

Undergraduate Latina/o Students: A Systematic Review of Research Identifying Factors  
Contributing to Academic Success Outcomes

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### **Abstract**

A systematic review was conducted to produce an up-to-date and comprehensive summary of qualitative and quantitative evidence specific to the factors related to undergraduate Latina/o student academic success outcomes during college. The purpose of the study was to make sense of and provide critique to this rapidly growing body of research, as well as to direct future research efforts. Findings indicate that a combination of (a) sociocultural characteristics; (b) academic self-confidence; (c) beliefs, ethnic/racial identity, and coping styles; (d) precollege academic experiences; (e) college experiences; (f) internal motivation and commitment; (g) interactions with supportive individuals; (h) perceptions of the campus climate/environment; and (i) institutional type/characteristics are related to one or more academic success outcomes for Latina/o students. The article concludes with specific recommendations including the use of additional methods, frameworks and perspectives that we hope will be useful in advancing this line of work.

Keywords: systematic review, Latina/o, students, persistence, degree completion

## **Undergraduate Latina/o Students: A Systematic Review of Research Identifying Factors Contributing to Academic Success Outcomes**

According to the 2010 Census, there are 51 million persons living in the United States who are of Latina/o origin, an increase from 35 million in 2000. Moreover, it is projected that in the next 50 years, Latina/os will account for half of the country's population growth, making them one fourth of the total population by 2050 (Llagas & Snyder, 2003). As a result, exceedingly greater numbers of Latina/o students are attending college (Fry & Lopez, 2012). As of 2011, Latina/o students made up 17% of all 18- to 24-year-olds in college, compared to 11% in 2006 (Fry, 2011). It is notable that the majority of Latina/o students are enrolling at 2-year institutions, currently representing 25% of 2-year students and just 13% of students enrolled at 4-year institutions nationwide (Fry & Lopez, 2012).

Although college graduation rates have increased substantially over the past four decades, Latina/os continue to lag behind other groups educationally (Fry, 2011), referred to by some scholars as "the Latino educational crisis" (Gándara & Contreras, 2009). In particular, institutions of higher education continue to be least successful in retaining and graduating Latina/o undergraduate students when compared to other groups (Castillo et al., 2006; Fry & Lopez, 2012; Llagas & Snyder, 2003). For instance, although Latina/os represent 17% of the nation's 18- to 24-year-old college student population, only nine% of 4-year degrees are currently earned by Latina/os (Fry & Lopez, 2012). It is notable that meaningful differences currently exist within the Latina/o population. For instance, the majority (61%) of degrees currently earned by Latina/os are being earned by females (National Center for Education Statistics, 2010). A large variance also exists in the equity of degree attainment among various Latina/o subgroups, as the shares of Colombians (32%) and Peruvians (30%) who hold

bachelor's degrees are higher than the shares of the total U.S. population, whereas other subgroups (e.g., Mexicans, Salvadorans) have rates of degree completion lower than the total share of all Latina/os (Motel & Patten, 2012).

In response, a rapidly growing body of research is being developed that is focused on identifying the factors associated with the academic success of Latina/o students. Within this body of work are literature/narrative reviews conducted to synthesize and make sense of this emerging line of research, including but not limited to Latina/os (e.g., Association for the Study of Higher Education, 2011; Carter, 2006). Reviews have also been done to summarize scholarship conducted specifically on Latina/o students. For instance, although not focused on college experiences and success outcomes, Padilla (2007) offers a review of Latina/o students' experiences from elementary school to postsecondary education. Reviews have also been conducted specific to Latina/o college experiences and outcomes, including early research by Rendón and Nora (1989) and more recent reviews by Nora and Crisp (2009) and Oseguera, Locks, and Vega (2009). However, more than 60 new studies were published between 2009 and the time of this review. Existing reviews are also limited in that they focus on a single college academic outcome (i.e., persistence) rather than a broad range of academic outcomes such as transfer to a 4-year institution or degree completion. Furthermore, no review was intended to provide a comprehensive and critical analysis of research on Latina/o student academic success.

In turn, we conducted a systematic review in spring 2012 to produce an up-to-date and comprehensive summary of the empirical evidence specific to success outcomes for undergraduate Latina/o students. We recognize that there are many ways to conceptualize, reinterpret, and define Latina/o student success (e.g., Castellanos & Gloria, 2007). Systematic reviews require comparison of study outcomes and are best suited for focused topics (Collins &

Fausser, 2005). As such, the present study is focused on research specific to traditional academic success outcomes for Latina/o students, rather than a broad overview of research on Latina/o college students. We operationally define academic success outcomes as behaviors necessary to accomplish students' academic goals, including course completion, course grades or grade point average (GPA), persistence in higher education, transfer to another postsecondary institution, and certificate or degree completion. We hope that our decision to review research using more long-established academic outcomes is not perceived as overlooking or undervaluing our colleagues' research on Latina/o students that falls outside the scope of the present study (e.g., Campa, 2010; Engberg & Hurtado, 2011; Gloria & Castellanos, 2012; Hurtado & Carter, 1997; Hurtado & Ponjuan, 2005; Nuñez, 2008; Yosso, 2005; Yosso, Villalpando, Bernal, & Solórzano, 2001).

Our review was guided by the overarching question: What factors are related to undergraduate Latina/o student academic success outcomes during college? The purpose was to make sense of and provide synthesis to this rapidly growing body of research, as well as provide guidance to future research efforts. To provide context for the study, we begin with a brief overview of the broader issues and societal conditions affecting Latina/o students. Next, we describe the methods used to identify, summarize, and evaluate research studies included in the review. A synthesis of the results is then provided, identifying numerous factors related to one or more academic success outcomes for Latina/o students. We conclude with a brief critique and specific recommendations to guide future research.

### **Conditions Influencing Latina/o Students: A Pre-review Note**

Prior to examining factors that are related to postsecondary academic success for Latina/o students, it is important to acknowledge the larger overlapping structural, cultural, and economic conditions influencing Latina/o students. To begin with, academic success of Latina/o students in

college can be intertwined with notions of equal access and differential instruction provided by K-12 schooling (Garcia & Bayer, 2005). Latina/o students must contend with social phenomena such as racism and language stigmas throughout the educational system (Caldwell & Siwatu, 2003). In comparison to White students, it has been argued that Latina/o students are more likely to be tracked into vocational or lower ability coursework, thus providing a less rigorous education (Meier & Stewart, 1991; National Assessment of Educational Progress, 2005). A disproportionate number of Latina/o students live in low-income neighborhoods and are therefore more likely to attend poorly resourced public schools (Contreras, 2005), which may negatively affect school and instruction quality (Vartanian & Gleason, 1999). As a result, many Latina/o students begin postsecondary education with lower levels of “college readiness,” a measure of qualification for university-level work computed from several precollege measures such as senior class rank, aptitude scores, and academic course GPA (Berkner & Chavez, 1997).

Psychosocial issues such as the cultural mismatch between Latina/o students and White school norms (e.g., Brown, 2008) and stereotype threat (Walton & Spencer, 2009) also provide context to the conditions surrounding the experiences of Latina/o students. A mismatch between a student’s home culture and the dominant school/classroom culture, known as cultural mismatch, has been linked to academic difficulties among Latina/o students (Boykin, Tyler, & Miller, 2005; Foster, Lewis, & Onafowora, 2003; Ladson-Billings, 1995). For example, researchers have used the idea of cultural mismatch to help explain the dynamics behind racial/ethnic minority student success or failure, hypothesizing that students who feel more culturally aligned with the school systems of which they are part will feel more motivated (Hudley & Daoud, 2008) and be more academically successful (Warzon & Ginsburg-Block, 2008). At the same time, cultural discontinuity may contribute to poor academic and

psychological outcomes in schools (e.g., Cholewa & West-Olatunji, 2008). Research has also identified minority students' apprehension that they might be perceived as confirming the stereotype that minorities do poorly on intellectual tests, referred to as "stereotype threat," as negatively influencing academic performance (Massey, Charles, Lundy, & Fischer, 2003; Walton & Spencer, 2009).

Socioeconomic conditions are also related to the educational experiences of Latina/os, as more than a quarter (27%) of Latina/o children in the United States live in poverty compared to 10% of White children (Aud, Fox, & KewalRamani, 2010). On the whole, Latina/o households own less than 10 cents for every dollar in wealth owned by White households (Pew Hispanic Center, 2005). In turn, a disproportionate percentage of Latina/o students must rely on grants and loans to attend and remain enrolled in college. Although Latina/o students are more likely to receive federal aid when compared to other groups, they receive the lowest average aid amount of any ethnic group (Santiago & Cunningham, 2005).

It is appropriate and expected that institutions work toward achieving educational equality for the Latina/o student population (Villalpando, 2004). Greater lifetime earnings, better job satisfaction, enhanced health, higher levels of civic engagement, and increased life expectancy are all more likely to be achieved by college degree recipients (Perna, 2005). Although the proportion of Latina/os earning college degrees continues to increase (U.S. Census Bureau, 2012), the above-mentioned conditions surrounding and within the K-12 and college environments continue to disadvantage Latina/o students' opportunity to be successful in college. As a growing number of equity-minded scholars engage in research around Latina/o success we feel it will be beneficial to our work, and hopefully to others as well, to provide a synthesis of research to date. The following section details the method we used to identify, review, critique,

and synthesize research conducted to identify factors that are in some way related to undergraduate Latina/o student academic outcomes.

### **Method**

The purpose of a systematic review is to be comprehensive and to answer one or more specific research questions. Systematic reviews differ from other types of reviews in that they aim to reduce selection bias in the selection and inclusion of empirical studies, critique the quality of included research, and summarize them (Petticrew & Roberts, 2006). In contrast to traditional narrative reviews that frequently summarize unrepresentative samples of studies in an uncritical and unsystematic manner, systematic reviews “impose discipline on the review process” (Littell, Corcoran & Pillai, 2008, p. 10). Systematic reviews can serve many purposes, including identifying holes or gaps in a knowledge base (Petticrew & Roberts, 2006). Although a meta-analysis is commonly a segment of a systematic review, this form of analysis was not possible due to a lack of comparable study outcomes (i.e., effect size, means) as well as the researchers’ desire to be inclusive of a broad range of research perspectives and paradigms.

### **Search Procedures**

In early spring 2012, eight electronic databases were searched for relevant work including educational reports, conference papers, dissertations, and books: (a) ERIC via EBSCO, (b) Academic Search Complete, (c) PsycExtra, (d) PsycInfo, (e) Psychology and Behavioral Sciences Collection, (f) SocINDEX, (g) Education full text, and (h) jstor. individual journals thought to have relevant articles were also manually searched, including higher education, sociological, and psychology journals as well as those specific to Latina/os. Concomitantly, the reference pages from identified studies were reviewed for potential articles. Combinations of key terms including “Hispanic,” “Latino,” “Latina,” “students,” “college,” and “undergraduate” were

used to locate relevant studies. In an effort to reduce publication bias, an Internet search was also conducted to identify relevant studies not published in the above-mentioned databases. In addition to a general search, organizational websites thought to publish related work were searched (i.e., Hispanic Association of Colleges and Universities, Pew Hispanic Center, Excelencia in Education, American Association of Hispanics in Higher Education, Tomás Rivera Policy Institute, Educational Policy Institute, and Higher Education Research Institute). Although the majority of research focused on Latina/o college students did not begin until around 1990, all qualitative and quantitative scholarship conducted prior to spring 2012 was considered for the current study.

#### *Data Extraction and Critical Appraisal*

An Excel database was created to capture the following identifying information for all 190 identified studies: (a) purpose, (b) institutional type, (c) outcome(s), (d) theory or conceptual models, (e) research design, (f) results, and (g) survey scales (if used). The first two authors independently read each study selected for inclusion and coded these seven study characteristics. Discrepancies were discussed until agreement was reached among the coders. Due to space limitations, summaries of the study characteristics for each of the reviewed studies are not included but are available on request. A critical appraisal of the 63 studies that were found to meet all of the inclusion/exclusion criteria described below was then conducted with respect to methodological strengths and weaknesses in an effort to interpret the data and identify biases. The organization and choice of categories/themes presented in the following narrative was driven by the research question. We began by developing a list of all of the factors identified in the reviewed studies to be in some way related to one or more undergraduate Latina/o student

academic success outcomes during college. This list was then organized into meaningful categories or themes (Petticrew & Roberts, 2006).

### *Inclusion/Exclusion Criteria*

The following criteria were used to select empirical studies to be analyzed and critiqued. Reviewed studies involved empirical studies that used quantitative or qualitative methods to understand and/or test relationships between one or more variables and college academic outcomes among Latina/o undergraduate students. Studies focused on postsecondary access or enrollment and research that did not explicitly address academic outcomes were excluded from review (e.g., studies predicting campus climate, identity, sense of belonging). Existing literature reviews, non-empirical research/policy briefs or magazine-type publications, and conceptual or opinion pieces were used to frame the introduction and discussion sections but were not included in the research synthesis. Student theses and dissertations were also not considered, as these studies had not undergone an objective peer review process to verify the soundness of the findings. An initial review of identified dissertations revealed serious misspecification of models, inappropriate designs or methods, and an over-extrapolation of research findings. Studies that also included other ethnic groups but that disaggregated analyses, making it possible to identify factors related to outcomes for Latina/o students, were included in the review. Those investigations that focused more broadly on minority students, though not Latina/o students in particular, were not included. Studies on Latina/o students attending both 2- and 4-year institutions were considered. However, research that focused on high school or graduate student samples were excluded from review.

## **Results**

Our initial search identified 190 empirical publications that were reviewed and coded. Eighteen studies more broadly described the college experiences of Latina/o students rather than predicting or explaining a particular outcome. For instance, scholarship was identified that described the experiences of students at predominantly White institutions (PWIs) and Hispanic serving institutions (HSIs; Hernandez, 2002; Perrakis & Hagedorn, 2010), first-generation students (Saunders & Serna, 2004), and participants of College Assistance Migrant Programs (Araujo, 2011; Ramirez, 2012). The remaining reviewed studies examined a range of academic and nonacademic outcomes, with many studies investigating more than one outcome. Roughly a third of the reviewed articles focused exclusively on nonacademic outcomes (e.g., campus climate, identity), failing to meet the inclusion criteria, and therefore they were not considered further. The most prevalent academic outcomes examined by researchers were course grades or GPA, persistence (i.e., subsequent re-enrollment in college), and completion of a certificate or degree. Relatively less attention was provided by researchers in predicting transfer from a 2- to a 4-year institution (known as vertical transfer), course failure/ completion, and broad measures of “academic success.” Of the reviewed studies, 63 were found to meet all of the inclusion and exclusion criteria and were subsequently retained for analysis. The large majority (64%) of identified studies used quantitative methods, roughly 36% used exclusively qualitative methods, and only one study used mixed methodologies (less than 1%). All but one of the quantitative studies (i.e., Keim, McDermott, & Gerard, 2010) used a non-experimental design and relied predominantly on survey methods, drawing on a diversity of national surveys such as the National Education Longitudinal Study (NELS: 88), CIRP Freshman Survey, and the National Survey of Hispanic Students. Interviews and focus groups were the dominant methodology used to collect qualitative data. Six studies used a case study approach, and five involved life history

analysis, grounded theory, or ethnographic approaches. Of the analyzed studies, 62% were conducted using samples of students attending 4-year institutions, 27% focused exclusively on 2-year students, and the remaining 11% used both community college and 4-year samples. Most studies did not explicitly identify information regarding institutional control or type. However, 17% focused on students attending HSIs, five% were conducted at PWIs, and six% included students attending institutions that used selective admissions criteria. Forty percent of the reviewed studies drew on one or more theoretical and/or conceptual frameworks.

### **Factors Associated with Academic Outcomes**

Findings indicate that a combination of (a) sociocultural characteristics; (b) academic self-confidence; (c) beliefs, ethnic/racial identity, and coping styles; (d) precollege academic experiences; (e) college experiences; (f) internal motivation and commitment; (g) interactions with supportive individuals; (h) perceptions of the campus climate/environment; and (i) institutional type/characteristics has been shown to be related to one or more academic success outcomes for Latina/o students. The following paragraphs discuss and provide detail regarding each of the identified factors with an eye toward identifying factors that should be included in future work as well as pinpointing research topics and methods that would advance current theory and understanding.

#### *Sociocultural Characteristics*

Gender, parental education, and socioeconomic status were found across the reviewed studies to be related to Latina/o students' grades, persistence decisions, and odds of degree completion. Consistent with national figures, being female was found in several analyses of large scale data sets to be positively associated with academic outcomes (i.e., Arbona & Nora, 2007; Cole, 2008; Fisher, 2007; Otero, Rivas, & Rivera, 2007). Findings from a quantitative survey

involving 100 Mexican American students by Lopez (1995) suggest that male students may experience more challenges from domestic responsibilities and male peers as well as more racial discrimination from financial aid staff when compared to female students. At the same time however, females reported receiving more gender discrimination than men from mothers, fathers, sisters, and cousins. Unfortunately, with the exception of work by Gonzalez, Jovel, and Stoner (2004) focused on Latinas, qualitative findings were not found to understand the differences in the experiences of male and female students and how these differences might be related to success outcomes.

Analyses of large, national samples of undergraduate students also indicated that the highest level of education obtained by students' parents, as a form of cultural capital (Arellano & Padilla, 1996), was positively related to Latina/o students' grades (e.g., Cole, 2008). For instance, Fisher (2007) found that Latina/o students' GPA was negatively related to being a first-generation college student, defined as being the first in a family to attend college. Similarly, parental education was found to affect students' decisions to persist to the second and third years of college among a national sample of Latina/o community college students (Crisp & Nora, 2010). Results demonstrate that socioeconomic status (measured by parental education and occupational status) may also be positively related to students' grades (Ong, Phinney, & Dennis, 2006). Additionally, family income was shown to be positively related to both Latina/o students' grades (Fisher, 2007) and decisions to persist in college (Otero et al., 2007), whereas financial concerns were found to be negatively related to academic success (Cerna, Pérez, & Saenz, 2009).

Less clarity was provided to the role of ethnic subgroup in predicting academic outcomes for Latina/o students. For example, although several studies focused on understanding the experiences of particular subgroups of Latina/os, such as Chicana/o students (e.g., Campa, 2010;

Gonzalez, 2002; Nora, 1987), very little evidence was found to understand how the factors influencing degree outcomes may be similar or different among different ethnic subgroups of Latinas/os. However, it is notable that the reviewed research provided some attention to academic success among undocumented students (i.e., Alexander, Garcia, Gonzalez, Grimes, & O'Brien, 2007; Contreras, 2009). Findings from 20 interviews with Latina/o students who attended various institutions in Washington revealed that undocumented students may face obstacles above and beyond other Latina/o students in college. In particular, results indicated that persistence among undocumented students may be influenced by struggles with fear of deportation for themselves and their families as well as concerns about permanent residency after graduation (Contreras, 2009).

#### *Academic Self-Confidence*

Review findings draw attention to the relationship between students' confidence in performing academic tasks (i.e., self-confidence) and academic outcomes for Latina/o students including grades, persistence decisions, and the odds of degree completion. Qualitative interviews with students attending a highly selective institution suggested that Latina/o students' positive views of the world and ability to succeed supported academic success outcomes (Arellano & Padilla, 1996). Furthermore, a good amount of quantitative evidence was found linking measures of students' academic self-confidence or self-efficacy to course failure, grades, persistence decisions, and degree completion (Bordes-Edgar, Arredondo, Robinson-Kurpius, & Rund, 2011; Cole, 2008; Massey et al., 2003; Rodriguez, 1996; Strange, 1999; J. B. Torres & Solberg, 2000). For instance, a quantitative study using the National Longitudinal Survey of Freshmen by Massey et al. (2003) revealed that Latina/o students who met the criteria for stereotype vulnerability were at higher risk of course failure. It should be noted that a crude

(using the researchers' language) marker of stereotype vulnerability was used, defining vulnerability as being unusually self-conscious of teachers and expressing reservations about academic abilities or expressing doubts of Latina/os' abilities.

### *Beliefs, Identity, and Coping Styles*

Although empirical support was limited, findings suggest that belief systems, ethnic/racial identity, stereotype vulnerability, and coping styles may in some way be related to academic success outcomes for Latina/o students. For instance, research by O'Brien, Mars, and Eccleston (2011) indicated that having system-justifying ideologies (i.e., belief in a just world and the Protestant work ethic) was negatively related to Latina/o students' grades among freshmen attending a 4-year institution. Also, research by Castillo et al. (2006) showed that having a stronger ethnic identity may be indirectly related to Latina/o students' commitment to persistence at a PWI. Findings by Ong et al. (2006) also suggest that ethnic identity and parental support may serve to moderate the negative effects of low socioeconomic status on Latina/o students' GPA among students attending HSIs. Finally, results by Lesure-Lester (2003) reveal that coping styles were related to a measure of Latina/o students' persistence among a small sample of students attending a community college in California. Specifically, positive reinterpretation and growth, active coping, and planning were positively related to students' persistence decisions, and alcohol and drug disengagement and denial were negatively related to persistence.

### *Precollege Academic Experiences*

Consistent with the broader persistence literature not specific to Latina/os, delaying enrollment in college immediately following high school was found to be negatively related to community college students' persistence decisions in the second and third years of college (Crisp

& Nora, 2010) as well as the odds of bachelor's degree completion (Arbona & Nora, 2007) among national samples of Latina/os (i.e., Beginning Postsecondary Students Longitudinal Study [BPS], NELS). Not surprisingly, Latina/o students' academic performance during high school was repeatedly found to be positively related to college grades and persistence decisions among first-generation students, those attending selective institutions, and students attending 2- and 4-year institutions (Cole, 2008; Dennis, Phinney, & Chuateco, 2005; Fisher, 2007; Nora, 1987). Findings suggested that high school performance may be particularly important for Latino males, as achievement in mathematics and science during high school was shown by Strayhorn (2010) to be a strong predictor of college grades for Latinos among participants in the NELS (88/00). Furthermore, high school GPA was found to be related to graduation outcomes for Latinos in particular (Cerna et al., 2009). It is noteworthy that although the reviewed studies highlight the importance of high school academic performance in predicting college academic success outcomes, a significant relationship between entrance exams (SAT/ACT) and success was not found after controlling for high school GPA (i.e., Bordes-Edgar et al., 2011; Cerna et al., 2009).

### *College Experiences*

Several college experiences were found across studies and methodologies to influence Latina/o students' academic success outcomes, including financial aid, full-time college attendance, work, and academic performance during college. To begin with, a substantial amount of evidence was found to suggest that both the amount and type of financial support students receive play a critical role in students' ability to persist in college, as well as Latinas' odds of degree completion (e.g., Cerna et al., 2009). This issue was shown to be of particular relevance to undocumented students who do not qualify for state or federal aid (Contreras, 2009). Results indicated that the total amount of financial aid received from any source (Crisp & Nora, 2010)

and more specifically, federal support in the form of Pell grant aid (Chen & DesJardins 2010; Gross, 2011; Nora, 1990), may serve to influence Latina/o students' academic success in college. Findings from a study using event history analysis further suggested that need-based loans may provide a constant source of support and that non-need-based loans may be an important source of aid for Latina/o students in the first years of college (Gross, 2011).

Attending college full-time was also shown to be positively related to both persistence and degree completion among three national samples of Latina/o students (i.e., BPS: 89/94, BPS: 04/06, and NELS; Alfonso, 2006; Arbona & Nora, 2007; Crisp & Nora, 2010). Interviews with counselors at a Hispanic Serving community college in California indicated that the most perceptible barrier to the transfer process for Latina/o students was nonacademic issues related to external responsibilities (Ornelas & Solórzano, 2004) such as working off-campus. Similarly, findings by Arana, Castañeda-Sound, Blanchard, and Aguilar (2011) suggest that Latino students attending a private HSI who worked while attending college found it challenging to juggle work and academic schedules. Working was also shown to make it difficult for students to connect with the campus community.

As one might expect, one of the most prevalent dependent measures of success, college grades or GPA, was found to be positively related to students' decisions to remain in college (Crisp & Nora, 2010; Hu & St. John, 2001) as well as the odds of successfully earning a certificate or degree (Arbona & Nora, 2007; Cerna et al., 2009). Qualitative findings by Zurita (2004) comparing the experiences of five Latina/o students who stopped out from a large research university and five Latina/os who graduated from the same institution found that four of the five students who stopped out were dismissed from the university for not meeting a minimum GPA.

Somewhat conflicting evidence was found concerning the impacts of participation in various in- and out-of-class academic and social experiences. For example, enrollment in remedial or developmental courses was found by Crisp and Nora (2010) to be positively related to persistence and degree completion among 2-year Latina/o students but was found by Alfonso (2006) who used an older version of the BPS data to decrease the odds of 2-year degree completion. Similarly, although there was evidence found to demonstrate the value of out-of-class opportunities to socialize with other students (e.g., Nora, 1987; Otero et al., 2007), results also suggested that Latina/o student involvement in certain social activities may negatively affect students' grades and/or odds of graduation (e.g., Baker, 2008; Cole, 2008; Museus, Nichols, & Lambert, 2008). For example, Baker's (2008) analysis of students attending 27 selective 4-year institutions found that although involvement in political organizations was positively related to Latina/o grades, participation in co-ethnic groups or intramural sports were found to negatively affect females' grades. In addition, participation in a fraternity or art group was shown to negatively impact males' GPA.

#### *Internal Motivation and Commitment*

Results also bring attention to the role of motivation and commitment in explaining Latina/o academic success outcomes. Qualitative research by Arellano and Padilla (1996) suggests that Latina/o students' drive to succeed was the most salient characteristic to academic attainment among successful students attending a highly selective university. In addition, recent findings by Prospero, Russell, and Vohra Gupta (2012) indicated that Latina/o first-generation students' grades may be correlated with the degree to which a student is intrinsically motivated, measured by a reliable composite of 12 items from the Academic Motivation Scale (Vallerand et al., 1992). An empirical connection was also found between Latina/o students' decisions to

remain enrolled in college and various forms of motivation and commitments, including latent measures of commitment to the institution (e.g., feeling that the college is right for them and that the college is important in their life) and to students' academic goals (Nora, 1987; Otero et al., 2007; Strange, 1999; V. Torres, 2006). Moreover, Latina/o students' academic and career goals were identified in qualitative work by Suarez (2003) as an individual factor thought to be positively related to transfer to a 4-year institution (i.e., vertical transfer). Furthermore, findings showed that Latina/o students' expectations and commitments were positively related to the odds that students would successfully earn a college degree (Arbona & Nora, 2007; Cerna et al., 2009; Museus et al., 2008).

#### *Interactions With Supportive Individuals*

A substantial amount of qualitative and quantitative evidence was found to suggest that Latina/o students' interactions with individuals who provide various types and forms of supportive relationships contribute in meaningful ways to Latina/o students' grades and persistence decisions. Qualitative findings highlight the positive impact of role models, mentors, parents, peers, and Latina/o communities on campus (Arana et al., 2011; Arellano & Padilla, 1996; Barajas & Pierce, 2001; Cabrera & Padilla, 2004; Cejda, Casparis & Rhodes, 2002; Hernandez, 2000; Zalaquett & Lopez, 2006). Although connecting with supportive individuals appears to be beneficial in a variety of ways and institutional contexts, results by Hernandez (2000) suggest that finding a Latina/o community at a PWI may serve as a powerful way to help students cope with the college environment, feel welcome, and want to stay at the institution.

Quantitative evidence was also found linking peer and family resources to grades among samples of Latina/o students attending 4-year institutions (Dennis et al., 2005; Ong et al., 2006). Additionally, mentoring experiences, including on-campus ties to professors, were shown to be

positively related to Latina/o students' grades in college (Bordes, Sand, Arredondo, Robinson-Kurpius, & Rayle, 2006; Fisher, 2007). Encouragement, support from friends, and mentoring relationships were also consistently found to be positively related to Latina/o students' decisions to remain enrolled at 4-year institutions (Bordes et al., 2006; Bordes-Edgar et al., 2011; Gloria, 1997; Gloria, Castellanos, Lopez, & Rosales, 2005; V. Torres, 2006).

#### *Perceptions of the Campus Climate/Environment*

Latina/o students' interactions with and perceptions of the campus climate/ environment were shown to be related to academic success outcomes. Results by Museus et al. (2008) demonstrated that Latina/o students' satisfaction with the campus racial climate was directly related to degree completion among a national sample of students attending 4-year institutions (BPS: 96/01). Likewise, positive perceptions of the university environment, as measured by a set of reliable items from the University Environment Scale, were found to positively affect Latina/o students' persistence decisions (Gloria, 1997; Gloria et al., 2005; Gloria & Robinson-Kurpius, 1996). Similar to scales measuring Latina/o students' sense of belonging (e.g., Hurtado & Carter, 1997), items on the University Environment Scale assess minority students' comfort on campus and the support received from various individuals, including faculty and staff. At the same time, qualitative findings suggest discriminatory campus experiences, such as negative interactions with school officials and isolation, were barriers to success for undocumented Latina/o students in Washington (Contreras, 2009). These findings were substantiated by Fisher (2007), demonstrating that Latina/o students' negative perceptions of the racial climate at selective institutions, including observed derogatory remarks by students, professors, and staff about the student's race and unfair grading, were negatively correlated with persistence among a national sample of first-year students.

*Institutional Type/Characteristics*

Limited evidence was also found to suggest that institutional type and characteristics in some way influence academic outcomes for Latina/o students. It is notable that the majority of reviewed studies did not provide information regarding institutional type or control or selectivity, and very few attempted to account for these factors in the analyses. However, limited evidence suggests that attending a selective or public institution and/or an institution with a sizable percentage of Latina/o students may improve the odds that students will persist or earn a degree (Cerna et al., 2009; Crisp & Nora, 2010; Melguizo, 2009). In addition, findings suggest that attending a 2-year institution may serve to decrease students' odds of degree completion (Melguizo, 2009) and that institutional size may be negatively related to degree completion among 2-year Latina/o students (Alfonso, 2006).

**Discussion**

Our analysis identified several methodological, theoretical, and conceptual limitations contributing to and, in many cases, impeding researchers' ability to predict or explain academic student success outcomes for Latina/o students. We do not highlight these issues to criticize our colleagues' research (in many cases our own work as well) but rather to give context to our recommendations presented in the following section. It is important to note that many strengths were identified in the reviewed studies, including efforts to promote credibility and trustworthiness within qualitative research (e.g., Alexander et al., 2007; Araujo, 2011; Campa, 2010; Gonzalez, 2002). At the same time, findings from the qualitative research as a whole were somewhat limited by a lack of methodological detail or thematic analysis (e.g., Cejda et al., 2002; Gonzalez et al., 2004) or failure to provide direct quotes from interviews (Suarez, 2003).

Although several quantitative studies were based on national samples of Latina/o students (e.g., Museus et al., 2008; Strayhorn, 2010), the majority of reviewed quantitative studies used small and/or non-representative samples of Latina/o students, thereby limiting the external validity of findings and/or use of multivariate statistics (e.g., Dennis et al., 2005; O'Brien et al., 2011). Many studies were limited to using descriptive statistics or basic inferential tests such as analysis of variance rather than more sophisticated regression techniques that control for extraneous variables (e.g., Lesure-Lester, 2003; Lopez, 1995). The limited number of studies that considered institutional characteristics did not use recommended hierarchical techniques (Raudenbush & Bryk, 2002) to properly account for the nested nature of students within postsecondary institutions (e.g., Cerna et al., 2009; Crisp & Nora, 2010; Hagedorn, Chi, Cepeda, & McLain, 2007). Although ordinary least squares regression and hierarchical linear modeling have been shown to yield an equally good fit with data, hierarchical techniques will likely yield a more conservative and valid test of the significance of institutional-level effects (Astin & Denson, 2009).

The major theoretical concern we identified was an overreliance of Tinto's (1993) model of student integration to explain Latina/o academic outcomes. Castillo et al. (2006) note that when applied to Latina/o students, person-centered approaches such as Tinto's (1993) model may be problematic, as these models do not account for contextual factors influencing student success. Moreover, Rendón, Novack, and Dowell (2005), Tierney (1993), and others have criticized the use of Tinto's (1993) model to study the experiences of diverse student groups. Despite these critiques however, the lack of more relevant and developed theories specific to Latina/os continues to hamper scholars' ability to move away from using student integration theory to predict academic outcomes (e.g., Baker, 2008, Fisher, 2007, Museus et al., 2008).

Additional theories/frameworks were identified in the reviewed research—for example, Nora and Cabrera’s (1996) student adjustment model, critical race theory, and Bronfenbrenner’s (1979) ecological theory. However, it is notable that over half of the reviewed studies were not informed by theory in or outside of higher education, thereby limiting the usefulness of findings and hindering the advancement of this line of research. Although theory plays an important role in both qualitative and quantitative work, we are particularly concerned about how limitations in current theory and how it is used (or not used) may be limiting quantitative researchers’ ability to design and test conceptual models that can accurately predict whether Latina/o students will be academically successful in college. The findings of the present review identify a host of students’ experiences, behaviors, and environmental influences shown to be in some way related to academic outcomes. However, the ability of these findings to inform policy and practice is largely limited without an a theoretical understanding about how these factors are interrelated and serve to directly and indirectly influence Latina/o academic outcomes.

Although the studies that used national datasets (e.g., NELS, BPS, Longitudinal Survey of Freshmen) may be largely generalizable to Latina/o students across the country, several theoretical and conceptual limitations of these datasets were shown to restrict the usefulness or relevance of results. To begin with, there is an absence of psychosocial measures (e.g., climate, interactions with supportive relationships) as well as a lack of information in the data about academic experiences during college. Moreover, data collection efforts do not wholly, and in some cases accurately, reflect the experiences of Latina/o students, making it necessary for researchers to rely on ethnocentric definitions of variables. For example, the 2002 Educational Longitudinal Survey’s definition of “out-of-school activities” is limited to activities valued by the dominant culture, such as taking sports or dance lessons or visiting with friends at a hangout.

The definition of out- of-school activities does not give space to activities valued by Latina/o communities such as spending time or caring for family or participating in activities at church. Finally, inconsistency across studies in how latent constructs were measured (both in and outside of studies using national data sets) was found to limit the comparability of research findings. For instance, quantitative studies used a variety of definitions and measurements of academic and social involvement/integration (e.g., Museus et al., 2008; Nora, 1987; V. Torres, 2006) and forms of mentoring support (e.g., Bordes-Edgar et al., 2011; Gloria et al., 2005; Keim et al., 2010). Early work by Nora (1987) operationally defined social integration as contact with faculty, counselors, and peers. In contrast, Strange (1999) used five combined measures of academic and social integration including items that captured students' perceptions of their adjustment to college and self-perceptions.

### **Recommendations for Future Research**

Findings from the current review advance existing understanding as to the factors contributing to academic success outcomes for Latina/o students. Results of our systematic review extend work by Padilla (2007), Rendón and Nora (1989), Nora and Crisp (2009), and Oseguera et al. (2009) in a few important ways. As previously mentioned, the present article is the first to consider a range of academic outcomes and includes studies conducted since 2009 that had not previously been reviewed. In turn, our article provides the most comprehensive and up-to-date synthesis of research specific to Latina/o academic outcomes. The systematic nature of our article also contributes by incorporating research from other disciplines (e.g., psychology, sociology) to provide a multidisciplinary perspective in understanding the factors that contribute to Latina/o academic outcomes.

Results suggest that Latina/o students' college experiences are directly influenced by academic experiences and performance prior to college. As such, findings bring attention to the importance of providing Latina/o students with supportive and academically rigorous experiences in high school that are effective in preparing students for college. Findings also highlight the potential power of practices and policies that facilitate the development of supportive relationships between Latina/o students and peers, faculty, and staff. Similarly, results suggest that institutions give attention to providing Latina/o students with in and out-of-class academic experiences that are supportive and engaging. Moreover, findings demonstrate the need for policy and institutional practice that expands Latina/o students' opportunity to enroll in college immediately following high school and attend college full-time (e.g., financial aid).

At the same time, results reveal substantial gaps in our understanding regarding how colleges and universities can effectively promote equity in degree completion among Latina/o students. In fact, many of the current findings are not particularly useful in their current form and bring about more questions than answers. For example, although findings to date suggest that it is important for Latina/o to be motivated and possess academic self-confidence, it remains unclear what policies and practices might serve to support/develop students' motivation and confidence. Similarly, present results reveal that many Latina/o students experience racial discrimination on campus that is likely to have a negative impact on students' academic success. However, it is not clear how or what institutional policy and practices might be effective in limiting these harmful experiences. In light of these restrictions, we conclude with specific areas of research that we feel may put scholars on a more direct path to developing implications for policy and practice and therefore deserve the attention of equity-minded scholars. Within the

identification of research studies, we also call for the consideration of additional methods, frameworks, and perspectives that we hope will be useful in advancing this line of work.

### *Gender and Ethnic Subgroup*

Results from the present study bring attention to the need to better understand the factors contributing to successful academic outcomes among Latino males. Current findings reveal that being female has been consistently shown to be positively related to academic outcomes (e.g., Cole, 2008; Fisher, 2007; Otero et al., 2007). However, in the studies that we reviewed, researchers have seldom tried to understand why or how Latinos are less likely to be successful in persisting and graduating college. As such, extending the work of Saenz and Ponjuan (2009) to identify the factors contributing to the “vanishing” Latino male, research is needed to better understand the role of gender in promoting equitable outcomes for Latina/os.

Results also highlight the dearth of literature that attempts to understand how the experiences and factors influencing degree outcomes may be similar or different among subgroups of Latina/o students. The diversity in background, experiences, and outcomes among Latina/o subgroups highlights the need for qualitative work to understand the college experiences of various groups, as well as quantitative research that studies variance in the factors influencing academic success among groups. We acknowledge that sample sizes, even when using national data sets, often limit researchers’ ability to disaggregate analyses by Latina/o sub-group. As such, we concur with the recommendation by Ong et al. (2006) for the expansion of large-scale longitudinal data on different Latina/o subgroups.

### *Culturally Relevant Experiences*

Although work to date has identified a range of factors influencing outcomes, scholars focused on predicting academic outcomes have only begun to scratch the surface in

understanding the role and qualities of Latina/o cultural values and experiences in predicting academic outcomes. Although many researchers acknowledge the importance of Latina/o cultural values, findings of the present study suggest that overreliance of ethnocentric theoretical frameworks (e.g., Tinto, 1993) and secondary data from national datasets continue to limit scholars' examination/use of more culturally relevant experiences. The scarce amount of reviewed research that addressed these types of experiences suggests that culture affects Latina/o student success not only abstractly or indirectly through family/ home experiences but also in very concrete ways through interactions with faculty and students and preferred participation patterns in the classroom (Brown, 2008). Additionally, results by Chiang, Hunter, and Yeh (2004) suggest that Latina/o students might find it more culturally appropriate to seek support from family or friends rather than college faculty or staff.

In light of these findings, it is recommended that cultural values and experiences be further integrated within research designs and theoretical frameworks to explain Latina/o academic outcomes. For example, cultural assets or strengths that may uniquely promote success among Latina/os—for example, Yosso's (2005) concept of cultural wealth and Campa's (2010) critical resilience—should be embedded within theoretically based empirical work to understand and predict academic outcomes. Finally, extending work by Rendón (2008), empirical research is recommended within work focused on predicting academic outcomes to better understand the cultural value-based learning preferences and practices of Latina/o students, how those preferences align or conflict with postsecondary classroom pedagogies, and their relationships to academic success outcomes (Guiffrida, 2006).

We also concur with Chen and DesJardins's (2010) recommendation for theory that integrates multiple perspectives and approaches. For instance, work from social psychologists

(e.g., Devos, Blanco, Munoz, Dunn, & Ulloa, 2008; Devos & Torres, 2007) could be better incorporated within current frameworks to improve understanding of Latina/o students' relationships, values, and perceptions. Although not included in the reviewed studies, segmented assimilation theory (e.g., Zhou, 1997), as well as other empirical research on Latina/os (e.g., V. Torres, 2003), would suggest that generational status should also be incorporated into future work predicting academic outcomes.

#### *Academic and Social Experiences*

Results bring attention to the need to better understand Latina/o students' in-class and out-of-class experiences during college, as well as the impact of those experiences on academic outcomes. For example, although over 40% of first-year Latina/o students enroll in some form of remedial coursework (Aud et al., 2011), it is unclear to what extent, and under which conditions, remediation may be positively or negatively related to academic success. As such, research is recommended to better understand the role of developmental education in promoting success among Latina/o students. Similarly, findings reveal a need for clarity regarding the role of participation in various types and forms of academic and social activities in supporting or hindering academic outcomes. Quantitative research that is able to provide a more complex understanding of relationships is also recommended, including the development and testing of theoretically grounded models that are able to identify mediating and indirect relationships between participation in specific social programs/activities and Latina/o outcomes (Hurtado & Ponjuan, 2005).

At the same time, expanding the work of Solórzano, Villalpando, and others (e.g., Solórzano & Bernal, 2001; Villalpando, 2003), additional qualitative research is suggested that allows Latina/o students to voice their own lived college experiences as specifically related to

successful academic outcomes (Zurita, 2004). Rigorous qualitative case studies, narrative-based inquiries, and ethnographic studies are needed to provide a rich description of students' experiences, perceptions, and behaviors specific to the college environment. Moreover, in-depth case studies are needed that engage in institutional or programmatic histories, document analyses, participant interviews, and measures of change over time. These qualitative methodological approaches would extend knowledge by probing more deeply into the nature of students' college experiences as related to academic outcomes and by uncovering new perspectives not incorporated in specific quantitative models and analyses regarding Latina/o academic success.

#### *Campus Climate*

Findings of the present review highlight the need to better connect work by Hurtado and colleagues focused on predicting adjustment, climate, and sense of belonging (e.g., Hurtado & Carter, 1997; Hurtado, Carter, & Spuler, 1996; Hurtado & Ponjuan, 2005) to research focused more directly on persistence and other academic outcomes. Drawing on research by Perez-Huber, Solórzano, and others (e.g., Perez-Huber & Cueva, 2012; Yosso, Smith, Ceja, & Solórzano, 2009), research is recommended to better understand how Latina/o students' specific experiences and responses to various forms of racism, including microaggressions, serve to indirectly or directly influence student outcomes. Furthermore, research is suggested that incorporates students' perceptions of the campus environment into theoretically grounded models predicting persistence and degree completion (Arana et al., 2011; Hurtado & Carter, 1997; Rodriguez, Myers, Morris, & Cardoza, 2006).

#### *Contextual Influences*

Results revealed gaps in understanding regarding how the larger structural, economic, cultural, and political conditions (mentioned at the beginning of the study) influence Latina/o students' academic success outcomes. For instance, although results highlight the relationship between high school grades and Latina/o college outcomes, relatively little is known about how the high school context may serve to positively or negatively shape students' experiences and subsequent academic outcomes in college. Ecological frameworks that account for contextual challenges (e.g., Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012) may be useful to researchers in conceptualizing how broader systems are affecting Latina/o students' college experiences (Cerezo, O'Neil, & McWhirter, 2009). We also recommend the development of models to account for the local community context that may affect the knowledge and/or support that Latina/o students need to succeed in college (e.g., Padilla, Trevino, Gonzalez, & Trevino, 1997).

When methodologically possible, research predicting Latina/o student academic outcomes should properly account for institutional characteristics and type (Battle & Pastrana, 2007) including but not limited to the diversity of students and faculty and institutional resources/support. Although Latina/o academic outcomes are not equitable to other groups on the whole, it is notable that substantial differences in graduation rates exist between institutions and institutional types. For instance, although some public and private 4-year institutions successfully graduate less than a third of Latina/o students within 6 academic years; other institutions are graduating well over two thirds of Latina/o students (Nguyen, Bibo, & Engle, 2012). One institutional type ripe for investigation is the HSI. In particular, there is a need for research to better understand the role of HSIs in promoting or hindering Latina/o academic outcomes. Findings to date have been somewhat conflicting (e.g., Dayton, Gonzalez-Vasquez,

Martinez, & Plum, 2004; Laird, Bridges, Morelon-Quainoo, Williams, & Holmes, 2007; Maestas, Vaquera, & Zehr, 2007). Research that uses situation-centered approaches (in conjunction with person-centered approaches) is suggested to obtain a more holistic understanding of how and why the factors identified in this review may be related to Latina/o student outcomes in and out of HSIs (Castillo et al., 2006). Furthermore, additional research is recommended to better understand how students and the college context interrelate to impact outcomes (Arana et al., 2011).

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