score for admission into the program (Castleman & Goodman, 2014). The results from this study found that the Bottom Line advising program “effectively shifts students’ enrollment away from two-year or discouraged four-year colleges and toward four-year colleges that the organization believes will be more successful at graduating those students” (Castleman & Goodman, 2014, p. 10). Specifically, students who received college counseling were 41 percentage points more likely to enroll in one of Bottom Line’s encouraged colleges after high school compared to the control group of students (Castleman & Goodman, 2014).

College Counselors/Advisors in High Schools

There is very limited research on college counselors within the high school context. Though there is a significant amount of literature on college access, choice, and guidance counseling, there is little research that focuses specifically on how the addition of a college counselor in a high school impacts college access. Several initiatives fall under the “coaching” model in which a college advisor or counselor is assigned to a high school to assist students with the college enrollment process (Stephan & Rosenbaum, 2013). The National College Advising Corps, which places recent college graduates into high-need public high schools to serve as college advisers, is one of the largest initiatives of this type (National College Advising Corps [NCAC], 2014). In one county in North Carolina, schools who added a college adviser saw an increase in college attendance of approximately 14 percentage points compared to control schools in the same county (Carolina College Advising Corps [CCAC], 2012).

The college coach program in Chicago Public Schools is another similar intervention (Stephan & Rosenbaum, 2013). Coaches were not randomly assigned to high schools, although they were “distributed fairly evenly across high schools in terms of socioeconomic composition, racial composition, and academic achievement” (Stephan & Rosenbaum, 2013, p. 204). Using a difference-in-differences design, this study found that compared to schools without a college coach, the coached schools had greater gains in college enrollment. Schools with a college coach had increased college enrollment by 1.7 percentage points, increased college applications by 4.7 percentage points, and increased FAFSA completion by 2.6 percentage points compared to non-coached schools (Stephan & Rosenbaum, 2013).

Despite these two related studies, no national studies on college counselors in public schools currently exist. Stephan and Rosenbaum's (2013) study on Chicago's coaching model is the most similar to this current study as it examines the impact of a college counselor (coach) in a high school on the same college access outcomes: college applications, FAFSA completion, and college enrollment. This study seeks to expand the literature on college counseling in high schools by examining this intervention on a national sample of high school students.

Conceptual Framework

This study is framed by Perna's (2006) multilevel conceptual model of college choice (see Figure 4.1), which is based on a broad review and synthesis of prior research addressing students' college choice behaviors. Perna's model assumes that four contextual layers influence a student's college choice decision. The four layers are: (1) the individual's habitus; (2) the school and community context; (3) the higher education context; and (4) the broader social, economic, and policy context (Perna, 2006). This study is focused on the second layer of the model because I am interested in examining the college counselor resource within the school context (Layer 2) on students' college choice behaviors.

Becker's (1993) human capital theory is at the core of the model, which, in the context of college choice behaviors, suggests that students decide to pursue higher education by comparing expected costs (time, tuition, and foregone earnings) and benefits (such as employment opportunities and better future salary). The model also considers that college choice decisions are additionally influenced by a student's supply of resources and demand for education. For example, a student's demand for education will vary depending on the

level of academic preparation and achievement they have obtained. This model assumes that investments in higher education will lead to larger economic returns, including greater productivity and higher salary (Becker, 1993). However, unlike human capital investment models, Perna's (2006) conceptual model of student college choice accounts for a student's calculations of expected costs and benefits nested within several contextual layers.

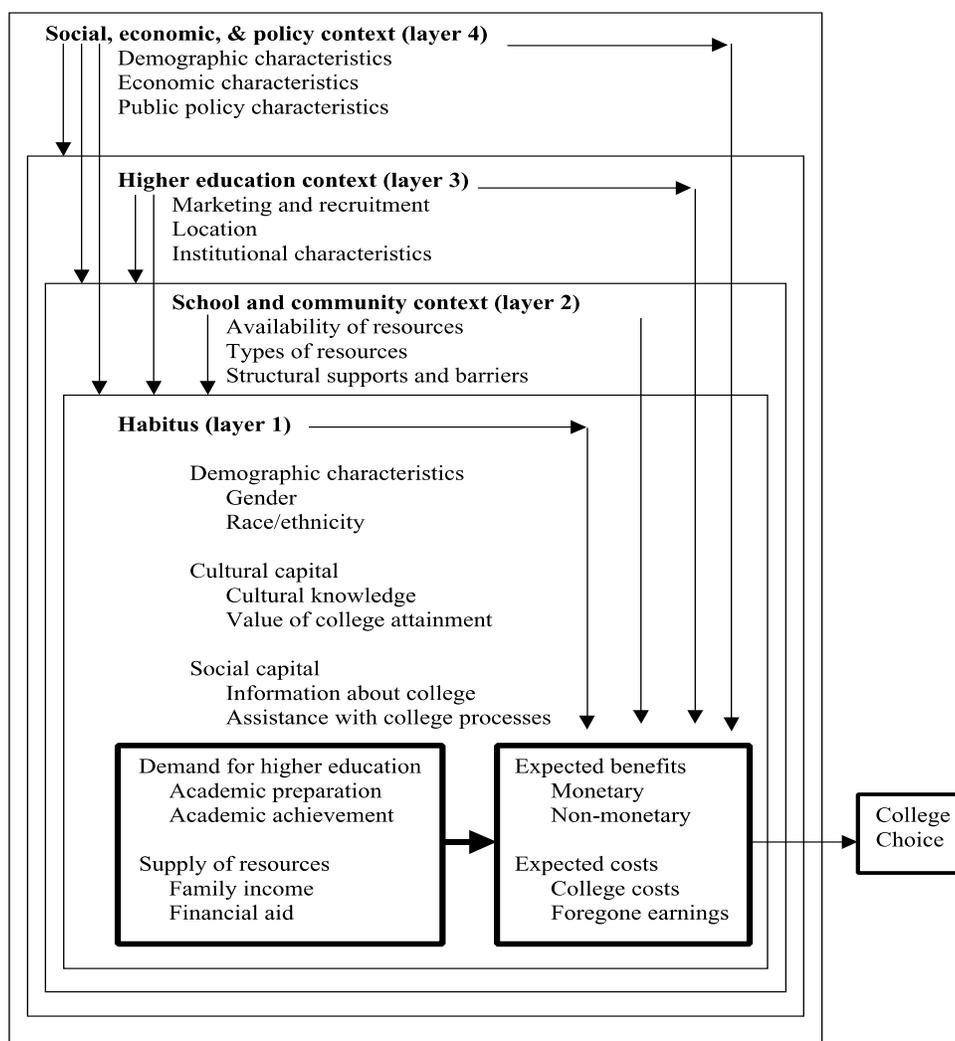


Figure 4.1. Perna's (2006) multilevel conceptual model of student college choice.

The first layer of Perna's (2006) conceptual model is the individual's habitus (Layer 1). The habitus refers to an individual's internalized system of opinions, principles, and perceptions that are shaped by their immediate environment (Bourdieu & Passeron, 1977; McDonough, 1997). Specifically, the habitus conditions an individual's college-related expectations, attitudes, and aspirations (Bourdieu & Passeron, 1997; McDonough, 1997). Although college counselors are the focus of this study, a student's individual habitus (Layer 1) still has a very strong influence on student's college choice behaviors. In the context of college choice, social capital refers to a student's access to social networks that provide information and assistance about college (Coleman, 1988; Deil-Aman & Turley, 2007; Perna, 2006). Cultural capital refers to a system of attributes including cultural knowledge, language skills, and mannerisms acquired from one's parents that defines their class status (Bourdieu & Passeron, 1997). Members of upper- and middle-class backgrounds possess the most valuable forms of cultural capital (McDonough, 1997).

The second layer of Perna's (2006) conceptual model is the school and community context (Layer 2). This layer is based on McDonough's (1997) concept of "organizational habitus," which identifies ways that schools either facilitate or impede the college choice process. This study focuses on the school context, because the college counselor would be considered a school resource that could potentially facilitate the college choice process. Staff members at the high school, such as college counselors, can be influential in providing access to resources and assisting students with the complex college application process (Hossler et al., 1999; McDonough, 1997; Stanton-Salazar, 1997). According to Layer 2, students that

attend schools with a college counselor have an additional resource that could have a positive effect on their college choice decisions.

Research Questions

Perna's (2006) conceptual model of college choice guides the research questions for this study as I examined the effects of the college counselor within the high school context (Layer 2) on key steps of the college enrollment process. Three primary research questions guided this study:

1. To what extent does having a college counselor in a high school affect students' college application behaviors?
2. To what extent does having a college counselor in a high school affect students' completion of the FAFSA?
3. To what extent does having a college counselor in a high school affect students' postsecondary enrollment?

I hypothesized that the presence of a college counselor in a public high school would increase the likelihood that a student would apply to college and the number of college applications they complete. I also predicted that college counselors would increase the FAFSA completion. With the college counselor providing increased information about college (social capital) and the value of college attainment (human capital), I predicted that students would apply for financial aid (i.e., complete the FAFSA) and complete college applications at higher rates, thereby increasing their demand for higher education. Further, because college counselors in these public high schools are also responsible for increasing

college enrollment, I predicted that students in a high school with this resource would be more likely to enroll in postsecondary education.

Methodology

I used a quasi-experimental research design and a national longitudinal dataset to understand the effects of the college counselor treatment in this study. Specifically, I employed a multilevel inverse probability weighting analysis using a longitudinal survey data from the High School Longitudinal Study of 2009. The statistical analyses involved several pre-analytical steps and careful decisions about weighting.

Data and Sample

Data was used from the 2009 High School Longitudinal Study (HSL:09) conducted by the National Center for Education Statistics. This nationally-representative dataset includes approximately 25,000 ninth graders from over 900 high schools in the fall of 2009. An average of 25 students were randomly selected from the sample of high schools to participate in the study. The First Follow-up was conducted in the spring of 2012 when most students were in their junior year of high school. Most recently, the 2013 Update was collected to record students' postsecondary options and plans (survey was administered from June – December 2013). Table 4.1 provides an overview of the data collection waves and the variables of interest.

Table 4.1

HSLs:09 Variables of Interest and Collection Timeline

	HSLs:09 Data Collection Waves		
	Base Year	First Follow-up	2013 Update
Date of Survey	2009 (Fall)	2012 (Spring)	2013 (June – December)
Grade in School	9 th grade (fall semester)	11 th grade (spring semester)	Summer/Fall after senior year of high school
Variables	Covariates: Student-level covariates School-level covariates	Treatment variables: Treatment 1 school has staff member designated for college <i>applications</i> Treatment 2 school has staff member designated for college <i>selection</i>	Outcome Variables: Outcome 1 college applications Outcome 2 FAFSA completion Outcome 3 postsecondary enrollment

Specific groups of students were removed from the dataset to create the appropriate analytical sample. First, I dropped students who did not respond to all three survey waves (9,350). Then, I limited this sample to only public school students and dropped students who attended Catholic schools (1,980) and other private schools (1,110). Last, I dropped students who changed high schools during the time of the study (1,940) and did not respond to either of the treatment questions (340). The final analytical sample included a total of 10,490 high school students.

Variables

Treatment variables. This study focuses on the college counseling treatment, as defined by having a counselor in the high school whose primary responsibility is college assistance. Students in the treatment groups have this college adviser in their high school. Two questions on the 2012 First Follow-up address having a college counselor. The lead counselor at each high school answered the two treatment questions. These two questions were operationalized as four different treatments.

The first college counselor treatment variable, *C2CLGAPP*, addresses assistance with college applications. The counselor survey question asks, “Does your school have one or more counselors whose primary responsibility is assisting students with college applications?” Approximately 35% of the public high school students in the HSLS:09 sample had a school counselor answer “yes” to this question. For the purposes of this study, I refer to these students as those with the college *application* counselor treatment. The second college counselor treatment variable, *C2SELECTCLG*, addresses assistance with college selection. The survey question asks, “Does your school have one or more counselors whose primary responsibility is assisting students with college selection?” Approximately 33% of the analytical sample had a school counselor answer “yes” to this question. For the purposes of this study, I refer to these students as those with the college *selection* counselor treatment.

The third and fourth treatment groups in this study include some combination of the first two treatments. The third treatment group, *EITHERCOUNSELOR*, includes students that had access to at least one of the first two treatments. Therefore, students in the treatment

group attended a high school that has at least one counselor that is dedicated to college applications and/or selection. Last, the fourth treatment, *BOTHCOUNSELOR*, included students that attend a school that answered ‘yes’ to both of the first. These students had access to one or more college counselors that could assist them with both college applications and selection.

I carefully considered the decision to test four treatments instead of the one treatment. About 10% of schools that have the college *application* counselor treatment did not indicate that they had the college *selection* counselor treatment. Only about 5% of the schools that had the college *selection* counselor treatment did not indicate that they had the college *application* counselor treatment. Therefore, because these percentages are noticeable I wanted to test the effects of the treatments individually as well as combined. For example, the college application counselor treatment might plausibly have effects on college applications but not college enrollment. Additionally, one might predict that the college selection counselor treatment might have greater effects on college enrollment. To understand the effects of the different treatments, it is important to examine all four. For this study, I was interested in effect of the treatment for the population of public school students. Reporting the average treatment effect (ATE) provides information about what would happen if college counselors were available to students in all public high schools.

Outcome variables. Three outcome variables were chosen to answer the research questions that this study seeks to answer. The first two outcomes focus on completing applications. The primary application variable of interest is the number of college admission applications a student completes. The variable *S3CLGAPPNUM* indicates how many college

applications a student completed. The variable *S3APPFSA* is a dichotomous variable that indicates whether or not a student completes the FAFSA. Given that the treatment variable, *C2CLGAPP*, indicates that there is a college counselor in the high school who assists students with college applications, it is critical that these application outcomes are examined.

The third outcome focuses on postsecondary enrollment. The variable, *X3CLASSES*, indicates if the student was enrolled in postsecondary level classes as of November 1, 2013. This would be the fall semester after the expected high school graduation date. This variable captures all postsecondary enrollment classes. While the application outcome variables of interest are important to consider, the postsecondary enrollment outcome is the primary focus of this study. This categorical variable has several potential answers as students indicate which level of postsecondary classes they will be taking. Therefore, I collapsed this into a dichotomous variable that indicates if a student was enrolled in any type of postsecondary courses or not.

Covariates. Selection of covariates is fundamental to having a strong propensity model. As Caliendo and Kopeinig (2008) explain, “It should be clear that only variables that are unaffected by participation (or the anticipation of it) should be included in the model. To ensure this, variables should either be fixed over time or measured before participation” (p. 38). Covariates are selected based on prior research findings and logical explanations for what drives selection into treatment. Specifically, variables are included that affect both the treatment assignment and the dependent variable (Ho et al., 2007). Therefore, variables will be selected that affect both the selection of having a college counselor and the postsecondary applications and enrollment outcomes.

While the college counselor intervention is at the school-level, this study employed a student-level analysis. Explaining conceptually why the analysis is taking place at the student-level as opposed to the school-level is important. Essentially, two levels of selection are taking place in this study. First, schools are choosing to employ counselors whose primary responsibility is to assist students with college applications and selection. Second, students and families are selecting into high schools with or without the college counselor resource based on residential choices. Therefore, both school-level and student-level covariates are included in the propensity model.

School-level covariates. The first set of covariates consists of school-level variables that influence whether or not a school selects to have the college counselor treatment. There is no empirical explanation or literature on why some public schools choose to have the additional resource of a college counselor, but there are assumptions that can be made based on theory and the variables in the HSLs:09 dataset. Perna's (2006) conceptual model that guides this study indicates that the school context has structures and resources that can facilitate or impede student college choice. Having a counselor at the high school whose primary responsibility is assisting students with college applications and selection is an additional resource beyond the traditional school counselors. For example, given that private schools have more resources, it makes sense that the majority of private schools in the HSLs:09 study had a college counselor compared to a little less than a third of the public schools. Therefore, I argue that the decision for a school to select the college counselor treatment is largely based on the demographics of the high school.

School-level covariates are organized into two categories of variables: school demographics and school resources. A complete list of school-level covariates is in Appendix B. School-level covariates come from both the HSLs:09 Base Year survey instrument and the Common Core of Data (CCD) survey (AY 2009-2010). School demographic information includes the following covariates: geographic region, urbanicity, school size, and racial demographic information. School resource covariates include information about the financial and structural context of the high school: Title I status, percentage of student body receiving free or reduced lunch, and average counselor caseload.

Student-level covariates. The second set of covariates consists of student-level variables that influence whether or not a student goes to a school with the college counselor treatment. Some may argue that parents sort students into schools based on background characteristics such as income, socioeconomic status, and parent education level. This student sorting occurs as families select into neighborhoods, districts, or private school options for their children. For example, students from families with more financial resources are logically more likely to select schools with more resources and student support. Schools with more financial resources, such as private schools, are more likely to invest in college counseling operations (McDonough, 2005b).

Student-level covariates are based on Layer 1, the individual habitus, of Perna's (2006) multilevel conceptual model of student college choice (see Figure 4.1). These factors all impact the outcome variable of college enrollment and likely influence school choice, as well. Based on Perna's (2006) conceptual model, students make college choices based on demographic characteristics, cultural capital, and social capital. Further, selected variables

address the human capital foundation of the conceptual framework, such as demand for higher education and supply of resources.

Student-level covariates come from four large categories of variables: student demographics, cultural and social capital, demand for higher education, and supply of resources. A complete list of school-level covariates is listed in Appendix C. Student-level covariates come from the HSLS:09 Base Year survey wave (student surveys). Student demographic covariates include: gender, race, and first language. Cultural and social capital covariates include: talking to others about college (parents, friends, teacher, and counselor). Demand for higher education captures students' academic achievement (highest math course, having an education/career plan, and importance of grades), college aspirations (expected education, taking a college entrance exam, and perceived postsecondary ability). Last, a composite socioeconomic status variable serves as a proxy for students' supply of resources.

Estimation Strategy

A quasi-experimental research design is appropriate for this study because I used a pre-existing dataset. Specifically, an inverse probability weighting strategy was employed to analyze the effects of the college counselor treatment. This procedure summarizes “all the variables in X with a single variable called the propensity score (Rosenbaum & Rubin, 1983). The propensity score is the true probability of unit i receiving treatment, given the covariates X_i ” (Ho et al., 2007, p. 218). Therefore, this study compares individuals who are similar to the treatment group on all relevant pretreatment characteristics X as determined by the probability (propensity) of participating in the treatment. Data analysis for this study included three major design stages prior to the empirical analysis. Estimating the probability

of treatment was the first step of the design phase. Each unit was given a propensity score, which is the predicted probability of treatment. After the first step, weights based on the inverse probabilities of the propensity model were created. Finally, in the third stage, I reconstructed the survey weight because the goal of this study using large-scale survey data was to make inferences to the national population.

Stage 1: Calculate propensities. Estimating propensities (p) for each unit in the data set was the first step of data analysis. Using the covariates discussed earlier, each unit in the dataset was given a propensity score. Though there is a misconception that variables must be statistically significant predictors of treatment in the propensity model, this is not true. The goal is that treated and control units are balanced on the covariates. The propensity score equation is a logit model that predicts the probability of an individual receiving the college counselor treatment. All student-level and school-level covariates were included in the regression equation to predict the probability of treatment. Following the recommendation of DuGoff, Shuler, and Stuart (2014), the survey weight, $W3WIW2STU$, was also included in the group of covariates. “Including the survey weight may thus help satisfy the assumption of unconfounded treatment assignment” (DuGoff, Shuler, & Stuart, 2014, p. 289). Further, weighting propensity models using the survey weight is not necessary because we are not interested in generalizing this model to the population (Zanutto, 2006).

$$\text{logit}(\text{COLLEGECOUNSELOR} = 1) = \beta_0 + \beta_1(x_i) + \beta_2(x_i) + \dots \beta_k(x_{ki})$$

For this model, i represents the value of an individual in the predictor equation. This model has one outcome variable, COLLEGECOUNSELOR , that indicates the probability of a student attending a high school with a college counselor (as defined by the four treatment

variables). All covariates were added to the model, and the effects are represented by the β coefficients. To check for common support, I generated histograms of the propensity score distributions for the treatment and control groups (see Appendix D). All four histograms appear to show sufficient overlap for common support. However, to further ensure common support, I dropped propensities below the highest minimum and lowest maximum value across treatment and control groups. Only between 10 and 12 observations were deleted from each of the four propensity models. This helped to ensure that all observations in the dataset conceptually have a similar matched value. I also checked to see if any observations had extreme propensities of less than .01 or greater than .99, which would indicate an almost perfect probability of treatment. There were no observations at the extremes, and I did not have to trim these. Table 4.2 reports the summary statistics of the propensities across the four treatment categories (after trimming for common support).

Table 4.2

Average Propensities of Full Sample

	Mean	SD	Min	Max
Treatment A: College Application Counselor	0.347	0.123	0.107	0.798
Treatment B: College Selection Counselor	0.337	0.115	0.116	0.810
Treatment C: Either College Counselor	0.358	0.120	0.116	0.789
Treatment D: Both College Counselors	0.326	0.118	0.100	0.788

Stage 2: Inverse probability weighting. After each unit had a predicted probability of treatment as determined by the propensity model in step one, I next calculated the inverse probability weights. The estimated propensities (p) from the logit model are used as weights in a statistical analysis. For this analysis, I was concerned with calculating the average treatment effect (ATE) for the population. The weights used to estimate the ATE were:

$$\text{Treated units, } w = 1 / p$$

$$\text{Control units, } w = 1 / (1 - p)$$

The logic behind inverse probability weighting is that some observations in the dataset count more than others when doing the analysis. Therefore, treated and control units will have various weights depending on their propensities. Overall, treated units had higher probabilities of treatment. Controls that do not have the college counselor treatment but are similar to the treated units on the covariates tended to have high propensities as well. Considering the weighting equation above, a control unit with a high propensity of .90, which is similar to the treated units, was weighted more than those with lower propensities. If a control has a low propensity, it will count less in the statistical analysis because it is not similar to the treated units. Control units that are most similar to treated units will have larger weights in the analysis compared to those control units that are least similar to treated units. Overall, this technique weights the treated down toward the full sample mean propensity and weights the controls up, so that the average propensities are equal for both groups. Therefore, when the weights are applied, the two groups should have average propensities close to the full sample mean.

After the weights were created, checking for balance of the covariates across the treatment and control groups was the next step. Prior to weighting, the propensities were not balanced across treatment and control groups. In all four treatment categories, the treatment group had higher propensities of treatment than the control group (see table 4.3). Intuitively, if the treatment and control group were balanced prior to weighting, we could argue that the covariates are balanced and that the makeup of our sample is similar to random assignment. I checked for balance of the covariates before and after weighting. The median standardized bias was reduced across all propensity models after weighting (see Appendix E).

Table 4.3

Distribution of Propensities Before and After Weighting

	<i>N</i>	Propensities	
		Before weighting	After Weighting
Treatment A: Application Counselor			
Control	5,510	0.324	0.350
Treatment	2,930	0.391	0.350
Treatment B: Selection Counselor			
Control	6,190	0.318	0.339
Treatment	2,920	0.377	0.339
Treatment C: Either Counselor			
Control	5,510	0.336	0.360
Treatment	3,070	0.398	0.360
Treatment D: Both Counselors			
Control	5510	0.306	0.329
Treatment	2670	0.369	0.328

Stage 3: Survey weighting. To generalize the results of the models to the nation's population of public school student, I included the survey weight in the analysis. The survey weight W3W1W2STU is the student longitudinal analytic weight for the Base Year, First-Follow-up, and 2013 Update. This analytical survey weight weights each observation so that the results are generalizable to the population. However, researchers are faced with a challenging decision on how to account for both the calculated inverse probability weight and the survey weight because the empirical models can only include one weight. Following DuGoff et al.'s (2014) suggestion, I multiplied the inverse probability weights and survey weights to form a new weight. The generated weights were added to each model to account for both the probability of treatment and the sampling design. This new weight was used in all the empirical models and allowed the models to report the population average treatment effect (PATE).

Empirical Models

The empirical models for this study were organized by the outcome variables of interest. Each empirical model also accounted for the nesting structure of the data. I employed a multilevel random effects model to account for students nested within schools in the sample. The intercept and slope coefficients were random variables that vary across schools (j), so they are referred to as random effects (coefficients). Each random effects model was also weighted by the generated weight, which is the inverse probability weight multiplied by the survey weight. All four college counselor treatment categories (application, selection, either, both) were tested on each outcome variable. Each equation includes the variable *COLLEGECOUNSELOR*, with the understanding that the model was

run four separate times on each treatment category. In the next section, I discuss three sets of empirical models based on each outcome variable of interest. Each empirical model varies depending on the outcome variable, but all models include the calculated inverse probability weights. Further, standard errors are clustered at the high school level for all empirical models.

College application models. The first set of multilevel models tested the effects of the college counselor treatments on college application behaviors. There are two main decisions that a student faces when applying to college: the initial decision to apply or not, and then how many college applications to submit. In the first phase of the application decision, I used a logistic regression model indicating if a student applied to college (submitted at least one application).

$$\text{logit}(APPLIEDTOCLG_{ij}) = \gamma_{00} + \gamma_{01}COLLEGECOUNSELOR_j + X_{ij} + u_{0j} + \varepsilon_{ij}$$

where $APPLIEDTOCLG_{ij}$ is the predicted outcome for applying to college for an individual i in school j with the $COLLEGECOUNSELOR_j$ treatment. γ_{00} is the average probability of applying to college across schools. The coefficient γ_{01} is the average difference in the probability of applying to college between treatment (with a college counselor) and control schools. The model controls for a vector of covariates X_{ij} (excluding the survey weight), that were used previously in the propensity models. The unique effect of school j on the probability of applying to college is captured by u_{0j} . The error term, ε_{ij} , captures all other factors that influence the dependent variable and are not accounted for in the model.

The second set of multilevel models used a Poisson regression equation, which is the standard approach when working with count data (Greene, 2008). “A *count variable* is a

variable that takes on discrete values (0, 1, 2,...) reflecting the number of occurrences of an event in a fixed period of time” (Coxe, West, & Aiken, 2009, p. 121). This technique was appropriate because the outcome variable of interest, number of college applications, would be considered a count variable. Only students who submitted at least one application were included in these models. Coxe et al. (2009) explain that, “in Poisson regression, the observed scores are counts, and the predicted scores are the natural logarithms of the counts” (p. 122). In this model, this special transformation function is called the link function, which is the natural log (\ln) depicted in the equation (Coxe et al., 2009). The Poisson regression model for this analysis is depicted as:

$$\ln(S3CLGAPPNUM_{ij}) = \gamma_{00} + \gamma_{01}COLLEGECOUNSELOR_j + X_{ij} + u_{0j} + \varepsilon_{ij}$$

where $S3CLGAPPNUM_{ij}$ is the predicted number of applications for an individual i in school j with the $COLLEGECOUNSELOR_j$ treatment. γ_{00} is the average number of submitted college applications across schools. The coefficient γ_{01} is the average difference in application numbers between treatment (with college counselor) and control schools. The model will control for a vector of covariates, X_{ij} (excluding the survey weight), that were used previously in the propensity models. u_{0j} is the unique effect of school j on the number of institutions a student applies to. The error term, ε_{ij} , captures all other factors that are not accounted for in these models.

FAFSA completion model. The second empirical model examined the effects of the three college counselor treatments on FAFSA completion. A logistic regression model was used given that the outcome variable of FAFSA completion is dichotomous. The following is the prediction equation for the FAFSA completion model:

$$\text{logit}(S3APPFAFASA_{ij}) = \gamma_{00} + \gamma_{01}COLLEGECOUNSELOR_j + X_{ij} + u_{0j} + \varepsilon_{ij}$$

where $S3APPFAFASA_{ij}$ is the predicted probability of FAFSA completion for each individual i in school j . γ_{00} is the average probability of FAFSA completion across schools. The coefficient γ_{01} is the average difference in FAFSA completion between school with the college counselor and those without. The model controls for a vector of covariates, X_{ij} (excluding the survey weight), that were used previously in the propensity models. u_{0j} is the unique effect of school j on the probability of FAFSA completion. The error term, ε_{ij} , captures all other factors that are not accounted for in these models.

College enrollment model. The last empirical model, and arguably the most important, examines the effects of the four college counselor treatments on college enrollment. Similar to the logistic regression model used for the FAFSA outcome, the third model uses this same approach to find the effects on the outcome variable of college enrollment, $X3CLASSES$. The collapsed variable is a dichotomous outcome indicating if the student was enrolled in postsecondary courses of any type in the fall following the expected high school graduation year. The following is the prediction equation for the college enrollment model:

$$\text{logit}(X3CLASSES_{ij}) = \gamma_{00} + \gamma_{01}COLLEGECOUNSELOR_j + X_{ij} + u_{0j} + \varepsilon_{ij}$$

where $X3CLASSES_{ij}$ is the predicted outcome variable for postsecondary enrollment for each student i in school j . γ_{00} is the average probability of enrolling in college across schools. The coefficient γ_{01} is the average difference in the probability of enrolling in college between treatment (with a college counselor) and control schools. The model will control for a vector of covariates, X_{ij} (excluding the survey weight), that were used in the propensity models.

The error term, ε_{ij} , captures all other factors that influence the dependent variable and are not accounted for in the model.

Results

The results for this study are organized by the four treatment categories. Each of the three outcomes of interest was tested using the four treatment areas to strengthen the analysis and validity of the findings. The reported average treatment effect is the marginal effects at the means (MEM) for all outcomes. For each set of analysis, I calculated the difference between the adjusted predictions at the means (APM) for both treatment and control groups to get the overall marginal effects for each model. For both APM and MEM, the average is defined as having a mean value for all the covariates in the model. Overall, there were noticeable similarities in the population average treatment effects (PATE) across the four treatment groups. None of the models had statistically significant effects for the number of postsecondary institutions a student applies to or FAFSA completion. The results of the final weighted models with covariates are displayed in Table 4.4. The full logit models for all treatment variables and outcomes are in Appendices F-I.

Table 4.4

Population Average Treatment Effects of College Counselors

	Outcome 1		Outcome 2	Outcome 3
	Applied (Y/N)	Num of Apps	FAFSA	Enrollment
Application Counselor	.018*	0.024	0.01	.031*
Selection Counselor	.021*	0.039	0.01	.032*
Either Counselor	.020*	0.031	0.011	.034*
Both Counselors	.020*	0.027	0.009	.031*
Includes Covariates	Yes	Yes	Yes	Yes

* $p < .05$, ** $p < .01$, *** $p < .001$

College Application Counselor

For the first treatment category, I examined the effects of having a college *application* counselor, *C2CLGAPP*, on the three postsecondary application and enrollment outcomes. Students in this sample were weighted based on their propensity to have the college application counselor. Students who had the college selection counselor only were not included in the control group. The college *application* counselor treatment had a positive significant effect on students applying to college and enrolling in college. When controlling for the vector of covariates, the average treatment effect of a college *application* counselor on college applications was $PATE = .018$, $p < .05$. Therefore, for two average students, one

with a college *application* counselor and one without, the treated student's probability of applying to college would be 1.8 percentage points higher (treated APM = .921, control APM = .903, MEM = .018). In addition to finding a positive significant effect on applying to college, students at treatment high schools were also more likely to enroll, PATE = .031, $p < .05$. Students with the college *application* counselor are 3.1 percentage points more likely to enroll at a postsecondary institution after high school (treated APM = .803, control APM = .772, MEM = .031).

College Selection Counselor

The second set of analyses examined the effects of having a college *selection* counselor, *C2SELECTCLG*, on the three outcomes of interest. Students in this sample were weighted based on their propensity to have the college *selection* counselor. Students who had the college application counselor only were removed from the control group. The college *selection* counselor treatment had a positive significant effect on students applying to college and enrolling in college. The average treatment effect of a college *selection* counselor on college applications was PATE = .026, $p < .05$ (without covariates) and ATE = .021, $p < .05$ (with covariates). Holding all else constant, for two average students, one with a college *selection* counselor and one without, the treated student's probability of applying to college would be 2.1 percentage points higher (treated APM = .924, control APM = .904, MEM = .021). In addition to finding a positive significant effect on applying to college, students at treatment high schools had higher probabilities of postsecondary enrollment when controlling for covariates, PATE = .032, $p < .05$. Students with the college *selection* counselor are 3.2 percentage points more likely to enroll at a postsecondary institution after

high school compared to those without the counselor treatment (treated APM = .805, control APM = .773, MEM = .032).

Either College Counselor

The third set of models examines the effect of having either college counselor type (*application or selection*), on the three postsecondary application and enrollment outcomes. Students in this sample were weighted based on their propensity to have at least one of the two college counselor treatments discussed in the first two sets of models. The control group included students who had neither the college application counselor nor the college selection counselor. Aligned with the first two sets of models, the *either* counselor treatment had a positive significant effect on students applying to college and enrolling in college. The average treatment effect of *either* counselor on college applications was PATE = .026, $p < .05$ (without covariates) and PATE = .020, $p < .05$ (with covariates). Holding all else constant, for two average students, one with a college counselor of any type (*either*) would have a probability of applying to college at 2 percentage points higher (treated APM = .924, control APM = .903, MEM = .020). Having either college counselor in a high school also increased the probability that a student would enroll in postsecondary education after controlling for covariates, .034, $p < .05$. Students with *either* counselor are 3.4 percentage points more likely to enroll at a postsecondary institution after high school compared to those without the counselor treatment (treated APM = .804, control APM = .771, MEM = .034).

Both College Counselors

The last set of models examined the effects of having both the application and selection counselor treatment compared to those who had neither treatment. Students in this

sample were weighted based on their propensity to have both counselors. Students who had only one treatment or another (e.g. only the college application counselors) were not included in these models. The final sets of models had a positive significant effect on students applying to college and enrolling in college. The average treatment effect having *both* counselors on college applications was PATE = .025, $p < .05$ (without covariates) and PATE = .020, $p < .05$ (with covariates). Holding all else constant, for two average students, one with both college counselor treatments and one without, the one with both college counselors would have a probability of applying to college at 2 percentage points higher (treated APM = .923, control APM = .903, MEM = .020). Having a counselor that assists with both college applications and selection also increased the probability that a student would enroll in postsecondary education after controlling for covariates, PATE = .031, $p < .05$. Students with *both* counselor treatments are 3.1 percentage points more likely to enroll at a postsecondary institution after high school compared to those without the counselor treatment (treated APM = .804, control APM = .773, MEM = .031).

Limitations

There are several limitations in this study. The primary limitation is defining the treatment variable. The 2012 First Follow-up wave of the HSLs:09 survey asks two separate survey questions about college counselors. The first question is “Does your school have one or more counselors whose primary responsibility is assisting students with college applications?” and the second question is: “Does your school have one or more counselors whose primary responsibility is assisting students with college selection?” While these questions are logical proxies for the college counselor treatment, the fact that there are two

separate questions can cause some confusion. With the high correlation between these two variables, a “yes” on both questions likely refers to one individual who assists students with both treatments. There is no literature or research that would indicate the counselor or advisor would assist with only one of these two tasks. Further, the question asks about one or more individuals, which could potentially vary the dosage of the treatment. For example, the majority of schools who answered “yes” to these questions might have only one person, but some schools might have two or more staff members who are considered college counselors. Hence, some students might have a more intense dosage of treatment compared to others. For the purposes of this study and using the HSLs:09 dataset, a school is considered to have the college counselor treatment if they answered “yes” to either of the two survey questions.

The college enrollment outcome variable is another limitation of this study. The 2013 Update survey was administered from June-December 2013, which was the 6 months following the cohort’s expected high school graduation. Either a parent or a student answered questions in this follow-up interview. Given the timing of when the survey was administered, there could potentially be some inaccurate answers. For example, a student might report in June that they plan to enroll in college in the fall, but this could potentially change. Additionally, all of the outcome variables are self-reported items and not verified from another source. Research has shown that the time between high school graduation and college enrollment can pose some significant obstacles, and many students have their plans fall apart, a phenomenon referred to as “summer melt” (Castleman, Arnold, & Wartman, 2012). Therefore, the college enrollment variable would be more reliable if all of the surveys

were administered after postsecondary classes began in August 2013. While many of the surveys were collected after postsecondary classes started, there are likely surveys that were reported prior to actual enrollment.

Discussion and Implications

The results from this study provide evidence that college counselors in public high schools have a positive effect on students' postsecondary application and enrollment behaviors. Overall, across all treatment categories, students who have a college counselor in their public high school are 2-3 percentage points more likely to apply and enroll in college. I did not find any significant effects on the number of institutions a student applies to or FAFSA completion. The results from this study have important implications for college counseling policy and practice in our nation.

Guided by Perna's (2006) conceptual model of students' college choice, the results from this study support the assumption that school counselors are a resource that influences college-related choices. College counselors are considered a school context resource in Layer 2 of the four-layer conceptual model. Layer 2 of the model is based on McDonough's (1997) concept of "organizational habitus," which identifies ways that schools either facilitate or impede the college choice process. Because the college counselor is there to assist students with college applications and selection, the results from this study provide some evidence that the college counselor helps to facilitate the college choice process. The impact of the college counselor on college applications and enrollment supports previous research that indicates that a school staff member can be influential in providing access to resources and assisting students with the complex college application process (Hossler et al.,

1999; McDonough, 1997; Stanton-Salazar, 1997). Even after controlling for student-level variables from Layer 1 and school-level variables from Layer 2, we find that the addition of a college counselor in a high school increases both the probability that a student will apply to college and ultimately enroll.

The results from the two-stage college application models provide some evidence that the college counselor increases the probability that a student will apply to college, but there was not a significant effect on the number of applications that a student submits. I argue that the first stage of the model is more important because the counselor is helping students apply to a postsecondary institution who would otherwise not apply without their assistance. Applying to just one college could potentially lead to enrollment, which is the primary goal.

The null effect of the college counselor on the number of applications can be interpreted in a couple of different ways. One explanation is that college counselors might be more focused on getting students to apply to college who might otherwise not apply and be less concerned about increasing the number of applications a student submits. There are instances where an increase in the number of applications a student submits would not change the college enrollment outcome. A student might only apply to the local community college, apply to one college under early decision/action, or apply to only a select few schools. However, the counterargument is that a college counselor whose primary responsibility is to assist students with college *applications* (treatment a) would likely have a positive significant effect on the number of applications a student submits. College counselors might need to focus more attention on submitting an appropriate number of applications based on the students' aspirations and credentials. Further, this raises some

concern about college application costs. Some students might not be able to afford the application fees at additional colleges. An increase in college application numbers often requires additional financial resources. Application fee waivers, such as the ones available from the College Board, are available, but students are limited to four waivers. Overall, little is known empirically about the ideal number of institutions a student should apply to in order to increase their likelihood of college enrollment.

The models did not provide evidence to support that college counselors have an effect on FAFSA completion, which is cause for concern because financial barriers to college are well documented for low-income and underrepresented student populations. Prior research confirms that a lack of understanding and information about the financial aid application process can result in sub-optimal college enrollment decisions (Bowen et al., 2005). Filling out the FAFSA is a major step in the college enrollment process, and not completing this form could hinder student enrollment because they may be ill informed about available financial assistance. In a major randomized trial, Bettinger et al. (2012) found that personally assisting students with FAFSA completion can ultimately increase college enrollment (Bettinger et al., 2012). College counselors should focus more effort on assisting students with the FAFSA and providing information about financial aid. Future trainings on financial aid should be developed to better equip college counselors with financial aid literacy and assisting students.

Arguably, the most critical finding of this study was the positive significant effect that the college counselor had on college enrollment. While the application steps in the first two models are important, enrolling in (and graduating from) college should be the

fundamental goal of providing college assistance. Students can fill out applications, take college entrance exams, and even accept an offer, but these steps do not seem to matter if a student fails to matriculate. This study provides evidence that a college counselor increases college enrollment. These findings add to previous studies that found positive significant effects of college counseling on college enrollment (Castleman & Goodman, 2014; Stephan & Rosenbaum, 2013).

The magnitude of the college application and enrollment effects seem relatively small, and we need to be cautious about the implications. Public high schools with the college counselors increase the probability of a student applying to college by 1.8 – 2.1 percentage points (across all treatment categories) and increase the probability that a student will enroll in college by 3.1 – 3.4 percentage points. These significant findings raise questions for policymakers about how large of an effect is needed to justify funding this additional resource. The positive significant findings help support the need for designated college counselors, but larger effects would provide more credibility. However, variation in college counselor quality is one explanation for these smaller effect sizes. Very effective college counselors are likely increasing the number of applications and postsecondary enrollment at much higher rates than others who are not as effective at their positions. If well-trained, hardworking college counselors are placed in high schools, we are likely to see larger effect sizes.

Overall, this study provides important implications for college counseling in U.S. public high schools. This study reports average treatment effects for the nation's population, and we can conclude that the presence of a college counselor in a public high school

significantly increases the probability that students will apply and enroll in postsecondary education. Policymakers and school districts should consider the importance of college access and which resources are needed to better assist public school students. As private schools continue to invest money in college counseling initiatives, should public schools consider investing in more equitable college assistance for students who might not otherwise get support? With K-12 and higher education operating independently, future initiatives should focus on the long-term educational trajectories of students.

Future Research

As we continue to see a shift in college counseling efforts in public schools, more empirical evidence of the effectiveness of school-level initiatives is needed. Relatively few studies have examined college counseling in public high schools outside of school counselors. As new models for college advising/coaching/counseling are being developed, more research is needed to understand the role and impact of having an additional resource in the high school. I provide three key areas that future research should address.

First, this study employed a quasi-experimental design to understand the effects of a college counselor on postsecondary enrollment behaviors. Though I tried to account for selection bias in my models, the best way to examine the effects of a college counselor is through random assignment. Randomly assigning college counselors to high schools on a national level would not be feasible, but college counseling programs and districts could feasibly use random assignment. The College Advising Corps recently implemented random assignment in Texas, and an evaluation team will be examining the effects. School districts

and federally-funded programs should also consider random assignment and partnering with researchers on program evaluation.

Second, a lack of understanding about the structure and practices of college counseling across the nation exists. Perna et al. (2008) examined the variation in college counseling services across high schools, but there are areas where this work can be expanded to inform policy and practice. The school district sometimes funds college counselors in public high schools, but non-profits and the federal government fund many college counselors. There is obviously a belief that these positions are providing a much-needed resource, and the results of this study help provide evidence that college counselors are helping students apply and enroll in college at higher rates. While this resource is less available in public schools, more research can explore the effects of college counseling to better inform educational investments and policy.

Last, this study adds to the current literature that is focused personal assistance in the college choice process. Future research should extend Bettinger et al.'s (2012) findings on the role that personal assistance plays in the college enrollment process. This research and other recent studies have found that personally assisting students with postsecondary and financial aid applications can improve college-going behavior. Future qualitative research should explore the practices of college counselors and how they assist students; whereas, future quantitative research should continue to examine initiatives that provide personal assistance in the college application process. As more studies support the importance of personal assistance, policymakers will be able to make more informed decisions about the appropriate college counseling services to provide to public high school students

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CONCLUSION

Collectively, the results from these three studies advance the conversation about the role and effectiveness of school-based college advising models. We are able to gain important and new insight about college assistance in public high schools. This research adds to the dearth literature on specialized college advising professionals. The results from these three studies provide evidence that college advising professionals had positive significant effects on students taking the SAT test, applying to college, and enrolling in postsecondary education. These significant quantitative findings are supported by the qualitative study, which indicated that exemplary college advising professionals provided numerous college advising services and felt that their position is essential. The findings from these three studies indicate that college advising professionals are providing significant college-related resources beyond traditional school counselors. These three studies provide important implications for policy, practice, and future research.

Policy

The findings from these studies inform both K-12 and higher education policy. College enrollment of high school graduates is not currently built into the K-12 accountability system (McDonough, 2005b), which is evidenced by the lack of college advising in public schools. As private schools continue to invest in college advising, school districts and policymakers need to ensure that public high school students are provided with equitable college assistance. Further, higher education institutions should consider building stronger relationships with high schools and educating staff members on current admissions policies and requirements.

Presently, several sources including the federal government, local school districts, and non-profit organizations fund school-based college advising initiatives. Senator Hillary Clinton introduced the COACH Act in 2008, to “recruit and train recent graduates of 4-year institutions of higher education, and place the graduates in high schools, to increase the number of low- and middle-income high-achieving high school students who are entering and succeeding at a college” (S. 3027, 2008). Although this act was not adopted, there is an indication that the federal government is considering the importance of college advising initiatives. As the College Advising Corps is expanding and other non-profit college coaching models are being developed, there is an increased awareness of the importance of personalized college advising. Future policies should address ways to make college advising more accessible to public school students who may otherwise not receive assistance in navigating the complex college enrollment process.

Practice

Previous findings suggest that traditional school counselors do not have the adequate time to assist students in the college choice process given the numerous other demands of their position (McDonough, 2005b). In contrast, college advising professionals are able to focus exclusively on assisting students with college applications, financial aid, and college selection. From the qualitative study, we learned that these professionals are providing numerous college-related services to students and are reaching out to students in creative ways. Further, the school-based college advising models provide access to any student within the school that seeks assistance. Because school counselors have many competing

priorities, schools may need additional staff members, such as the college advising professionals in these studies, to assist students in the college choice process.

Further consideration needs to be given to the training and education of college advising professionals. Currently, there is no clear educational requirement or credentialing process for these professionals. If this position continues to expand in public high schools across the nation, there needs to be more formalized training. Counselor education programs or higher education programs might consider adding a specialization or concentration in college advising/counseling. Another suggestion is to develop a certificate program with specific course requirements. After completing the certificate program, participants would be Certified College Advising Professionals. Overall, training and professional development needs to be expanded to formalize this profession.

Future Research

McDonough's (2002, 2005a, 2005b) work started an important conversation about college advising resources in public high schools, and this research extends the literature by examining the role and effectiveness of specialized college advising professionals. Future qualitative research should examine the students' experiences working with college advising professionals and their perceptions of the role. To better understand the college advising services provided, researchers should conduct observations of one-on-one student meetings, classroom presentations, and workshops. Policymakers and administrators will make better decisions about the best way to structure these positions within the high school context if they gain a more holistic understanding of how these individuals assist students. Future

research is needed to understand the most effective, potentially replicable college advising practices.

Future quantitative studies should examine the effects of other school-based college advising initiatives on college access. There are potential opportunities to conduct field experiments by randomly assigning college advising professionals to schools. High schools could apply to have a college advisor and the program could use an oversubscription lottery approach to place college advisors. A true field experiment would aid researchers and policymakers in understanding the causal effects of college advising. In cases where random assignment is not feasible, researchers should employ quasi-experimental methods to account for selection bias. As new programs develop and school districts decide to fund college advising staff members, rigorous research evaluations should be conducted to help inform future educational policy.

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APPENDICES

Appendix A

College Advising Professional Interview Protocol

1. Tell me a little about what led you to become a college advising professional.
2. What program or company or policy sponsors your position. How is your position funded?
3. How long have you been a college advising professional?
4. What type of training, if any, did you go through to prepare for this role?
5. As you reflect back on your training, what was the most helpful, if anything, that has prepared you for your role?
6. As you reflect back on your training, what was the least helpful, if anything, that has prepared you for your role?
7. After being in this role for (amount of time), what additional training do you think would be useful to your profession?
8. How many students do you typically work with in a given year? How are you connected with students or do students choose to work with you?
9. How would you describe your role? (in your own words)
10. What type of information do you share with students about preparing for college?
11. What types of services do you provide that assists students in preparing for college?
12. How do you go about sharing college information and services?
13. What resources do you use to help you in your role?
14. How do you go about building relationships with students?
15. What are some of the barriers or challenges the students you work with face in regards to accessing and enrolling in college?
16. How do you think teachers/guidance counselors/school administrators perceive your role?
17. How do you think the students perceive your role? How come?
18. How do you think the parents/guardians perceive your role? How come?
19. What is the most challenging aspect of serving as a college advising professional?
20. What is the most rewarding aspect of serving as a college advising professional?
21. Do you have an example of a student success story that you would like to share?
22. Is there anything else you would like to share about your experience as a college advising professional?

Appendix B

School-Level Covariates

Variable Name	Variable Label	Data Source	Coded As	Covariate Category
X1LOCALE	X1 School locale (urbanicity)	BY school-level composites	locale_city (comparison), local_suburb, locale_town, locale_rural	School Demographics
X1CENDIV	X1 School census geographic division	BY school-level composites	newengland (comparison), midatlantic, enorthcentral, wnorthcentral, southatlantic, esouthcentral, wsouthcentral, mountain, pacific	School Demographics
totfreeredlunch_percent	percentage of students with total free/reduced lunch	CCD 2009-2010 variable	continuous	School Demographics
schmembership	school size (number of students)	CCD 2009-2010 variable	continuous	School Demographics
black_percent	percentage of Black students in the school	CCD 2009-2010 variable	continuous	School Demographics
asian_percent	percentage of Asian students in the school	CCD 2009-2010 variable	continuous	School Demographics
hisp_percent	percentage of Hispanic students in the school	CCD 2009-2010 variable	continuous	School Demographics
am_percent	percentage of American Indian students in the school	CCD 2009-2010 variable	continuous	School Demographics
title1_status	1=title 1 school	CCD 2009-2010 variable	yes/no	School Resources
C1CASELOAD	C1 A03 Average caseload for school's counselors	BY counselor instrument	continuous	School Resources
W3W1W2STU	W3 Student Longitudinal Analytic Weight BY-F1-U13	BY, F1, U13 (3 waves)	w3w1w2stu	Survey Weight

Note: BY refers to the 2009 Base Year survey

Appendix C

Student-Level Covariates

Variable Name	Variable Label	Data Source	Coded As	Covariate Category
X1SEX	X1 Student's sex	BY student composite	male	Student Demographics
X1RACE	X1 Student's race/ethnicity-composite	BY student composite	stu_amindian, stu_asianpi, stu_black, stu_hispanic, stu_multirace, stu_white (comparison)	Student Demographics
S1LANG1ST	S1 A07 First language 9th grader learned to speak is English, Spanish, or other	BY student instrument	english(comparison), spanish, otherlang, biligual	Student Demographics
S1MOMTALKCLG	S1 E09A 9th grader talked to mother about going to college	BY student instrument	parenttalkclg	Cultural and Social Capital
S1DADTALKCLG	S1 E09B 9th grader talked to father about going to college	BY student instrument		Cultural and Social Capital
S1FRNDTLKCLG	S1 E09C 9th grader talked to friends about going to college	BY student instrument	friendtalkclg	Cultural and Social Capital
S1TCHTALKCLG	S1 E09D 9th grader talked to teacher about going to college	BY student instrument	schooltalkclg	Cultural and Social Capital
S1CNSLTLKCLG	S1 E09E 9th grader talked to school counselor about going to college	BY student instrument		Cultural and Social Capital
S1PLAN	S1 F07 9th grader has put together an education plan and/or career plan	BY student instrument	edcareerplan, edplan, careerplan, noedcareerplan (comparison)	Demand for Higher Education
S1ABILITYBA	S1 G03 9th grader thinks he/she has the ability to complete a Bachelor's degree	BY student instrument	noabilityba (comparison), probabilityba, defabilityba	Demand for Higher Education

Note: BY refers to the 2009 Base Year survey

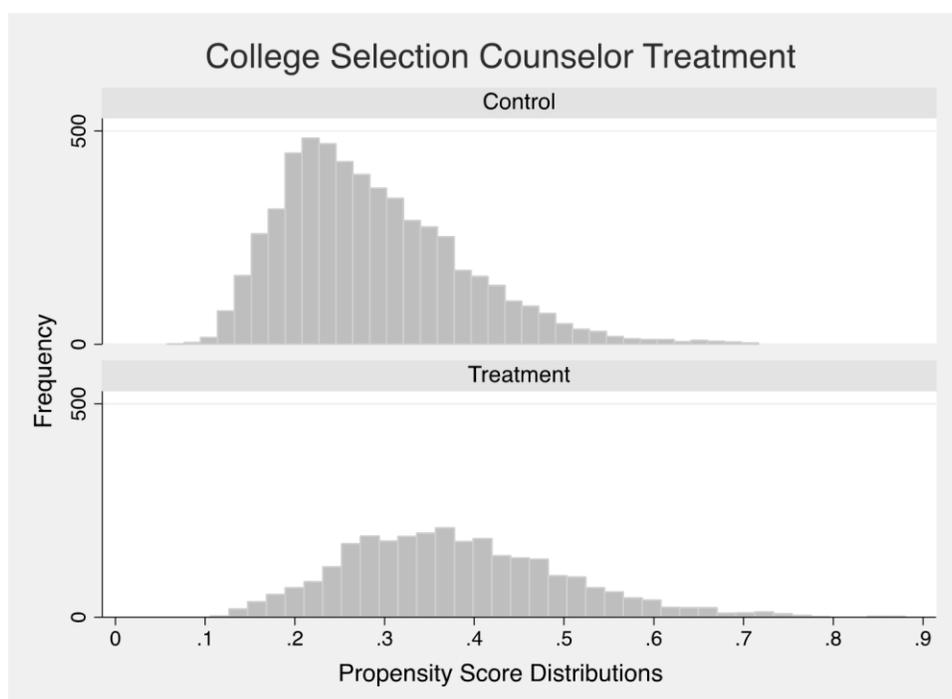
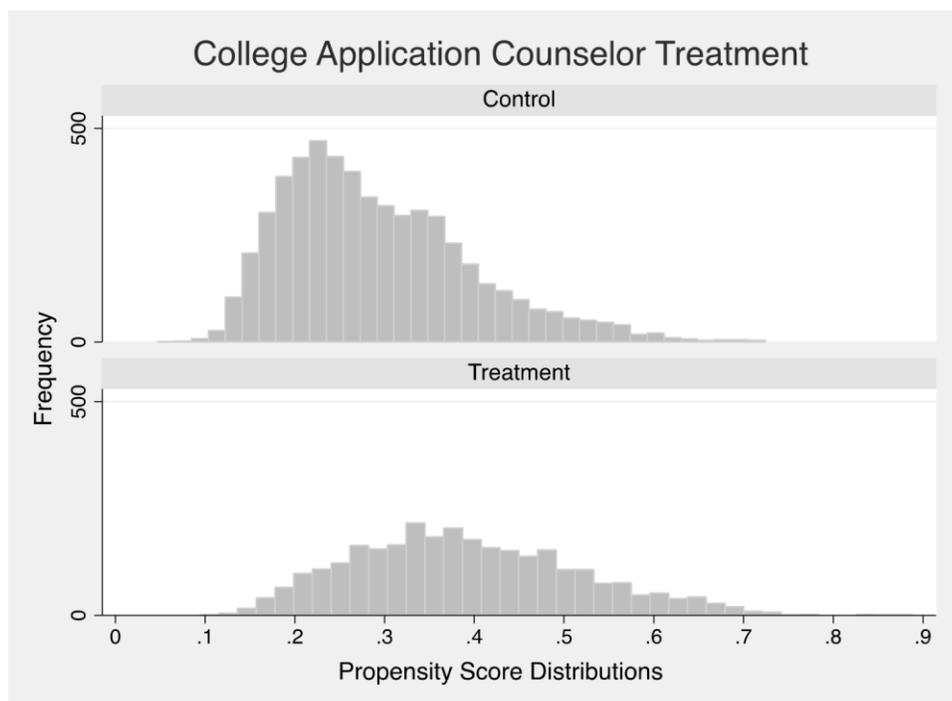
Student-level Covariates Continued

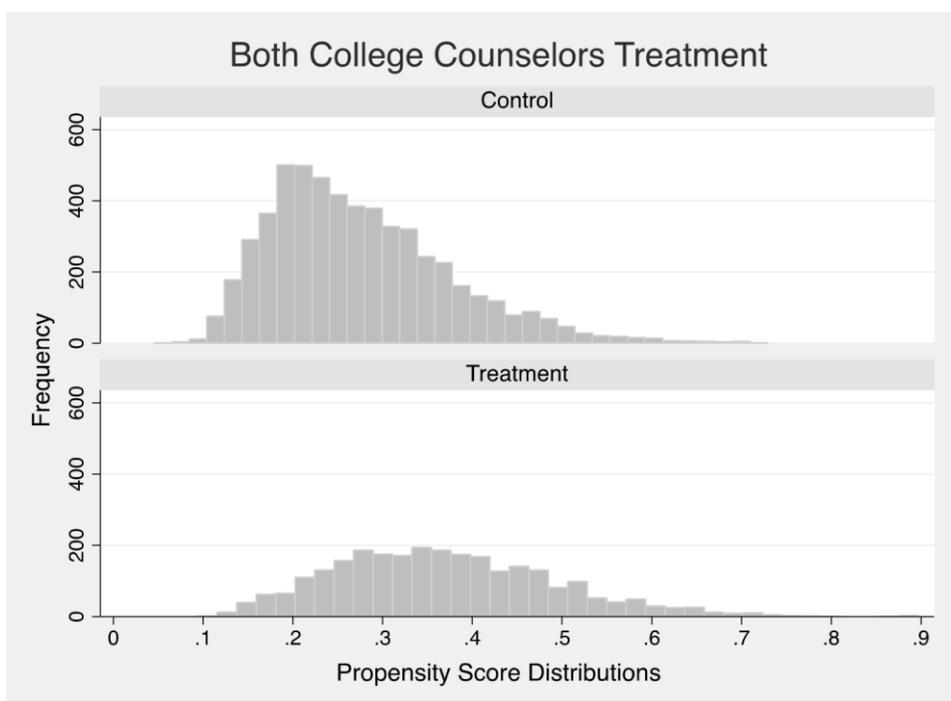
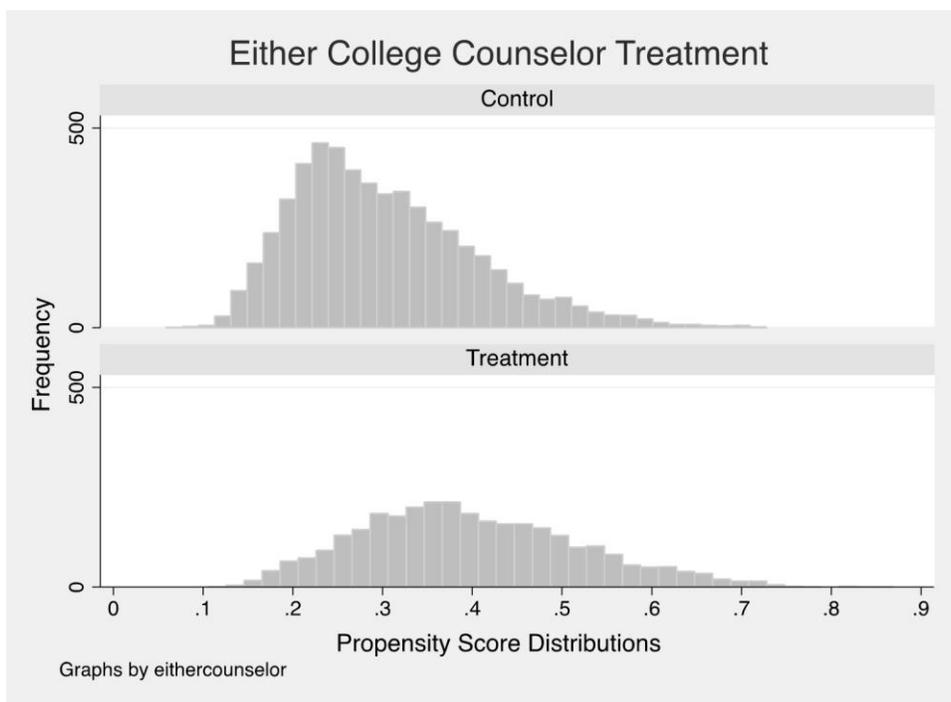
Variable Name	Variable Label	Data Source	Coded As	Covariate Category
S1BAAGE30	S1 G04 9th grader would be disappointed if he/she didn't have a BA/BS by age 30	BY student instrument	s1baage30 (yes=1)	Demand for Higher Education
S1FYBA	S1 G05B 9th grader plans to enroll in Bachelor's program in 1st year after HS	BY student instrument	s1fyba (yes=1)	Demand for Higher Education
S1M8	S1 B06 Most advanced math course taken by 9th grader in the 8th grade	BY student instrument	math8 (comparison), prealgebra, algebra1, algebra2plus, othermath	Demand for Higher Education
S1GOODGRADES	S1 E01E Getting good grades is important to 9th grader	BY student instrument	goodgrades_stagree, goodgrades_agree, goodgrades_disagree (comparison)	Demand for Higher Education
S1PSAT	S1 F09A 9th grader has taken or plans to take the PSAT	BY student instrument	collegetestplan	Demand for Higher Education
S1SAT	S1 F09B 9th grader has taken or plans to take the SAT	BY student instrument		Demand for Higher Education
S1ACT	S1 F09C 9th grader has taken or plans to take the ACT	BY student instrument		Demand for Higher Education
S1AP	S1 F09D 9th grader has taken/plans to take an Advanced Placement (AP) test	BY student instrument	abibtestplan	Demand for Higher Education
S1IBTEST	S1 F09E 9th grader has taken/plans to take International Baccalaureate (IB) test	BY student instrument		Demand for Higher Education
S1EDUEXPECT	S1 G01 How far in school 9th grader thinks he/she will get	BY student instrument	eduexpect_lessthanhs, eduexpect_hs, eduexpect_bach, eduexpect_masters, eduexpect_phd, eduexpect_don'tknow (comparison)	Demand for Higher Education
X1SES_U	X1 Socio-economic status composite derived with locale (urbanicity)	BY student level composites	x1ses_u (continuous)	Supply of Resources

Note: BY refers to the 2009 Base Year survey

Appendix D

Histograms of Common Support





Appendix E

Reduction of Standardized Bias

Treatment A: College Application Counselor

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
American Indian	0.01	0.01	1.85	0.01	0.01	0.01
Asian/Pacific Islander	0.10	0.08	6.47	0.09	0.09	0.38
Black	0.08	0.10	5.16	0.09	0.09	0.70
Hispanic	0.13	0.18	14.14	0.15	0.15	0.39
Multiracial	0.09	0.08	2.30	0.09	0.09	0.22
1 st Language - Spanish	0.05	0.07	9.80	0.05	0.05	0.18
1 st Language - Other	0.05	0.04	2.62	0.05	0.05	0.17
Bilingual	0.06	0.07	3.12	0.06	0.06	0.05
Talk to Parents about College	0.85	0.84	2.12	0.84	0.84	0.38
Talk to Friends about College	0.56	0.56	0.80	0.56	0.56	0.25
Talk to School Staff about College	0.29	0.31	4.65	0.30	0.30	0.45
Ed & Career Plan	0.37	0.37	0.34	0.37	0.37	0.46
Education Plan Only	0.15	0.14	2.13	0.15	0.15	0.12
Career Plan Only	0.12	0.10	6.55	0.12	0.12	0.35
Probably has Ability to get BA	0.41	0.43	3.63	0.42	0.42	0.41
Definitely has Ability to get BA	0.52	0.50	4.58	0.51	0.51	0.30
Bachelors by Age 30	0.84	0.84	1.89	0.84	0.84	0.30
Plan to pursue bachelor's degree	0.56	0.54	2.29	0.55	0.55	0.38
Pre-Algebra	0.33	0.33	0.78	0.33	0.33	0.03
Algebra 1	0.33	0.30	6.08	0.32	0.32	0.23
Algebra 2 or Higher	0.06	0.05	1.10	0.06	0.06	0.40
Other Math Class	0.05	0.06	3.61	0.06	0.06	0.12
Good Grades - Very Important	0.61	0.61	0.11	0.61	0.61	0.26
Good Grades - Important	0.35	0.35	0.11	0.35	0.35	0.55
Plans to Take College Test	0.73	0.70	6.10	0.72	0.73	0.48
Plans to Take AB/IB Test	0.38	0.37	1.47	0.38	0.38	0.56
Ed Expectation - Less than HS	0.00	0.00	1.65	0.00	0.00	0.27
Ed Expectation - High School	0.10	0.12	6.00	0.11	0.11	0.29
Ed Expectation - Bachelors	0.18	0.18	2.03	0.18	0.18	0.42
Ed Expectation - Masters	0.22	0.22	0.71	0.22	0.22	0.12
Ed Expectation - PhD/Terminal	0.22	0.21	3.00	0.22	0.22	0.35
Socioeconomic Status	0.08	-0.05	16.22	0.03	0.03	0.11
Locale - Rural	0.27	0.34	14.37	0.30	0.30	0.09
Locale - Suburban	0.41	0.30	22.64	0.37	0.37	0.10
Locate - Town	0.12	0.13	5.03	0.12	0.13	1.18
Region - Pacific	0.14	0.11	8.30	0.13	0.13	1.09
Region - Midatlantic	0.13	0.09	14.03	0.11	0.11	1.20

Treatment A cont.

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
Region - East North Central	0.21	0.18	7.45	0.20	0.20	0.46
Region - West North Central	0.06	0.07	7.49	0.06	0.06	0.22
Region - South Atlantic	0.23	0.20	6.46	0.22	0.22	0.03
Region - East South Central	0.09	0.15	16.97	0.11	0.12	1.28
Region - West South Central	0.07	0.12	18.40	0.09	0.09	0.22
Region - Mountain	0.04	0.05	4.86	0.04	0.04	1.17
School - Title 1 Status	0.43	0.58	29.72	0.49	0.49	0.90
School - Free/Red Lunch %	0.35	0.44	41.02	0.38	0.38	0.07
School - Size	1434.74	1321.99	14.24	1381.36	1371.77	1.23
School - Black %	0.13	0.15	9.92	0.14	0.14	0.06
School - Asian %	0.04	0.03	11.62	0.04	0.04	2.19
School - Hispanic %	0.12	0.16	19.77	0.13	0.13	0.63
School - American Indian %	0.01	0.01	3.48	0.01	0.01	1.55
School - Counselor Caseload	377.50	374.04	2.95	374.62	373.32	1.13
		Mean	7.49		Mean	0.48
		Median	4.86		Median	0.35

Treatment B: College Selection Counselor

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
American Indian	0.01	0.01	2.19	0.01	0.01	0.03
Asian/Pacific Islander	0.10	0.08	5.62	0.09	0.09	0.21
Black	0.08	0.09	4.38	0.09	0.09	0.71
Hispanic	0.13	0.18	14.03	0.15	0.15	0.35
Multiracial	0.09	0.08	2.96	0.09	0.09	0.36
1 st Language - Spanish	0.05	0.07	9.84	0.05	0.06	0.31
1 st Language - Other	0.05	0.04	2.38	0.05	0.05	0.23
Bilingual	0.06	0.07	4.00	0.06	0.06	0.14
Talk to Parents about College	0.84	0.84	1.86	0.84	0.84	0.08
Talk to Friends about College	0.56	0.56	0.18	0.56	0.56	0.04
Talk to School Staff about College	0.29	0.31	4.35	0.30	0.30	0.46
Ed & Career Plan	0.37	0.36	0.18	0.37	0.37	0.56
Education Plan Only	0.15	0.14	2.34	0.14	0.15	0.21
Career Plan Only	0.12	0.10	6.98	0.11	0.11	0.07
Probably has Ability to get BA	0.41	0.43	4.17	0.42	0.42	0.25
Definitely has Ability to get BA	0.52	0.49	4.93	0.51	0.51	0.35
Bachelors by Age 30	0.84	0.84	1.71	0.84	0.84	0.54
Plan to pursue bachelor's degree	0.56	0.55	1.77	0.55	0.55	0.33
Pre-Algebra	0.33	0.33	0.42	0.33	0.33	0.11
Algebra 1	0.33	0.30	6.55	0.32	0.32	0.05
Algebra 2 or Higher	0.06	0.06	0.07	0.06	0.06	0.52
Other Math Class	0.05	0.06	3.85	0.06	0.06	0.20
Good Grades - Very Important	0.61	0.61	0.22	0.61	0.61	0.02
Good Grades - Important	0.35	0.35	0.15	0.35	0.35	0.24
Plans to Take College Test	0.73	0.70	6.26	0.72	0.73	0.60
Plans to Take AB/IB Test	0.38	0.36	3.84	0.37	0.38	0.79
Ed Expectation - Less than HS	0.00	0.00	1.76	0.00	0.00	0.38
Ed Expectation - High School	0.10	0.12	6.21	0.11	0.11	0.04
Ed Expectation - Bachelors	0.18	0.18	1.43	0.18	0.18	0.13
Ed Expectation - Masters	0.22	0.22	0.40	0.22	0.22	0.31
Ed Expectation - PhD/Terminal	0.22	0.21	3.56	0.22	0.22	0.34
Socioeconomic Status	0.08	-0.02	13.54	0.04	0.04	0.09
Locale - Rural	0.27	0.32	11.19	0.29	0.29	0.81
Locale - Suburban	0.41	0.30	22.17	0.37	0.37	0.18
Locate - Town	0.12	0.13	3.69	0.12	0.13	1.51
Region - Pacific	0.14	0.10	11.70	0.13	0.13	0.38
Region - Midatlantic	0.13	0.09	14.47	0.11	0.11	0.57
Region - East North Central	0.21	0.21	0.30	0.21	0.21	0.04
Region - West North Central	0.06	0.08	11.29	0.06	0.07	0.46
Region - South Atlantic	0.23	0.19	10.54	0.21	0.21	0.11

Treatment B cont.

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
Region - East South Central	0.09	0.14	15.97	0.11	0.11	0.87
Region - West South Central	0.07	0.11	16.37	0.09	0.09	0.12
Region - Mountain	0.04	0.05	1.67	0.04	0.04	1.25
School - Title 1 Status	0.43	0.55	23.51	0.47	0.48	0.88
School - Free/Red Lunch %	0.35	0.42	35.96	0.38	0.38	0.07
School - Size	1434.74	1338.49	12.19	1391.63	1388.07	0.46
School - Black %	0.13	0.14	7.94	0.14	0.14	0.02
School - Asian %	0.04	0.03	10.74	0.04	0.04	2.75
School - Hispanic %	0.12	0.16	19.76	0.13	0.13	0.52
School - American Indian %	0.01	0.01	2.80	0.01	0.01	1.50
School - Counselor Caseload	377.50	375.37	1.82	375.15	373.90	1.09
		Mean	6.98		Mean	0.44
		Median	4.17		Median	0.34

Treatment C: Either College Counselor

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
American Indian	0.01	0.01	1.48	0.01	0.01	0.10
Asian/Pacific Islander	0.10	0.08	6.03	0.09	0.09	0.42
Black	0.08	0.10	5.35	0.09	0.09	0.50
Hispanic	0.13	0.18	13.16	0.15	0.15	0.26
Multiracial	0.09	0.08	2.93	0.09	0.09	0.33
1 st Language - Spanish	0.05	0.07	9.35	0.05	0.06	0.19
1 st Language - Other	0.05	0.04	2.73	0.05	0.05	0.14
Bilingual	0.06	0.07	3.65	0.06	0.06	0.04
Talk to Parents about College	0.84	0.84	2.18	0.84	0.84	0.10
Talk to Friends about College	0.56	0.56	0.32	0.56	0.56	0.12
Talk to School Staff about College	0.29	0.31	4.32	0.30	0.30	0.43
Ed & Career Plan	0.37	0.37	0.19	0.37	0.37	0.47
Education Plan Only	0.15	0.14	1.89	0.15	0.15	0.09
Career Plan Only	0.12	0.10	6.30	0.12	0.12	0.26
Probably has Ability to get BA	0.41	0.43	3.91	0.42	0.42	0.32
Definitely has Ability to get BA	0.52	0.49	4.81	0.51	0.51	0.33
Bachelors by Age 30	0.84	0.84	2.10	0.84	0.84	0.27
Plan to pursue bachelor's degree	0.56	0.54	2.34	0.55	0.55	0.31
Pre-Algebra	0.33	0.34	1.17	0.33	0.33	0.17
Algebra 1	0.33	0.30	7.02	0.32	0.32	0.24
Algebra 2 or Higher	0.06	0.05	1.31	0.06	0.06	0.30
Other Math Class	0.05	0.06	3.77	0.06	0.06	0.07
Good Grades - Very Important	0.61	0.61	0.04	0.61	0.61	0.21
Good Grades - Important	0.35	0.35	0.43	0.35	0.35	0.43
Plans to Take College Test	0.73	0.70	6.21	0.72	0.72	0.45
Plans to Take AB/IB Test	0.38	0.37	2.36	0.37	0.38	0.46
Ed Expectation - Less than HS	0.00	0.00	1.53	0.00	0.00	0.28
Ed Expectation - High School	0.10	0.12	6.34	0.11	0.11	0.30
Ed Expectation - Bachelors	0.18	0.18	1.58	0.18	0.18	0.23
Ed Expectation - Masters	0.22	0.22	0.76	0.22	0.22	0.14
Ed Expectation - PhD/Terminal	0.22	0.21	3.26	0.22	0.22	0.27
Socioeconomic Status	0.08	-0.04	15.92	0.03	0.03	0.10
Locale - Rural	0.27	0.33	12.53	0.30	0.29	0.39
Locale - Suburban	0.41	0.31	20.94	0.37	0.37	0.04
Locate - Town	0.12	0.13	3.22	0.12	0.13	1.08
Region - Pacific	0.14	0.11	9.87	0.13	0.13	0.98
Region - Midatlantic	0.13	0.08	14.61	0.11	0.11	1.19
Region - East North Central	0.21	0.20	3.10	0.21	0.21	0.05
Region - West North Central	0.06	0.08	8.67	0.06	0.06	0.34
Region - South Atlantic	0.23	0.19	8.77	0.21	0.21	0.16

Treatment C cont.

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
Region - East South Central	0.09	0.15	16.82	0.11	0.12	0.94
Region - West South Central	0.07	0.11	16.80	0.09	0.09	0.09
Region - Mountain	0.04	0.05	3.78	0.04	0.04	1.26
School - Title 1 Status	0.43	0.56	26.71	0.48	0.49	0.76
School - Free/Red Lunch %	0.35	0.43	38.85	0.38	0.38	0.20
School - Size	1434.74	1331.44	13.09	1385.43	1381.31	0.53
School - Black %	0.13	0.15	10.41	0.14	0.14	0.28
School - Asian %	0.04	0.03	11.55	0.04	0.04	2.07
School - Hispanic %	0.12	0.15	19.06	0.13	0.13	0.39
School - American Indian %	0.01	0.01	2.44	0.01	0.01	1.81
School - Counselor Caseload	377.47	373.37	3.51	374.48	373.29	1.03
		Mean	7.36		Mean	0.45
		Median	3.78		Median	0.30

Treatment D: Both College Counselors

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
American Indian	0.01	0.01	2.61	0.01	0.01	0.06
Asian/Pacific Islander	0.10	0.08	5.89	0.09	0.09	0.29
Black	0.08	0.09	4.10	0.09	0.09	0.89
Hispanic	0.13	0.18	15.22	0.15	0.15	0.26
Multiracial	0.09	0.08	2.49	0.09	0.09	0.49
1 st Language - Spanish	0.05	0.07	10.35	0.05	0.06	0.27
1 st Language - Other	0.05	0.05	2.17	0.05	0.05	0.24
Bilingual	0.06	0.07	3.58	0.06	0.06	0.26
Talk to Parents about College	0.84	0.84	1.74	0.84	0.84	0.11
Talk to Friends about College	0.56	0.56	0.88	0.56	0.56	0.24
Talk to School Staff about College	0.29	0.31	4.68	0.30	0.30	0.30
Ed & Career Plan	0.37	0.37	0.08	0.37	0.37	0.47
Education Plan Only	0.15	0.14	2.60	0.14	0.15	0.17
Career Plan Only	0.12	0.10	7.25	0.11	0.12	0.31
Probably has Ability to get BA	0.41	0.43	3.91	0.42	0.42	0.12
Definitely has Ability to get BA	0.52	0.49	4.66	0.51	0.51	0.19
Bachelors by Age 30	0.84	0.84	1.48	0.84	0.84	0.53
Plan to pursue bachelor's degree	0.56	0.55	1.55	0.55	0.55	0.13
Pre-Algebra	0.33	0.33	0.98	0.33	0.33	0.23
Algebra 1	0.33	0.31	5.41	0.32	0.32	0.18
Algebra 2 or Higher	0.06	0.06	0.35	0.06	0.06	0.59
Other Math Class	0.05	0.06	3.51	0.06	0.06	0.09
Good Grades - Very Important	0.61	0.62	0.29	0.61	0.61	0.24
Good Grades - Important	0.35	0.35	0.10	0.35	0.35	0.04
Plans to Take College Test	0.73	0.70	6.03	0.72	0.73	0.85
Plans to Take AB/IB Test	0.38	0.36	2.95	0.37	0.38	0.78
Ed Expectation - Less than HS	0.00	0.00	1.95	0.00	0.00	0.36
Ed Expectation - High School	0.10	0.12	5.87	0.11	0.11	0.01
Ed Expectation - Bachelors	0.18	0.18	1.96	0.18	0.18	0.42
Ed Expectation - Masters	0.22	0.22	0.31	0.22	0.22	0.32
Ed Expectation - PhD/Terminal	0.22	0.21	3.22	0.22	0.22	0.60
Socioeconomic Status	0.08	-0.03	13.77	0.04	0.04	0.02
Locale - Rural	0.27	0.33	13.21	0.30	0.29	0.30
Locale - Suburban	0.41	0.29	24.09	0.37	0.37	0.47
Locate - Town	0.12	0.14	5.55	0.12	0.13	1.34
Region - Pacific	0.14	0.11	10.00	0.13	0.13	0.40
Region - Midatlantic	0.13	0.09	13.71	0.11	0.11	0.22
Region - East North Central	0.21	0.19	4.86	0.20	0.20	0.48
Region - West North Central	0.06	0.08	10.17	0.06	0.06	0.32
Region - South Atlantic	0.23	0.20	8.09	0.22	0.22	0.11

Treatment D cont.

Median Percent Standardized Bias Before and After Weighting

	Unweighted Sample			Weighted Sample		
	C Mean	T Mean	% Bias	C Mean	T Mean	% Bias
Region - East South Central	0.09	0.15	16.08	0.11	0.11	0.98
Region - West South Central	0.07	0.12	18.24	0.09	0.09	0.07
Region - Mountain	0.04	0.05	2.62	0.04	0.04	1.30
School - Title 1 Status	0.43	0.56	26.62	0.48	0.48	0.97
School - Free/Red Lunch %	0.35	0.43	38.10	0.38	0.38	0.03
School - Size	1434.83	1329.02	13.35	1388.76	1380.33	1.08
School - Black %	0.13	0.14	7.25	0.14	0.14	0.31
School - Asian %	0.04	0.03	10.51	0.04	0.04	3.46
School - Hispanic %	0.12	0.16	20.78	0.13	0.13	0.30
School - American Indian %	0.01	0.01	2.89	0.01	0.01	2.27
School - Counselor Caseload	377.55	376.16	1.18	375.45	373.52	1.68
		Mean	7.24		Mean	0.51
		Median	4.66		Median	0.31

Appendix F

Full Model: College Application Counselor Treatment

*Full Model: College **Application** Counselor Treatment*

	Applied to College	Num. of Apps	FAFSA	Enrollment
Application Counselor	0.245* (0.125)	0.009 (0.027)	0.053 (0.078)	0.199* (0.086)
Male	-0.773*** (0.117)	-0.076* (0.035)	-0.610*** (0.094)	-0.397*** (0.087)
American Indian	-0.564 (0.706)	0.045 (0.274)	-0.193 (0.489)	-0.151 (0.640)
Asian/Pacific Islander	-0.645 (0.438)	0.209*** (0.055)	0.146 (0.248)	0.075 (0.306)
Black	0.669** (0.231)	0.139* (0.064)	0.432** (0.153)	0.012 (0.170)
Hispanic	0.094 (0.228)	0.028 (0.074)	0.113 (0.178)	0.046 (0.173)
Multiracial	0.203 (0.191)	0.071 (0.048)	0.295 (0.162)	-0.086 (0.164)
1 st Language – Spanish	0.611 (0.448)	-0.046 (0.090)	-0.073 (0.213)	0.131 (0.227)
1 st Language – Other	2.087*** (0.556)	-0.005 (0.056)	0.485 (0.285)	1.125** (0.388)
Bilingual	1.181*** (0.347)	0.009 (0.064)	0.106 (0.230)	0.274 (0.318)
Talk to Parents about College	0.236 (0.147)	0.049 (0.040)	0.245* (0.107)	0.340** (0.119)
Talk to Friends about College	-0.083 (0.143)	0.035 (0.030)	0.028 (0.102)	-0.131 (0.100)
Talk to School Staff about College	-0.001 (0.152)	-0.008 (0.032)	-0.136 (0.104)	-0.048 (0.113)
Education & Career Plan	-0.156 (0.166)	-0.036 (0.031)	-0.056 (0.104)	-0.181 (0.107)
Education Plan Only	0.296 (0.198)	0.001 (0.038)	0.269 (0.149)	0.307 (0.177)
Career Plan Only	-0.159 (0.204)	-0.158*** (0.047)	-0.202 (0.155)	-0.304* (0.153)
Probably has Ability to get BA	0.630* (0.258)	0.074 (0.086)	0.646** (0.201)	0.737*** (0.176)
Definitely has Ability to get BA	0.778** (0.285)	0.111 (0.087)	0.832*** (0.235)	0.966*** (0.212)

Full Model: College Application Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Bachelor's by Age 30	0.115 (0.153)	-0.032 (0.043)	-0.156 (0.126)	0.068 (0.127)
Plan to Pursue Bachelor's	0.513*** (0.139)	0.112** (0.035)	0.263** (0.089)	0.347** (0.111)
Pre Algebra	0.074 (0.153)	-0.081 (0.042)	-0.137 (0.110)	0.088 (0.115)
Algebra 1	0.774*** (0.220)	0.128** (0.040)	0.430*** (0.114)	0.662*** (0.149)
Algebra 2 or Higher	0.981* (0.437)	0.287*** (0.073)	0.417* (0.193)	0.853** (0.288)
Other Math Class	0.043 (0.241)	0.077 (0.068)	-0.178 (0.177)	0.129 (0.176)
Good Grades - Very Important	0.232 (0.280)	0.062 (0.112)	0.712* (0.281)	-0.074 (0.254)
Good Grades - Important	-0.207 (0.287)	-0.018 (0.113)	0.485 (0.256)	-0.460 (0.257)
Plans to Take College Test	0.208 (0.136)	0.028 (0.034)	0.224* (0.098)	0.102 (0.115)
Plans to Take AB/IB Test	0.002 (0.144)	0.075* (0.034)	0.077 (0.099)	0.158 (0.118)
Ed Expectation - Less than HS	-1.980* (0.842)	-0.330** (0.110)	-0.743 (0.648)	-1.681* (0.675)
Ed Expectation - High School	-0.758*** (0.168)	-0.132* (0.062)	-0.564** (0.172)	-0.376* (0.149)
Ed Expectation - Bachelors	0.083 (0.164)	0.030 (0.050)	0.429*** (0.125)	0.329* (0.146)
Ed Expectation - Masters	0.078 (0.190)	0.040 (0.044)	0.303* (0.141)	0.605*** (0.167)
Ed Expectation - PhD/Terminal	0.331 (0.200)	0.143*** (0.040)	0.263 (0.135)	0.405** (0.152)
Socioeconomic Status	0.578*** (0.098)	0.122*** (0.024)	0.094 (0.067)	0.716*** (0.076)
Locale - Suburban	-0.047 (0.179)	0.034 (0.038)	0.034 (0.107)	0.140 (0.131)
Locale - Town	-0.422* (0.213)	-0.070 (0.052)	-0.034 (0.136)	-0.155 (0.164)
Locale - Rural	-0.338 (0.196)	0.000 (0.040)	-0.069 (0.125)	-0.097 (0.147)
Region - Midatlantic	-0.075 (0.366)	-0.080 (0.096)	0.059 (0.194)	0.274 (0.249)

Full Model: College Application Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Region - East North Central	0.021 (0.321)	-0.242* (0.094)	0.147 (0.189)	0.226 (0.232)
Region - West North Central	0.001 (0.372)	-0.366*** (0.102)	0.156 (0.209)	0.370 (0.256)
Region - South Atlantic	-0.292 (0.335)	-0.409*** (0.096)	-0.313 (0.190)	0.119 (0.236)
Region - East South Central	-0.095 (0.355)	-0.337** (0.106)	-0.150 (0.213)	0.168 (0.251)
Region - West South Central	-0.658 (0.364)	-0.533*** (0.102)	-0.590** (0.205)	-0.023 (0.267)
Region - Mountain	-0.370 (0.383)	-0.441*** (0.117)	-0.641* (0.259)	-0.337 (0.276)
Region - Pacific	-0.568 (0.378)	-0.374*** (0.101)	-0.531** (0.203)	-0.031 (0.275)
School - Title 1 Status	0.123 (0.148)	0.034 (0.032)	0.022 (0.089)	0.050 (0.107)
School - Free/Red Lunch %	-1.305** (0.453)	-0.114 (0.095)	0.183 (0.281)	-1.587** (0.524)
School - Size	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
School - Black %	0.582 (0.416)	0.171 (0.116)	0.083 (0.274)	0.475 (0.422)
School - Asian %	0.685 (1.192)	0.830*** (0.163)	-0.264 (0.843)	1.293 (0.954)
School - Hispanic %	1.109* (0.493)	0.358** (0.111)	0.487 (0.300)	1.204** (0.396)
School - American Indian %	-1.459** (0.522)	0.486 (0.386)	2.660** (1.021)	0.088 (0.688)
School - Counselor Caseload	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Intercept (Level 1)	1.866*** (0.507)	0.879*** (0.174)	-0.500 (0.355)	0.315 (0.433)
Intercept (Level 2)	0.713*** (0.121)	0.050*** (0.006)	0.268*** (0.044)	0.366*** (0.063)
<i>N</i>	7553	6559	8133	8441

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix G

Full Model: College Selection Counselor Treatment

<i>Full Model: College Selection Counselor Treatment</i>				
	Applied to College	Num. of Apps	FAFSA	Enrollment
Selection Counselor	0.280* (0.128)	0.014 (0.028)	0.053 (0.079)	0.207* (0.088)
Male	-0.766*** (0.117)	-0.079* (0.036)	-0.621*** (0.098)	-0.395*** (0.087)
American Indian	-0.587 (0.719)	0.030 (0.268)	-0.239 (0.486)	-0.217 (0.630)
Asian/Pacific Islander	-0.642 (0.441)	0.214*** (0.056)	0.210 (0.256)	0.145 (0.311)
Black	0.690** (0.236)	0.126 (0.065)	0.447** (0.158)	0.013 (0.172)
Hispanic	0.115 (0.224)	0.021 (0.074)	0.103 (0.193)	0.020 (0.176)
Multiracial	0.215 (0.194)	0.071 (0.049)	0.275 (0.167)	-0.115 (0.169)
1 st Language - Spanish	0.605 (0.439)	-0.051 (0.090)	-0.104 (0.223)	0.104 (0.231)
1 st Language - Other	2.000*** (0.570)	-0.015 (0.058)	0.421 (0.288)	0.976* (0.386)
Bilingual	1.177*** (0.343)	0.018 (0.064)	0.157 (0.223)	0.272 (0.323)
Talk to Parents about College	0.252 (0.147)	0.041 (0.040)	0.212 (0.110)	0.328** (0.119)
Talk to Friends about College	0.004 (0.139)	0.033 (0.031)	0.050 (0.104)	-0.087 (0.100)
Talk to School Staff about College	-0.008 (0.150)	0.003 (0.032)	-0.188 (0.105)	-0.057 (0.112)
Education & Career Plan	-0.190 (0.168)	-0.036 (0.032)	-0.034 (0.104)	-0.185 (0.109)
Education Plan Only	0.232 (0.198)	0.003 (0.037)	0.235 (0.150)	0.308 (0.182)
Career Plan Only	-0.001 (0.202)	-0.156*** (0.046)	-0.079 (0.146)	-0.192 (0.149)
Probably Ability to get BA	0.667** (0.258)	0.085 (0.089)	0.652** (0.202)	0.709*** (0.182)
Definitely Ability to get BA	0.841** (0.285)	0.126 (0.090)	0.885*** (0.239)	0.945*** (0.219)

Full Model: College Selection Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Bachelor's by Age 30	0.099 (0.150)	-0.025 (0.044)	-0.195 (0.122)	0.003 (0.123)
Plan to Pursue Bachelor's	0.461*** (0.138)	0.112** (0.034)	0.256** (0.089)	0.307** (0.112)
Pre Algebra	0.061 (0.152)	-0.074 (0.043)	-0.166 (0.113)	0.105 (0.115)
Algebra 1	0.747*** (0.217)	0.123** (0.040)	0.391** (0.119)	0.653*** (0.150)
Algebra 2 or Higher	0.948* (0.426)	0.301*** (0.072)	0.405* (0.196)	0.873** (0.291)
Other Math Class	-0.022 (0.241)	0.080 (0.070)	-0.152 (0.176)	0.079 (0.174)
Good Grades - Very Important	0.329 (0.279)	0.036 (0.118)	0.782** (0.292)	0.077 (0.254)
Good Grades - Important	-0.041 (0.277)	-0.041 (0.119)	0.570* (0.268)	-0.295 (0.256)
Plans to Take College Test	0.228 (0.136)	0.030 (0.034)	0.240* (0.099)	0.104 (0.116)
Plans to Take AB/IB Test	-0.001 (0.145)	0.083* (0.034)	0.098 (0.098)	0.187 (0.120)
Ed Expectation - Less than HS	-1.256 (0.752)	-0.366*** (0.077)	-0.249 (0.597)	-0.649 (0.760)
Ed Expectation - High School	-0.654*** (0.170)	-0.138* (0.064)	0.556** (0.172)	-0.278 (0.151)
Ed Expectation - Bachelors	0.117 (0.165)	0.022 (0.052)	0.452*** (0.129)	0.374* (0.147)
Ed Expectation - Masters	0.105 (0.195)	0.027 (0.045)	0.295* (0.140)	0.632*** (0.168)
Ed Expectation - PhD/Terminal	0.390 (0.205)	0.125** (0.042)	0.245 (0.131)	0.435** (0.147)
Socioeconomic Status	0.600*** (0.097)	0.124*** (0.024)	0.076 (0.067)	0.701*** (0.077)
Locale - Suburban	-0.084 (0.182)	0.037 (0.038)	0.004 (0.104)	0.069 (0.131)
Locale - Town	-0.469* (0.218)	-0.074 (0.052)	-0.018 (0.138)	-0.210 (0.165)
Locale - Rural	-0.441* (0.200)	0.010 (0.040)	-0.034 (0.129)	-0.168 (0.146)
Region - Midatlantic	-0.305 (0.367)	-0.045 (0.093)	-0.051 (0.201)	0.090 (0.261)

Full Model: College Selection Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Region - East North Central	-0.050 (0.328)	-0.223* (0.092)	0.064 (0.189)	0.116 (0.242)
Region - West North Central	-0.122 (0.375)	-0.324** (0.101)	0.059 (0.209)	0.189 (0.264)
Region - South Atlantic	-0.399 (0.344)	-0.395*** (0.094)	-0.431* (0.193)	-0.017 (0.247)
Region - East South Central	-0.209 (0.365)	-0.299** (0.105)	-0.257 (0.217)	0.023 (0.261)
Region - West South Central	-0.849* (0.367)	-0.516*** (0.099)	-0.698*** (0.207)	-0.245 (0.278)
Region - Mountain	-0.460 (0.406)	-0.405*** (0.116)	-0.805** (0.270)	-0.506 (0.293)
Region - Pacific	-0.733 (0.394)	-0.363*** (0.099)	-0.660** (0.204)	-0.239 (0.294)
School - Title 1 Status	0.143 (0.149)	0.038 (0.033)	0.048 (0.091)	0.075 (0.109)
School - Free/Red Lunch %	-1.416** (0.470)	-0.135 (0.096)	0.139 (0.292)	-1.693** (0.517)
School - Size	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
School - Black %	0.555 (0.431)	0.173 (0.117)	0.102 (0.289)	0.422 (0.411)
School - Asian %	0.598 (1.193)	0.815*** (0.164)	-0.312 (0.844)	1.243 (0.960)
School - Hispanic %	1.167* (0.502)	0.373*** (0.113)	0.492 (0.302)	1.336*** (0.394)
School - American Indian %	-1.535** (0.561)	0.547 (0.358)	2.594* (1.054)	0.209 (0.674)
School - Counselor Caseload	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Intercept (Level 1)	1.823*** (0.505)	0.867*** (0.179)	-0.491 (0.374)	0.358 (0.434)
Intercept (Level 2)	0.725*** (0.122)	0.050*** (0.006)	0.267*** (0.044)	0.377*** (0.062)
<i>N</i>	7448	6473	8019	8321

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix H

Full Model: Either College Counselor Treatment

<i>Full Model: Either College Counselor Treatment</i>				
	Applied to College	Num. of Apps	FAFSA	Enrollment
Either Counselor	0.273* (0.123)	0.013 (0.027)	0.059 (0.077)	0.209* (0.085)
Male	-0.781*** (0.114)	-0.072* (0.034)	-0.586*** (0.092)	-0.386*** (0.085)
American Indian	-0.586 (0.700)	0.041 (0.268)	-0.231 (0.481)	-0.193 (0.623)
Asian/Pacific Islander	-0.568 (0.436)	0.203*** (0.055)	0.182 (0.245)	0.160 (0.300)
Black	0.739** (0.230)	0.128* (0.062)	0.470** (0.153)	0.025 (0.165)
Hispanic	0.125 (0.224)	0.034 (0.072)	0.120 (0.183)	0.051 (0.171)
Multiracial	0.201 (0.189)	0.067 (0.047)	0.267 (0.159)	-0.130 (0.160)
1 st Language - Spanish	0.565 (0.442)	-0.057 (0.087)	-0.105 (0.215)	0.094 (0.224)
1 st Language - Other	2.072*** (0.548)	-0.004 (0.057)	0.436 (0.279)	1.051** (0.373)
Bilingual	1.140*** (0.345)	0.012 (0.064)	0.146 (0.228)	0.266 (0.315)
Talk to Parents about College	0.239 (0.143)	0.049 (0.038)	0.250* (0.105)	0.341** (0.114)
Talk to Friends about College	-0.051 (0.140)	0.035 (0.030)	0.026 (0.099)	-0.089 (0.098)
Talk to School Staff about College	0.005 (0.150)	-0.009 (0.031)	-0.161 (0.103)	-0.059 (0.109)
Education & Career Plan	-0.187 (0.162)	-0.036 (0.031)	-0.051 (0.103)	-0.175 (0.105)
Education Plan Only	0.269 (0.194)	-0.002 (0.037)	0.251 (0.144)	0.320 (0.173)
Career Plan Only	-0.124 (0.201)	-0.173*** (0.046)	-0.182 (0.151)	-0.283 (0.147)
Probably Ability to get BA	0.593* (0.255)	0.086 (0.085)	0.633** (0.198)	0.691*** (0.176)
Definitely Ability to get BA	0.765** (0.278)	0.128 (0.086)	0.845*** (0.232)	0.920*** (0.209)

Full Model: Either College Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Bachelor's by Age 30	0.108 (0.147)	-0.021 (0.042)	-0.136 (0.123)	0.065 (0.122)
Plan to Pursue Bachelor's	0.507*** (0.136)	0.113*** (0.034)	0.260** (0.088)	0.328** (0.110)
Pre Algebra	0.047 (0.151)	-0.064 (0.042)	-0.135 (0.108)	0.084 (0.112)
Algebra 1	0.719*** (0.217)	0.133*** (0.039)	0.422*** (0.113)	0.651*** (0.145)
Algebra 2 or Higher	0.968* (0.431)	0.294*** (0.071)	0.426* (0.191)	0.862** (0.285)
Other Math Class	0.026 (0.239)	0.081 (0.066)	-0.174 (0.172)	0.121 (0.172)
Good Grades - Very Important	0.257 (0.277)	0.072 (0.113)	0.730** (0.282)	-0.014 (0.251)
Good Grades - Important	-0.160 (0.281)	-0.010 (0.114)	0.494 (0.257)	-0.382 (0.257)
Plans to Take College Test	0.211 (0.134)	0.023 (0.033)	0.203* (0.096)	0.104 (0.111)
Plans to Take AB/IB Test	-0.010 (0.142)	0.078* (0.033)	0.065 (0.097)	0.148 (0.115)
Ed Expectation - Less than HS	-1.416 (0.746)	-0.346*** (0.081)	-0.381 (0.585)	-0.705 (0.781)
Ed Expectation - High School	-0.747*** (0.164)	-0.128* (0.063)	-0.551** (0.169)	-0.330* (0.145)
Ed Expectation - Bachelors	0.120 (0.161)	0.030 (0.050)	0.426*** (0.123)	0.363* (0.143)
Ed Expectation - Masters	0.107 (0.188)	0.034 (0.043)	0.307* (0.140)	0.611*** (0.160)
Ed Expectation - PhD/Terminal	0.368 (0.197)	0.135*** (0.040)	0.266* (0.133)	0.446** (0.148)
Socioeconomic Status	0.584*** (0.096)	0.124*** (0.023)	0.084 (0.066)	0.707*** (0.074)
Locale -Suburban	-0.085 (0.177)	0.045 (0.037)	0.033 (0.104)	0.107 (0.129)
Locale - Town	-0.454* (0.212)	-0.062 (0.052)	-0.043 (0.135)	-0.175 (0.161)
Locale - Rural	-0.357 (0.195)	0.005 (0.040)	-0.063 (0.124)	-0.110 (0.144)
Region - Midatlantic	-0.219 (0.371)	-0.053 (0.093)	-0.050 (0.199)	0.122 (0.262)

Full Model: Either College Counselor Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Region - East North Central	-0.036 (0.328)	-0.218* (0.092)	0.099 (0.189)	0.114 (0.244)
Region - West North Central	-0.105 (0.374)	-0.324** (0.101)	0.093 (0.208)	0.202 (0.265)
Region - South Atlantic	-0.409 (0.341)	-0.386*** (0.093)	-0.374 (0.191)	-0.014 (0.248)
Region - East South Central	-0.244 (0.359)	-0.311** (0.104)	-0.225 (0.213)	0.021 (0.261)
Region - West South Central	-0.788* (0.365)	-0.502*** (0.099)	-0.653** (0.205)	-0.173 (0.280)
Region - Mountain	-0.496 (0.386)	-0.415*** (0.115)	-0.703** (0.262)	-0.485 (0.287)
Region - Pacific	-0.680 (0.383)	-0.347*** (0.098)	-0.596** (0.205)	-0.177 (0.289)
School - Title 1 Status	0.128 (0.146)	0.032 (0.032)	0.040 (0.089)	0.067 (0.106)
School - Free/Red Lunch %	-1.290** (0.451)	-0.124 (0.095)	0.189 (0.282)	-1.630** (0.505)
School - Size	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
School - Black %	0.496 (0.411)	0.190 (0.113)	-0.011 (0.274)	0.477 (0.404)
School - Asian %	0.579 (1.186)	0.837*** (0.161)	-0.247 (0.834)	1.205 (0.942)
School - Hispanic %	1.084* (0.483)	0.351** (0.109)	0.473 (0.300)	1.252** (0.386)
School - American Indian %	-1.497** (0.517)	0.523 (0.387)	2.615* (1.028)	0.187 (0.672)
School - Counselor Caseload	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Intercept (Level 1)	2.007*** (0.507)	0.816*** (0.175)	-0.444 (0.359)	0.408 (0.433)
Intercept (Level 2)	0.705*** (0.118)	0.051*** (0.006)	0.263*** (0.043)	0.361*** (0.059)
<i>N</i>	7670	6664	8264	8579

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix I

Full Model: Both College Counselors Treatment

Full Model: Both College Counselors Treatment

	Applied to College	Num. of Apps	FAFSA	Enrollment
Both Counselors	0.266* (0.130)	0.010 (0.028)	0.044 (0.080)	0.199* (0.090)
Male	-0.759*** (0.120)	-0.084* (0.037)	-0.646*** (0.100)	-0.407*** (0.090)
American Indian	-0.578 (0.727)	0.036 (0.275)	-0.197 (0.496)	-0.182 (0.642)
Asian/Pacific Islander	-0.717 (0.442)	0.217*** (0.056)	0.182 (0.260)	-0.017 (0.310)
Black	0.620** (0.237)	0.136* (0.067)	0.407* (0.159)	-0.007 (0.177)
Hispanic	0.087 (0.227)	0.013 (0.076)	0.095 (0.189)	0.005 (0.177)
Multiracial	0.220 (0.196)	0.075 (0.051)	0.302 (0.171)	-0.067 (0.174)
1 st Language - Spanish	0.645 (0.445)	-0.039 (0.093)	-0.070 (0.222)	0.137 (0.234)
1 st Language - Other	2.011*** (0.576)	-0.013 (0.057)	0.460 (0.293)	1.085** (0.400)
Bilingual	1.204*** (0.347)	0.016 (0.064)	0.127 (0.227)	0.298 (0.327)
Talk to Parents about College	0.254 (0.153)	0.041 (0.042)	0.208 (0.112)	0.332** (0.124)
Talk to Friends about College	-0.031 (0.142)	0.035 (0.032)	0.058 (0.107)	-0.131 (0.102)
Talk to School Staff about College	-0.011 (0.153)	0.004 (0.033)	-0.165 (0.106)	-0.042 (0.116)
Education & Career Plan	-0.162 (0.171)	-0.036 (0.031)	-0.038 (0.105)	-0.189 (0.112)
Education Plan Only	0.252 (0.202)	0.007 (0.038)	0.254 (0.156)	0.293 (0.186)
Career Plan Only	-0.031 (0.206)	-0.141** (0.047)	-0.095 (0.150)	-0.218 (0.155)
Probably Ability to get BA	0.706** (0.262)	0.072 (0.090)	0.668** (0.206)	0.754*** (0.182)
Definitely Ability to get BA	0.854** (0.293)	0.108 (0.092)	0.870*** (0.244)	0.994*** (0.222)

Full Model: Both College Counselors Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Bachelor's by Age 30	0.116 (0.156)	-0.038 (0.045)	-0.223 (0.125)	0.005 (0.128)
Plan to Pursue Bachelor's	0.458** (0.140)	0.111** (0.035)	0.260** (0.091)	0.319** (0.113)
Pre Algebra	0.096 (0.154)	-0.092* (0.044)	-0.169 (0.115)	0.11 (0.118)
Algebra 1	0.819*** (0.220)	0.117** (0.041)	0.403*** (0.121)	0.665*** (0.154)
Algebra 2 or Higher	0.973* (0.433)	0.293*** (0.075)	0.399* (0.198)	0.872** (0.293)
Other Math Class	0.028 (0.243)	0.077 (0.072)	-0.165 (0.181)	0.1 (0.177)
Good Grades - Very Important	0.315 (0.284)	0.027 (0.117)	0.766** (0.291)	0.031 (0.258)
Good Grades - Important	-0.092 (0.285)	-0.048 (0.118)	0.566* (0.266)	-0.373 (0.258)
Plans to Take College Test	0.222 (0.139)	0.036 (0.036)	0.266** (0.101)	0.099 (0.120)
Plans to Take AB/IB Test	0.017 (0.147)	0.080* (0.034)	0.106 (0.100)	0.198 (0.124)
Ed Expectation - Less than HS	-1.902* (0.919)	-0.402*** (0.104)	-0.528 (0.679)	-1.787* (0.710)
Ed Expectation - High School	-0.668*** (0.176)	-0.143* (0.063)	-0.562** (0.175)	-0.327* (0.155)
Ed Expectation - Bachelors	0.073 (0.168)	0.02 (0.054)	0.457*** (0.132)	0.337* (0.150)
Ed Expectation - Masters	0.066 (0.198)	0.032 (0.045)	0.297* (0.142)	0.621*** (0.177)
Ed Expectation - PhD/Terminal	0.327 (0.204)	0.132** (0.042)	0.247 (0.133)	0.369* (0.151)
Socioeconomic Status	0.598*** (0.100)	0.123*** (0.025)	0.084 (0.068)	0.707*** (0.078)
Locale - Suburban	-0.034 (0.185)	0.024 (0.038)	0.005 (0.107)	0.106 (0.134)
Locale - Town	-0.439* (0.220)	-0.083 (0.052)	-0.007 (0.140)	-0.191 (0.168)
Locale - Rural	-0.413* (0.201)	0.005 (0.041)	-0.038 (0.130)	-0.148 (0.149)
Region - Midatlantic	-0.159 (0.363)	-0.074 (0.095)	0.062 (0.196)	0.226 (0.250)

Full Model: Both College Counselors Treatment Cont.

	Applied to College	Num. of Apps	FAFSA	Enrollment
Region - East North Central	-0.011 (0.323)	-0.249** (0.094)	0.114 (0.190)	0.217 (0.231)
Region - West North Central	-0.043 (0.376)	-0.367*** (0.102)	0.125 (0.211)	0.342 (0.256)
Region - South Atlantic	-0.297 (0.339)	-0.420*** (0.095)	-0.370 (0.192)	0.105 (0.235)
Region - East South Central	-0.068 (0.364)	-0.326** (0.107)	-0.178 (0.218)	0.159 (0.252)
Region - West South Central	-0.756* (0.367)	-0.549*** (0.102)	-0.629** (0.207)	-0.120 (0.266)
Region - Mountain	-0.359 (0.406)	-0.433*** (0.118)	-0.742** (0.266)	-0.375 (0.283)
Region - Pacific	-0.680 (0.394)	-0.393*** (0.101)	-0.590** (0.202)	-0.123 (0.284)
School - Title 1 Status	0.134 (0.151)	0.041 (0.033)	0.030 (0.091)	0.058 (0.111)
School - Free/Red Lunch %	-1.434** (0.472)	-0.125 (0.097)	0.124 (0.290)	-1.646** (0.537)
School - Size	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
School - Black %	0.670 (0.436)	0.155 (0.121)	0.201 (0.290)	0.433 (0.430)
School - Asian %	0.702 (1.196)	0.809*** (0.167)	-0.333 (0.843)	1.325 (0.973)
School - Hispanic %	1.231* (0.510)	0.382*** (0.115)	0.516 (0.305)	1.329** (0.406)
School - American Indian %	0.993 (1.323)	0.512 (0.358)	2.117 (1.144)	1.519 (1.445)
School - Counselor Caseload	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Intercept (Level 1)	1.639** (0.507)	0.934*** (0.178)	-0.547 (0.372)	0.248 (0.435)
Intercept (Level 2)	0.743*** (0.125)	0.050*** (0.006)	0.274*** (0.045)	0.390*** (0.066)
<i>N</i>	7328	6365	7885	8180

* $p < .05$, ** $p < .01$, *** $p < .001$