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The Impact of Academic Aspirations and Career Uncertainty on Students' College Outcomes

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ABSTRACT

Between the fall of 2009 and 2019, total postsecondary institution enrollment in the United States decreased by 5%, and for those students who do enroll in college, many who lack clear career objectives drop out, making the U.S. the nation with the highest college dropout rate in the industrialized world. Students' academic aspirations and career certainty have been shown to impact college outcomes. However, the impact of career uncertainty and academic aspirations on students' college outcomes has not been studied nationally. Using binomial regression analyses and a nationally representative sample (N = 23,503) of high school students, we investigated the impact of high school students' career uncertainty and academic aspirations on their college outcomes. Findings indicate that academic aspirations were a significant predictor of students' college application, enrollment, attendance, and major decision status. Career uncertainty was a significant predictor of students' college enrollment status. We discuss implications for practice and future research.

Keywords: College outcomes, academic aspirations, career uncertainty

While four-year degrees are essential for many high-skill, high-wage jobs in the U.S., only 36% of U.S. adults over 25 years old have a four-year degree (U.S. Census, 2020). In 2019, the college enrollment rate for 18- to 24-year-olds was 41%, and between the fall of 2009 and 2019, total postsecondary institution enrollment decreased by 5% (National Center for

Education Statistics, 2021a, b). For those students who do enroll in college, many are not academically prepared and lack clear career objectives (ACT, 2019), and drop out, making the U.S. the nation with the highest college dropout rate in the industrialized world (Coalition for Career Development [CCD], 2019). Students' academic aspirations and career certainty have been shown to impact college preparation and retention outcomes (CCD, 2029; Griffin et al., 2007). However, the impact of career uncertainty and academic aspirations on students' transition into postsecondary education and their postsecondary outcomes has not been studied nationally.

Adolescence is a period of role exploration and refinement of educational and career choices, yet evidence shows that many adolescents do not have clear occupational and educational aspirations (CCD, 2019; Gutman et al., 2012; Staff et al., 2010). Previous research has defined career uncertainty as the inability to specify occupational choices or aspirations (Kelly & Lee, 2002; Staff et al., 2010). Gutman et al. (2012) defined career uncertain students as



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those who do not know what they would like to do in the future regarding their occupational plans. Academic aspirations are defined as a student's desire to remain in education after 16 years old (Rothon et al., 2011) or the highest educational level individuals expect to achieve (McGaha & Fitzpatrick, 2010). Research suggests that having high academic aspirations can positively impact students' educational and postsecondary outcomes (Gutman et al., 2012; Kim et al., 2019). High school students with high academic aspirations are more likely to be in A.P. courses and spend more time on college preparation (Griffin et al., 2007). Furthermore, students with high educational aspirations are more likely to have higher academic achievement (Gutman et al., 2012; Rothon et al., 2011) and be admitted to and enroll in college (Kim et al., 2019; McCulloch, 2017).

According to the Coalition for Career Development (2019), students who are uncertain about their career aspirations are more likely to drop out of college. In addition to high dropout rates, career uncertainty has been shown to impact future career success (Portfeli & Lee, 2012). Youth who are uncertain about their career aspirations are less likely to have future employment stability and educational attainment, which can lead to lower-wage attainment (Sabates et al., 2011; Staff et al., 2010). Additionally, career uncertainty can lead to stress and anxiety (Campagna & Curtis, 2007; Ito & Brotheridge, 2001), and this stress can negatively impact

students' psychological well-being (Creed et al., 2005; Kwok, 2018). Furthermore, in a longitudinal study of uncertainty, researchers found that students who remain undecided about a career lack confidence (Hartman et al., 1985).

Although career uncertainty affects many aspects of a student's life, more research is necessary to understand how career uncertainty and academic aspirations affect students' postsecondary outcomes. This study aims to examine the impact of high school students' career uncertainty and academic aspirations on their college transition and outcomes. In this study, we define career uncertainty as a "student's certainty about their choice of occupation in adulthood and academic aspirations as the highest level of education students expected to achieve."

Impact of Career Uncertainty on College and Career Outcomes

Career decision-making begins as early as elementary school then continually evolves throughout middle and high school (Akos et al., 2010; Auger et al., 2005; Ginzberg, 1952; Hartung et al., 2005; Park & Jun, 2017; Turner & Lapan, 2013). High school students' academic and career certainty levels directly impact students' success rates in transitioning into a career. Portfeli and Lee (2012) maintained that higher certainty levels lead to a more successful career path due to personal adjustments, career maturity, and determination to pursue a college degree.

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Similarly, adjustment to social and academic domains early in life has been found to have long-term effects on subsequent adaptive functioning in those and other domains later in life (Blumenthal et al., 2015). This phenomenon, referred to as developmental cascades, describes how early developmental maladjustment, such as career uncertainty, can negatively impact future career development and result in higher perceived career uncertainty in early adulthood (Blumenthal et al., 2015). Furthermore, Staff et al. (2011) found that young adults who presented with uncertain career aspirations in their adolescent years were less likely to have future employment stability and earned significantly lower wages than those who were more certain. Career uncertainty has also been termed career 'indecisiveness.' Germeijs et al. (2006) reported that 12th-grade students' career indecisiveness resulted in students having unclear ideas about their future education and career needs and indecisiveness around choosing a college major. However, it would be inaccurate to assume that the impact of uncertainty is the same for all high school students.

Demographic characteristics have been shown to impact the relationship between uncertainty and postsecondary outcomes. In a longitudinal study examining influential antecedents to youth career and educational development, Gutman et al. (2012) found that young males reported higher uncertainty in their aspiration to continue postsecondary education than their female counterparts.

According to Gutman et al.'s pathway model (2012), the significant gender differences can be attributed to factors associated with a family's socioeconomic level, parental educational expectations, and youth's perceived ability, school motivation, career guidance, and academic performance. Relatedly, other studies have linked family socioeconomic background and academic and career development. For example, Yates et al. (2011) found that young men from families with a low socioeconomic background were more likely to be unemployed or unengaged in educational or vocational training later in life than their counterparts from higher socioeconomic status (SES) backgrounds. Students' race was also a factor in high school students' college choices. Cabrera & La Nasa (2002) found the most influential factors in racially minoritized students' decision-making regarding college are their financial needs, availability of financial assistance, and the college's distance from home.

Academic Aspirations and Postsecondary Outcomes

As discussed earlier, a lack of clear career goals or an understanding of the connection between college degrees and career pathways often leads students to drop out, making the U.S. the nation with the highest college dropout rate in the industrialized world (CCD, 2019; Hanson, 2021). Furthermore, dropout rates are estimated to cost educational institutions approximately \$16.5 billion per year (Hanson, 2021). Academic

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aspirations are thought to be a key variable in continuing postsecondary education.

Research focusing on academic aspirations has examined the relationship between academic aspirations, demographic variables, and retention and persistence in various forms of higher institutions. While examining the longitudinal relationship between academic aspirations in 10th grade and 12th grade and postsecondary retention and persistence, Poynton and Lapan (2017) found that early academic aspirations in 10th grade were predictive of academic aspirations in 12th grade associated with retention and persistence in college. Wang (2013) examined the relationship between sociodemographic variables, academic aspirations entering postsecondary institutions, and retention and persistence. In this study, Wang found that graduating seniors' academic aspirations were predictive of baccalaureate aspirations in community college. Further, SES and parental expectations strongly impacted initial academic aspirations.

Examining the impact of academic aspirations and expectations has also been researched within the context of academic certainty and uncertainty. Like career uncertainty, uncertainty about one's academic aspirations also influenced high school students' transitions into postsecondary opportunities (Schoon & Polek, 2011). Compared to peers who are uncertain about their future careers, students with aspirations for a professional job are more likely to participate in further education (Schoon & Polek, 2011). Therefore,

examining high school students' career and academic uncertainty levels is critical when exploring interventions that support a more successful transition into postsecondary education. Though very few articles address the interplay between career and academic uncertainty, research suggests that the two are positively related (Bergeron & Romano, 1994; Orndoff & Herr, 1996). Students who are certain about their academic aspirations are also more certain about their career aspirations than their academically uncertain peers (Bergeron & Romano, 1994; Orndoff & Herr, 1996). Bergeron and Romano (1994) further found that students who decided or were certain about a college major reported the same level of certainty in their career choice.

Furthermore, some research indicates that students who enter college with undecided majors tend to come from higher socio-economic status (SES) families and may receive greater parental financial contributions than their counterparts who are certain about their academic aspirations. Quadlin (2017) found that as the level of parental financial contributions increases, the likelihood of a student entering college as an undeclared major rather than a declared major increases. Quadlin (2017) further maintained that because students from higher SES families may be less academically inclined than their peers, they may enroll in institutions that support academic uncertainty in the first few years to provide students with the opportunity to explore classes in diverse fields. On the other hand, Glassegen et al.

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(2018) reported that a lack of familial support in identifying a future academic direction could increase students' postsecondary attrition, especially considering traditionally marginalized student groups, such as first-generation college students.

School Counseling College-Going Culture

Bryan et al. (2021) identified and tested a School Counseling College-Going Culture (SCCGC) Model using the HSLS:09 dataset. They examined the relationship of the SCCGC (i.e., counselor expectations and priorities, student-counselor contact for college and career counseling, college and career readiness activities, and constraints) to high school seniors' college outcomes (i.e., student-counselor contact for college admissions counseling, student-counselor contact for financial aid counseling, the number of college applications, and student enrollment in college). Bryan et al. (2021) situated SCCGC within the high school (along with Student Performance Variables) while accounting for context (Student Background and Demographics) and examining the model's impact on College Outcomes. Findings from the initial test of the SCCGC framework suggest that school counseling culture, contextual, and student performance variables all significantly impact college outcomes. These significant findings and the use of the HSLS:09 dataset make this model an ideal conceptual framework for examining the impact of student background and performance variables on college outcomes.

The Present Study

Following Bryan et al.'s (2021) SCCGC Model, we sought to examine the impact of student performance variables on students' college-going outcomes while controlling for background and demographic variables. The current study posits that students' academic aspirations and career certainty are student performance variables. College outcomes in this study include four dichotomous variables assessing whether a student applied to college, planned to enroll in college, attended college, and declared a major in college. We sought to examine the following research questions:

Research Question 1:

Controlling for demographic and background variables, what is the impact of students' academic aspirations on their college outcomes?

Research Question 2:

Controlling for demographic and background variables, what is the impact of students' career certainty on their college outcomes?

Methods

Data Source

We conducted a secondary data analysis using the High School Longitudinal Study of 2009 (Ingels et al., 2015) dataset, a study conducted by the National Center for Educational Statistics (NCES; U.S. Department of Education, 2009).

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Our university's institutional review board approved the study. NCES collected HSLs:09 base year data in 2009 through a stratified, two-stage, random sample design. The final base-year sample included:

- 944 schools,
- 25,206 ninth-grade students,
- 16,995 parents,
- 34,151 teachers,
- 888 school administrators, and
- 852 school counselors

in the first year of administration. The current study utilized data from the base year and follow-up studies using the restricted data file provided by NCES.

Participants

The analytic sample for the current study comprised 23,503 high school students (weighted sample = 3,575,625) who participated in the base year (2009), first follow-up (2012), high school transcript (2013), and second follow-up (2016) surveys. Of the sample, 51.6% identified as White, 22.1% as Hispanic, 13.6% as Black, 7.9% as Multiracial, 3.6% as Asian, and 1.2% as Indigenous. The dataset comprised 52.5% female students and 47.8% male students.

Measures

Dependent Variables: College Outcomes

This study aimed to examine the impact of students' academic aspirations and career certainty on students' college transitions and outcomes. The dependent variables in this

study were students' college application status, students' plans to enroll in college, college attendance, and major decision status.

College Application. College application status was measured using a composite variable created by NCES researchers indicating whether the respondent ever applied to or registered at a college or trade school for postsecondary enrollment. The composite variable was created based on two separate items. Students indicated if they had applied or registered at any postsecondary institution during the HSLs:09 2013 Update and the second follow-up data collection in 2016. College application status was a dichotomous variable with two categories (0 = Never applied or registered, 1 = Applied or registered).

Plan to Enroll in College. Plan to enroll in college was measured using the following item from the survey: "Do you plan to enroll full-time or part-time in the fall of 2013?" Responses on the survey were categorical (1 = Full-time, 2 = Part-time, 3 = Don't know). We recoded the variable into a dichotomous variable (1 = Yes, 2 = No).

College Attendance. Whether or not students ever attended college was measured using the following item from the survey: "Did you attend any college or trade school between the time you [received your high school diploma/received your GED/received your high school equivalency/received your certificate of attendance or completion/last

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attended high school] and February 2016?” Responses to the survey were dichotomous (0 = No, 1 = Yes).

Plans to Declare a Major. Plans to declare a major was measured using a composite variable created by NCES researchers. The composite variable was created as an aggregate of the categories of fields of study students selected on the item “When you first started at [first college/trade school attended after high school] in [date of first postsecondary attendance], what was the major or field of study you were most seriously considering?” The variable had 11 categories, one of which was “Undecided.” We collapsed the ten fields of study to create a dichotomous variable (1 = Decided, 2 = Undecided).

Independent Variables: Academic Aspirations and Career Uncertainty

We used two variables to measure student college/career aspirations and expectations – academic aspiration and career certainty.

Academic Aspiration. Academic aspiration was measured by the highest level of education students expected to achieve. Responses were 13 categories that we recoded into four categories (0 = Don’t Know, 1 = High school degree or less, 2 = Some postsecondary degree, 3 = Graduate degree).

Career Uncertainty. Career certainty was measured by students’ responses to the item: “How certain are you that this will be your job or occupation at age 30?” Responses were collected on a three-point Likert scale “not certain,” “fairly certain,” and “very certain.” We recoded this variable into a dichotomous variable (0 = Uncertain, 1 = Certain). Table 1 (see next page) presents descriptive statistics for dependent and independent variables.

Control Variables: Student Background and Demographic Variables

Background and demographic control variables were selected using the SCCGC framework (Bryan et al., 2021).

Student Background Variables:

Parental Involvement. Student background variables comprised two dichotomous (yes/no) parental involvement variables. The first variable was whether the family members met with the school counselor generally when students were in ninth grade; the second variable was whether or not the family members talked with a school counselor or teacher about academic requirements for postsecondary admission specifically.

Student Demographic Variables. The student demographic variables were gender (male/female), race/ethnicity, and SES. Race/ethnicity was originally a categorical variable with eight groups in the dataset that we collapsed to six categories: 1 = Indigenous (American Indian/Alaska Native and Native

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Table 1.
Characteristics of Participants by Student Performance and College Outcome Variables.

Characteristics	Weighted n^a	Unweighted n	%
Ever Applied to College			
Yes	3,559,110	11840	87
No	533,330	1360	13
Plan to Enroll in College			
Yes	2,972,890	9980	83
No	602,735	1840	17
College Attendance			
Yes	3,027,190	10535	72
No	1,154,540	2890	28
Plan to Declare a Major			
Yes	2,812,790	9829	94
No	1,710,080	570	6
Academic Aspiration			
Don't Know	423,520	1280	10
High school degree or less	679,290	1620	16
Some postsecondary degree	1,578,140	5035	38
Graduate Degree	1,496,970	5490	36
Career Certainty			
Certain	2,673,040	8460	89
Not Certain	322,130	1160	11

Note. Weighted $N = 4,181,740$. Unweighted $N = 13,420$.

^a Sample sizes are rounded to the nearest whole number in compliance with NCES requirements for use of restricted data.

Complete case analysis was utilized for each dependent variable resulting in varying samples sizes in variables.

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Hawaiian/Pacific Islander, 1.2%); 2 = more than one race (multiracial, 7.9%); 3 = Hispanic (22.1%); 4 = Asian (3.6%); 5 = Black/African American (13.6%); 6 = White (reference group, 51.6%). SES was measured by a continuous composite score created by NCES researchers using family income, parent/guardians' education, and occupation (composite score range = -2 - 3).

Data Analysis

HSL:09 survey data are unique because of primary sampling units, weighting, stratum, and imputation, which created a complex sample. We used SPSS for Complex Samples version 27 (IBM Corp. Released 2020) to account for the reduction in variance due to weight adjustments (Ingels et al., 2015). According to Cunningham and Huguet (2011), using complex sampling analyses for survey methodology results in unbiased population estimates and inferences in a study's findings. First, we used SPSS for Complex Samples 27 to obtain descriptive statistics for the sample. Then we conducted binomial logistic regressions to model relations between the predictors and membership in each outcome group (applied to college, attended college, enrolled in college, declared a major). Wald F was used to assess overall model fit. Other test statistics used to evaluate the effect of each independent variable on college outcome variables were logged odds (B), standard errors (S.E.), odds ratios (O.R.s), and t values. To improve OR interpretation, we report

inverted O.R.s (i.e., 1/OR) when direct interpretation was not straightforward. Following Bryan et al.'s (2021) decision to report p-values at both 0.05 and 0.10 levels because that study is the first test of the SCCGC framework, we also report p-values at 0.05 and 0.10 levels.

Results

Students' academic aspirations significantly predicted students' college application status ($F = 71.94, p < .001$), attendance status ($F = 124.08, p < .001$), enrollment status ($F = 25.51, p < .001$), and plans to declare a major ($F = 2.95, p = .032$). Students' career certainty significantly predicted students' enrollment status ($F = 4.45, p .035$). Career certainty did not predict students' college application status ($F = 0.97, p = .325$), attendance status ($F = 3.196, p = .076$), and plans to declare a major ($F = 0.79, p = .374$). Parameter estimates are presented in Table 2 (see next page).

Effects of Student Performance Variables on College Outcomes

Considering students' college application status, the odds of applying to college were significantly lower for students who did not have academic aspirations ($OR = .18, p < .001$), aspired to a high-school degree or less ($OR = .08, p < .001$), and aspired to some college ($OR = .48, p < .001$) compared to students who aspired to attain a graduate degree. Considering students' college enrollment status, the odds of not enrolling in college were significantly higher for students who did not have academic aspirations ($OR =$

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Table 2.
Logistic Regression Analyses Predicting Students' College Outcomes.

Variables	Apply to College		Enroll in College		Attend College		Declare Major	
	OR	S.E.	OR	S.E.	OR	S.E.	OR	S.E.
Student Performance Variables								
Academic Aspiration ^a								
Don't know	0.18***	0.22	3.96***	0.16	4.16***	0.15	1.26	0.30
HS/less than HS	0.08***	0.19	2.98***	0.18	11.79***	0.14	2.64*	0.37
Some college	0.48***	0.17	1.79***	0.12	1.87***	0.11	1.45*	0.18
Career Certainty ^b								
Uncertain	0.86	0.16	1.54*	0.21	0.79 ⁺	0.13	1.22	0.22
Control Variables								
Race ^a								
Indigenous	0.47*	0.37	0.92	0.49	1.62	0.33	3.02 ⁺	0.59
Multiracial	0.96	0.23	1.39 ⁺	0.18	0.99	0.17	0.88	0.26
Hispanic	1.77**	0.19	1.35*	0.14	0.62**	0.14	1.28	0.22
Asian	2.87**	0.35	1.27	0.20	0.47*	0.26	0.58	0.36
Black/African American	1.78**	0.21	1.16	0.17	1.20	0.12	0.70	0.28
Gender ^b								
Male	0.67***	0.10	1.40**	0.10	1.57***	0.09	0.77	0.17
Socioeconomic status	2.05***	.086	0.84*	0.07	0.40***	0.07	0.85	0.11
Parent Involvement								
Met school counselor in 9 th grade (No) ^b	1.28 ⁺	0.13	1.03	0.12	0.80*	0.10	1.13	0.22
Talked to counselor about postsecondary admission (No) ^b	0.76	0.17	1.24 ⁺	0.13	1.33*	0.11	1.17	0.18

^a Reference category for nominal variables in order: Graduate degree, White

^b Reference category for binary variables: Certain, Male, Yes, Yes

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

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3.96, $p < .001$), aspired to a high-school degree or less (OR = 2.98, $p < .001$), and aspired to some college degree (OR = 1.79, $p < .001$) compared to students who aspired to attain a graduate degree. Additionally, the odds of not enrolling in college were 1.5 times higher for students who were uncertain about their career aspirations (OR = 1.54, $p = .035$) compared to students who were certain about their career aspirations. Considering students' college attendance status, the odds of not attending college were significantly higher for students who did not have academic aspirations (OR = 4.16, $p < .001$), aspired to a high-school degree or less (OR = 11.79, $p < .001$), and aspired to some college degree (OR = 1.87, $p < .001$) compared to students who aspired to attain a graduate degree. Finally, considering students' plans to declare a major, the odds of students being undecided were significantly higher for students who aspired to a high-school degree or less (OR = 2.64, $p = .009$) and aspired to some college degree (OR = 1.45, $p = .042$) compared to students who aspired to attain a graduate degree.

Control Variables

Background Variables

Students whose family members did not talk to a school counselor or teacher about postsecondary admission requirements had significantly higher odds of not attending college (OR = 1.33, $p = .042$) compared to students whose family members did talk to a school counselor or teacher about

postsecondary admission requirements. Students whose family members did not talk to a school counselor generally while the student was in ninth grade had significantly higher odds of attending college (OR = 1.26, $p < .001$) compared to students whose family members did talk to a school counselor generally while the student was in ninth grade.

Demographic Variables

Concerning gender, male students had significantly lower odds (OR = 0.66, $p < .001$) of applying to college and significantly higher odds of not attending (OR = 1.57, $p < .001$) and not enrolling in college (OR = 1.4, $p = .001$) compared to female students. Concerning race, Indigenous (i.e., American Indian/Alaskan Native and Native Hawaiian/Pacific Islander) students had significantly lower odds (OR = 0.47, $p = .041$) of applying to college compared to White students. Hispanic students had significantly higher odds of applying to college (OR = 1.77, $p = .002$), attending college (OR = 1.61, $p = .001$), and not enrolling in college (OR = 1.35, $p = .033$) compared to White students. Asian students had significantly higher odds of applying to college (OR = 2.87, $p = .003$) and attending college (OR = 2.11, $p = .004$) compared to White students. Black/African American students had significantly higher odds of applying to college (OR = 1.78, $p = .005$) compared to White students. As SES increased, students had increasingly higher odds of applying to college (OR = 2.05,

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$p < .001$), enrolling in college ($OR = 1.18$, $p = .020$), and attending college ($OR = 2.50$, $p < .001$).

Discussion

As college and career readiness continues to be an important education policy goal (CCD, 2019; Falco & Steen, 2018), understanding factors that impact students' post-secondary outcomes remains critical. Research has found that high school students who have high academic aspirations are more likely to be in A.P. courses and spend more time on college preparation (Griffin et al., 2007) and that students who are uncertain about their career aspirations are more likely to drop out of college (CCD, 2019).

However, no research has explored the impact of career uncertainty and academic aspirations on students' transition into postsecondary education and their postsecondary outcomes on a national level. Using a nationally representative data set and binomial regression analyses, we investigated the relationship between high school students' career uncertainty and academic aspirations on their college outcomes. Specifically, we examined the odds of

students applying to college or not, enrolling in college or not, attending college or not, and declaring a major in college or not. Academic aspirations were a significant predictor of all college outcomes, and career uncertainty was a significant predictor of students' plans to enroll in college. Considering the

background and demographic variables, students' race, gender, SES, and parental involvement were significant predictors of students' college application, enrollment, and attendance status. These findings were consistent with Bryan et al.'s (2021) findings of the impact of student background, contextual, and demographic variables on college outcomes using the School Counseling College-Going Culture

(SCCGC) Model.

Our findings suggest that students who aspire to attain a graduate degree are more likely to apply to college than students who do not have a postsecondary education aspiration, aspire to attain a high school diploma or less, and aspire to attain some college degree. Furthermore, students who aspired to attain a graduate degree were more likely to enroll in and attend college than their peers who



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aspired to have some college degree or less. These findings further reinforce previous research showing that students' academic aspirations impact college attendance and enrollment (Gutman et al., 2012; Kim et al., 2019; McCulloch, 2017). Our findings provide important evidence suggesting that students' general academic aspirations matter and that the level of education they expect to attain also influences students' postsecondary outcomes. Khattab's (2015) assertion that high academic aspirations impact students' achievement and educational behavior may speak to this finding. Aspiring to graduate school can be classified as having high aspirations, as graduate school requires additional work, academic achievement, and commitment after bachelor's degree completion. It appears that when students have high expectations of themselves, it influences their postsecondary transition behaviors.

Interestingly, significant differences in plans to declare a major only existed when comparing students who aspired to attain a graduate degree to students who aspired to attain some college degree or high school diploma. There was no significant relationship with plans to declare a major for students who were not sure about their academic aspirations. Furthermore, students' career uncertainty significantly predicted students' plans to enroll in college. Students who were uncertain of their career aspirations were 1.5 times more likely to not enroll in college than their peers who were certain of

their career aspirations. This finding is consistent with research showing that career certainty impacts students' postsecondary outcomes (Porfeli & Lee, 2012; Yates et al., 2011).

Though not the focus of this study, our findings suggest that students' background and demographic variables significantly predict their college outcomes, consistent with previous studies establishing this claim (Wang, 2013; Wells & Lynch, 2012). Specifically, Black/African American, Asian, and Hispanic students all had significantly higher odds of applying to college compared to their White peers; meanwhile, Indigenous students had significantly lower odds of applying to college. Furthermore, Hispanic students were less likely to enroll in college but more likely to attend college compared to their White peers. Our findings that Hispanic students are more likely to apply to and attend college but less likely to enroll suggest that there are experiences that disrupt Hispanic students' ability to enroll in college even if they submit an application. This finding might speak to previous research showing that while Hispanic students rely heavily on social networks to make college decisions (Acevedo-Gil, 2017; Clark-Ibáñez, 2015), they often have inadequate access to mentors within their school (Farmer-Hinton, 2008; Irizarry, 2012), and do not have the same access to college readiness resources as their White peers (Griffin & Birkenstock, 2022). Additionally, perhaps this finding speaks to Taggart and Paschal's (2019) report

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that discrimination and inequitable treatment served as barriers to Hispanic students' prospects of enrolling in postsecondary education.

Additionally, Asian students were significantly more likely to attend college compared to their White peers. As related to gender, male students were less likely to apply, enroll, and attend college compared to their female colleagues, consistent with previous research showing that male students generally had lower academic aspirations compared to their female peers (Barrington et al., 2016; Gutman et al., 2012; McCulloch, 2017; Rothon et al., 2011). Moreover, our findings suggest that as students' socioeconomic status increases, students are more likely to apply to, enroll in, and attend college, which is also consistent with previous research showing that students' academic aspirations are influenced by SES (McGaha & Fitzpatrick, 2010; Rothon et al., 2011; Wang, 2013). Interestingly, the only college outcome that was impacted by parental involvement was whether students attended college. Students whose parents did not meet with the school counselor while the student were in 9th grade were more likely to attend college compared to their peers whose parents met with the school counselor. However, students whose parents did not talk to the counselor specifically about postsecondary admission were less likely to attend college than their peers whose parents talked to the school counselor about it. These findings are consistent with Bryan et al.'s (2021) findings

that parental engagement with school counselors can predict a student's likelihood of applying to and enrolling in college.

Implications

Findings from this study point to a few implications for teachers, counselors, college access professionals, and other K-12 practitioners as they support the postsecondary transitions of high school students. Students who aspire to graduate school have an increased likelihood of applying to, enrolling in, attending, and declaring a major in college. Knowing this can help support college and career conversations that happen in schools. Our findings suggest that in addition to helping students develop postsecondary goals, helping them understand all the educational requirements for their potential career aspirations – including the need for a graduate degree when indicated and appropriate – might improve students' college outcomes. Practitioners can partner with programs like McNair Scholars that are dedicated to helping racially minoritized college students continue their postsecondary education into graduate school. Such partnerships can help students better understand graduate school requirements while fostering their career maturity and decision-making abilities. Moreover, with the research linking career certainty to postsecondary decision making and attainment (Sabates et al., 2011), adulthood income, and job satisfaction (Porfeli & Lee, 2012; Staff et al., 2011), findings

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from this study suggest that career certainty impacts college enrollment has long term implications for students' success.

Practitioners must intentionally implement career development interventions to increase students' career certainty. Practitioners can account for students' cultural and economic contexts as they implement these interventions. Specifically, postsecondary outcome differences by race and SES revealed in this study point to the need for practitioners to create career development interventions that improve the cultural, social, and economic values and needs of students from minority groups (Howard et al., 2008). School-based interventions – like virtual and in-person career fairs, classroom-based lessons, and so on – that expose students to information about the world of work and careers that may not be readily available in their communities or society will be important for fostering certainty in students' career aspirations.

Practitioners working with young people can leverage career development interventions to dismantle societal stereotypes around careers and foster students' certainty in whatever career path they choose to follow while providing them with information about the educational requirements for their aspirations. Previous research (Alliman-Brissett & Turner, 2010; Falconer & Hays, 2006; Wyatt, 2009) has highlighted the importance of mentors and familial support for promoting the career development of

students from racially minoritized groups. Access to social capital from mentors and family members can often provide students from racially minoritized groups with protective factors against the negative impact of racism on career development (Alliman-Brissett & Turner, 2010). Knowing this, practitioners must be intentional about including parents and guardians in the career development of students from racially minoritized groups. Practitioners can send home monthly newsletters that update family members on the career development activities happening in the school and provide family members with prompts for engaging their children in discussions about their career aspirations. In addition, school counselors can host family events in which family members are invited to the school to join their child in using the internet and community resources to find information about their desired careers. Practitioners can work with parents from minoritized groups and invite them to come into the school to speak about their different careers and utilize parents' networks to find other diverse professionals that can serve as guest speakers.

Limitations and Future Research


The nature of a secondary data set is such that assessing complex constructs is limited to the data set, which may not always be accurate measurements of the construct of interest. For example, academic aspirations and career certainty are measured by a single item which may not capture the complexity of both

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constructs. Furthermore, for enrollment and major declaration status, students were asked about their plans to enroll in college and declare a major, which may not reflect students' actual behavior. Finally, our decision to exclude missing data from the analysis may result in missing data bias. These limitations highlight opportunities for future research. In the future, researchers should explore the impact of students' academic aspirations and career certainty on objectively measured college outcomes instead of self-report. Additional research is needed to understand why significant differences exist for students who aspire to graduate school compared to their peers with other academic aspirations. Furthermore, qualitative research to understand why Hispanic students are less likely to enroll in college even though they apply is needed to develop culturally responsive interventions for Hispanic students. Finally, our finding suggests that students whose parents did not meet with the school counselor were more likely to attend college than their peers whose parents met with the school counselor begs further research. Additional research is needed to understand how conversations between parents and school counselors impact students' college outcomes.

Conclusion

The findings of this study extend the literature surrounding the impact of student performance and background variables on their college outcomes – particularly using a

nationally generalizable dataset. The literature and findings highlight the critical role students' beliefs about their college and career outcomes have on their actual college outcomes and present an opportunity for targeted interventions. Suppose schools and college access programs support students' academic aspirations and career certainty. In that case, they may be able to increase the rate at which students apply to, attend, enroll in and declare a major in college. 

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