ABSTRACT

Title of Dissertation: INVESTIGATING PREDICTORS OF COLLEGE-GOING
                         SELF-EFFICACY AND EDUCATIONAL GOALS FOR
                         LATINA/O HIGH SCHOOL STUDENTS

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       This study examined predictors of college-going self-efficacy and educational

goals in a sample of Latina/o high school students ($N = 119$). Specifically, the study

investigated the variance accounted for by school performance, ethnic identity, barriers,

and family support in college-going self-efficacy and educational goals. Important

findings included that school performance was a key predictor of college-going self-

efficacy, and this relationship was moderated by family's college-going support. For

students with a high GPA, having support was linked to higher college-going self-

efficacy, while students that had a high GPA but low support had lower self-efficacy.

Students with lower GPA had lower college-going self-efficacy regardless of the level of

support they reported. Another important finding was that school performance was the

main predictor of educational goals. In addition, socioeconomic status was related to

perceptions of barriers, GPA, and educational goals, such that students with a lower

socioeconomic status were more likely to perceive more barriers, have a lower GPA, and lower educational goals. This study advanced knowledge regarding salient variables for Latina/o students, and may contribute to the development of an empirically tested intervention to improve Latina/o students' academic performance, college-going self-efficacy, and educational goals.

INVESTIGATING PREDICTORS OF COLLEGE-GOING SELF-EFFICACY AND
EDUCATIONAL GOALS FOR LATINA/O HIGH SCHOOL STUDENTS

By

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CHAPTER 1

Introduction

Vast disparities in the United States educational system mean that many Latina/o

adolescents are missing opportunities to develop their full potential. The consequences

are severe, because people with lower levels of education are more likely to be

unemployed and earn lower incomes than people with higher levels of education (U.S.

Department of Education, 2011). Latinas/os have lower rates of graduating from high

school compared to non-Hispanic Blacks and Whites (Pew Hispanic Center, 2010).

Currently, 41% of Hispanic adults age 20 and older do not have a high school diploma,

compared to 23% of non-Hispanic Blacks and 14% of Whites (Pew Hispanic Center,

2010). Furthermore, only one in ten Hispanics who drop out of high school earn a GED,

compared to two in ten Blacks and three in ten Whites (Pew Hispanic Center, 2010). This

pattern of lower educational attainment also can be seen at other important levels of

education. For example, Latinos have low rates of graduating from college (Pew Hispanic

Center, 2011a). In 2011, 13.4% of U.S. Latina/os age 25 and older were college

graduates, compared to 31.8% for White, 18.7% for Black, and 50.3% for Asians (Pew

Hispanic Center, 2011a). The focus of this study was factors that influence Latina/o high

school students' college-going self-efficacy and educational goals. In particular, we

studied school performance, ethnic identity, college-going support, and college-going

barriers in predicting college-going self-efficacy and goals.

Studies have shown that Latina/o students have high academic aspirations

(McWhirter, Hackett, & Bandalos, 1998), but they have lower expectations for

realistically achieving their academic goals (Flores, Navarro, & DeWitz, 2008; St-

Hilaire, 2002). One nationally representative study that tracked students from eighth to tenth to twelfth grade found that Latina/o and Black high school students have less stable aspirations than their White and Asian counterparts (Kao & Tienda, 1998). For example, only 54% of Latinos and 53% of Latinas maintained their educational goals from eighth to tenth grade, compared to 72% of Asian males and 73% of Asian females, and 61% of White males and 63% of White females (Kao & Tienda, 1998). Another survey found that the vast majority (89%) of Latinos between 16 and 25 say a college education is important for success in life, but only half of them (48%) say they plan to obtain a college degree (Pew Hispanic Center, 2009). We need more information regarding what creates the gap between what Latina/o high school students hope to achieve and what actually occurs.

Studying students at the high school level was especially important because interventions aimed at adolescents may have a direct effect on their educational goals while goals are still flexible. For example, one study found that high school students who attended a career education class, compared to a control group, increased their career decision-making self-efficacy, vocational skills self-efficacy, and improved their short-term outcome expectations (McWhirter, Rasheed, & Crothers, 2000). They also were more likely to change their career plans than the group that did not receive the intervention (McWhirter et al., 2000). High school seems to be the ideal age to intervene regarding college goals, because younger students may not have a clear idea of their goals, and individuals who have already completed high school may have decided whether they plan to attend college and these decisions may be difficult to change.

Having a postsecondary education is critical because it leads to more work opportunities. People who have higher levels of education participate in the labor force at higher levels, while people with lower levels of education are more likely to be unemployed (US Department of Education, 2011). There also are differences in income based on educational level. When comparing full-time workers in 2010, men and women with a Bachelor's degree earned 59% more than their counterparts that completed only high school (US Department of Education, 2011). If Latinas/os are a growing population and they attend college at lower rates, a growing proportion of the United States population is missing opportunities to develop a career and/or earn a higher income. A lack of postsecondary education is limiting the potential of many Latinas/os.

However, this is a problem not just for individuals, but also for the United States economy, which needs more professionals to compete internationally. Recent studies by economists have shown that the demand for college-educated students in the United States has been greater than the supply of students graduating for the past thirty years (Carnevale & Rose, 2011). This leads to greater income inequality in the United States because of the differences in earnings between high school graduates and college graduates (Carnevale & Rose, 2011). The United States economy benefits from workers that earn higher incomes because it increases the Gross Domestic Product and creates tax revenue (Carnevale & Rose, 2011).

This study focused on factors that influence Latina/o high school students' college-going self-efficacy and educational goals. Specifically, we examined school performance, ethnic identity, college-related supports and college-going barriers as predictors of college-going self-efficacy and educational goals. We hope that an

increased understanding of these factors will inform the development of programs to assist Latina/o students in improving their self-efficacy, graduating from high school, and obtaining college degrees.

Past Research on Latina/o Career Development and Its Limitations

A recent meta-analysis summarized the findings of 25 empirical studies that investigated predictors of educational and vocational goals in Latina/o students (Risco et al., 2011). The meta-analysis found small effect sizes for ethnic identity, support, and barriers, and a medium effect size for career-related self-efficacy (Risco et al., 2011). However, there was a large amount of unexplained variance in predicting educational and career goals (Risco et al., 2011).

Of these studies, the most common theory, used in 8 studies, was Social Cognitive Career Theory (Risco et al., 2011). Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994; 2000; Lent & Brown, 1996; Lent, 2005) is an integrative theory that examines individuals' career development through cognitive-personal variables (i.e., self-efficacy, outcome expectations, personal goals) as well as environmental and contextual influences (i.e., social support, barriers). This theory examines individual variables such as self-efficacy, together with environmental variables, which are important in the study of Latina/o students. Many researchers studying Latina/o students have emphasized the importance of contextual variables such as acculturation, ethnic identity, barriers and supports in the environment (Flores et al., 2008; Flores & O'Brien, 2002; Flores, Ojeda, Huang, Gee, & Lee, 2006; Gloria & Rodriguez, 2000; Gushue, 2006; Gushue & Whitson, 2006; McWhirter, Torres, Salgado, & Valdez, 2007). SCCT's inclusion of contextual variables provides an adequate foundation for this study; however, previous research has

not accounted for a large amount of variance using this model (Risco et al., 2011). One recommendation from the authors of the meta-analysis was to incorporate an ecological model into the theoretical foundation of studies on Latina/o students (Risco et al., 2011). The theoretical foundation for this study was based on an integration of SCCT and ecological theory.

One of the main problems with many studies on Latina/o career development identified in the meta-analysis was that the measures used lack domain specificity (Risco et al., 2011). For example, self-efficacy should be specific to the domain of interest, because people can have different levels of confidence in their abilities in different areas (Bandura, 1994). The meta-analysis found that there have been few studies that were domain specific, for example, studying math-science self-efficacy and how it relates to math-science outcomes (Navarro, Flores, & Worthington, 2007; Stevens, Olivarez, Lan, Tallent-Runnels, 2004). Since the focus of this study is educational goals, the variables of interest were specific to plans to attend college and advance their education. For example, it was important to study college-going self-efficacy as a variable, instead of a general academic self-efficacy. In addition, we also studied college-going support and college-going barriers as they contributed to educational goals and aspirations, rather than general social support and barriers. Previous studies may have used measures of self-efficacy, support, and barriers that were too global, since students can have different levels of self-efficacy, support, and barriers depending on the goal (for example, they may have high self-efficacy and support for finding a job after high school, but low self-efficacy and support for going to college). The domain specificity in our measures was an important

contribution to the current research and enabled an accurate estimation of the variance in educational goals.

Another limitation of the majority of studies in the meta-analysis was that they did not measure the contributions of cognitive ability to educational and vocational outcomes (Risco et al., 2011). Ability has been shown to an important predictor of educational and vocational attainment, and although many studies have shown that self-efficacy is a predictor, these studies have not shown that self-efficacy explains outcomes over and above academic ability (Lubinski, 2010). Studies using SCCT has been critiqued for not testing whether self-efficacy explains outcomes beyond the contributions of actual cognitive abilities (Lubinski, 2010). Since ability can be a difficult concept to measure, we decided to measure school performance. It was important to include school performance as a variable to determine if other variables (such as contextual factors) contribute beyond performance to the prediction of college going self-efficacy and educational goals.

Overview of Proposed Variables

School performance. Cognitive abilities are defined as a person's capacity to perform in academic fields. Many studies have shown that "ability," as measured by GPA and SAT scores, predicts success in college (Camara & Echternacht, 2000; Cohn, Cohn, Balch, & Bradley, 2004; Hoffman & Lowitzki, 2005; Kim, 2002; Tross, 2000). We preferred to call these measures "school performance" because they may not reflect the true potential of all students. Performance may contribute to the prediction of college-going self-efficacy because students may realistically base their self-efficacy on their knowledge about their academic skills. Performance may also contribute to educational

goals because people may make reasonable educational plans for what they see as accessible to them based upon their performance until then. Until now, no research to our knowledge had looked at the relationship between Latina/o high school students' school performance and their college going self-efficacy or career or educational goals (Risco et al., 2011). Performance was included as a variable to test whether students base their college-going self-efficacy and goals on appraisals of their academic skills, or if the contributions of ethnic identity, college-going support, and college-going barriers add variance beyond performance to these goals.

Ethnic identity. Ethnic identity refers to an individual's sense of belonging to their ethnic group, and whether they seek experiences and information related to their ethnic group (Phinney & Ong, 2007). In a study of Latina/o ninth graders, ethnic identity was found to be related positively to career decision-making self-efficacy, and was related to career planning outcome expectations when mediated by career decision-making self-efficacy (Gushue, 2006). Another study also found that for Latina high schoolers, ethnic identity related to career decision-making self-efficacy, and related to gender traditionality in career goals when mediated by career decision self-efficacy (Gushue & Whitson, 2006). A third study found that ethnic identification in a diverse group of high school students related to more positive academic attitudes, including the utility of education and school success, and higher interests in school (Fulgini et al., 2005). It was important to study ethnic identity to understand how it could relate to college-going self-efficacy and postsecondary education goals in a sample of Latina/o high school students.

College-going support. Social support that specifically encourages the goal of attending college was referred to in this study as college-going support. Social support has typically been studied as a more global variable rather than specifically focusing on support for one outcome. One study of Mexican-American high school students found that father support was related to educational plans and expectations, while mother support had effects on mediating variables that led to career outcomes (McWhirter et al., 1998). Another study found that parental support predicted career aspirations (Flores & O'Brien, 2002). A third study found that for a sample of urban high school students who were mostly Black and Hispanic, general perceptions of support were related positively to aspirations for career success and expectations for attaining career goals (Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003). Research was needed that measured parents' support for college-going as a specific outcome as opposed to a general construct. Further research was necessary to understand the potential relationship between college-going support and college-going self-efficacy and educational goals.

College-going barriers. Similarly, we were interested in barriers, or obstacles in the environment, that make it more difficult for students to plan to go to college or continue their education. Previous research has focused on general perceptions of barriers. Studies have found that Mexican American students tend to anticipate more barriers than European American students, and they expect those barriers to be more difficult to overcome (McWhirter, 1997; McWhirter et al., 2007). Another study of Mexican American high school students found that perceived barriers predicted educational aspirations above and beyond the influence of gender, generation status, and parents' level of education (Ojeda & Flores, 2008). In an additional study of Latina/o

high school students, perceptions of career barriers were related negatively to career decision-making self-efficacy and vocational identity (Gushue et al., 2006). In addition, a study of Latina/o college students found that those that perceived a more negative university environment were less likely to feel committed to finishing college (Castillo et al., 2006). We predicted that barriers specific to college-going would have a strong relationship with college-going self-efficacy and educational goals.

College-going self-efficacy. We were interested in studying college-going self-efficacy as an outcome variable. College-going self-efficacy has been defined as a person's confidence in their ability to succeed in gaining admission to college (O'Brien, Kivlighan, Jones, & Diaz, 2011). To date, there has not been much research on high school students' college-going self-efficacy. Previous research on Latina/o students has investigated different career-related types of self-efficacy. For example, career decision-making self-efficacy was related positively to educational goals (Flores et al., 2006), a more differentiated vocational identity, and engagement with career exploration tasks (Gushue et al., 2006). Career decision-making self-efficacy also has been found to mediate the relationship between ethnic identity and career planning outcome expectations (Gushue, 2006). Similarly, college-going self-efficacy is likely to relate to educational goals. However, more research was necessary to determine which variables may influence college-going self-efficacy. In this study, we tested whether ability, ethnic identity, college-going support, and college-going barriers related to college-going self-efficacy.

Educational goals. We were interested in studying educational goals as another outcome variable. Educational goals describe plans to complete or pursue education (for

example, goals of completing high school, college, or graduate school). A few empirical

studies have investigated educational goals as an outcome variable for Latina/o students

(Risco et al., 2011). One study found that Latina/o college students' persistence

intentions were predicted by college self-efficacy, which was influenced by family

support (Torres & Solberg, 2001). In addition, parents' level of education and students'

perceptions of barriers were predictive of immediate postsecondary plans in a sample of

Mexican American high school students (McWhirter et al., 2007). More research is

necessary to understand how school performance, ethnic identity, college-going support,

and college-going barriers may relate to educational goals.

Summary of Proposed Work

This study advanced previous research by investigating factors that contribute to

Latina/o high school students' college-going self-efficacy and educational goals. In

particular, this study focused on the degree to which school performance, ethnic identity,

college-going support, and college-going barriers contributed to college-going self-

efficacy and educational among Latina/o youth. We hope that this research will advance

understanding regarding the underrepresentation of Latina/o students in pursuing

postsecondary education, and provide the foundation for developing theoretically

grounded and empirically tested interventions to increase college-going self-efficacy and

advance education goals among Latina/o youth.

CHAPTER 2

Review of Literature

This review of the literature first will provide information on the Latina/o community in the United States. The theoretical foundations for this study will be outlined, in particular, Social Cognitive Career Theory and an ecological model. Then, an overview of the research on Latina/o high school students' career development will be provided. Research on the two outcome variables (college-going self-efficacy and educational goals) will be summarized. Also, research on the predictor variables (school performance, ethnic identity, college-going barriers, college-going support) will be described. Finally, the purposes, research questions, and hypotheses for this study will be indicated.

The Latina/o Community in the United States

The term Latina/o refers to people who have origins in Latin America (including Central and South America and the Spanish-speaking countries of the Caribbean) (Comas-Díaz, 2001). The terms Latina and Latino have been recommended because they also convey gender (female and male, respectively) (Shorris, 1992). The United States government employs the name "Hispanic," but it has been argued that this term should not be used because it includes Europeans (Spaniards). It also highlights lineage to Spain and a colonial history, without accounting for the rich indigenous history of the Americas (Comas-Díaz, 2001).

The growth of the Latina/o community in the United States has been remarkable. The population of people that identify as a "Hispanic" ethnicity on the census has increased by 43% in the last ten years, accounting for 56% of the total increase in the

U.S. population (U.S. Census, 2010a). Between 2000 and 2006, Hispanics accounted for one half of the United States' growth. The Census projects that by the year 2060, one in three U.S. residents will be Latina/o (U.S. Census, 2012). In 2010, Latina/os comprised 16.3% of the United States population (50.5 million Hispanics out of 308.7 million in the total United States population) (U.S. Census, 2010a). (Note that though Hispanic is considered an ethnicity and not a race by the census, Hispanics of all races are often grouped together and compared to other racial groups (e.g., non-Hispanic Whites, non-Hispanic Blacks).)

Most Latinas/os in the United States are of Mexican (63%), Puerto Rican (9.2%), Central American (7.9%), South American (5.5%), or Cuban (3.5%) origin (U.S. Census, 2010b). However, the growth of the Mexican, Puerto Rican, and Cuban population has stayed relatively stable in the last ten years, while Central and South Americans' numbers have increased significantly (U.S. Census, 2010b). For example, the Salvadoran population has increased 152% since 2000 (Pew Hispanic Center, 2011b). In Washington, DC, Maryland, and Virginia, Salvadorans are the largest group of Latinas/os (33.7%) (Pew Hispanic Center, 2011b).

Latina/o Students' Educational Attainment

Latinas/os have lower rates of educational attainment than non-Latina/o Whites and Blacks (Pew Hispanic Center, 2009, 2010, 2011a). In one survey, despite 89% of Latina/o youth stating they believe a college education is important for success in life, only 48% planned to get a college degree (Pew Hispanic Center, 2009). Of the surveyed adolescents that ended their education during or after high school, 74% said the reason was financial pressure to support their family, about half said they had poor English

skills, and about 40% said they disliked school or felt more education would not be necessary for the careers they wanted (Pew Hispanic Center, 2009). Other studies also have shown that Latina/o students rated their educational expectations lower than their aspirations or wishes (Flores et al., 2008; St- Hilaire, 2002). We need to learn more about what factors play a role in Latina/o students' low educational attainment to find the most effective ways to intervene and increase education levels.

Theoretical Foundations

Social Cognitive Career Theory. The main foundation for this study was Social Cognitive Career Theory (SCCT; Lent, et al., 1994; 2000; Lent & Brown, 1996; Lent, 2005). SCCT expands on previous career theories that focused on people's interests and values by incorporating Bandura's social cognitive theory. SCCT suggests that in addition to individual variables, cognitive-person variables and contextual variables interact to influence individuals' career development.

Cognitive-person variables include self-efficacy beliefs, outcome expectations, and personal goals. Self-efficacy refers to a person's confidence in their ability to succeed in a particular domain (Bandura, 1977). Self-efficacy is said to come from four sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states (Bandura, 1977). It is different from a measure of self-esteem because it must be measured in the domain of interest and people may have different levels of efficacy for different domains. For example, they may feel confident in their ability to succeed in a math or science career, but may have low self-efficacy for artistic careers. It is important to understand self-efficacy because it is predictive of behavior (Lent, Brown, & Hackett, 2000). Self-efficacy beliefs affect our feelings about the

domain, how much effort we put into it, and how long we persist at the activity (Bandura, 1977). For example, studies have linked content-specific self-efficacy to academic persistence (Multon, Brown, & Lent, 1991). In this study, we are interested in college-going self-efficacy, or how confident the students are in their ability to apply and be admitted to college.

Personal goals are our intentions to carry out a behavior or activity (Bandura, 1986). SCCT suggests that goals are generally influenced by both self-efficacy and outcome expectations (Lent & Brown, 1996). Aspirations refer to goals that are distant and do not require a commitment, while career plans or decisions refer to specific goals that are more proximal and do require a commitment (Lent et al., 1994). In this study, we were concerned with educational goals of high school students, in particular goals to attend college.

SCCT also adds to previous theories by taking into account contextual or environmental variables. Contextual variables can be distal (background variables) or proximal (variables that play a role in active decision making processes) (Lent et al., 2000). Proximal contextual variables include supports and barriers in the environment that moderate the relationship both between interests and goals, and the relationship between goals and actions (Lent et al., 2000).

While Social Cognitive Career Theory is the most commonly used model for studying career development in Latina/o students, the meta-analysis found that its variables did not account for a large amount of variance (Risco et al., 2011). A suggestion was to integrate SCCT with ecological models to see if a systemic approach might better explain the data.

Ecological perspective. Bronfenbrenner (1977) proposed an ecological model where multiple systems influence the lives of individuals. He described four systems embedded in each other, where the closest to the individual is the microsystem (interactions between the person and their immediate environment, including their home, workplace, and school). Next comes the mesosystem, which is comprised of the relationships between different parts of the microsystem (for example, relationships between school and work). A larger system is the exosystem, which is the social structures that indirectly impact the individual (for example, the media, agencies of government). Finally, the macrosystem is the values and institutional patterns of a culture (e.g., democracy, capitalism, patriarchy).

Researchers have proposed that especially when studying the career development of women and minorities, an ecological model should be applied (Cook, Heppner, & O'Brien, 2005). For example, at the microsystem level, a student may have or may lack support from their family, or role models at school. Factors in the exosystem such as the safety of the student's neighborhood and media portrayals of people of their own gender or ethnicity may also affect their perception of their career opportunities. At the macrosystem, larger values such as racism or sexism can affect individuals through discrimination. Cook et al. (2005) suggested that a person's gender or ethnicity will expose them to specific opportunities or obstacles in the environment, though individual variables can affect how the person reacts. Individual variables may include ethnic identity or acculturation for Latina/o students. This study focused on the individual level (school performance, ethnic identity), microsystem level (college-going support), and

macrosystem (college-going barriers) as predictors of students' college-going self-efficacy and college goals.

Review of Literature on Latina/o High School Students' Career Development

This review will discuss the two outcome variables of this study, college-going self-efficacy and educational goals. Then, we will outline research that has been conducted on the independent variables, in particular, school performance, ethnic identity, support, and barriers.

College-going self-efficacy. Research on self-efficacy must be domain-specific, and for this study we were interested in college-going self-efficacy. This has been defined as a student's confidence in their ability to apply and gain admission to college (O'Brien et al., 2011).

One group of researchers studied middle school students' from diverse backgrounds self-efficacy related to achieving a college degree (Gibbons & Borders, 2010). They created a measure with two subscales: college attendance self-efficacy and college persistence self-efficacy. The scale appears to have adequate internal reliability and test-retest reliability, but further research is necessary to test the measure's validity and to understand how middle schoolers' college-going self-efficacy might relate to college goals and college attainment. This measure also has not been used with high schoolers. Another study focused on Latina/o college students' self-efficacy for successfully completing tasks that they were currently managing as students in college (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993), but this is different from high school students' self-efficacy about whether they could complete these tasks in the future.

Beyond the aforementioned studies on college-related self-efficacies, there has not been a lot of research specifically on college-going self-efficacy, or studies on a high school population. However, several studies have linked other types of self-efficacy to career goals in Latina/o students. For example, some studies have focused on Latina/o students' math-science self-efficacy and found it was related to math-science goals (Navarro et al., 2007) and math-science performance (Stevens et al., 2004). The meta-analysis found that when self-efficacy measures were more domain-specific, the relationships to outcomes were stronger (Risco et al., 2011).

Another type of self-efficacy that received some attention in the research is career decision-making self-efficacy. Career decision-making self-efficacy is an individual's belief that they will be able to complete the tasks necessary to make a career decision (Flores et al., 2006). Research has suggested that ethnic minority students have lower career decision-making self-efficacy than White students (Gloria & Hird, 1999). One study of 105 Mexican American rural high school students found that career decision-making self-efficacy was related positively to educational goals (Flores et al., 2006). Another study of 128 Latina/o urban high school students found that career decision-making self-efficacy was related to a more differentiated vocational identity, meaning they had a more clear picture of their goals, strengths, and interests (Gushue et al., 2006). Career decision-making self-efficacy also was related to greater engagement with career exploration tasks and activities (Gushue et al., 2006). In a third study of 128 Latina/o ninth graders, career decision-making self-efficacy mediated the relationship between ethnic identity and career planning outcome expectations (that is, how positively they felt about the outcomes of their chosen careers) (Gushue, 2006).

Furthermore, research suggested that career decision-making self-efficacy can be improved through interventions. For example, high school sophomores' career decision-making self-efficacy increased after participating in a nine-week career education class (McWhirter et al., 2000). In another study, students that met in fifty minute career classes five times a week for five weeks showed higher career decision-making self-efficacy than students in a control group (O'Brien, Bikos, Epstein, Flores, Dukstein, & Kamatuka, 2000). These results are promising because they suggest that at least one type self-efficacy related to career goals can be improved through education and training.

Additional research was needed to assess the predictors of college-going self-efficacy with a sample of Latina/o high school students.

Educational goals. We were also interested in students' educational, and in particular, college goals as an outcome variable. Educational goals are defined as the level of education students plan to complete (high school, community college, four year college, graduate school), while college goals are whether the students have goals to attend and complete college.

Educational goals include aspirations, realistic expectations, persistence, and plans. Educational goals have been studied as an outcome variable in several research studies on Latina/o students (as summarized in the meta-analysis by Risco et al., 2011). For example, a study of Mexican American women that were seniors in high school found that feminist attitudes and parental support predicted career aspiration (Flores & O'Brien, 2002). Another study of Mexican American high schoolers found that Anglo-orientation acculturation and perceived problem-solving abilities predicted educational goals (comprised of educational aspirations and expectations), but Mexican-oriented

acculturation and career decision-making self-efficacy did not have an influence (Flores et al., 2006). An alternative research study showed that persistence intentions in Latina/o college students were predicted by college self-efficacy, and family support influenced college self-efficacy (Torres & Solberg, 2001). A different investigation found that Mexican American high school students' immediate postsecondary plans were predicted by their parents' level of education and their perception of barriers (McWhirter et al., 2007).

School performance. In the meta-analysis of empirical studies on Latina/o students, no research took into account the role of cognitive ability in predicting career or educational success (Risco et al., 2011). Studies using a SCCT framework have been criticized for emphasizing self-efficacy without including ability as a variable, because ability has been shown to be the primary predictor of educational and vocational attainment (Lubinski, 2010). School performance is typically how ability is measured (Camara & Echternacht, 2000; Cohn, et al., 2004; Hoffman & Lowitzki, 2005; Kim, 2002; Tross, 2000). Many studies find that self-efficacy is a predictor of educational or vocational outcomes, but these studies have not determined that confidence predicts over and above an established predictor of these outcomes, academic performance.

Specifically, many broader studies on American students have shown that performance, as measured by GPA or standardized test scores, is related positively to success in college (Camara & Echternacht, 2000; Cohn et al., 2004; Hoffman & Lowitzki, 2005; Kim, 2002; Tross, 2000). Usually, success in college has been defined as freshman year GPA (Camara & Echternacht, 2000). One study found that for a sample of African American students at both historically Black and historically White colleges,

both high school GPA and SAT composite scores were predictive of self-rated academic performance in college (Kim, 2002). Some studies found that high school grades were better at predicting college success than standardized test scores (Hoffman & Lowitzki, 2005), but standardized test scores did still add additional variance to the prediction (Camara & Echternacht, 2000). Yet, other research has shown that for African American and Latina/o students, SAT scores over-predict these students' freshman year GPA (Zwick & Himelfarb, 2011). This study found that taking high school socioeconomic status into account improved the prediction of college grades, and the authors suggested that this may be because African American and Latina/o high school students may attend schools with fewer resources (Zwick & Himelfarb, 2011).

At least one study of college undergraduates has found associations between self-rated abilities and self-efficacy (Brady-Amoon & Fuertes, 2011). We do not yet know how GPA and standardized test scores may be related to college-going self-efficacy or educational goals for Latina/o high school students. Further research was necessary to learn whether academic performance could predict college-going self-efficacy and/or educational goals.

Ethnic identity. Ethnic identity can be defined as the degree to which an individual feels connected to their ethnic group, and is comprised of two components: exploration and commitment (Phinney & Ong, 2007). Exploration refers to an individual's search for information and experiences relevant to their identity, including activities such as talking to people of their ethnic identity, attending cultural events, and learning cultural practices (Phinney & Ong, 2007). Commitment refers to the person's feelings of attachment towards their ethnic group and their sense of belonging to the

group (Phinney & Ong, 2007). Ethnic identity is important because cultural values can affect people's decisions about their career and education. For example, collectivists may be more motivated by the needs of others such as their family, while people that value individualism may be motivated by personal achievement (Phinney, Dennis, & Osorio, 2006).

Ethnic identity appears to be important for the mental health of Latina/o students (Iturbide, Raffaelli, & Carlo, 2009; Umaña-Taylor & Updegraff, 2007). For example, a study of Latina/o adolescents found that higher levels of ethnic identity predicted higher levels of self-esteem (Umaña-Taylor & Updegraff, 2007). Another study of Mexican American college students found that ethnic identity moderated the relationship between low levels of acculturative stress and depression (Iturbide et al., 2009). However, when acculturative stress was high, ethnic identity did not appear to have the same protective effect (Iturbide et al., 2009), suggesting that sometimes the stress is too overwhelming to use ethnic identity as a coping mechanism. There is also evidence that perceived support may mediate the relationship between ethnic identification and adjustment to college, based on a study of Latina/o college students (Schneider & Ward, 2003).

A few studies have investigated the relation between ethnic identity of Latina/o students and career-related variables (Castillo, Conoley, Choi-Pearson, Archuleta, Phoummarath, & Van Landingham, 2006; Fulgini, Witkow, & Garcia, 2005; Gushue, 2006; Gushue & Whitson, 2006). One study of 128 Latina/o high school students found that ethnic identity achievement was related positively to vocational identity (Gushue, 2006). Ethnic identity also was linked to career decision-making self-efficacy; that is, the students' identification with their ethnic group was related positively to their beliefs

about their ability to make a career decision (Gushue, 2006). In addition, ethnic identity

was related to career planning outcome expectations when mediated by self-efficacy

(Gushue, 2006). In a different study of Latina high school students, ethnic identity again

related to career decision-making self-efficacy, and also related to gender traditionality in

career goals when mediated by career decision-making self-efficacy (Gushue & Whitson,

2006). Another study found that higher levels of ethnic identification in high school

students of Mexican, Chinese, and European backgrounds were related to more positive

academic attitudes, including stronger beliefs in the utility of education and school

success, and higher levels of interest in school (Fulgini et al., 2005). There was one study

appeared to have contradictory results (Castillo et al., 2006). This study of Latino college

students at a primarily White university found that higher Latino ethnic identity was

related to perceiving a more negative university environment, and this perception was

associated with feeling less committed to finishing college (Castillo et al., 2006). The

result may have been because Latina/o students who are a small minority in their

university and have a higher Latino ethnic identity may feel more marginalized on

campus.

  Research has found a link between ethnic identity and self-esteem, ethnic identity

as a potential protective factor against depression, and a relationship between ethnic

identity and vocational identity, career decision-making self-efficacy, and positive

academic attitudes (Fulgini et al., 2005; Gushue, 2006; Gushue & Whitson, 2006;

Iturbide, 2009; Umaña-Taylor & Updegraff, 2007). However, we did not yet know

whether ethnic identity affects Latina/o high school students' college-going self-efficacy

or their educational goals. More research was necessary to learn more about these specific relationships.

College-going support. Social support has been found to be an important variable in helping adolescents pursue career goals. For example, in a sample of mostly Black and Latina/o urban high school students, general perceptions of support were related positively to aspirations for career success and expectations for attaining career goals (Kenny et al., 2003). In a study of 364 Mexican American female high school students, parental support was one of the most important predictors of students' selection of prestigious careers and career aspiration (Flores & O'Brien, 2002). In another study of Mexican American high school girls, support from fathers had direct effects on educational plans and career expectations, while support from mothers had effects on other mediating variables (McWhirter et al., 1998). Parental support appeared to be affected by SES, and the authors suggested that parents with lower incomes may have less knowledge and experience to provide support for their daughters. Teacher support also was related positively to career commitment (McWhirter et al., 1998).

Support has also been found to relate to students' self-efficacy. For example, a study of Latina/o college students found that students who had more family support reported higher college self-efficacy (Torres & Solberg, 2001). In a different study, parental support also appeared to be a moderator between math-science self-efficacy and math-science goals (Navarro et al., 2007).

Some studies have shown that social support has an indirect effect on other educational and career variables. In a study of 848 Latina/o middle school students, parental support and friend support were linked to perceptions of teacher support, and

were indirectly linked to positive school behavior (for example not cutting class or fighting) and satisfaction (Wooley et al., 2009). Positive school behavior and satisfaction were related to better grades and more time spent on homework (Wooley et al., 2009).

The meta-analysis of empirical studies on Latina/o students' career development suggested that support from an important adult has more influence than support from peers (Risco et al., 2011). Thus, we focused on support from parents in this study. The meta-analysis also found that the type of goal measure moderated the relationship between adults' social support and goals, suggesting that support measures should be specific to the type of outcome being measured (Risco et al., 2011). Instruments that have been typically used (i.e., the Multidimensional Scale of Perceived Social Support, Zimet, Dahlem, Zimet, & Farley, 1988; People in my Life Scale, Cook, et al., 1995) tend to measure a more general social support, including support from family, peers, and other significant people in various aspects of an individual's life. In this study, since we are interested in educational (and in particular college goals), we investigated college-going social support from students' parents.

College-going barriers. Studies suggest that perception of barriers may play an important role in the career and educational goals of Latina/o high school students (Castillo et al., 2006; Gushue et al., 2006; Lopez & Ann-Yi, 2006; Luzzo & Jenkins-Smith, 1996; McWhirter et al., 2007; Ojeda & Flores, 2008; Ojeda, Navarro, & Morales, 2011; Risco et al., 2011). For example, one study found that with medium to large effect sizes, Mexican American students perceived more internal barriers (ability, preparation/motivation) and external barriers (support and separation from family) to college than White American students (McWhirter et al., 2007). They also thought those

barriers would be harder to overcome than White American students (McWhirter et al., 2007). Interestingly, both Mexican American and White American students perceived financial barriers but there was no difference between the two groups' perceptions for this variable (McWhirter et al., 2007). Girls anticipated more financial barriers than boys (McWhirter et al., 2007).

At least one study has found that barriers relate to self-efficacy, though college-going self-efficacy has not been studied (Gushue et al., 2006). In a sample of urban Latina/o high school students, researchers found that the perception of career barriers was related negatively to career decision-making self-efficacy and vocational identity (Gushue et al., 2006).

Perceived barriers also relate to college-going goals and career goals (Lopez & Ann-Yi, 2006; Ojeda & Flores, 2008). For example, one study of Mexican American high school students found that perceived educational barriers predicted students' educational aspirations, above and beyond the contributions of gender, generation level, and parents' educational level (Ojeda & Flores, 2008). Another study found that Latina/o college students that perceive a negative university environment are more likely to feel less committed to finishing college (Castillo et al., 2006). In a third study, career and educational barriers accounted for 20% of the variance in a measure of career indecision for Hispanic women in college (Lopez & Ann-Yi, 2006). In the recent meta-analysis, perceptions of barriers accounted for 23% of the variance (in a negative direction) in persistence goals for Latina/o students (Risco et al., 2011).

It would also be useful to understand which barriers are perceived as most difficult to overcome. For example, one study found that Mexican American college

students perceive barriers to educational goals and career aspirations such as finances, study skills, and job competition, as more important than ethnic discrimination, gender, or age (Luzzo & Jenkins-Smith, 1996). Another study of Mexican American men in college found that they reported barriers to completing college such as struggles with finances, academics, and unexpected problems (for example death of a loved one, health-related problems, pregnancy of significant other), and barriers related to their families (Ojeda et al., 2011).

Though some research has linked barriers to career decision-making self-efficacy and some educational and career goals, no research has examined how perceived college-going barriers may relate to college-going self-efficacy and educational goals. Thus, we hoped to contribute to knowledge about these specific relationships for Latina/o high school students.

Purposes, Research Questions, and Hypotheses

Purpose 1. The first purpose of this study was to learn more about Latina/o high school students' academic performance, ethnic identity, college-going support, college-going barriers, college-going self-efficacy, and educational goals.

Research Question 1. How can this sample be described with regard to the students' ethnicity, race, age, gender, grade in school, country of origin, place of birth, generation status, socioeconomic status, and parents' level of education?

Research Question 2. What are the levels of school performance, ethnic identity, perceived college-going support, perceived college-going barriers, college-going self-efficacy, and educational goals reported by a sample of Latina/o students?

Purpose 2. The second purpose was to study the contributions of school performance, ethnic identity, college-going support, and college-going barriers to college-going self-efficacy.

Hypothesis 1. School performance, ethnic identity, college-going support, and college-going barriers would contribute unique and shared variance to college-going self-efficacy.

Hypothesis 1a. School performance would contribute unique variance to college-going self-efficacy. A positive relationship between these variables was expected.

Hypothesis 1b. Ethnic identity would contribute unique variance to college-going self-efficacy. A positive relationship between these variables was expected.

Hypothesis 1c. College-going support would contribute unique variance to college-going self-efficacy. A positive relationship between these variables was expected.

Hypothesis 1d. College-going barriers would contribute unique variance to college-going self-efficacy. A negative relationship between these variables was expected.

Purpose 3. The third purpose was to study the contributions of school performance, ethnic identity, college-going support, and college-going barriers to educational goals.

Hypothesis 2. School performance, ethnic identity, college-going support, and college-going barriers would contribute unique and shared variance to educational goals.

Hypothesis 2a. School performance would contribute unique variance to educational goals. A positive relationship between these variables was expected.

Hypothesis 2b. Ethnic identity would contribute unique variance to educational goals. A positive relationship between these variables was expected.

Hypothesis 2c. College-going support would contribute unique variance to educational goals. A positive relationship between these variables was expected.

Hypothesis 2d. College-going barriers would contribute unique variance to educational goals. A negative relationship between these variables was expected.

Purpose 4. The fourth purpose was to test whether college-going support or college-going barriers moderated the relationship between school performance and college-going self-efficacy.

Hypothesis 3a. The effect of school performance on college-going self-efficacy would depend on the level of college-going support, such that there would be a positive relationship between school performance and college-going self-efficacy for those that have high levels of college-going support, and a weaker positive relationship between school performance and college-going self-efficacy for those with low levels of support.

Hypothesis 3b. The effect of school performance on college-going self-efficacy would depend on the level of college-going barriers, such that there would be a negative relationship between school performance and college-going self-efficacy for those that have high levels of college-going barriers, and a positive relationship between school performance and college-going self-efficacy for those who perceive low levels of barriers.

Purpose 5. The fifth purpose was to test whether college-going support and college-going barriers moderated the relationship between school performance and educational goals.

Hypothesis 4a. The effect of school performance on educational goals would depend on the level of college-going support, such that there would be a positive relationship between school performance and educational goals for those that have high

levels of support, and a weaker positive relationship between school performance and educational goals for those with low levels of support.

Hypothesis 4b. The effect of school performance on educational goals would depend on the level of college-going barriers, such that there would be a negative relationship between school performance and educational goals for those that see high levels of college-going barriers, and a positive relationship between school performance and educational goals for those that see low levels of barriers.

Purpose 6. The sixth purpose was to test whether college-going support and college-going barriers moderated the relationship between ethnic identity and college-going self-efficacy.

Hypothesis 5a. The effect of ethnic identity on college-going self-efficacy would depend on the level of college-going support, such that there would be a positive relationship between ethnic identity and college-going self-efficacy for those that have high levels of college-going support, and a weaker positive relationship between ethnic identity and college-going self-efficacy for those with low levels of support.

Hypothesis 5b. The effect of ethnic identity on college-going self-efficacy would depend on the level of college-going barriers, such that there would be a negative relationship between ethnic identity and college-going self-efficacy for those that have high levels of college-going barriers, and a positive relationship between ethnic identity and college-going self-efficacy for those who perceive low levels of barriers.

Purpose 7. The seventh purpose was to test whether college-going support and college-going barriers moderated the relationship between ethnic identity and educational goals.

Hypothesis 6a. The effect of ethnic identity on educational goals would depend on the level of college-going support, such that there would be a positive relationship between ethnic identity and educational goals for those that have high levels of college-going support, and a weaker positive relationship between ethnic identity and educational goals for those with low levels of support.

Hypothesis 6b. The effect of ethnic identity on educational goals would depend on the level of college-going barriers, such that there would be a negative relationship between ethnic identity and educational goals for those that have high levels of college-going barriers, and a positive relationship between ethnic identity and educational goals for those who perceive low levels of barriers.

CHAPTER 3

Method

Participants

The participants in this study were Latina/o adolescents currently enrolled in high school (9th through 12th grade) in the Washington, DC metropolitan area. They had at least one parent that was Latina/o. We calculated that to detect a medium effect size (power = .80, α = .01) for 4 predictors, we needed a minimum of 118 participants (Cohen, 1992). We recruited 120 participants, and of these, 119 had sufficient data to analyze for the study.

Procedure

We recruited from several locations, focusing mainly on community centers, after-school programs, and nonprofit organizations that serve the Latina/o community. Seven out of 10 community organizations agreed to participate (Maryland Multicultural Youth Center, Mary's Center, UMD's Upward Bound program, Langley Park Community Center, Wheaton Community Center, Prince George's Community College "Mis Quince Años" program, and Community Lodgings). Three additional community programs were contacted but either declined to participate or did not respond. We also recruited from church youth groups, and three out of five churches agreed to participate (Iglesia Biblica Peniel, Iglesia San Bartolomé, and Langley Park Seventh Day Adventist Church). Two other churches were contacted and either declined to participate or did not respond. Finally, we recruited through personal contacts, all of whom agreed to participate. Our participants came from community organizations (61.3%), church youth groups (18.5%), and personal contacts (20.2%).

A letter or email was sent to the community center, church, or personal contact, containing an invitation for their students to participate in the study. These letters or emails were followed up by phone calls to the agencies to speak to the agency directors or decision-making adults about the study.

If the directors agreed, we arranged to distribute information to the students' parents (see Appendix A) and schedule a time that was convenient for data collection. Parents received either a letter or email with information about the study, including an explanation of the purpose, the voluntary and confidential nature of the study and the University of Maryland IRB information. The parents that did not want their children to participate in the study were instructed to return an "opt out" form to the school or community center. This form was available in both English and Spanish (see Appendix B). On the scheduled day for data collection, the researcher and/or her assistants went to the agency to administer the study to students whose parents did not opt out. The researchers gave a brief explanation on the study and handed out the assent form, paper surveys, and pencils. Students who agreed to participate (see assent form, Appendix C) and whose parents did not return the opt out form completed the surveys in the classroom. Thirteen students and/or their parents declined participation, and 120 agreed to participate, leading to a 90% return rate. The survey took approximately 30 minutes to complete (with approximately 90 items to answer).

Students completed surveys using paper-and-pencil methods and no names were placed on the surveys. These data were entered into our database by the researcher and undergraduate research assistants. The data was checked by other undergraduate students

and the primary investigator to ensure the data was entered correctly. The data are stored in a locked filing cabinet in an office at the University of Maryland.

Measures

School performance. Students' performance was assessed by asking for their GPA, PSAT score (composite score and subscales for critical reading, math, and writing), and SAT score (composite score and subscales for critical reading, math, and writing). GPA was assessed on a 4 point scale (where a 4.0 is an A average, 3.0 is a B average, 2.0 is a C average, etc.). The PSAT is a standardized test usually taken by high school sophomores and juniors, though it can be taken earlier. Scores for each of the three sections (critical reading, math, and writing) range from 20 to 80 points, so the composite score for the PSAT ranges from 60 to 240 points. The SAT is a standardized college admissions test usually taken by high school juniors and seniors. Scores range from 200 to 800 for each of the three sections (critical reading, math, and writing) and 600 to 2400 for the composite score. Performance has been assessed by GPA, PSAT, and SAT scores in numerous studies (Camara & Echternacht, 2000; Cohn et al., 2004; Hoffman & Lowitzki, 2005; Kim, 2002; Tross, 2000). (See Appendix D). A meta-analysis found that self-reports on high school GPA tend to be correlated to actual GPA ($r = .82$), and self-reports of standardized test scores also correlate to actual standardized test scores ($r = .74$ for Verbal Score, $r = .80$ for Math Score, and $r = .82$ for Total Score) (Kuncel, Credé, & Thomas, 2005).

Ethnic Identity. The Multigroup Ethnic Identity Measure-Revised (MEIM-R, Phinney & Ong, 2007) was administered to measure ethnic identity (See Appendix E). This scale contains six items which are measured on a scale from 1 *(strongly disagree)* to

5 *(strongly agree)* and can be used to measure ethnic identity in any ethnic group. Factor

analyses have supported a two factor structure, with three items on each subscale. The

Exploration subscale contains items about whether the individual has sought information

and experiences relevant to their ethnic identity. An example item for the Exploration

subscale is, "I have spent time trying to find out more about my ethnic group, such as its

history, traditions, and customs." The Commitment subscale contains items about sense

of belonging to the ethnic group. An example item for the Commitment subscale is "I feel

a strong attachment towards my own ethnic group." A mean score was calculated for the

total subscale and/or for the two subscales. In a sample of 241 university students, the

Cronbach's alphas were .76 for exploration, .78 for commitment, and .81 for the

combined 6-item scale (Phinney & Ong, 2007). The authors indicate that the measure can

either be used as two subscales or a total score (Phinney & Ong, 2007).

For this study, we used the total score for ethnic identity. The Cronbach alpha for

the total measure was .89.

College-going support. Most measures of social support that have been used in

career research define support broadly and do not refer to the specific encouragement of

college-going in high school students. We used a modified version of the Career Support

Scale (CSS; Binen, Franta, & Thye, 1995), which measures support from the mother and

father in encouraging students' career goals. The original measure was edited by Flores

and O'Brien (2002) to assess support from both parents together and reduce the number

of items to 10 (See Appendix F). Binen et al. (1995) found the internal consistency to be

.87 for the mother scale and .90 for the father scale. Internal consistency was .76 for the

modified scale (Flores & O'Brien, 2002). The scale was further modified in this study to

assess for college-going support instead of career support (See Appendix G). For

example, an item that reads, "My parents and I often discuss my career plans" was

changed to "My parents and I often discuss my college plans." Responses were the same

as the original measure and ranged from 1 *(almost never)* to 5 *(almost always)*. In this

study, the alpha for this measure was .82.

     College-going barriers. To measure the students' views on barriers to post-

secondary education, we used the Perceptions of Educational Barriers Scale (PEB;

McWhirter et al., 2000). The original measure had 84 items, where 28 barriers were

presented and each was rated on three dimensions: likelihood of the barrier occurring,

magnitude of the barrier, and estimated difficulty of overcoming the barrier (McWhirter

et al., 2000). Each of the items had response options ranging from 1 *(not at all likely/not*

a barrier/not at all) to 4 *(definitely/huge barrier/extremely difficult)* (McWhirter et al.,

2000). Due to high correlations between the scales, the author stopped using the

magnitude subscale and the difficulty scale (McWhirter et al., 2007; McWhirter, personal

communication, October 27, 2011). The author also indicated in a personal

communication that she has added three items that are relevant to Latina/o high school

students, for a total of 31 items (October 27, 2011). Thus, we will be using only the

Likelihood subscale (see Appendix H). A few sample items include "not talented

enough," "family responsibilities," "racial/ethnic discrimination," "not enough money,"

and "not wanting to move away." One study found for questions about likelihood of

encountering a barrier, the items fell into 6 factors that were either internal or external

barriers: ability and preparation/motivation (internal) and financial, relational,

demographic, and separation (external) (McWhirter et al., 2007). However, only the total

score for the Likelihood scale was used for this study.

The internal consistency for this measure appears to be adequate: Cronbach's

alphas were .96 for the total scale (including the three subscales), and .89 for Likelihood

in a sample of 196 high school sophomores (McWhirter et al., 2000). In another sample

of 140 Mexican American students and 296 White high school students, Cronbach's

alpha was .91 for Likelihood (McWhirter, Salgado, Torres, & Valdez, 2007). McWhirter

et al. (2000) found a 9-week test-retest reliability of .57 in a sample of 95 students. The

Likelihood and Difficulty scales are correlated ($r=.66$), which theoretically is reasonable

because those that perceive barriers are more likely may also see them as more difficult

to overcome (McWhirter et al., 2007). For our sample, the internal consistency for the

Likelihood measure was .93.

College-going self-efficacy. O'Brien, Kivlighan, Jones, & Diaz (2011) created the

college-going self-efficacy scale we used (see Appendix I). This survey contains 22

items. Participants are asked the question, "How confident are you in each of the

following?" and given a list of items which they rate from 1 *(Not confident at all)* to 9 *(A

great deal of confidence)*. A few examples of items include, "Describe the characteristics

of three different colleges" and "Complete the Free Application for Federal Student Aid

(FASFA) financial aid form." For our sample, the Cronbach alpha for this measure was

.95.

Educational goals. Goals for education, including to attend college, were

measured using two items developed from studies by Farmer (Farmer, 1985; Farmer et al.,

1981) and that have been used in previous studies (Flores et al., 2006; Flores et al., 2008;

McWhirter et al., 1998) (see Appendix J). Farmer's items correspond to students'

educational expectations and aspirations (i.e., "What level of education do you expect to

complete?" and "What level of education do you hope to complete?"). Responses ranged

from 1 to 6 (from some high school to professional or doctoral degree). In one study of

105 Mexican American high school students, the two items were averaged and the results

had an alpha of .88 (Flores et al., 2006). In our study, the alpha was .75.

Demographic questionnaire. A demographic questionnaire assessed the following

information: ethnicity, race, age, gender, grade in school, country of origin, country of

origin for mother and father, generation status (i.e., whether they, parents, or

grandparents immigrated), socioeconomic status (asking whether they participate in their

school's free or reduced lunch program), level of education for mother and father, and

language use at home.

Analyses

First, we addressed the missing data. Cases that were missing more than 15% of

the data were eliminated. Then, we used the Expectation-Maximization (EM) algorithm

to provide values for remaining missing data.

Second, we obtained descriptive statistics (i.e., means, standard deviations,

ranges) on all subscales and the continuous demographic variables (e.g., age of students),

and frequencies on the categorical variables (e.g., parents' level of education).

Third, we checked the assumptions for conducting regressions (linearity,

independence of errors, homoscedasticity, and normality of the error distribution) to

determine if the data could be analyzed using regressions. If the assumptions were met,

we could conduct two hierarchical linear regression equations to investigate the collective

and unique contributions of school performance, ethnic identity, college-going support

and college-going barriers in predicting college-going self-efficacy and educational goals.

Fourth, we tested the moderation hypotheses using eight hierarchical linear

regression equations. We believed that college-going support and college-going barriers

would be moderators in the relationship between school performance and college-going

self-efficacy, school performance and educational goals, ethnic identity and college-

going self-efficacy, and ethnic identity and educational goals. First, we tested college-

going support and college-going barriers as moderators between school performance and

college-going self-efficacy. Since the predictor and moderator variables were both

measured on continuous scales, they were standardized by creating z-scores for the

scales. This was done to reduce problems associated with multicollinearity in calculating

regressions.

Two interaction terms were created where standardized scores of performance

(i.e., GPA) scores were multiplied by the standardized college-going support measure and

standardized scores of performance were multiplied by the standardized college-going

barriers measure. For the first hierarchical regression equation to predict college-going

self-efficacy, we entered school performance, college-going support, and finally a step

with the moderator variable (performance multiplied by support). If the interaction term

contributed unique variance above and beyond that accounted for by the predictor

variables, we would assume that college-going support was a moderator in the

relationship between performance and college-going self-efficacy. If the step was not

significant, then it would be eliminated. For the second hierarchical regression, the same

process would be repeated but with college-going barriers instead of college-going support entered as the potential moderator.

This process was repeated to test college-going support and college-going barriers as moderators between performance and educational goals. Then, it was repeated to test college-going support and college-going barriers as moderators between ethnic identity and college-going self-efficacy. Finally, it was repeated to test college-going support and college-going barriers as moderators between ethnic identity and educational goals.

CHAPTER 4

Results

Missing Data

The survey contained 72 items on key (non-demographic) variables; participants

missing more than 15% (i.e., 11 items) of the data were eliminated from the study. Only

one participant met this criterion and was deleted. Of the remaining 119 participants, 73

had no missing data, 22 had one missing item, 12 had two missing items, and 13 had

between 3 and 7 items missing. We used the Expectation-Maximization (EM) algorithm

to insert values for the missing data.

Descriptive Statistics on Demographics

To address the first purpose of the study, which was to learn more about the

sample's demographic characteristics, as well as levels of school performance, ethnic

identity, college-going support, perceptions of barriers, college-going self-efficacy, and

educational goals, we calculated descriptive analyses for all variables (see Tables 1 and

2). All participants identified as Latina/o. Of the 119 participants, 52.1% identified as

female, and 47.9% as male. The average age was 16 (SD = 1.67), and participants were

fairly evenly distributed throughout the four high school grades (28.6% in 9th grade,

21.8% in 10th grade, 24.4% in 11th grade, and 21.0% in 12th grade). The majority of

participants did not respond to a question on race (54.6%). The remainder of participants

identified as White/Caucasian (20.2%), Biracial (11.8%), Black/African American (5%),

Native American/Indigenous (5%), and Mestizo (mixed White/Native American

ancestry) (3.4%). Twelve participants wrote in a description for "Biracial" and 11 of

these wrote in a term describing their Latina/o identity ("Hispanic," "Latina,"

"Salvadorean," "White and Colombian").

With regards to country of birth, more than half (59.2%) of the participants were

born in the United States. Other participants were born in El Salvador (11.8%), Argentina

(9.2%), Colombia, Dominican Republic, Guatemala (3.4% each), Uruguay, Mexico,

Peru, Paraguay, or did not report a country of birth (all 2.5% or less). Almost all of the

sample's mothers and fathers were born in Latin America (96.7% and 97.5%,

respectively). The countries of birth that appeared most frequently for the mothers were

El Salvador (47.1%), Argentina (10.9%), Mexico (9.2%), Guatemala (7.6%), and

Dominican Republic (5%). For fathers, the most frequent countries of birth were El

Salvador (48.7%), Argentina (10.9%), Guatemala (10.1%), Mexico (9.2%), and

Dominican Republic (5%). Participants identified their generation status most frequently

as second generation immigrants (parents immigrated to the United States and

participants were born here; 57.1%). The other participants identified as first generation

immigrants (37.1%), or third (1.7%) or fourth generation (0.8%). Most of the students

reported either using "mostly" or "only" Spanish at home (44.6%), or equally using

English and Spanish at home (44.5%). A remaining 10.9% used "mostly" or "only"

English at home.

Socioeconomic status can be approximated based on whether students receive free

or reduced price lunch at work. The majority of students in this sample (63.1%) received

free or reduced price lunch, while 36.1% did not (one person did not answer the

question). For a family of four to qualify for a free or reduced lunch, the family income

needed to be below $41,348 for the 2011-2012 school year (Federal Register, 2011).

The majority of the parents of participants had low levels of education. Participants reported that for their mothers, 40.3% had completed only grade school or part of grade school, 29.4% had completed high school. The remaining 5% had an Associate's degree, 16% a Bachelor's degree, and 7.6% a Masters' or professional degree. For the participants' fathers, 44.5% had completed only grade school or part of grade school, 25.2% completed high school, 3.4% had an Associate's degree, 6.7% had a Bachelor's degree and 15.2% had a Masters' or professional degree.

Descriptive Statistics on Variables of Interest

Our second research question was to learn about levels of school performance, ethnic identity, college-going support, perceived college-going barriers, college-going self-efficacy, and educational goals among this sample of Latina/o students (see Table 3).

Performance was measured by GPA, PSAT, and SAT scores; however, only 4 students recalled their PSAT score and 8 students recalled their SAT score, thus, GPA was used as the measure of performance for all analyses. The mean GPA in this sample was 3.0 ($SD = 0.79$).

Overall, the sample had a fairly high mean total score for ethnic identity, at 21.70 ($SD = 5.72$) where the possible range was 6 to 30. Students also reported high levels of family college-going support, with the mean score being 42.84 ($SD = 6.78$) and the possible range being from 10 to 50. The sample reported fairly low levels of perceived college-going barriers, with an average score of 49.39 ($SD = 14.80$) and the possible range being from 31 to 124. The barriers that were most highly endorsed were "not enough money" (93 students indicated it was maybe, probably, or definitely a barrier)

and "school/program very expensive" (79 students). Twenty two students indicated their legal status was potentially a barrier to college.

The sample also had a moderately high level of college-going self-efficacy, with a mean score of 145.04 ($SD = 35.82$) for scores that could range from 22 to 198. The mean level of educational goals was 9.22 ($SD = 2.09$), where scores could range from 2 to 12, suggesting that most students in the sample plan to complete a Bachelor's or Master's degree.

Correlational Analyses

Correlations were calculated among all variables of interest (see Table 3). Correlations that were significant at the .01 level are discussed as follows. GPA correlated positively with ethnic identity ($r = .41$), support ($r = .37$), college-going self-efficacy ($r = .49$), and educational goals ($r = .48$), and negatively with barriers ($r = -.35$). Ethnic identity also correlated positively with support ($r = .34$), college-going self-efficacy ($r = .47$), and educational goals ($r = .37$), and negatively with barriers ($r = -.31$). Support correlated positively with college-going self-efficacy ($r = .53$) and educational goals ($r = .47$), and negatively with barriers ($r = -.59$). Barriers were correlated negatively with college-going self-efficacy ($r = -.43$) and educational goals ($r = -.48$). College-going self-efficacy correlated positively with educational goals ($r = .59$).

Post hoc analyses of the correlations between demographic variables and variables of interest revealed additional relationships. Mother's education level correlated positively with their children's GPA ($r = .45$), support ($r = .30$), college-going self-efficacy ($r = .26$), and educational goals ($r = .32$), and was correlated negatively with barriers ($r = -.38$). Father's education level correlated positively with their children's GPA

($r = .52$) , ethnic identity ($r = .30$), support ($r = .30$), college-going self-efficacy ($r = .25$),

educational goals ($r = .30$), and negatively with barriers ($r = -.45$). Language spoken at

home correlated positively with ethnic identity ($r = .30$) and had no relationship with the

other variables.

Linear Regressions

       Prior to conducting regressions, we determined that the data met the assumptions

of linearity, independence of errors, homoscedasticity, and normality of the error

distribution. The second purpose of this study was to examine the contributions of school

performance, ethnic identity, college-going support, and college-going barriers to

college-going self-efficacy. To address this purpose, a hierarchical linear regression was

conducted, with college-going self-efficacy as the outcome (see Table 4). In the first step

for this regression, GPA was entered. In the second step, ethnic identity was entered. In

the third step, college-going support was entered. In the fourth step, college-going

barriers were entered. The variables collectively accounted for 39% of the variance, with

GPA (24%), ethnic identity (8%), and college-going support (7%) contributing to the

prediction of college-going self-efficacy. GPA was the only variable that contributed

unique variance when all variables were entered into the equation.

       The third purpose of the study was to examine the contributions of school

performance, ethnic identity, college-going support, and college-going barriers to

educational goals. To address this purpose, a hierarchical linear regression was

conducted, with educational goals as the outcome (see Table 5). In the first step for this

regression, GPA was entered. In the second step, ethnic identity was entered. In the third

step, college-going support was entered. In the fourth step, college-going barriers were

entered. The variables collectively accounted for 32% of the variance, with only GPA

(23%) contributing to educational goals. Again, GPA was the only variable that

contributed unique variance when all variables were entered into the equation.

Moderation regressions

The fourth purpose of the study was to test whether college-going support and

college-going barriers were moderators in the relationship between school performance

and college-going self-efficacy (see Tables 6 and 7). To test whether college-going

support was a moderator between performance and college-going self-efficacy, we first

entered GPA, then college-going support, and finally, an interaction term created by

multiplying the z-scores for GPA by the z-scores for college-going support (see Table 6).

The model collectively accounted for 38% of the variance in college-going self-efficacy.

Variance was accounted for by GPA (24%), college-going support (10%), and by the

moderator variable, GPA multiplied by support (4%). The hypothesis on this moderation

variable was supported, meaning that the effect of GPA on college-going self-efficacy

depended on the level of support (See Figure 9). When GPA was high, and support was

high, college-going self-efficacy was higher, but if GPA was high and support was low,

college-going self-efficacy was lower. Support did not make as much of a difference for

students with low GPAs.

To test whether college-going barriers were a moderator between performance

and college-going self-efficacy, we first entered GPA, then college-going barriers, and

finally an interaction term created by multiplying the z-scores for GPA and the z-scores

for barriers (see Table 7). The model collectively accounted for 30% of the variance, with

GPA (24%) and barriers (7%) contributing to college-going self-efficacy, but not the moderator variable (GPA multiplied by barriers).

The fifth purpose of the study was to test whether college-going support and college-going barriers were moderators in the relationship between school performance and educational goals (see Tables 8 and 9). To test whether college-going support was a moderator between school performance and educational goals, we first entered GPA, then support, and third, an interaction term created by multiplying the z-scores of GPA by the z-scores for support (see Table 8). The model collectively accounted for 30% of the variance, with GPA (23%) and support (5%) contributing to educational goals, but not the moderator (GPA multiplied by support).

To test whether college-going barriers were a moderator between school performance and educational goals, we first entered GPA, then barriers, and then the interaction term created by multiplying the z-scores for GPA by the z-scores for barriers (see Table 9). The model collectively accounted for 30% of the variance, with GPA (23%) and barriers (6%) contributing to educational goals, but not the moderator variable (GPA multiplied by barriers).

The sixth purpose of the study was to test whether college-going support and college-going barriers were moderators in the relationship between ethnic identity and college-going self-efficacy (see Tables 10 and 11). To test whether college-going support was a moderator between ethnic identity and college-going self-efficacy, we first entered ethnic identity, then support, and then an interaction term created by multiplying z-scores for ethnic identity by z-scores for support (see Table 10). The model collectively accounted for 37% of the variance, with ethnic identity (22%) and support (15%)

accounting for variance in college-going self-efficacy, but not the moderator variable (ethnic identity multiplied by support).

To test whether college-going barriers were moderators between ethnic identity and college-going self-efficacy, we first entered ethnic identity, then barriers, and third the interaction term created by multiplying the z-scores for ethnic identity by the z-scores for barriers (see Table 11). The model collectively accounted for 31% of the variance in college-going self-efficacy, with ethnic identity (22%) and barriers (9%) accounting for variance, but not the moderator variable (ethnic identity multiplied by barriers).

The seventh purpose of the study was to test whether college-going support and college-going barriers were moderators in the relationship between ethnic identity and educational goals (see Tables 12 and 13). To test whether college-going support was a moderator in the relationship between ethnic identity and educational goals, we first entered ethnic identity, then support, and then the moderator created by multiplying z-scores for ethnic identity by z-scores for support (see Table 12). The model collectively accounted for 29% of the variance in educational goals, with ethnic identity (13%) and support (14%) uniquely contributing, but not the moderator variable of ethnic identity multiplied by support.

To test whether college-going barriers were moderators in the relationship between ethnic identity and educational goals, we first entered ethnic identity, then barriers, and then an interaction term created by multiplying z-scores for ethnic identity by z-scores for barriers. The model collectively accounted for 29% of the variance in educational goals, with ethnic identity (13%) and barriers (15%) contributing, but not the moderator variable of ethnic identity multiplied by barriers.

Posthoc Analyses

Several posthoc MANOVAS were run to assess differences on the measures based on several demographic variables. In particular, we were interested in assessing differences in results for students by grade level, gender, and socioeconomic status (measured by whether they received free or reduced lunch in school). First, we ran three MANOVAS to assess whether differences in grade level were found on support and barriers, ethnic identity and generation status, and GPA, college-going self-efficacy, and goals. None of these MANOVAS revealed significant results, suggesting grade level was not related to the variables of interest.

Second, we ran three MANOVAS to assess whether gender differences existed on support and barriers, ethnic identity and generation status, and GPA, college-going self-efficacy, and goals. None of these MANOVAS revealed significant results, suggesting that gender differences were not on the variables of interest.

Third, we ran three MANOVAS to assess whether there were differences in free/reduced lunch status in support and barriers, ethnic identity and generation status, and goals. A one-way MANOVA revealed a significant multivariate effect for free/reduced lunch status when predicting support and barriers, Wilks' $\lambda = .87$, $F (2, 115) = 8.73$, $p < .00$. Power to detect the effect was .97. Given the significance of the overall test, the univariate main effects were examined. Significant univariate main effects for free/reduced lunch status were obtained for barriers, $F (1, 116) = 17.33$, $p < .00$, power = .99. Students who received free/reduced lunch reported more barriers. The mean number of barriers reported by students who received free/reduced lunch was 53.56 (*SD* =

14.28), while the mean number of barriers reported by students who did not receive free/reduced lunch was 42.54 (SD = 13.00).

In addition, a one-way MANOVA revealed a significant multivariate effect for free/reduced lunch status when predicting GPA, college-going self-efficacy, and goals, Wilks' λ = .83, F (3, 92) = 6.13, p < .00. Power to detect the effect was .96. Significant univariate main effects for free/reduced lunch status were obtained for GPA, F (1, 94) = 12.06, p <.00, power = .93; and for goals, F (1, 94) = 8.38, p <.01, power = .82. Students who received free/reduced lunch had a lower mean GPA. The mean score for their GPA was 2.77 (SD = .84) compared to students that did not receive free/reduced lunch, who had a mean GPA of 3.32 (SD = .60). When comparing educational goals, students who received free/reduced lunch reported lower goals, with a mean score of 8.73 (SD = 2.11), compared to students who did not receive free/reduced lunch, who had a mean score of 10.00 (SD = 1.74).

CHAPTER 5

Discussion

This study furthered understanding of the career development of Latina/o high school students living in the Washington, DC metropolitan area (including the District of Columbia and nearby suburbs in Maryland and Virginia). Previous research has shown that Latina/o students have high academic aspirations (McWhirter et al., 1998), but low expectations for realistically achieving their academic goals (Flores et al., 2008). In this study, we learned that GPA was the most important contributor to both college-going self-efficacy and educational goals for these students, which may explain the difference between aspirations and expectations. Students may be basing their college-going self-efficacy and educational goals on their academic performance in high school. In addition, college-going support from family moderated the relationship between GPA and college-going self-efficacy, such that for students with a high GPA, high levels of support were related to higher self-efficacy, while students that had a high GPA but lower support had lower self-efficacy. Levels of family support were less important for students with a lower GPA, who tended to have low college-going self-efficacy.

The group of students in this study could be considered at-risk in that they came from low-income families and had parents with low levels of education. Not surprisingly, parents' levels of education correlated with their children's GPA, and their children's reports of college-going support, college-going barriers, college-going self-efficacy and educational goals. This suggests that the more formal education received by parents, the more support they were able to provide for their children's academic success and academic goals. Most of the students in this study were born in the United States, but had

parents born in diverse Latin American countries (mainly Central America). Consistent with previous research, most of the students were second generation (Risco et al., 2011).

As expected, since the sample was mainly low-income (as indicated by the majority receiving free or reduced lunch), the barriers to college that were most often reported were financial barriers. These also were the most common barriers noted in other studies (Luzzo & Jenkins-Smith, 1996). In posthoc analyses, we found that students' perceptions of barriers, their GPA, and their educational goals differed based on whether or not they received free or reduced lunch. Students who received free or reduced lunch perceived more barriers to college, had lower GPAs, and had lower educational goals compared to students that did not receive free or reduced lunch. This suggests that socioeconomic status plays a critical role in the obstacles that students perceive; it also relates to their ability to do well in school, and their goals for the future. Notably, in this study, free or reduced lunch status did not relate to their confidence in their ability to go to college. Furthermore, gender and grade level did not appear to be important factors in predicting the variables we studied.

One of the most important findings of the study was that GPA was the only unique predictor of college-going self-efficacy. This underscores the importance of including a measure of school performance when investigating predictors of vocational and career goals for Latina/o high school students. Though many studies have shown a link between GPA and college performance (Camara & Echternacht, 2000; Cohn et al., 2004; Hoffman & Lowitzki, 2005; Kim, 2002; Tross, 2000), previous studies on Latina/o high school students have neglected to include GPA as a predictor for college-going self-efficacy. Vocational research has been criticized for focusing on self-efficacy and

confidence in predicting career choice, while ignoring a known contributor, cognitive ability (Lubinski, 2010). In this study, we measured school performance as one type of ability. We used GPA as the first step in our regressions, to determine if other factors contributed over and above the contribution of school performance. We found that the other factors did not uniquely contribute variance after GPA was included, suggesting that either the factors are less important, or they may share variance with GPA.

Several previous studies had demonstrated the importance of parental support for educational goals and/or self-efficacy (Flores & O'Brien, 2002; McWhirter et al., 1998; Navarro et al., 2007; Torres & Solberg, 2001), but this is the first study to show for which particular students support is most important. Of significant interest was the finding that the effect of GPA on college-going self-efficacy depended on college-going support from the student's family. When students had support from their families, there was a stronger relationship between GPA and college-going self-efficacy, such that students with a high GPA and high support had higher self-efficacy. Without support from their parents, the relationship between GPA and college-going self-efficacy was weaker, so even if students had a high GPA, if they lacked support, they had lower college-going self-efficacy. For example, a student who earns a 4.0 but whose parents do not support their goal of going to college will have less confidence in their ability to go to college, compared to a student with the same GPA whose parents encourage them to pursue college. Our results suggest that even students with high GPAs need family support to feel confident in their ability to go to college.

It is possible that for students with a low GPA, family support that is focused on a high goal (such as encouraging college attendance) may be experienced as stressful or

pressure to achieve something that feels out of reach. It also is possible that perhaps a

feedback loop is formed between parents and children, so that when students

underperform, parents may stop supporting the educational goals of their children, or they

may focus on more proximal goals (for example, passing all their classes that semester,

rather than going to college, or focusing on keeping their children safe from negative peer

influences).

Ethnic identity also contributed to college-going self-efficacy, over and above

grade point average, although it was not a unique contributor when all variables were

considered. This may mean that ethnic identity is related to and shares variance with the

other variables in the study. It is interesting to note that ethnic identity was positively

related to GPA, suggesting that students who have a sense of pride and belonging to their

ethnic community are more likely to have high GPAs, which was shown in our study to

relate to feelings of confidence in completing the tasks necessary for college. The

positive relationship between ethnic identity and college-going self-efficacy may reflect

an overarching positive self-esteem.

In predicting educational goals, we found similar support for the importance of

school performance. GPA was the sole unique contributor for predicting educational

goals. This result suggests that Latina/o students may base their educational goals on

appraisals of their academic performance in high school. Moreover, teacher support and

encouragement may be based on academic performance so students who are doing well

in school may be receiving messages from teachers (and family) regarding their pursuing

higher education. There was no support for any of the proposed moderators in this

relationship, which suggests that there is a direct relationship between GPA and

educational goals. It is possible that the sample size and low power made it difficult to find a moderator effect.

It is also notable that when GPA was included in the equation, neither ethnic identity, nor college-going support, nor college-going barriers made contributions to educational goals. In this study, environmental variables did not appear to be as important as academic performance. Very few previous studies of Latina/o high school students have included GPA as a predictor variable, so this may be why environmental variables have been viewed as salient in other studies (Risco et al., 2011). It may be that students with a high GPA generally have a positive ethnic identity, receive teacher and family support, and perceive fewer barriers, reflecting shared variance among these constructs. It also is possible that ethnic identity, college-going support, and college-going barriers are all contributing to the GPA that the student is able to achieve. GPA may also predict more unique variance because it is more of a concrete, precise factor than complex environmental variables.

Another finding of the study, which went against our predictions, was that barriers did not appear to contribute variance to either college-going self-efficacy or educational goals. Perhaps barriers shared variance that was covered by support. These two variables were highly correlated. This may have been because the perception of barriers could be very similar to a perception of lack of support, meaning that these could be two sides of the same continuum. It could also be because the study lacked method variance, as all of our measures were self-reported surveys. Another possibility was that this group of students did not believe barriers would impede their access to college, or they underestimated the barriers because they are not currently facing them yet. Moreover,

barriers likely contributed to the GPA a student was able to achieve. Finally, other barriers that were not listed could play a role (for example, not having enough information about applying for financial aid, not having role models, no access to SAT prep classes).

Strengths of the Current Study

One of the main strengths of this study was that the sample of students surveys is a population that has been understudied in psychology. There has not been a lot of research on Latina/o students overall, but the Latina/o students included in this study are especially difficult to access for research, because they come from mainly low income families and have parents with low levels of education. These also are the students who are most at risk for not going to college. Thus, studying this population offers a window of opportunity to more deeply understand the challenges of underprivileged students and find ways to intervene and help them continue their education.

One of the main critiques of previous research on the career development of Latina/o students was that it lacked domain specificity in the variables studied (Risco et al., 2011). Since we were most interested in educational goals, it was important to study variables that would be specific to college. Researchers have emphasized the importance of domain specificity for self-efficacy, because people can have different levels of self-efficacy in different areas of their lives (Bandura, 1994). Adolescents may find that they have parental support in some areas but not others, and may also perceive more barriers to some goals than others. This study looked at college-going self-efficacy, college-going support, and college-going barriers, which ensured examination of related variables.

A third strength of this study was the inclusion of school performance in addition to variables from social cognitive career theory. Research in career development has been critiqued for not including a concrete measure of ability as a predictor (Risco et al., 2011). Ability has been shown to an important predictor of educational and vocational development (Lubinski, 2010). Although many studies have shown self-efficacy also is a predictor, these studies have not shown that self-efficacy explains outcomes over and above academic performance, which may be a realistic measure of whether someone can succeed in college (Lubinski, 2010). Indeed, our results indicated that performance is perhaps the most important predictor of both college-going self-efficacy and educational goals.

Limitations

There were also several limitations to the study. The study was correlational, so though we can see relationships between the variables, we cannot determine causation. Due to the difficulties collecting data from this sample, the Latina/o students surveyed were heterogeneous in backgrounds. It may be helpful if in the future researchers can focus on one particular group, especially groups that have not been studied as frequently (i.e., Central Americans whose families earn below a certain income). Also, the students that were in higher grades in our sample were students that persevered through high school, so they may be different from students that dropped out earlier. Due to our recruitment methods, we sampled mostly students that are active in community organizations or church youth groups, who may be different from students that are uninvolved in activities. With a larger sample size at a setting like a school, we may have been able to generalize to a larger group of students. A larger sample also could have

made it easier to see the relationships between the variables of interest, or find more support for moderators. Additional connections would need to be made with community agencies or schools to obtain a larger sample. Offering incentives to every student could increase participation. If a future study could obtain grant funding, it would be possible to offer incentives.

Due to social desirability, students may have over-reported their college-going self-efficacy, goals to go to college, GPA, ethnic identity, and levels of family support, while underreporting perceived barriers. They may not have wanted to admit to low levels of support from their family, or whether they had doubts about their ability to go to college. GPA was self-reported, and it may have been more reliable to get reports of GPA directly from their schools. Also, students did not recall their PSAT or SAT scores, or had not yet taken these standardized tests. It would be helpful to compare GPA to other types of academic performance.

Also, there were some limitations in the measures that were available. For example, the goals measure was a two-item measure. College-going self-efficacy is a newer area of research, so this measure did not have established psychometric properties. This measure needs to be tested with additional samples and factor analyzed to determine the invariance of the structure of the instrument. Family college-going support also was a modified measure, with need of additional evaluation.

Finally, it is also possible that students may not understand the steps needed to attend college. They may look at the self-efficacy items, and think that they can do them, but not have a realistic perception of what it takes to gain admission to and attend college. They also may not be aware of the barriers that exist until they encounter them in

the application process. It might be interesting to research the degree to which schools prepare students to understand the steps needed to attend college.

Future Directions

Additional research is necessary to further understand Latina/o high school students' college-going self-efficacy and educational goals. Larger, more representative samples may be possible if researchers are able to recruit through schools and offer incentives to students. There are many bureaucratic steps necessary to gain approval in schools, which made it impossible to recruit that way for this study (which was a time-limited dissertation).

Research also may examine other factors that contribute to college-going self-efficacy and educational goals. For example, research may study personality factors, such as self-esteem, perseverance, and self-discipline, knowledge about college (for example knowledge about how to write application essays, how to apply for financial aid). Research should also expand on environmental factors, such as support from peers and teachers, school resources, presence of mentors, neighborhoods, school districts, students' experiences of racism, and whether the school has a college preparation emphasis. Socioeconomic status seems to be an especially important factor that needs to be included in all future research on Latina/o students' career development.

It may also be interesting to study how parental support may change over time throughout a student's high school career, and what factors may lead to a parent not providing support for educational goals.

Another important suggestion for research is to study behavioral outcomes. Students would need to be followed over a longer period of time. For example, studies

that tested students both while they were in high school and several years later could help

clarify which variables contribute to outcomes such as application to college, college

attendance, college GPA, and graduation from college.

Another direction for future research is to develop and test an intervention to help

Latina/o high school students increase their college-going self-efficacy, and plans to go to

college. This could be tested in an experimental study, and if the intervention were

supported, it could have important social justice implications for this group of at-risk

students. Researchers may pursue grants to fund an intervention testing study. Given the

findings of this study, interventions should be aimed at improving the GPA of Latina/o

high school students, and increasing family college-going support, especially for students

who have high GPAs.

Finally, researchers could also further knowledge by embedding future studies in

the ecological model. At each of the levels of analysis in the ecological model, more

variables could be added to understand Latina/o college students and their educational

goals. For example, at the microsystem, potential variables could be SES, school

performance, college-going self-efficacy, educational goals, and educational resources

available at home. At the mesosystem, researchers could study relationships between

different parts of the microsystem (for example, how teachers perceive students' SES and

interests, how teachers perceive students' goals, or how parents may react to their

children's grades and aspirations). At the exosystem, researchers could study students'

neighborhoods and community resources (safety of the neighborhood, availability of

transportation to school, etc.). Finally, at the macrosystem, researchers could study

institutional values, such as policies that can discriminate against Latinas/os (for

example, whether undocumented students are able to obtain in-state tuition in their states, or policies about tracking students based on their perceived abilities).

Implications for Practitioners

Our results suggest that two interventions may be needed for Latina/o youth who experience poverty; one for students with lower academic performance, and one for students with higher academic performance. First, there is a group of Latina/o students that need support to improve their academic performance. Helping students do better in school would most likely increase their college-going self-efficacy and educational goals. Psychologists should advocate for increasing resources to schools with low-income Latina/o students; for example, decreasing class sizes, or improving the quality of books, teachers, access to after-school tutoring, and access to low-cost or free SAT prep classes. When possible, students in public school should be engaged in learning through technology, encouraging critical thinking, using current events, and service activities. Interventions may begin at earlier levels, such as preschool, elementary school, and middle school, so that students arrive at high school ready for academic challenges. It is important to not to conclude from this study that the relationships between GPA and college-going self-efficacy and GPA and educational goals mean that the current low rates of college attendance among Latinas/os are due to lower intrinsic intelligence; academic performance may be tied to the low quality of schools that many Latina/o students attend.

For students who demonstrate high academic performance, we found that family support was important in predicting college-going self-efficacy. To increase family support, it is important to provide bilingual training and workshops about college for

parents, at hours that are convenient for parents who work. Most of the students in this sample endorsed speaking mainly Spanish at home, so it would be important to provide resources in Spanish and have Spanish-speaking professionals available to answer parents' questions. Most of the students' parents did not have college educations, and since they were mainly immigrants, they may not have knowledge of the American educational system. Families could be educated in these workshops not only on the importance of college, but also gain practical advice about how to apply for financial aid and scholarships, how to help their children in the college application process, and how to emotionally support their children in the transition to college. Parents may also be provided with trainings earlier in their children's development, to support their academic achievement throughout school.

Therapists and teachers working with Latina/o high school students may also want to consider the importance of helping their clients or students build their ethnic pride and sense of ethnic identity, since this seems to be related positively to GPA and college-going self-efficacy. It is important to use books and teaching materials that are representative of diverse students, for example, reading literature on Latina/o inspirational individuals, and learning about Latin American history and the history of Latinas/os in the United States. Latina/o students also would benefit from having role models and mentors of their own ethnicity.

It also is important for practitioners to advocate for Latina/o high school students on a larger, societal level. Many of our participants indicated that financial barriers were a difficulty in accessing college, and their socioeconomic status appeared to relate to their GPA and educational goals as well. Psychologists can lobby for reducing the costs of

higher education, making more need-based scholarships available, and providing more work-study opportunities for low-income students. Some of our participants also indicated that legal status could be a barrier to college. Psychologists can support the Dream Act, which will help undocumented Latina/o students attend college at in-state tuition rates, and gain a path to citizenship. Wide scale immigration reform is necessary to help bring undocumented Latina/o families out of the shadows, reduce fears about deportation and separating families, and give equal opportunities to undocumented youth who were brought to the United States as children.

Conclusion

To conclude, this study examined predictors of college-going self-efficacy and educational goals in a sample of Latina/o high school students. Important findings included that school performance was a key predictor of college-going self-efficacy, and this relationship was moderated by family's college-going support. For students with a high GPA, having support was linked to higher college-going self-efficacy, while students that had a high GPA but low support had lower self-efficacy. Students with lower GPA had lower college-going self-efficacy regardless of the level of support they reported. Another important finding was that school performance was the main predictor of educational goals. Socioeconomic status also related to students' perceptions of barriers, their GPA, and their educational goals. Further research will be necessary to determine what other factors may contribute to college-going self-efficacy and educational goals. We hope that these findings will contribute to increasing the number of Latina/o students pursuing and receiving college educations. After replication, the findings from this research may be used to provide the foundation for an empirically

tested intervention to improve Latina/o students' academic performance, as well as their

college-going self-efficacy and educational goals. Finally, this research can be used to

advocate for academic resources for Latina/o students at the national level to ensure

access to quality education and occupational opportunities for those at risk in our society.

Figure 1. School performance and college-going support predicting college-going self-efficacy in Latina/o high school students.
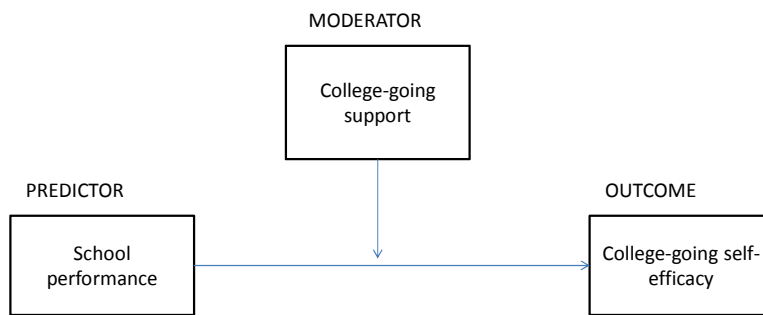
Figure 2. School performance and college-going barriers predicting college-going self-efficacy in Latina/o high school students.
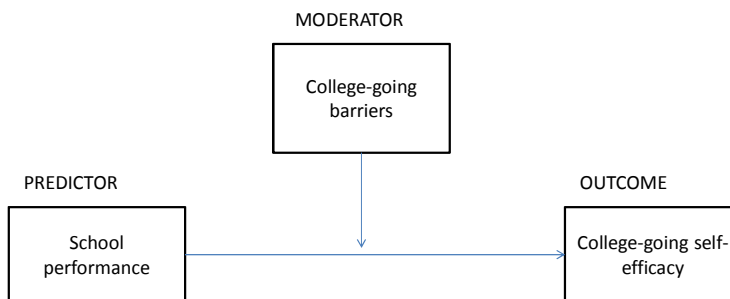
Figure 3. Ethnic identity and college-going support predicting college-going self-efficacy in Latina/o high school students.

MODERATOR

College-going support

PREDICTOR

Ethnic identity

OUTCOME

College-going self-efficacy
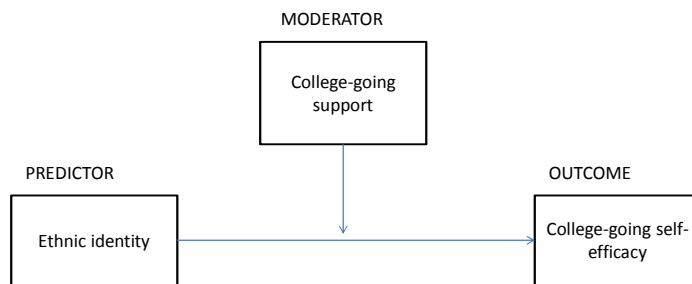
Figure 4. Ethnic identity and college-going barriers predicting college-going self-efficacy in Latina/o high school students.

MODERATOR

College-going barriers

PREDICTOR

Ethnic identity

OUTCOME

College-going self-efficacy
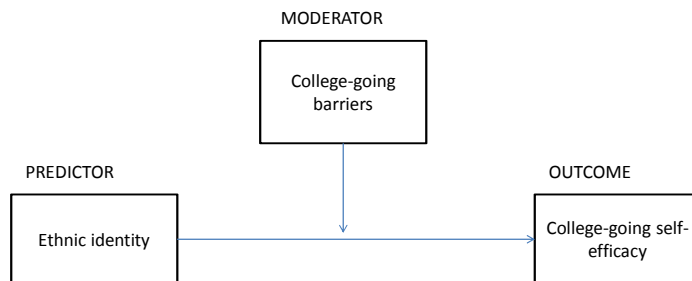
Figure 5. School performance and college-going support predicting educational goals in Latina/o high schools students.

MODERATOR

College-going support

PREDICTOR

School performance

OUTCOME
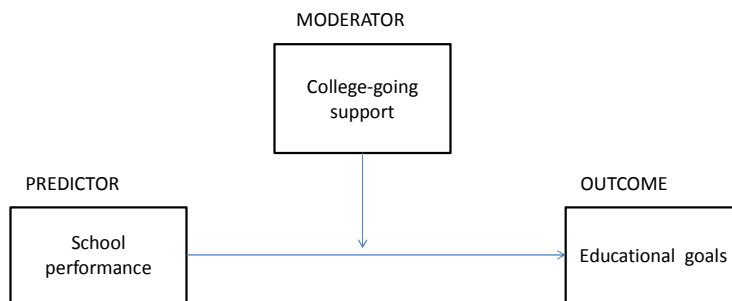
Educational goals

Figure 6. School performance and college-going barriers predicting educational goals in Latina/o high school students.

MODERATOR

College-going barriers

PREDICTOR

School performance

OUTCOME
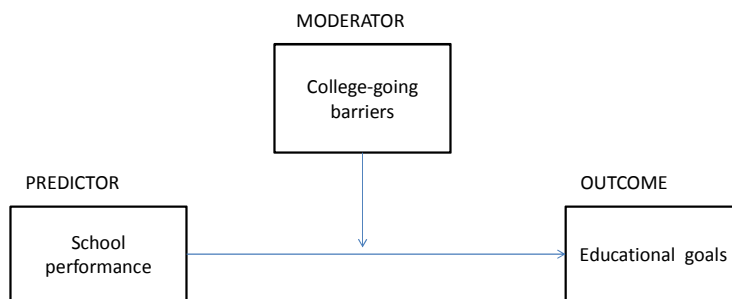
Educational goals

Figure 7. Ethnic identity and college-going support predicting educational goals in Latina/o high school students.
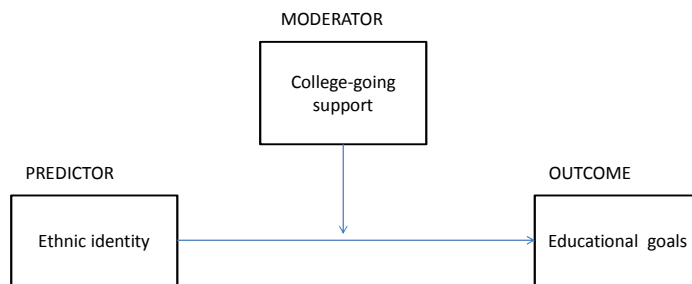
Figure 8. Ethnic identity and college-going barriers predicting educational goals in Latina/o high school students.
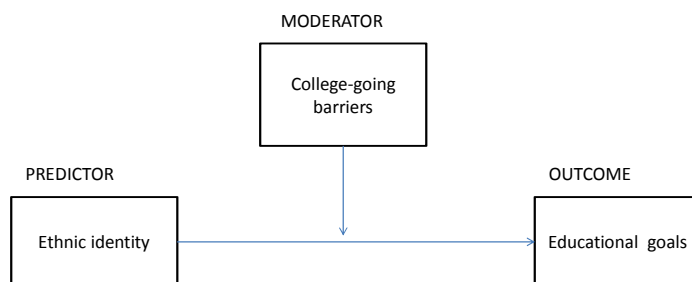
Figure 9. Plot of interaction.
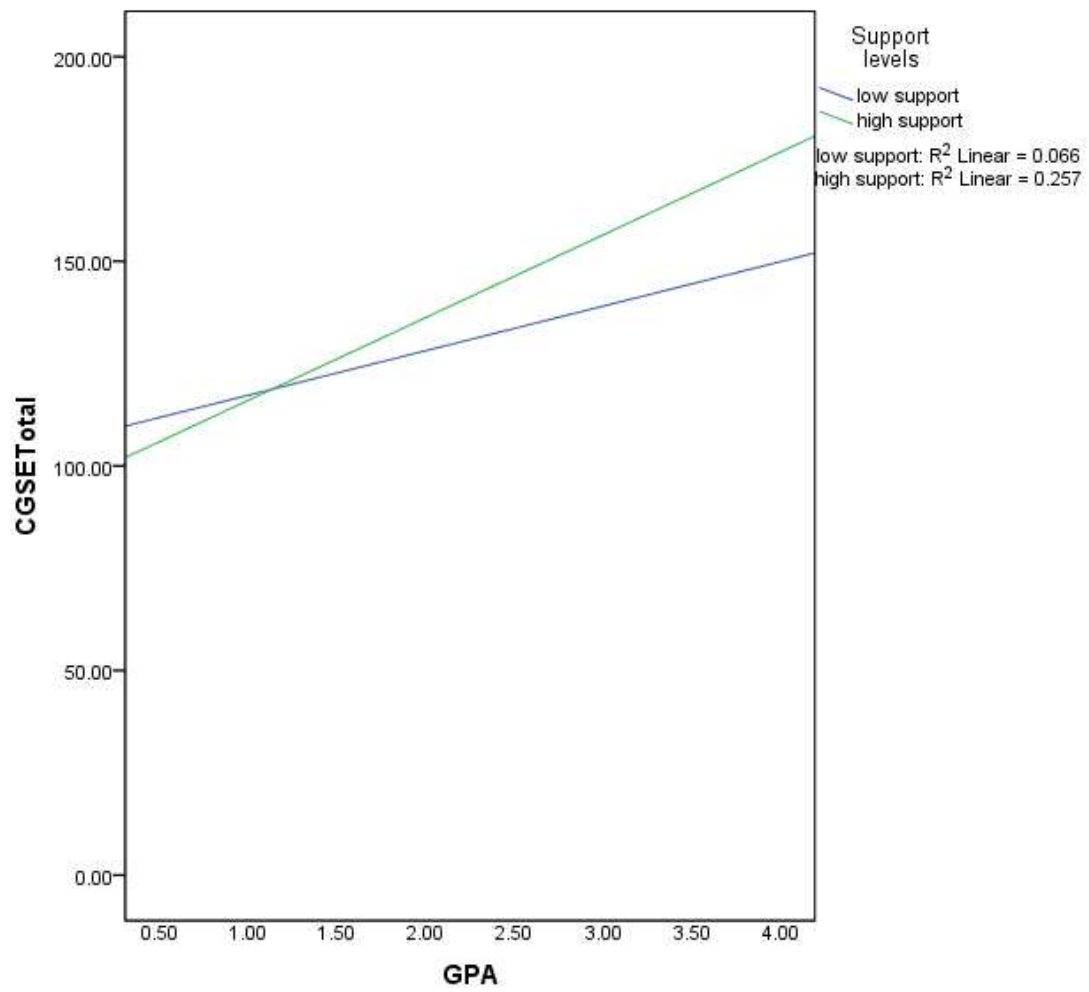
Appendix A

Advertisement to Recruit Participants

ATTENTION LATINA AND LATINO HIGH SCHOOL STUDENTS!

Your help is needed for a research study on Latina and Latino high school students! You can provide researchers with valuable information that will help advance understanding about Latina/o students' confidence in going to college and their goals in education.

This study is being conducted by Ms. Maria Luz Berbery, a doctoral student in counseling psychology, and Dr. Karen O'Brien, a professor in counseling psychology at the University of Maryland, College Park. We want to learn more about your identity and your experiences with education. Our study involves a one-time survey that takes approximately 30 minutes to complete. Your responses will be confidential, and although you will receive no direct benefits, your participation will help researchers understand more about Latina/o students' educational goals. If you would like, after completing the study, you may sign up for a chance to win one of two $50 gift certificates. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

The researchers and their assistants will be visiting your school or community organization at a time that has been agreed upon by the teachers or staff there. If your parents choose to allow you to participate, and you agree to participate, you will fill out the survey. There is no penalty for students who do not want to participate but we greatly appreciate every volunteer's help!

Contact Information:
Maria Luz Berbery, doctoral student   Dr. Karen M. O'Brien, Professor
University of Maryland   University of Maryland
Department of Psychology   Department of Psychology
1147 Biology-Psychology Building   1147 Biology-Psychology Building
College Park, MD 20742   College Park, MD 20742
mberbery@umd.edu   kmobrien@umd.edu or 301.405.5812

Appendix B

Parental Consent (English)

Project Title	*Latina/o High School Students' College-going Self-Efficacy and Educational Goals*
Why is this research being done?	*This is a research project being conducted by faculty and students at the University of Maryland, College Park. We are inviting the students at ___(insert location)_____ to participate in this study because they are high school students who may be considering attending college.* *The purpose of this research project is to understand what relates to Latina and Latino high school students' confidence about going to college and students' educational goals. We will study students' confidence about going to college and their educational goals by studying their feelings about their ethnic identity, social support, possible barriers they may see in the environment, and their grades and PSAT and SAT scores.*
What will your child be asked to do?	*Your child will be asked to be a part of this study by researchers from the University of Maryland. A survey will be administered that is completely voluntary and will take approximately 30 minutes to complete. The students will be asked to complete the surveys to the best of their ability and they may drop out at any time. Example survey items include: (a) What is the highest level of education you hope to complete? (b) How likely is it that not having enough money will be a barrier to going to college? (c) How confident are you in completing three college applications? Upon completing the survey, if your child would like, their name can be entered into a drawing for one of two $50 gift certificates.*
What about confidentiality?	*We will do our best to keep your child's personal information confidential. We will do so by taking the following steps: (1) your child's name will not be included on the surveys and other collected data; (2) a code will be placed on the survey and other collected data. Names will only be necessary on consent forms, which will be kept separately from the rest of the survey. The only people with access to these names will be the two researchers. All completed surveys will be kept in locked cabinets the University of Maryland for data analysis. Once the data are analyzed, a report will be written about the results and your child's identity will be protected to the maximum extent possible. To comply with the University of Maryland policies, the data will be retained for 10 years and then shredded.*

Project Title	*Latina/o High School Students' College-going Self-Efficacy and Educational Goals*
What are the risks of this research?	*There are some risks of participating in this study. The risks are similar to those associated with completing surveys including fatigue. For some participants, survey questions may bring up thoughts associated with college that may be considered stressful or may cause some to feel embarrassed by their answers. If your child is uncomfortable answering a certain question, your child can choose not to answer the question.*
What are the benefits of this research?	*We will share the general findings with the teachers/staff at ___(location)_____ so our work may benefit current and future students. We hope that, in the future, other Latina/o students might benefit from this study through improved understanding of what helps students develop confidence in going to college.*
Does your child have to be in this research? May your child stop participating at any time?	*Your child's participation in this research is completely voluntary. Your child may choose not to take part at all or may choose to stop participating at any time. If your child decides not to participate in this study or if your child stops participating at any time, he or she will not be penalized or lose any benefits to which your child would otherwise qualify.*
What if I have questions?	*This research is being conducted by Maria Luz Berbery, M.S. and Dr. Karen O'Brien at the University of Maryland, College Park. If you have any questions about the research study, please contact Dr. Karen O'Brien at 301.405.5812 or 1147 Biology-Psychology Building College Park, MD 20742, or via email at kmobrien@umd.edu or Ms. Maria Luz Berbery via email at mberbery@umd.edu. If you have questions about the rights your child has as a research participant or wish to report a research-related injury, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@umd.edu; (telephone) 301-405-0678. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.*
MY CHILD <u>CAN</u> PARTICIPATE.	**DO NOTHING. You do not have to return this form if you are willing to have your child participate in this study.**

NO! **MY CHILD <u>CAN NOT</u> PARTICIPATE IN THIS STUDY.** (Fill in these boxes and return form.)	**Name of your child who <u>CAN NOT</u> participate in this study**	
	Signature of the parent who <u>DOES NOT</u> want child to participate in this study	_____
	DATE	_____ / _____ / _____

THANK YOU!

Appendix B, continued

Parental Consent (Spanish)

Título del Proyecto	***Latina/o High School Students' College-going Self-Efficacy and Educational Goals***
¿Por qué se está haciendo esta investigación?	*Este es un estudio conducido por una profesora y una estudiante de la Universidad de Maryland, College Park. Invitamos a los estudiantes de _____ a participar en este estudio porque son estudiantes de high school que podrían estar considerando asistir a una universidad.* *El propósito de este estudio es entender cuales son los factores que se relacionan con la confianza con respeto a ir a la universidad y las metas educativas que tienen los estudiantes de secundaria latinas y latinos. Vamos a estudiar el nivel de confianza de ir a la universidad y metas educativas investigando la identidad del estudiante como latino, el nivel de apoyo que tienen, obstáculos que ven en sus vidas, y sus notas y puntaje en los exámenes de PSAT y SAT.*
¿Qué van a pedir que haga mi hijo?	*Su hijo será invitado a participar en este estudio por las investigadoras de la Universidad de Maryland. Se administrará un cuestionario que es completamente voluntario y tardará aproximadamente 30 minutos en completar. Las investigadoras les explicarán a los estudiantes que deberán completar los cuestionarios lo mejor que puedan y que podrán dejar de participar en cualquier momento. Ejemplos de preguntas incluyen: (a) ¿Qué nivel de educación esperas completar? (b) ¿Cuán probable es que no tener suficiente dinero sea un obstáculo para ir a la universidad? (c) ¿Cuánta confianza tienes en completar tres aplicaciones para la universidad? Cuando termine el cuestionario, si le interesa a su hijo, podrá participar de una lotería donde podrá ganar uno de dos premios de una tarjeta de regalo con $50 de crédito.*
¿Y la confidencialidad?	*Vamos a hacer todo lo posible por mantener privada la informacion personal de su hijo. Tomaremos las siguientes medidas: 1) El nombre de su hijo no estará en los cuestionarios y datos que pedimos. 2) Cada cuestionario recibirá un código para identificarlo. Los nombres solo estarán en los formularios de consentimiento, que se van a guardar en un lugar separado del resto de los cuestionarios. Las únicas personas con acceso a estos nombres serán las dos investigadoras. Los cuestionarios completados serán guardados para poder analizarlos en un gabinete asegurado en la Universidad de Maryland. Después de analizar los datos, vamos a escribir un artículo sobre el resumen de los resultados, pero la identidad de su hijo se protegerá. Para cumplir con la política de la Universidad de Maryland, los datos se guardarán por diez años y después se destruirán.*

Título del Proyecto	***Latina/o High School Students' College-going Self-Efficacy and Educational Goals***
¿Cuáles son los riesgos de este estudio?	*Hay algunos riesgos relacionados con participar en el estudio. Los riesgos son similares a los asociados con completar otros cuestionarios, incluyendo el cansancio. Para algunos participantes, las preguntas pueden traer pensamientos relacionados con la universidad que pueden ser considerados estresantes o las respuestas pueden darles vergüenza. Si su hijo se siente incómodo al contester contestar una pregunta, puede elegir no hacerlo.*
¿Cuáles son los beneficios de este estudio?	*Compartiremos los resultados del estudio con los maestros y ayudantes en ___(location)_____ asi nuestro trabajo puede beneficiar a estos estudiantes y también futuros estudiantes. Nuestro deseo es que, en el futuro, otros estudiantes latinos puedan beneficiarse de este estudio porque habrá mejorado el entendimiento sobre qué cosas pueden ayudar a los estudiantes latinos a desarrollar confianza para ir a la universidad.*
¿Mi hijo tiene que estar en este estudio de investigaciones? ¿Puede mi hijo dejar de participar en cualquier momento?	*La participación de su hijo en este estudio es completamente voluntaria. Su hijo puede elegir no participar o dejar de hacerlo en cualquier momento. Si su hijo decide no participar o dejar de hacerlo, no será penalizado ni perderá ningún otro beneficio para el cual calificaría.*
¿Qué hago si tengo preguntas?	*Este estudio está conducido por Maria Luz Berbery, M.S. y Dra. Karen O'Brien en la Universidad de Maryland, College Park. Si usted tiene preguntas sobre el estudio, por favor contacte Srta. Berbery al email mberbery@umd.edu, o Dra. O'Brien al 301.405.5812o escribiéndole al 1147 Biology-Psychology Building, College Park, MD 20742, or por email al kmobrien@umd.edu. Si tiene preguntas sobre los derechos de su hijo como participante de un estudio o si quiere reportar algun problema relacionado con las investigaciones, por favor contacte: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; (e-mail) irb@umd.edu; (teléfono) 301-405-0678. Este estudio se ha controlado de acuerdo a los procedimientos de la Universidad de Maryland, College Park IRB para estudios de investigaciones que involucran sujetos humanos.*
MI HIJO PUEDE PARTICIPAR.	**NO NECESITA HACER NADA. No hace falta devolver el formulario si está dispuesto a que su hijo participe en este estudio.**
¡NO! **MI HIJO NO PUEDE PARTICIPAR EN ESTE ESTUDIO.** (Complete esta sección y devuelva el formulario.)	**Nombre del hijo que** **NO PUEDE** **participar en este estudio.**
	Firma del padre que NO QUIERE que su hijo participe del estudio. _____ _____ / _____ / _____
	FECHA

¡GRACIAS!

Appendix C

Student Assent

Greetings students! You are being asked to participate in a research project being conducted by faculty and students at the University of Maryland, College Park. We are inviting you to participate in this research project because you are a Latina/o student in high school and you may be considering attending college. The purpose of this research project is to understand what relates to Latina/o high school students' confidence about going to college and their goals for education. We are going to study confidence, goals, ethnic identity, support from parents, and potential barriers in the environment. We also will ask for your GPA and PSAT or SAT score, if you have taken these tests.

A survey will be administered that is completely voluntary and will take approximately 30 minutes to complete. You will be asked to complete the survey to the best of your ability and you may drop out at any time. Upon completing the survey, your name will be entered into a drawing for one of two $50 gift certificates.

We will do our best to keep your personal information confidential. Your name will not be collected on the surveys or data. We will only collect your names on a separate paper if you would like to participate in the drawing. Completed surveys and consent forms will be kept in locked cabinets at the University of Maryland in Dr. O'Brien's office. The information from the surveys will be entered into the computer with no names attached and then will be destroyed. Once the data are analyzed, a report will be written and your identity will be protected to the maximum extent possible.

There are some risks of participating in this study. While completing the survey, you may get tired and you might feel uncomfortable or embarrassed. If you are uncomfortable answering a certain question, you can choose not to answer it. You may choose not to take part at all or may choose to stop participating at any time. If you decide not to participate in this study, you will not be penalized.

We will share the general findings with the teachers or staff at the location you are taking the survey. We hope that, in the future, other students might benefit from this study through improved understanding of what helps students develop confidence in going to college.

This research is being conducted by Maria Luz Berbery and Dr. Karen O'Brien at the University of Maryland, College Park. If you have any questions about the research study, please contact Ms. Berbery by mail at University of Maryland Department of Psychology, 1147 Biology-Psychology Building, College Park, MD 20742 or via email at mberbery@umd.edu. Dr. O'Brien may be contacted at 301-405-5812, by mail addressed to University of Maryland Department of Psychology, 1147 Biology-Psychology Building, College Park, MD 20742 or via email at kmobrien@umd.edu. Concerns can be reported to the IRB (301.405.0678).

Agreement

Your signature indicates that the research has been explained to you; your questions have been fully answered; and you freely and voluntarily choose to participate in this research project.

_____   _____   _____
Name of Study Participant   Signature of Study Participant   Date

Appendix D

School performance

Please indicate the following:

1. Your most recent GPA: _____

2. Have you taken the PSAT? Yes _____

No_____

    (If you have not taken the PSAT, leave the next section blank).

    Your PSAT total score: _____

Critical Reading: _____

Math: _____

Writing: _____

3. Have you taken the SAT? Yes _____

No_____

    (If you have not taken the SAT, leave the next section blank).

    Your SAT total score: _____

Critical Reading: _____

Math: _____

Writing: _____

Appendix E

Ethnic Identity

Multigroup Ethnic Identity Measure—Revised (MEIM—R) (Phinney & Ong, 2007)

What is your ethnic identity? _____

Please rate the following items using this scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. I have spent time trying to find out more about my ethnic group, such as its history,

   traditions, and customs.

2. I have a strong sense of belonging to my own ethnic group.

3. I understand pretty well what my ethnic group membership means to me.

4. I have often done things that will help me understand my ethnic background better.

5. I have often talked to other people in order to learn more about my ethnic group.

6. I feel a strong attachment towards my own ethnic group.

Appendix F

Career Support (Flores & O'Brien, 2002)

Instructions: The following questions concern your relationship with your family. Answer the following items by circling the answer that best represents your experience with your family.

	Almost never		Sometimes		Almost always
1. My family supports my ideas about careers.	1	2	3	4	5
2. My family agrees with my career goals.	1	2	3	4	5
3. My family would have different expectations of my career if I were of the opposite sex.	1	2	3	4	5
4. My family and I often discuss my career plans.	1	2	3	4	5
5. My family understands how hard it can be to pursue a career.	1	2	3	4	5
6. I do not feel support from my family for my career plans.	1	2	3	4	5
7. My family thinks I am headed in the right direction in my career goals.	1	2	3	4	5
8. I feel encouragement from my family to pursue my career goals.	1	2	3	4	5
9. My family encourages me to try new things and learn from my mistakes.	1	2	3	4	5
10. My family thinks I should aim higher in my career goals.	1	2	3	4	5

Appendix G

College-going support (adapted from Flores & O'Brien, 2002)

Instructions: The following questions concern your relationship with your family. Answer the following items by circling the answer that best represents your experience with your family.

	Almost never		Sometimes		Almost always
1. My family supports my going to college.	1	2	3	4	5
2. My family thinks I should go to college.	1	2	3	4	5
3. My family would have different expectations of my going to college if I were of the opposite sex.	1	2	3	4	5
My family and I often discuss my plans to go to college.	1	2	3	4	5
5. My family understands how hard it can be to pursue a college education.	1	2	3	4	5
6. I do not feel support from my family for going to college.	1	2	3	4	5
7. My family thinks going to college is right for me.	1	2	3	4	5
8. I feel encouragement from my family to go to college.	1	2	3	4	5
9. My family encourages me to try new things and learn from my mistakes.	1	2	3	4	5
10. My family thinks I should aim higher in my educational goals.	1	2	3	4	5

Appendix H

Perceptions of Educational Barriers Scale (McWhirter et al., 2000)

MY PERCEPTIONS OF BARRIERS

How LIKELY is it that this will be a barrier for <u>you</u>?

	Not at all Likely	Maybe	Probably	Definitely
1. Not enough money	A	B	C	D
2. Not smart enough	A	B	C	D
3. Not confident enough	A	B	C	D
4. Friends don't support my plans	A	B	C	D
5. Having to work while going to school	A	B	C	D
6. Not fitting in at new school or program	A	B	C	D
7. Takes a long time to finish the training or schooling	A	B	C	D
8. Being married	A	B	C	D
9. Teachers don't support my plans	A	B	C	D
10. Social class discrimination (classism)	A	B	C	D
11. Not being prepared enough	A	B	C	D
12. Family responsibilities	A	B	C	D
13. Lack of motivation	A	B	C	D
14. Not talented enough	A	B	C	D
15. Pressure from my boy/girlfriend	A	B	C	D
16. Sex discrimination	A	B	C	D
17. Racial/ethnic discrimination	A	B	C	D
18. Pregnancy/having children	A	B	C	D
19. Lack of study skills	A	B	C	D
20. Not knowing what kind of school or training I want	A	B	C	D
21. None of my friends are doing what I'm doing	A	B	C	D
22. Not being able to get into the program I want	A	B	C	D
23. Parents don't support my plans	A	B	C	D
24. School too stressful	A	B	C	D
25. Not wanting to move away	A	B	C	D
26. School/program very expensive	A	B	C	D
27. The schooling/training I want not available here	A	B	C	D
28. Others don't think I can do it	A	B	C	D

29. My immigration status	A	B	C	D
30. Parents don't have access to the information I need	A	B	C	D
31. Lack of English language skills	A	B	C	D

Appendix I
College-Going Self-Efficacy

Instructions: Please follow the instructions in each section. Circle your answer. Remember, there are no right or wrong answers.

How CONFIDENT are you in each of the following areas?

Not at all confident	B	Very Little Confidence	D	Some Confidence	F	Quite a Bit of Confidence	H	A Great Deal of Confidence
A	B	C	D	E	F	G	H	I

1. Describe the characteristics of three different colleges.	A	B	C	D	E	F	G	H	I
2. Write an excellent personal statement/essay for college applications.	A	B	C	D	E	F	G	H	I
3. Complete a test preparation course.	A	B	C	D	E	F	G	H	I
4. Talk to an admissions counselor at a college.	A	B	C	D	E	F	G	H	I
5. Obtain emotional support from my parents/guardians to go to college.	A	B	C	D	E	F	G	H	I
6. Score a 3 or better on all of my advanced placement tests	A	B	C	D	E	F	G	H	I
7. State why going to college is important to me	A	B	C	D	E	F	G	H	I
8. Talk to someone at a college about obtaining financial aid for college	A	B	C	D	E	F	G	H	I
9. Know how college will affect my future	A	B	C	D	E	F	G	H	I
10. Complete the Free Application for Federal Student Aid (FASFA) financial aid form.	A	B	C	D	E	F	G	H	I
11. Identify several career goals.	A	B	C	D	E	F	G	H	I
12. Talk to my counselor about applying to college.	A	B	C	D	E	F	G	H	I
13. Describe what a college major is.	A	B	C	D	E	F	G	H	I
14. Save enough money for college.	A	B	C	D	E	F	G	H	I
15. Use the Internet to learn about several colleges.	A	B	C	D	E	F	G	H	I
16. Identify some of the classes that make up a major.	A	B	C	D	E	F	G	H	I
17. Identify colleges that match my abilities.	A	B	C	D	E	F	G	H	I
18. Identify colleges that I have a good chance of being accepted to.	A	B	C	D	E	F	G	H	I
19. Develop test taking strategies to improve my test scores.	A	B	C	D	E	F	G	H	I
20. Receive encouragement from adults to go to college.	A	B	C	D	E	F	G	H	I
21. Develop an alternative plan if none of my top choices for college accept me.	A	B	C	D	E	F	G	H	I
22. Identify college majors that match my interests.	A	B	C	D	E	F	G	H	I

Appendix J

Educational goals

What is the highest level of education you **expect** to complete?

_____ Some high school

_____ Complete high school

_____ Two-year college degree

_____ Bachelor's (4 year) college degree

_____ Master's degree (1 or 2 years of graduate study beyond Bachelor's degree)

_____ Professional level degree (Ph.D., M.D., J.D. or law degree, etc.)

What is the highest level of education you **hope** to complete?

_____ Some high school

_____ Complete high school

_____ Two-year college degree

_____ Bachelor's (4 year) college degree

_____ Master's degree (1 or 2 years of graduate study beyond Bachelor's degree)

_____ Professional level degree (Ph.D., M.D., J.D. or law degree, etc.)

Appendix K

Demographics Questionnaire

1. Are you Latina or Latino?

    Yes _____ No_____

2. What is your race (select one)?

    White/Caucasian _____

    Black/African American _____

    Native American _____

    Mestizo (mixed White/Native American ancestry)_____

    Asian _____

    Biracial (please indicate) _____

3. Place of birth: _____

4. Mother place of birth: _____

5. Father place of birth: _____

6. Age: _____

7. Gender:

    Female _____

    Male_____

    Transgender _____

8. Grade in school:

    9th _____

    10th _____

    11th _____

12th _____

9. Which generation in your family immigrated to the United States?

    a.) I was born in another country and immigrated to the United States ____

    b.) My parents immigrated to the United States and I was born here _____

    c.) My grandparents immigrated to the United States and my parents were

    born here _____

    d.) Older generations immigrated to the United States and my grandparents

    were born here _____.

10. Do you participate in your school's free or reduced lunch program?

    Yes _____   No_____

11. Mother's level of education:

    _____ Some grade school

    _____ Grade school

    _____ High school

    _____ Two-year college degree

    _____ Bachelor's (4 year) college degree

    _____ Master's degree (1 or 2 years of graduate study beyond

                Bachelor's degree)

    _____ Professional level degree (Ph.D., M.D., J.D. or law degree, etc.)

12. Father's level of education:

    _____ Some grade school

    _____ Grade school

    _____ High school

_____ Two-year college degree

_____ Bachelor's (4 year) college degree

_____ Master's degree (1 or 2 years of graduate study beyond

Bachelor's degree)

_____ Professional level degree (Ph.D., M.D., J.D. or law degree, etc.)

Table 1
Demographic characteristics of the sample (N = 119)

Variable	N	%
Latina/o		
Yes	119	100%
No	0	0%
Recruitment Setting		
Community center	73	61.34%
Personal contact	24	20.17%
Church youth group	22	18.49%
Gender		
Female	62	52.1%
Male	57	47.9%
Transgender	0	0%
Race		
No answer	65	54.6%
White	24	20.2%
Biracial	14	11.8%
Black	6	5.0%
Native American	6	5.0%
Mestizo	4	3.4%
Birth country (student)		
USA	71	59.7%
El Salvador	14	11.8%
Argentina	11	9.2%
Dominican Republic	4	3.4%
Guatemala	4	3.4%
Colombia	4	3.4%
Uruguay	3	2.5%
Mexico	2	1.7%
Peru	2	1.7%
Paraguay	1	0.8%
No response	3	2.5%
Free or reduced lunch		
Yes	75	63%
No	43	36.1%
No response	1	0.8%
Grade		
9th grade	34	28.6%
10th grade	26	21.8%
11th grade	29	24.4%
12th grade	26	21.8%
No response	4	3.4%

Table 1, continued
Demographic characteristics of the sample (N = 119)

Variable	N	%
Birth place mother		
El Salvador	56	47.1%
Argentina	13	10.9%
Mexico	11	9.2%
Guatemala	9	7.6%
Dominican Republic	6	5.0%
Colombia	4	3.4%
Uruguay	3	2.5%
USA	3	2.5%
Nicaragua	3	2.5%
Honduras	2	1.7%
Jamaica	2	1.7%
Paraguay	2	1.7%
Peru	2	1.7%
Puerto Rico	1	0.8%
No response	2	1.7%
Birth place father		
El Salvador	58	48.7%
Argentina	13	10.9%
Guatemala	12	10.1%
Mexico	11	9.2%
Dominican Republic	6	5.0%
Colombia	4	3.4%
Uruguay	3	2.5%
USA	2	1.7%
Peru	2	1.7%
Honduras	1	0.8%
Paraguay	1	0.8%
Puerto Rico	1	0.8%
No response	5	4.2%
Generation status		
1st generation (participant immigrant)	45	37.8%
2nd generation (parents immigrants)	68	57.1%
3rd generation (grandparents immigrant)	2	1.7%
4th generation (older generations immigrant)	1	0.8%
No response	3	2.5%

Table 2

Demographic characteristics of the sample, continued (N = 119)

Variable	N	Minimum	Maximum	Mean	SD
Age	118	13	21	16.0	1.67
GPA	97	0.10	4.40	2.99	0.80

Table 3

Means, standard deviations, and correlations among key variables (N = 119)

Variable	1	2	3	4	5	6
1. GPA	1					
2. Ethnic Identity	.41*	1				
3. Support	.37*	.34*	1			
4. Barriers	-.35*	-.31*	-.59*	1		
5. College-Going Self-Efficacy	.49*	.47*	.53*	-.43*	1	
6. Goals	.48*	.37*	.47*	-.48*	.59*	1
M	2.99	21.70	42.84	49.39	145.04	9.22
SD	.80	5.72	6.78	14.80	35.82	2.09
Range (possible)	0.00-4.50	6.00-30.00	10.00-50.00	31.00-124.00	22.00-198.00	2.00-12.00
Range (actual)	0.10-4.30	6.00-30.00	20.16-50.00	31.00-94.98	48.25-198.00	2.00-12.00
Cronbach's alpha	n/a	.89	.82	.93	.95	.75

*Note: *p = .01*

Table 4
Summary of hierarchical regression analysis of GPA, ethnic identity, college-going support, and college-going barriers as predictors of college-going self-efficacy (N = 119)

Variable	B	$SE\ B$	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	91.07	11.45		7.95*	1,95	.47	.24	29.43*	.24	29.43*
GPA	20.10	3.70	.49	5.42*						
Step 2	69.08	12.88		5.36*	2,94	.56	.31	21.36*	.08	10.38*
GPA	14.99	8.88	.36	3.87*						
Ethnic Identity	1.71	.53	.30	3.22*						
Step 3	19.32	19.56		.99	3,93	.62	.38	19.26*	.07	10.67*
GPA	11.62	3.83	.28	3.03*						
Ethnic Identity	1.32	.52	.23	2.54						
Support	1.58	.48	.30	3.27*						
Step 4	46.09	32.54		1.42	4,92	.63	.39	14.72*	.01	1.06
GPA	11.09	3.87	.27	2.87*						
Ethnic Identity	1.28	.52	.23	2.44						
Support	1.28	.56	.24	2.29						
Barriers	-.24	.23	-.11	-1.03						

*Note. *$*p < .01$

Table 5

Summary of hierarchical regression analysis of GPA, ethnic identity, college-going support, and college-going barriers barriers as predictors of educational goals (N = 119)

Variable	*B*	*SE B*	β	*T*	*Df*	*R*	*R*^{2}	*F*	Δ *R*^{2}	Δ*F*
Step 1	6.03	.66		9.15*	1,95	.48	.23	28.67*	.23	28.67*
GPA	1.14	.21	.48	5.36*						
Step 2	5.23	.77		6.83*	2,94	.51	.26	16.74*	.03	3.92
GPA	.96	.23	.40	4.15*						
Ethnic Identity	.06	.03	.19	1.98						
Step 3	3.12	1.19		2.61	3,93	.55	.30	13.37*	.04	5.15
GPA	.81	.23	.34	3.47*						
Ethnic Identity	.05	.03	.14	1.45						
Support	.07	.03	.22	2.27						
Step 4	5.62	1.97		2.85*	4,92	.57	.32	10.82*	.02	2.52
GPA	.76	.23	.32	3.26*						
Ethnic Identity	.04	.03	.13	1.32						
Support	.04	.03	.13	1.16						
Barriers	-.02	.014	-.17	-1.59						

Note. *p < .01

Table 6

Summary of hierarchical regression analysis of GPA, support, and the moderator of GPA multiplied by support as predictors of college-going self-efficacy (N = 119)

Variable	*B*	*SE B*	β	*T*	*Df*	*R*	*R²*	*F*	Δ *R²*	Δ*F*
Step 1	91.07	11.45		7.95*	1, 95	.49	.24	29.43*	.24	29.43*
GPA	20.10	3.71	.49	5.43*						
Step 2	26.47	19.91		1.33	2, 94	.58	.34	24.25*	.10	14.80*
GPA	14.75	3.73	.36	3.95*						
Support	1.86	.48	.35	3.85*						
Step 3	9.47	20.84		.46	3, 93	.61	.38	18.65*	.04	5.25*
GPA	14.36	3.66	.35	3.93*						
Support	2.22	.50	.42	4.46*						
Mod GPA*Supp	7.00	3.05	.20	2.29*						

*Note. *p <.05

Table 7

Summary of hierarchical regression analysis of GPA, barriers, and the moderator of GPA multiplied by barriers as predictors of college-going self-efficacy (N = 119)

Variable	B	$SE\ B$	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	92.07	11.45		7.95*	1,95	.49	.24	29.43*	.24	29.43*
GPA	20.10	3.71	.48	5.42*						
Step 2	132.38	17.71		7.48*	2,94	.55	.30	20.37*	.07	8.87*
GPA	16.19	3.80	.39	4.27*						
Barriers	-.61	.20	-.27	-2.98*						
Step 3	131.94	17.80		7.41*	3,93	.55	.30	13.56*	.00	.26
GPA	16.39	3.83	.40	4.28*						
Barriers	-.60	.21	-.27	-2.91*						
Mod GPA*Bar	1.75	3.41	.05	.51						

*Note. *p <.05*

Table 8

Summary of hierarchical regression analysis of GPA, support, and the moderator of GPA multiplied by support as predictors of educational goals (N = 119)

Variable	B	$SE\ B$	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	6.03	.66		9.15*	1, 95	.48	.23	28.67*	.23	28.67*
GPA	1.14	.21	.48	5.36*						
Step 2	3.37	1.19		2.83*	2, 94	.53	.29	18.79*	.05	7.07*
GPA	.92	.22	.39	4.13*						
Support	.08	.03	.35	2.66*						
Step 3	2.82	1.27		2.22	3, 93	.55	.30	13.08*	.01	1.47
GPA	.91	.22	.38	4.08*						
Support	.09	.03	.29	2.91*						
Mod GPA*Supp	.23	.19	.11	1.21						

*Note. *$p < .05$

Table 9

Summary of hierarchical regression analysis of GPA, barriers, and the moderator of GPA multiplied by barriers as predictors of educational goals (N = 119)

Variable	B	$SE\ B$	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	6.03	.66		9.15*	1, 95	.48	.23	28.67*	.23	28.67*
GPA	1.14	.21	.48	5.36*						
Step 2	8.31	1.02		8.13*	2, 94	.54	.29	19.47*	.06	8.13*
GPA	.93	.22	.39	4.22*						
Barriers	-.03	.01	-.26	-2.85*						
Step 3	8.37	1.02		8.18*	3, 93	.55	.30	13.38*	.01	1.13
GPA	.90	.22	.38	4.09*						
Barriers	-.04	.01	-.27	-2.93*						
Mod GPA*Bar	-.21	.20	-.09	-1.06						

Note. *p <.05

Table 10

Summary of hierarchical regression analysis of ethnic identity, support, and the moderator of ethnic identity multiplied by support as predictors of college-going self-efficacy (N = 119)

Variable	B	$SE\ B$	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	81.29	11.46		7.09*	1, 117	.47	.22	33.09*	.22	33.09*
Ethnic Identity	2.94	.51	.47	5.75*						
Step 2	6.61	17.49		.38	2, 116	.61	.37	34.45*	.15	28.14*
Ethnic Identity	2.05	.49	.33	4.20*						
Support	2.19	.41	.42	5.30*						
Step 3	7.17	17.59		.41	3, 115	.61	.37	22.84*	.00	.13
Ethnic Identity	2.05	.49	.33	4.16*						
Support	2.19	.42	.41	5.28*						
Mod EthId*Supp	-.85	2.40	-.03	-.36						

Note. *p < .05

Table 11
Summary of hierarchical regression analysis of ethnic identity, barriers, and the moderator of ethnic identity multiplied by barriers as predictors of college-going self-efficacy (N = 119)

Variable	B	SE B	β	T	Df	R	R^2	F	ΔR^2	ΔF
Step 1	81.29	11.46		7.09*	1, 117	.47	.22	33.09*	.22	33.09*
Ethnic Identity	2.94	.51	.47	5.75*						
Step 2	132.29	16.95		7.81*	2, 116	.56	.31	26.21*	.09	15.29*
Ethnic Identity	2.33	.51	.37	4.60*						
Barriers	-.766	.20	-.32	-3.91*						
Step 3	132.02	17.00		7.76*	3, 115	.56	.31	17.47*	.00	.30
Ethnic Identity	2.34	.51	.37	4.60*						
Barriers	-.76	.20	-.31	-3.83*						
Mod EthId*Bar	1.40	2.57	.04	.55						

Note. *p <.05

Table 12
Summary of hierarchical regression analysis of ethnic identity, support, and the moderator of ethnic identity multiplied by support as predictors of educational goals (N = 119)

Variable	*B*	*SE B*	β	*T*	*Df*	*R*	*R²*	*F*	Δ *R²*	Δ*F*
Step 1	6.33	.70		8.99*	1, 117	.37	.13	18.08*	.13	18.08*
Ethnic Identity	.13	.03	.37	4.25*						
Step 2	2.19	1.10		2.00*	2, 116	.52	.27	21.64*	.14	21.95*
Ethnic Identity	.08	.03	.23	2.75*						
Support	.12	.03	.40	4.69*						
Step 3	2.35	1.09		2.15*	3, 115	.54	.29	15.60*	.02	2.83
Ethnic Identity	.08	.03	.23	2.69*						
Support	.12	.03	.39	4.70*						
Mod EthId*Supp	-.25	.15	-.13	-1.68						

*Note. *p* <.05*

Table 13

Summary of hierarchical regression analysis of ethnic identity, barriers, and the moderator of ethnic identity multiplied by barriers as predictors of educational goals (N = 119)

Variable	*B*	*SE B*	β	*T*	*Df*	*R*	*R*^{2}	*F*	Δ*R*^{2}	Δ*F*
Step 1	6.33	.70		8.99*	1, 117	.37	.13	18.08*	.13	18.08*
Ethnic Identity	.13	.03	.37	4.25*						
Step 2	10.16	1.01		10.09*	2, 116	.53	.28	23.04*	.15	24.39*
Ethnic Identity	.09	.03	.24	2.92*						
Barriers	-.06	.01	-.41	-4.94*						
Step 3	10.13	1.01		10.06*	3, 115	.54	.29	15.74*	.01	1.10
Ethnic Identity	.09	.03	.24	2.95*						
Barriers	-.06	.01	-.40	-4.82*						
Mod EthId*Bar	.16	.15	.08	1.05						

Note. *p < .05

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