Linking Counselor Activities and Students' College Readiness: How they Matter for Disadvantaged Students

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Abstract Body

Background / Context:

Prior research has shown that having more high school counselors and students meeting with counselors can help increase rates at which students enroll and succeed in postsecondary education (Belasco 2013; Domina & Woods 2014). A second set of research has shown that specific forms of college readiness, including college eligibility such as advanced mathematical course-taking (Byun, Irvin & Bell 2014; Gamoran & Hannigan 2000; Gaertner, Kim, DesJardins, & McClarty 2014; Muller, Riegle-Crumb, Schiller, Wilkinson, & Frank 2010; Zelkowski 2011) and college knowledge such as completing the FAFSA (Belasco & Trivette 2015; Hoxby & Turner 2013; Stephan & Rosenbaum 2013) are linked with better postsecondary outcomes. However, most of the evidence that links the work of counselors to these readiness outcomes is limited and often based on small purposive samples. We bridge that gap by linking specific activities by high school counselors to specific demonstrations of college readiness by students in national longitudinal data, and then assessing if that link differs for disadvantaged students.

We frame disparities in students' information about the transition to tertiary education as an issue of social capital. At its core, social capital is the idea that a person benefits from the knowledge, norms, and resources held by their community, family, and social contacts (Bourdieu 1987; Coleman 1988; Portes 1998). Parents with stronger social networks can provide more resources to their children and link their children to yet other resources; as a result, social capital often enhances the ability of individuals to improve their knowledge and, subsequently, long-term status (Lin 1999; Waithaka 2014). There is a large gap in the knowledge regarding the college application process in the social networks of – in the social capital available to – lower income students. Lower-SES students' lack of knowledge can impede them from attending college even when they aspire and intend to enroll (Goldrick-Rab & Pfeffer 2009; Roderick, Nagaoka, & Coca 2009). Prior research indicates that counselors can be an important factor in compensating for low-SES students' low social capital around college readiness (Cabrera & La Nasa 2001, Castleman & Goodman 2014). A critical premise of this study is that specific counseling activities related to college preparation can contribute to low-SES students preparing better for college and demonstrating greater college readiness than they would if they relied only on their out-of-school social capital.

Purpose / Objective / Research Question / Focus of Study:

Students' college readiness has important links with their access to and success in postsecondary education. College readiness measures appear to be malleable based on high school counselors' work. Unfortunately, the research-to-date provides only minimal guidance for what high school counselors should actually do in order to help their students. One body of research has established that a lower student:counselor ratio (a lowered counselor caseload) is beneficial to students (Domina & Woods 2014; Hurwitz & Howell 2014). Another has shown that students benefit from actually meeting with a counselor (Belasco 2013; Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy 2011; McDonough 2005). A third has linked specific small-scale activities or programs to student postsecondary enrollment or success (Domina 2009; Plank & Jordan 2001; Farmer-Hinton & Adams 2006). However, the first two do not provide much guidance to counselors, and the third is based on non-representative local data of samples too small to allow dis-aggregation to examine differing student groups.

Discussions of college readiness often merge college eligibility and college knowledge. We distinguish between these two components of college readiness (Roderick, Nagaoka, & Coca

2009). College eligibility refers to basic skills, academic skills, and content knowledge, including students having taken courses and earned grades that earn them entry into a typical 4-year college. Especially for disadvantaged students, course enrollment decisions can preclude reaching college eligibility in math (Fallon 1997; Long, Conger, & Iatarola 2012; Long, Iatarola, & Conger 2009; Riegle-Crumb 2006; Stephan 2013). College knowledge refers to awareness of the steps (e.g. taking the SAT/ACT, applying to colleges, seeking financial aid) in between aspiring to attend college and actually doing so. College knowledge has been identified as a critical area for high schools to help students with, in order to increase access to higher education (Conley 2005; Stanton-Salazar 2011). Counselors can mediate both factors, and we use HSLS data to illuminate how. In this paper, we investigate how four *specific* advising activities impact two *specific* demonstrations of college readiness for all students and for disadvantaged students.

Setting:

The setting is schools included in the High School Longitudinal Study of 2009; see next section.

Population / Participants / Subjects:

In this study we utilize a detailed, nationally representative, longitudinal dataset to link specific advising activities on the part of high school counselors to specific demonstrations of college readiness by individual students. The High School Longitudinal Study of 2009 (HSLS) gathered data on more than 23,000 students in 944 U.S. schools both as 9th graders in 2009 and as 12th graders in 2012. In all cases, our analytic sample is the subset of the full HSLS with non-missing values for the student demographic, family characteristic, treatment, and outcome variables included in our final models. Using these detailed data, we are able to look at the link between advising and college readiness behaviors for specific students over time, while accounting for a set of student, family, and school characteristics. The descriptive statistics for treatment, outcome, and control variables are shown in Table 1.

Intervention / Program / Practice:

We conduct separate analyses of four advising activities. The first advising independent variable of interest is whether the school's counselors meet with rising 9th graders to plan their courses. The second is whether an individual student has an education plan (which is also a control variable for other advising activities). The HSLS provides data on whether a student put together no plan, an employment plan, an education plan, or a plan that includes both education and employment. We collapse these categories into a dummy variable for whether the student developed a plan that included education (with or without employment). The third independent variable of interest is whether the student submitted that plan to the school. The final advising variable is a binary variable for whether the student met with an adult in the school to review the plan at least once per year.

Research Design:

The outcomes of interest are college eligibility and college knowledge. We operationalize college eligibility as whether the 12th grade student is enrolled in a college-eligible mathematics course, and college knowledge by the intent to submit the Free Application for Federal Student Aid (FAFSA). FAFSA completion is an important measure of college knowledge (Bettinger, Long, Oreopoulos, & Sanbonmatsu 2009). Mathematics college eligibility is operationalized by a dummy variable for whether the 12th-grade student is enrolled in a course that comes after both Geometry and Algebra 2, both of which are typically included in minimum 4-year college

entrance requirements. The rich data of the HSLS allow us to look at eight pairings of treatment and outcome variables while controlling for important student, family, and school characteristics.

Data Collection and Analysis:

We use multivariate logistic regression to examine how advising activities relate to students' odds of demonstrating college readiness. Preliminary analyses used bivariate relationships and multivariate logistic regression controlling for race and SES composite to explore the relationships between the advising and college readiness variables (summarized in Appendix tables A1 and A2). Our primary analyses are multivariate logistic regression analyses including all control variables, and sub-sample analyses investigating whether the coefficients differ for more disadvantaged populations of students. Throughout this article, results in tables are expressed in odds ratios (rather than log odds) for ease of interpretation. Our model for each pairing of readiness and advising variables in full multivariate analysis is:

$$\text{O.R. Readiness} = \beta_0 + \beta_1 T + \beta_2 \mathbf{A} + \beta_3 \mathbf{B} + \beta_4 \mathbf{C} + \varepsilon$$

where **A** is a matrix of student characteristics, **B** is a matrix of home characteristics, and **C** is a matrix of school characteristics. For the two advising-readiness relationships that show the greatest significance, this structure is applied to student subsamples to investigate whether advising is more important for students facing greater disadvantaged.[1]

Findings / Results:

Table 2 reveals the coefficient of interest (i.e., the relationship between the advising activity and the college readiness variable) from eight separate logistic regression models that include the full set of control variables. For most treatment-outcome relationships, the advising activities at least have a positive coefficient, even when it is statistically insignificant; the exception is the only treatment that was measured at the school level rather than the student level. The strongest relationships seem to be between students creating an education plan and subsequently engaging in college-eligible math course-taking, and between frequent meetings with counselors and planned FAFSA submission. Because they appear to be the treatments that may matter the most, those two treatment-outcome relationships are displayed in greater detail in Tables 3A and 3B. Table 3A shows our main analyses for the relationship between plan creation and college eligible math; Table 3B shows our main analyses for the relationship between meeting frequency and planned FAFSA submission. In each case, the columns move through the same sequence: the bivariate relationship between the advising activity and the college readiness variable, a simple multivariate logistic regression analysis controlling for race and an SES composite, a model with all student-level controls, and a model with the full set of student and school controls.

The full models for education plan creation and college-eligible math course-taking show a statistically insignificant but possibly suggestive coefficient of 1.19. Results for frequency of meetings about a student's education plan and that student's intent to submit the FAFSA are simpler. Table 3B reveals that the frequency of meeting is both substantively and statistically

[1] The school-level characteristics have generally insignificant estimates ranging from 0.99-1.02, and do not qualitatively change the estimates of interest. As a result, in the subsample analyses looking at the relationship between counseling activities and disadvantaged students' college readiness, the school-level covariates are dropped, since including the school variables requires dropping one-sixth of cases due to missing data. Alternative analyses, similar to those in Table 4 but retaining school-level controls, are shown in Tables A6 and A7 but are not qualitatively different from our main analyses either in coefficient magnitude or in statistical significance.

significant across all models. In the full model with all controls, meeting at least once per year is linked with nearly a 50% increase in likelihood that a student plans to submit the FAFSA.

The college advising and college readiness literatures both build on the premise that more-disadvantaged students are less prepared for college and may benefit more from better supports during high school. As a result, we conduct a sequence of analyses to look at whether the relationship between the pairs of variables identified above seems to be stronger for lower-SES students. This is operationalized seven different ways in order to understand the importance of advising activities for students facing different types of disadvantage. The results of all 14 models are available in the appendix (Tables A5-A6); Table 4 shows the results of three models for each treatment/outcome relationship. In these models applied to subsamples, significance becomes a less clear indicator of relationships of substantive importance, because the smaller sample size makes it computationally more difficult to achieve statistical significance. In Table 4, the magnitude of the coefficients on the relationship of interest may indicate importance, even for values without statistical significance. The results of our subsample analyses investigating the relationship between the treatment and outcome variables, displayed in Table 4, are striking. As predicted, counseling activities matter much more for disadvantaged students.

Table 4 reveals that making an education plan makes a large difference in the likelihood that disadvantaged students will be college-eligible. For students in poverty the odds ratio is 1.8, for poor students whose parents do not have a BA the odds ratio is 1.69 (significant at .10), for minority students whose parents do not have a BA the odds ratio is 2.16 (significant at .05). Creating an education plan matters more for college-eligible math course-taking for every disadvantaged group we examined than for the full sample of students. The results are similar for plan review & FAFSA submission, though with less importance for minority students. For students in poverty, meeting once per year is associated with more than doubling (odds ratio of 2.19, significant at .01) their likelihood of planned FAFSA submission. For students whose parents do not have BAs the estimate is 1.51 (significant at .01), and for poor students whose parents do not have BAs the estimate is 1.64 (significant at .05). Especially given that these effects are in a model that also controls for both talking to a counselor about college in 9th grade and creating an education plan, these are substantial effects.

Conclusions:

Our analyses of the nationally representative HSLS data show large differences in the importance of various advising activities to students' demonstrations of college readiness. In this case, even the null findings are of interest. High school guidance counselors are typically overworked, a condition that is almost always more severe in higher-need schools. Given that condition, in decreasing the extent to which college access is driven by social capital, college counselors will need to focus their time on activities that have been shown to influence students' college readiness.

Our work is limited by the characteristics of the existing national dataset that we analyzed. We were unable to make qualitative observations of the schools. Our analysis is also limited by the possibility that advisors select students, or students opt in, to the advising activities we analyze based on unobserved characteristics. That would bias our estimates upward, based on the correlation of those unobserved characteristics both with the advising activities and with the college readiness outcomes. The HSLS data also allowed us to analyze the interim outcome of college readiness, not the more-important outcome of college success.

Appendices

Appendix A. References

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Appendix B. Tables and Figures

Table 1

Descriptive statistics for full HSLS 2009 dataset and analytic sample

Variable	Sample with Missing Data	Non-Missing with Education Plan (Analytic Sample)
Outcome Variables		
Yes on FAFSA	29.1%***	37.5%
12th grade Math	49.5***	51.6
Col Eligible math	31.3%***	41.4%
Student Characteristics		
Male	47.5%***	56.8%
White	74%	71.6%
9th grade Math Score	49.4***	51.6
Family Characteristics		
SES Composite	-0.09*	-0.03[a]
Poverty	19.7%***	15.2%
185% Poverty	40.2%**	35.7%
Avg. Inc. Value	4.3	4.3
BAs	37.8%	37.8%
School Characteristics		
% Free Lunch	40.2%*	37.6%
% ELL	6.6%**	5.4%
% Special Ed	12.9%*	12.3%
% White	58.9%	61.0%

Note. Data from HSLS restricted-use data file, using longitudinal student weights.

[a]The table shows small differences between the full sample and the analytic sample, which appear to be driven by nonrandom non-response. Lower-SES parents appear to be more likely to have not responded, so when missing values are dropped, the sample appears to shift slightly higher in average SES, across most measures examined. Students in the analytic sample, relative to dropped records, are more likely to be male, score higher in math, have higher SES composite, be above poverty and 185% poverty thresholds, and attend schools with lower rates of free lunch eligibility, ELL status, special education, and minority students. These differences are important for the questions we are examining. However, subsequent analyses reveal that less-advantaged students are more positively impacted by counseling activities than the average student, so this difference between the total and analytic samples would actually introduce downward bias in the magnitude of our estimates of the coefficients of interest. This decreases the extent to which the differences in the full and analytic sample are a concern, because the differences make our estimates more conservative.

Table 2

Odds Ratios from Multivariate Logistic Regressions between Treatment and Outcome Variables, Full Set of Control Variables

Treatment	College Eligible math	Intent to Submit FAFSA[a]
C1TRANS	0.88	0.94
Student Made Education Plan	1.19	1.01
Student Submitted Ed Plan	1.04	1.39**
Reviewed Plan at least Once/Year	0.96	1.45***

Note. Data from HSLS restricted-use data file, using longitudinal student weights. Control variables are student minority status, sex, math score in 9th grade, having an education plan, talking to a counselor about college, family income, and parent education; FAFSA models also include 12th grade math score and math coursetaking models also include college expectations.

[a]Students who do not intend to submit the FAFSA because they are ineligible or have too high of a family income are excluded.

*p<.05. **p<.01. ***p<.001

Table 3A

Odds Ratios from Progressive Logistic Regression Models Pairing Student Plan Creation and College Eligible Math

	Student Plan Creation and College Eligible math			
Variable	Bivariate Model	Simple Model	Student Controls	School Controls
Treatment Variables				
Has Ed Plan	1.34**	1.33**	**1.19**	1.10
Reviewed Plan at least Once/Year				
Talked to Counselor			1.32*	1.37*
Student Controls				
SES Composite		2.02***		
Gender			1.13	1.08
White		0.92	0.76+	0.84
9th grade Math Score			1.12***	1.13***
Expects BA			2.34***	2.47***
12th grade Math				
Family Income			1.05*	1.05*
Parent has BA+			1.12	1.19
School Controls				
% Free Lunch				1.00
% ELL				0.99
% Special Ed				1.02
% White				0.99*
N	5,271	5,271	5,213	4,728

Note. Dependent variable is a binary indicator of whether the 12th grader is enrolled in a math class that qualifies them for admission to a Tier 1 university. Data from HSLS restricted-use file with longitudinal student weights. +p<.10. *p<.05. **p<.01. ***p<.001

Table 3B

Odds Ratios from Progressive Logistic Regression Models Pairing School Review of Plan and FAFSA Submission Intent

	Frequency of Plan Review and FAFSA Intent			
Variable	Bivariate Model	Simple Model	Student Controls	School Controls
Treatment Variables				
Has Ed Plan			0.99	0.99
Reviewed Plan at least Once/Year	1.49***	1.52***	**1.45*** **	1.46***
Talked to Counselor			1.48***	1.49***
Student Controls				
SES Composite		.88*		
Gender			1.88***	1.93***
White		0.79*	0.84	0.94
9th grade Math Score			1.00	1.00
Expects BA				
12th grade Math			1.02*	1.02**
Family Income			0.9***	0.93**
Parent has BA+			0.99	1.02
School Controls				
% Free Lunch				1.01***
% ELL				1.00
% Special Ed				0.99
% White				1.00
N	5,874	5,874	5,642	5,099

Note. Dependent variable is a binary indicator of whether the 12th grader plans to submit the FAFSA. Data from HSLS restricted-use file with longitudinal student weights.
+p<.10. *p<.05. **p<.01. ***p<.001

Table 4
Odds Ratios from Multivariate Logistic Regression Models for Disadvantaged Students

	Student Plan Creation and College Eligible math				Frequency of Plan Review and FAFSA Intent			
Student Group	All	Students in Poverty	Minority Students, no parent with BA	Poor students, no parent with BA	All	Students in Poverty	No parent with BA	Poor students, no parent with BA
Treatment Variables								
Has Ed Plan	1.19	1.80	2.16*	1.69+	0.99	0.90	0.95	1.00
Submitted Ed Plan								
Reviewed Plan at least Once/Year					1.45***	2.19**	1.51**	1.64*
Talked to Counselor	1.32*	0.72	1.15	1.07	1.48***	1.54	1.64***	1.52*
Student Controls								
Gender	1.13	0.84	0.77	0.84	1.88***	1.44	1.80***	1.71**
White	0.76+	1.27		0.87	0.84	1.18	0.78	1.03
9^{th} grade Math Score	1.12***	1.07*	1.09***	1.08***	1.00	1.01	1.01	1.00
Expects BA	2.34***	1.22	2.15	1.95*				
12^{th} grade Math					1.02*	1.02	1.03*	1.03+
Family Income	1.05*	1.03	1.10	1.14	0.90***	1.71+	0.93*	1.04
Parent has BA+	1.12	0.90			0.99	0.72		
N	5,213	676	708	1,265	5,642	811	3,248	1,504

Note. Dependent variable is a binary indicator of whether 12^{th} intends to submit the FAFSA. Data from HSLS restricted-use data file, using longitudinal student weights. Students who do not intend to submit the FAFSA because they are ineligible or have too high of a family income are excluded.
+p<.10. *p<.05. **p<.01. ***p<.001

Appendix C. Tables A1-A6

Table A1

Bivariate Odds Ratios from Logistic Regression Models between possible Treatment and Outcome Variables

Treatment	College Eligible math	Intent to Submit FAFSA[a]
C1TRANS	0.94	0.99
Has_ed_plan	1.34**	1.08
Binary_s2submitplan	1.10	1.42***
Reviewed Plan at least Once/Year	1.10	1.49***

Note. Data from HSLS restricted-use data file, using longitudinal student weights.
[a]Students who do not intend to submit the FAFSA because they are ineligible or have too high of a family income are excluded.
*p<.05. **p<.01. ***p<.001

Table A2

Odds Ratios from Multivariate Logistic Regressions between Treatment and Outcome Variables, Controlling for Minority Status and SES Composite

Treatment	College Eligible math	Intent to Submit FAFSA[a]
C1TRANS	0.99	0.99
Has_ed_plan	1.33**	1.08
Binary_s2submitplan	1.06	1.44***
Reviewed Plan at least Once/Year	1.04	1.52***

Note. Data from HSLS restricted-use data file, using longitudinal student weights
[a]Students who do not intend to submit the FAFSA because they are ineligible or have too high of a family income are excluded.
*p<.05. **p<.01. ***p<.001

Table A3

Models of Plan Submission and Math College Readiness with School-Level Variables

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. esttab SubmitMathFull SubmitMathLowEd_school SubmitMathPoor_school SubmitMathMin_school SubmitMathMinPoor_school
SubmitMathPov_school, eform b(2) star
> (+ 0.10 * 0.05 ** 0.01 *** 0.001) not
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Students in Sample:	(1) All Students	(2) No Parent BA	(3) Under 185% Poverty	(4) Nonwhite	(5) Minority	(6) Under 185% Pov. Poverty
colreadymath						
binary_s2s~n	1.11	1.05	1.19	0.95	0.99	0.87
has_ed_plan	1.09	1.21	1.41	1.50	1.88	1.88
ExpectsBA	2.44***	2.36***	2.02*	2.79*	2.64	1.33
S1CNSLTLKCLG	1.36*	1.24	1.13	1.29	1.21	0.80
X1SEX	1.08	0.93	0.72	0.78	0.51	0.67
X1WHITE	0.84	0.86	1.02			1.05
X1TXMTSCOR	1.13***	1.11***	1.10***	1.12***	1.08*	1.09**
o.NotInMath	1.00	1.00	1.00	1.00	1.00	1.00
X1FAMINCOME	1.05*	1.05	1.09	1.09	1.30	1.03
parent_bac~s	1.19		0.93	1.02	0.71	1.13
A1FREELUNCH	1.00	1.00	1.00	0.99	0.99	0.99
A1ELL	0.99	0.98	0.98	0.99	0.98	1.01
A1SPECIALED	1.02	1.02	1.03	1.04	1.05	1.04
A1WHITESTU	0.99*	0.99	0.99*	0.99	0.99	0.99
o.parent_b~s		1.00				
o.X1WHITE				1.00	1.00	
N	4728	2533	1362	1176	454	607

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table A4

Models of Plan Review Frequency and FAFSA Submission Intent with School-Level Variables

Students in Sample:	(1) All Students	(2) No Parent BA	(3) Under 185% Poverty	(4) Nonwhite	(5) Minority	(6) Under 185% Pov. Poverty
binary_s2a~d						
binary_rev~n	1.46***	1.44*	1.55+	1.40	1.67	2.42**
has_ed_plan	0.99	0.94	1.11	1.30	1.18	0.91
X2TXMTSCOR	1.02**	1.03*	1.03+	1.01	1.04	1.02
S1CNSLTLKCLG	1.49***	1.75***	1.73*	1.74*	2.36*	1.77+
X1SEX	1.93***	1.83***	1.75**	1.85*	1.24	1.42
X1WHITE	0.94	0.92	1.26			1.90+
X1TXMTSCOR	1.00	1.01	1.00	0.98	0.97	1.02
X1FAMINCOME	0.93**	0.96	1.15	1.06	1.47	1.98*
parent_bac~s	1.02		1.14	0.97	1.40	0.62
A1FREELUNCH	1.01***	1.01*	1.01+	1.01	1.00	1.01
A1ELL	1.00	1.00	1.00	1.01	1.02	0.99
A1SPECIALED	0.99	1.00	1.00	1.00	1.01	1.01
A1WHITESTU	1.00	1.00	1.00	1.00	1.00	0.99+
o.parent_b~s		1.00				
o.X1WHITE				1.00	1.00	
N	5099	2926	1583	1250	518	721

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table A5

Full Results of Plan Review on FAFSA Submission for Disadvantaged Students

	(1) All Students	(2) Poor Students	(3) Minorities	(4) Poor Minorities	(5) Students in Poverty	(6) No Parent w/BA	(7) No BA Poor	(8) Minority no parent BA
binary_s2a~d								
binary_rev~n	1.45***	1.60*	1.41	1.84	2.19**	1.51**	1.64*	1.36
has_ed_plan	0.99	1.04	1.18	0.92	0.90	0.95	1.00	1.21
X2TXMTSCOR	1.02*	1.03	1.00	1.03	1.02	1.03*	1.03+	1.02
S1CNSLTLKCLG	1.48***	1.56*	1.62*	1.68	1.54	1.64***	1.52*	1.92*
X1SEX	1.88***	1.79***	1.74*	1.30	1.44	1.80***	1.71**	1.65*
X1WHITE	0.84	1.03			1.18	0.78	1.03	
X1TXMTSCOR	1.00	1.00	0.98	0.98	1.01	1.01	1.00	0.98
X1FAMINCOME	0.90***	1.07	1.02	1.32	1.71+	0.93*	1.04	1.15+
parent_bac~s	0.99	1.10	0.93	1.19	0.72			
o.X1WHITE			1.00	1.00				1.00
o.parent_b~s						1.00	1.00	1.00
N	5642	1780	1416	601	811	3248	1504	849

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table A6

Full Results of Plan Creation on Math College Eligibility for Disadvantaged Students

	(1) All Students	(2) Poor Students	(3) Minorities	(4) Poor Minorities	(5) Students in Poverty	(6) No Parent w/BA	(7) No BA Poor	(8) Minority no parent BA
colreadymath								
has_ed_plan	1.19	1.60+	1.53	1.90	1.80	1.32	1.69+	2.16*
ExpectsBA	2.34***	2.07*	2.40*	1.97	1.22	2.28***	1.95*	2.15
S1CNSLTLKCLG	1.32*	1.14	1.25	1.06	0.72	1.19	1.07	1.15
X1SEX	1.13	0.91	0.97	0.82	0.84	1.01	0.84	0.77
X1WHITE	0.76+	0.92			1.27	0.82	0.87	
X1TXMTSCOR	1.12***	1.09***	1.11***	1.06*	1.07*	1.11***	1.08***	1.09***
o.NotInMath	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
X1FAMINCOME	1.05*	1.08	1.13*	1.58	1.03	1.03	1.14	1.10
parent_bac~s	1.12	0.81	1.06	0.59	0.90			
o.X1WHITE			1.00	1.00				1.00
o.has_ed_p~n						1.00	1.00	
o.parent_b~s						1.00	1.00	1.00
N	5213	1523	1323	522	676	2802	1265	708

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001