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Understanding Differences in College Persistence: A Longitudinal Examination of Financial Circumstances, Family Obligations, and Discrimination in an Ethnically Diverse Sample

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Abstract

Ethnic and generation differences in motivation and achievement have been well-established. However, less work has examined the role of social factors on educational outcomes among individuals from diverse backgrounds. With a longitudinal sample of 408 Latino, Asian, and European-American students, we examine family, discrimination, and financial factors in 12th grade and two years later as predictors of persistence four years after high school, and as mediators of ethnic and generation differences in persistence. Results indicate that family obligations, discrimination, and financial burdens are associated with reduced rates of persistence, while high school GPA, SES, and financial aid are associated with higher rates of persistence. Ethnic differences in persistence are related to high school GPA and SES, as well as financial circumstances. Reducing ethnic disparities in college persistence should thus involve attention not only to academic factors, but also to family circumstances that may cause college attendance to be a hardship.

Changes in the demographic characteristics of the United States have led to increasing numbers of ethnic minority adolescents, and particularly Latino adolescents, graduating from high school (US Department of Education, 2011). Even with increased high school graduation rates of Latino students, numerous studies have shown that variations in high school achievement between ethnic groups continue to persist, demonstrating an Asian advantage and Latino disadvantage (Benitez & DeAro, 2004; Hagelskamp, Suarez-Orozco, & Hughes, 2010; Steinberg, Dornbusch, & Brown, 1992). In order for youth from all backgrounds to successfully transition to adulthood, it is necessary for them to enroll in college and, even more importantly, to complete a postsecondary degree (Dounay, 2008; Halperin, 1998). However, compared to experiences in secondary school, post-secondary education presents additional challenges that can make persistence towards a degree and

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eventual graduation more difficult for youth from traditionally under-represented backgrounds.

The goal of this study is to explore how economic factors, family obligations, and perceptions of discrimination, in addition to high school GPA, are related to college persistence, as well as how these factors help explain ethnic and generation differences in postsecondary persistence four years after high school graduation among Latino, Asian and European-American students. Although Latino immigrant youth experience reduced rates of participation at every stage of the educational pipeline towards college (Swail, Redd, & Perna, 2003), we follow only those students who have successfully graduated from high school and enrolled in a postsecondary program to examine persistence within this particular stage. The use of both high school and college data responds to recent calls for clearer links between K-12 and postsecondary education (e.g., Venezia, Callan, Finney, Kirst, & Usdan, 2005).

We begin by examining the extent to which there are ethnic and generation differences in persistence in this sample, four years after high school graduation. We then add high school GPA and SES, high school discrimination and family obligations, and postsecondary financial, family, and discrimination variables in a series of steps to explore the ways in which each of these sets of variables is related to persistence, as well as mediates the ethnic and generation differences in persistence, above and beyond the impact of the variables in the earlier steps. These steps allow us to go further than studies using national datasets (e.g., Bowen, Chingos, & McPherson, 2009; Hao & Ma, 2012), to explore the social factors that help explain well-established demographic differences in achievement and persistence.

High School GPA and Socioeconomic Status

One of the strongest predictors of college persistence is one's high school academic record and level of preparation for college (Daugherty & Lane, 1999). High achieving high school students are more likely to be successful in college, but also to enroll in colleges with higher graduation rates (IES, 2012). Given that numerous studies have found ethnic differences in high school GPA (e.g., Fuligni & Witkow, 2004; Hagelskamp, et al., 2010; Steinberg, et al., 1992), high school grades are one very obvious explanation for differences in college persistence.

In addition, one of the major challenges that immigrant and ethnic minority youth face in their path towards college graduation is related to their higher likelihood of being from lower socioeconomic backgrounds (see Pong & Landale, 2012). Even beginning earlier in their educational careers, parental education and financial resources are at least partially responsible for ethnic differences in achievement. For example, youth from Asian backgrounds, who tend to be of higher socioeconomic status (Fuligni & Witkow, 2004), perform better in high school than youth from Latino families (Hagelskamp et al., 2010). In addition, the "immigrant paradox" of achievement, in which more recent immigrants tend to perform better than later generations, tends to be more readily apparent when controlling for SES. It is only when compared with similarly low SES families that youth from immigrant

families achieve at higher levels than those from same-ethnic, non-immigrant families (Crosnoe, 2012; Pong & Zeiser, 2012).

High School Family Obligations and Perceptions of Discrimination

Above and beyond socioeconomic status and GPA, however, there are other high school social and experiential factors that can help explain differences in college persistence (Bowen, et al., 2009). One important social factor to understand is the extent to which youth derive a value of education, and thus motivation, from a sense of family obligations (Cabrera & Padilla, 2004; Suarez-Orozco & Suarez-Orozco, 1995). Youth from immigrant families believe that one way in which they can repay their parents for the sacrifices that were made for them is to succeed academically. However, family obligations can be a double-edged sword in terms of their influence on achievement. On the one hand, family obligations can provide important motivation to work hard in school. On the other hand, family obligations do not just translate into increased school motivation, but also to increased levels of actual assistance to the family, including behaviors such as helping to take care of brothers and sisters and translating for parents who are not fluent in English (Hardway & Fuligni, 2006). When these demands are chronic, they can take away from the time that adolescents can put into their school work (Telzer & Fuligni, 2009). As a result, for adolescents with high levels of family obligations, academic motivation does not necessarily translate into high levels of achievement (Fuligni, Tseng, & Lam, 1999).

Ethnic minority and immigrant adolescents also face the challenges of discrimination in high school. Not surprisingly, those who experience or perceive discrimination from peers and adults are at heightened risk for lower motivation and poorer achievement during high school (e.g., Huynh & Fuligni, 2010; Wong, Eccles, & Sameroff, 2003). While some of these experiences during adolescence may contribute to dropping out of the educational pipeline at high school graduation or before, discrimination experiences in high school may also contribute to reduced persistence in college among those who do enroll. In particular, discriminatory practices from teachers during high school may place ethnic minority and immigrant youth on an academic trajectory that limits their ability to be successful in college because of the lack of rigor of their coursework (Blank, Dabady, & Citro, 2004). Lower grades as a function of perceptions of discrimination during high school may also continue to haunt students even once they are enrolled in college.

Postsecondary Family Obligations, Perceptions of Discrimination, and Financial Circumstances

As students move beyond high school, young adults' current experiences with family obligations and perceptions of discrimination can continue to shape their educational trajectory. For example, compared to during high school, family obligations may increase in the likelihood that they will impede students' abilities to successfully manage both family and school demands. College-age students with a strong sense of family obligations may face a conflict between providing for their family financially and attending college (Tseng, 2004). In a very real sense, college may "cost" more for these students in terms of the

financial burden on the family of paying for college and their lost wages during the college years, reducing their ability to help support their family.

Of course, perceptions of discrimination during college can also contribute to reduced persistence. The social context between high school and college is potentially qualitatively different; therefore there may not be consistency between how individuals perceive discrimination in these two settings. Given the authority associated with faculty and staff in colleges, discrimination from these adults may affect college students' motivation or perceived ability to succeed. Indeed, just as in high school, perceptions of discrimination in college are associated with reduced rates of success and persistence (Nora & Cabrera, 1996). Discrimination from peers may also affect college students' persistence given the importance of social acceptance on persistence (Nora, 2004).

In addition, postsecondary financial factors above and beyond SES, such as contributing to the family financially or working at a job, can also hinder college persistence. Receiving financial aid is a clear way that students can reduce the financial burden of college. However, families differ in terms of their access to information about financial aid and thus financial aid itself. One challenge for immigrant youth is having parents who are relatively unfamiliar with the U.S. educational system because their own educational experiences were in a different country, if at all. These parents may be lacking the social capital to easily navigate through financial aid resources (Auerbach, 2004; Crosnoe, Cavanagh, & Elder, 2003; Dounay, 2008), making it difficult for them to help their children make informed decisions (Cooper, Chavira, & Mena, 2005; Kao & Tienda, 1995). At a very basic level, many students and their families may not know that financial aid resources other than loans are available or how to access them if they do know about them (see Bowen et al., 2009 for a thorough discussion on issues related to student and private loans). Lacking knowledge about financial aid can thus influence the kinds of colleges to which students apply, potentially funneling students to schools with lower graduation rates (Bowen et al., 2009; Dounay, 2008).

Successfully navigating financial aid can also be associated with persistence because of the college experiences of those who are struggling financially. When students have a gap between their financial needs and the financial aid they are receiving, one clear solution is working at a job to help fill this gap. However, increased work hours are associated with both lower rates of persistence (US Department of Education, 1998) and increased likelihood of attending school part-time, which in and of itself is associated with reduced persistence (Somers, 1995). In evaluating the perceived benefits of a college degree, students are also likely to consider the trade-offs of the current costs in terms of both college expenses and lost wages. This is particularly true among those with high levels of family obligations who are concerned about their potential lack of contributions to their family as well. It is important to note that these experiences are not just due to parental education and occupation, common indicators of SES, but to other more nuanced financial and familial circumstances.

The Current Study

The goal of the current study is to examine college persistence four years after high school graduation, among students from Latino, Asian and European-American backgrounds who enrolled in college. First, we identify ethnic and generation differences, as well as differences according to social and financial factors, in persistence. In particular, we examine high school GPA and SES, family obligations and perceptions of discrimination in 12th grade, and family obligations, perceptions of discrimination, and financial circumstances 2 years after high school graduation in a series of steps. These steps allow us to isolate the particular timing of experiences that help us understand differences in the path towards college persistence and eventual graduation. It is hypothesized that Latino students will persist at lower rates than those from Asian and European-American backgrounds. Above and beyond these differences, it is hypothesized that those with lower high school GPAs and from lower SES backgrounds will persist at lower rates. Finally, it is hypothesized that family obligations, perceptions of discrimination and financial hardships, both in high school and college will interfere with persistence, while receiving financial aid will help support persistence.

Second, we examine these social and financial factors as mediators of ethnic and generation differences in persistence. It is hypothesized that variables at each step will mediate the ethnic and generation differences. However, previous work does not offer evidence to suggest specific hypotheses regarding which of the variables at each step will have the strongest effect. A conceptual model showing the hypothesized associations is shown in Figure 1.

Method

Participants

The current study included 408 Latino, Asian, and European American participants (M_{age} 4 years after high school = 22.08, *SD* = .37) who enrolled in some form of postsecondary education after high school. Adolescents were considered first generation Americans if they were born outside the U.S. (age came to U.S. *M* = 6.74, *SD* = 5.35, range = 1–15), second generation if they reported at least one parent being born outside the U.S., and third generation if both parents were born in the U.S. The Asian (n = 202) sample consisted primarily of students from Chinese descent (68%) and were from the first-(29%) or second-generation (61%). The other Asian students were from Vietnamese (10%), Korean (5%), Japanese (5%), Filipino (4%), and other Asian backgrounds. The Latino sample (n = 125) consisted primarily of students from Mexican descent (68%) and were from the first- (15%) and second- (61%) generation. The other Latino students were from Guatemalan (4%), and Salvadoran 3 (2%), and other Latin American backgrounds. Unfortunately, given the small number of participants within these panethnic categories who claimed a nationality other than Mexican or Chinese, we were unable to explore within-group differences. European American adolescents (n = 81) were primarily third generation or more (78%). There were somewhat more females (57%) than males in the sample.

Procedure

As part of a larger longitudinal study, we recruited students from three public high schools in the Los Angeles area. The student bodies of these schools differed somewhat in terms of ethnic composition and socioeconomic status (California Department of Education, 2006). The first school primarily served students from Latin American and Asian families and 64% received free or reduced price meals, the second school enrolled mostly students from Latin American and European American families and 24% received free or reduced priced meals, and the third school included students primarily from Asian and European backgrounds and 9% received free or reduced priced meals. No school, however, was dominated by a single ethnic group; the largest ethnic groups of each school composed 30% – 50% of the total population.

In all three schools, the entire twelfth grade was recruited through in-class presentations. Students who returned parent consent forms and provided their own assent completed a questionnaire during class time, and were paid $30 for their participation. Although the questionnaire was available in multiple languages, all participants completed the surveys in English. Sixty percent (n = 744) of the students enrolled in twelfth grade participated in the study. Of the 744 students, 525 and 553 adolescents participated again two and four years after high school. Because this study focuses predictors of persistence, only participants who completed both follow-up waves (N = 522; 70%) were included in this study. Chi-square tests indicate ethnic differences in overall retention, such that Asian students were more likely, and Latino students were less likely to participate in both follow-up waves (retention: Latino = 59%, Asian = 81%), $p < .05$. Participants who participated in all waves had higher GPAs ($M = 3.06$, $SD = .66$), higher SES ($M = -.02$, $SD = .88$), and less adult discrimination ($M = 1.63$, $SD = .81$) in high school than those who did not complete both waves ($M_{GPA} = 2.64$, $SD_{GPA} = .72$; $M_{SES} = -.18$, $SD_{SES} = .84$; $M_{disc} = 1.82$, $SD_{disc} = .92$), ts(661–684) = 2.28–7.23, ps < .05. There were no differences in participation by high school family obligation or peer discrimination, ts(661–684) = .70–1.01, ps = .32–.50.

We also excluded those from ethnic backgrounds other than European, Latino and Asian because this sample was too heterogeneous to make meaningful comparisons (e.g., African American, Middle Eastern, multiethnic, etc.; n = 23, 4%). Finally, because our analysis focuses on examinations of academic persistence among those who enroll in college, we excluded participants with the following criteria: 1) never sought a post-secondary degree after high school (n = 21, 4%), 2) have missing data on our key variables (n = 70, 13%, primarily due to missing information in terms of high school GPA and family obligations after high school). Follow up *t*-tests indicate that participants missing high school GPA data (n = 23) had lower SES than those with GPA data ($p = .01$). Participants missing current (n = 26) or future (n = 29) family assistance data 2 years after high school received less financial aid ($p < .01$). There were no other significant differences between those who were and were not missing data on these variables. The final sample thus included only participants who had complete data for all variables (N = 408, 78%).

Measures

12th Grade Predictors

Academic achievement: Official school records were obtained at the end of the 12th grade school year and were used to calculate a grade point average (GPA), ranging from 0.0 to 4.0.

Socioeconomic status (SES): Adolescents reported their parents' educational level, using a scale that ranged from 1 (*elementary school*) to 6 (*graduate school*), and their parents' current occupation. Occupations were coded according to a 5-point scale ranging from 1 (*unskilled level*) to 5 (*professional level*); examples of unskilled worker included occupations such as furniture mover, gas station attendant, food service worker, and professional workers included occupations such as architect, dentist, and physician. SES was calculated by standardizing adolescent reports of parental education and occupation and averaging these variables.

Current family assistance: Current assistance (Fuligni et al., 1999) refers to the degree to which participants believe they should assist with household tasks (e.g., translating, spending time at home) on a 5 point scale (1 = *almost never*, 5 = *almost always*). Consistent with prior studies that found similar predictive values across groups (Fuligni, 1999; Tseng, 2004), and good reliability with Mexican (Telzer, Gonzales, & Fuligni, 2013) and Chinese samples (Juang & Cookston, 2009), this 12-item measure had good reliability (α = .86) and was similarly consistent among the different ethnic groups (Latin American: .88, Asian: .86, European American: .85).

Future family assistance: Future assistance (Fuligni et al., 1999) is the value participants place on supporting the family in the future. Participants respond to six items on a 5 point scale (1 = *not at all important*, 5 = *very important*) to indicate how important they believe it is to help their parents financially, live or go to college near their parents, and take care of their parents and other family members in the future. Consistent with prior studies that found similar predictive values and internal consistence across groups (Fuligni, 1999; Tseng, 2004), this measure had acceptable reliability (α = .76) and was similarly consistent among the different ethnic groups (Latin American: .79, Asian: .69, European American: .66).

Perceived adult discrimination: The frequency of perceived discrimination by adults was assessed using Greene, Way, and Paul's (2006) seven item scale. Adolescents were asked how often (1 = *never*, 5 = *all the time*) they perceived discrimination experiences from adults (e.g., "Feel that adults treat you with less respect because of your race or ethnicity," and "Feel that adults threaten or harass you because of your race or ethnicity?"). This measure had good reliability (α = .93) and was consistent among ethnic groups (Latino: .94; Asian: .93; European: .90). Other work has also shown this measure to have good test-retest reliability (Greene et al., 2006) be similarly predictive across groups (e.g., Greene et al., 2006; Huynh & Fuligni, 2010).

Perceived peer discrimination: The frequency of perceived discrimination by peers was assessed with the same items used above, but asked about "kids" in 12th grade. This measure had good reliability (α = .93) and was consistent among the different ethnic groups

(Latino: .94; Asian: .93; European: .84). Other work has also shown this measure to have good test-retest reliability (Greene et al., 2006) be similarly predictive across groups (e.g., Greene et al., 2006; Huynh & Fuligni, 2010).

Postsecondary Predictors Two Years after High School—The family and discrimination variables described above were also collected two years after high school and demonstrated good reliability (αs = .70–.95). Additional information about financial situation, described below, was also collected.

Work: Participants indicated if they (Y/N) were currently working at a job.

Received financial aid: Participants indicated if they (Y/N) have ever received financial aid for their college education.

Financial contributions: Participants indicated (Y/N) if they currently contribute to the financial support of their parents, siblings, grandparents, and other relatives, regardless of whether these family members live with them.

College Persistence Four Years after High School—Participants indicated whether they were currently taking academic courses at a two- or four-year college, and if so, what kind of school it was (1 = *2-year community college*, 2 = *four-year university*, 3 = *vocational*, 4 = *technical*, 5 = *trade*, 6 = *don't know*) and the type of degree they were studying for (1 = *none*, 2 = *certificate*, 3 = *Associate's degree*, 4 = *Bachelor's degree*, 5 = *don't know*, 6 = *other*). Participants who were not currently taking academic courses indicated if they already graduated from a four-year college. Participants were considered as persisting if they 1) had already graduated from a four-year college (22%) or 2) were currently attending a four-year college or were studying for a Bachelor's degree (53%).

Results

Preliminary Results

As shown in Table 1, at a bivariate level, higher high school GPA and SES were positively correlated with persistence. High school future family assistance, discrimination from adults and discrimination from peers were negatively correlated with persistence. Post-secondary current family assistance, discrimination from adults, financial contributions to others, and work status were negatively correlated with persistence, and financial aid was positively correlated with persistence.

Because we are interested in ethnic and generation differences in persistence, we first conducted Analyses of Variances (ANOVA) to test for differences in the key variables by ethnicity, generation, and their interaction. If a significant main effect was found, post hoc analyses were conducted using a Bonferonni correction at $p < .05$. As shown in Table 2, in 12th grade, controlling for generation, parents of European American adolescents were more likely to have higher education and occupation statuses than their Asian counterparts, who were more likely to have higher education and occupation status than Latino parents. Latino participants had the lowest high school grade point averages. Latino and Asian participants

reported higher levels of future family assistance and perceptions of discrimination than their European peers.

Two years after high school, Asian and Latino participants reported more future assistance and adult discrimination than European-American participants. Latino participants were also more likely to contribute financially to their family than their other ethnic peers and less likely to receive financial aid compared to their Asian peers.

Controlling for ethnicity, there were also significant main effects of generation status (see Table 3). Specifically, third generation adolescents were more likely to be of higher SES than first or second generation adolescents. In 12th grade and two years after high school, first and second generation participants reported higher levels of future family assistance than their third generation peers. However, only second generation youths reported more current assistance two years after high school than their third generation peers. Moreover, second generation participants reported more financial contributions to their family than their third generation peers. Lastly, first and second generation students were more likely to receive financial aid than third generation students.

The interaction of ethnicity and generational status was only significant for financial aid. ANOVAs testing for generation differences separately by ethnic group indicated that among Asian participants, first generation students (M = .86, SD = .35) were more likely than their third generation (M = .58, SD = .51) peers to receive financial, but did not differ from second generation peers (M = .75, SD = .43), $F(2, 199) = 3.62$, p = .03. Among European American participants, second generation students (M = 1.00, SD = .00) were more likely to receive financial aid than their third generation peers (M = .49, SD = .50), and did not differ from first generation students (M = .63, SD = .52), $F(2, 78) = 4.99$, p = .009. There were no generation differences in receipt of financial aid among Latino participants, $F(2, 121) = 1.61$, p = .20.

Analysis Plan

All analyses were conducted using the statistical software SPSS. A preliminary logistic regression model explored interactions between generation and ethnicity in persistence. The key models first tested for demographic differences in persistence. Latino and first generation students were used as the reference groups because of their lower rates of college attendance than their Asian and European American, and later generation, peers. The second model added SES and high school GPA. The third model added all 12th grade family and discrimination predictors to determine whether any contextual high school factors predicted persistence above and beyond the other variables. The fourth model added all postsecondary predictors.

At each step we tested whether inclusion of the factors in that step, controlling for variables in the earlier steps, mediated the initial ethnic difference. Using MacKinnon and Dwyer's (1993; see Herr, n.d.) approach for dichotomous variables, we started by estimating the total effects of ethnicity and generation on persistence. Then, we estimated the indirect effects of each of these associations through three groups of factors: high school GPA and SES, high school factors, and post-secondary factors. At each step, we controlled for variables in the

earlier steps (e.g., models testing the mediating role of high school factors included GPA and SES). Finally, we divided each indirect effect by the corresponding direct effect to get an estimate of the proportion of each direct effect that could be accounted for by the potential mediators. Post hoc tests were conducted using the RMediation program (Tofighi & MacKinnon, 2011), which computes asymmetric confidence limits based on the distribution of products. MacKinnon, Fairchild, & Fritz (2007) assert that these confidence limits are more powerful and produce more accurate Type 1 error rates, compared to Baron and Kenny's (1986) method. All analyses controlled for gender.

Predictors of Persistence

Preliminary Model—Testing for Ethnicity x Generation interactions—An initial model found ethnic, generation, and ethnicity x generation effects on persistence (see Table 4). To understand the interaction findings, analyses examining generation differences were conducted separately by ethnic group. These results revealed that there was a generation difference for Latino participants, but not for Asian or European students (see Figure 2). Specifically, among Latino participants, third generation students ($b = 1.24$, $SE = .62$, $p < .05$) were more likely and second generation students ($b = 1.00$, $SE = .54$, $p = .07$) were marginally more likely to persist than first generation students. Given the generation difference only for Latino students, and the fact that generation was not equally distributed across ethnic groups, further analyses explored ethnic differences in persistence in one set of models, with another set of models restricted to Latino participants to explore generation differences in persistence.

Ethnicity and Generation Differences—Logistic regression results examining ethnic differences in persistence are presented in the first two columns of Table 5. European American and Asian students were more likely to persist than their Latino peers. Both Asian and European American students had more than five times the odds of persisting than Latino students. Specifically, 86% and 85% of Asian and European American students, respectively, were either currently enrolled or had already graduated from a 4-year college. However, only 50% of Latino students were persisting.

Results examining generation differences in persistence among Latino participants are presented in the first two columns of Table 6. Third generation Latino students (59%) were significantly more likely to persist and second generation Latino students (53%) were marginally more likely to persist than first generation Latino students (32%).

The Role of SES and High School GPA—Next, we examine the role of SES and high school GPA on persistence. As shown in columns three and four of Table 5, as expected, high school GPA and family SES predicted a higher likelihood of persisting, above and beyond ethnicity. As shown in Table 6, this was also true for Latino students, controlling for generation status.

The Role of Contextual Factors at 12th Grade—We next tested whether family obligations and discrimination were associated with persistence above and beyond the effects of demographic characteristics, SES, and high school GPA. When all family and

discrimination factors from 12th grade were entered into the model, future family assistance and adult discrimination negatively predicted persistence. However, current family persistence and peer discrimination were not associated with persistence.

Among Latino students, only future family assistance was associated with a lower likelihood of persistence.

The Role of Postsecondary Predictors—Finally, we tested whether economic variables, discrimination, and family factors from two years after high school were additionally associated with persistence, controlling for all of the variables in the earlier steps. When these predictors were entered into the model, financial contributions to others negatively predicted persistence, whereas receipt of financial aid positively predicted persistence.

Among Latino students, more financial aid was associated with higher persistence while working at a job was marginally associated with lower persistence.

Mediating Persistence

As described previously, Asian and European American students were more likely to persist than their Latino peers. In addition, Latino third generation students were more likely to persist than their first generation peers. Thus, mediation analyses sought to explain these ethnic differences and the generation difference among Latino students.

Ethnic Differences

Asian and Latino: Including GPA and SES reduced the difference in persistence between Asian and Latino students by 42%. Including contextual high school factors did not significantly explain more of the variance. However, including post-secondary high school factors reduced the Asian and Latino ethnic difference by an additional 12%. Tests of individual indirect paths indicated significant mediation by GPA ($Z = 4.98$, $p < .001$), SES ($Z = 2.56$, $p = .01$), and receipt of financial aid ($Z = 2.50$, $p = .01$). Consistent with statistically significant mediation (MacKinnon et al., 2007), confidence intervals did not include zero (GPA: .04–.09; SES: .01–.04; Financial aid: .02–.15).

European and Latino: The higher rate of persistence among European American, compared to Latino, participants was reduced by 58% with the inclusion of GPA and SES. The addition of contextual high school and post-secondary factors reduced the ethnic difference by an additional 16% and 5%, respectively. Tests of individual indirect paths indicated significant mediation by GPA ($Z = 4.27$, $p < .001$), SES ($Z = 3.56$, $p < .001$), and financial contributions to others ($Z = 2.19$, $p = .03$); confidence intervals did not include zero (GPA: .03–.07; SES: .03–.09; Financial contributions: .02–.14).

Generation Differences—Among Latino students, the higher rate of persistence among 3rd generation compared to 1st generation was reduced by 6% with the inclusion of GPA and SES, and an additional 20% and 5% with the inclusion of contextual high school and post-secondary factors, respectively. However, tests of individual indirect paths indicate no significant mediation of any individual factor, and these confidence intervals did include 0.

Discussion

The continued and growing importance of college and advanced degrees for financial security (Day & Newberger, 2002; Dounay, 2008; US Census Bureau, 2013) makes it important to consider college persistence and completion in understanding whether or not an individual has made a successful transition to adulthood. The goal of this study was to explore a single stage in the educational pipeline—persistence towards college graduation four years after high school. To this end, we first examined ethnic and generation differences, as well as social differences, in persistence. These demographic differences are critical from a policy standpoint given continued disparities in college graduation rates (e.g., Benitez & DeAro, 2004; Hagelskamp et al., 2010). Then we examined these social differences as mediators of the ethnic and generation differences in persistence. The social factors were explored longitudinally, first towards the end of high school, and then 2 years after high school graduation. The longitudinal design allowed us to capture the changing nature of the type of experiences that are likely to impact persistence. While many other studies have examined persistence among students in a single college (e.g., Azmitia, Syed, & Radmacher, 2008; Somers, 1995; Wintre, Bowers, Gordner, & Lange, 2006), the students in this sample went to a variety of different colleges, such that our findings are unlikely to be due to the idiosyncrasies of a single college, including characteristics such as ethnic diversity and financial aid policies. Further, compared to studies using national datasets (e.g., Bowen et al., 2009; Hao & Ma, 2012), our study has the advantage of a more in-depth assessment of the economic and social factors that can help us understand generation and ethnic differences in persistence. Interventionists may find that further consideration of these factors can help reduce some of the widely noted and lamented differences in postsecondary completion.

Ethnic and Generation Differences in Persistence

Consistent with previous research (e.g., Bowen et al., 2009; Fuligni & Witkow, 2004), we found striking ethnic differences in rates of college persistence, with Asian and European American students persisting at much higher rates than Latino students. Among Latino students, we also found that those from the third generation persisted at a higher rate than those from the first generation, and those from the second generation persisted at a marginally higher rate than those from the first generation. Together, the ethnic and generation differences indicate that first generation Latinos are particularly struggling in their pursuit of a postsecondary degree. This finding contradicts the “immigrant paradox” which has identified advantages for immigrants compared to their same-ethnic non-immigrant peers (e.g., Fuligni, 1997). One possible explanation is that this was a select sample of high school graduates. In particular, the participants in this sample had already made it further in the educational pipeline than many of their same-ethnic and generational peers. Another possible explanation is that the high levels of motivation seen in immigrant youth are not enough to sustain the increase in challenges that they face as they move from high school to college. Some of these challenges can be attributed to the social and background factors that we explored—high school achievement, family obligations, perceptions of discrimination, and financial circumstances including SES.

Differences in Persistence beyond Ethnicity and Generation

Controlling for ethnicity, generation, as well as the other variables we explored, family obligations and perceptions of discrimination in high school, and financial circumstances two years after high school were all associated with likelihood of persistence. In particular, a sense of future family assistance and perceptions of discrimination from adults in high school both reduced the likelihood of persistence. Contributing financially to one's family two years after high school also reduced the likelihood of persistence, while receiving financial aid increased the likelihood of persistence.

While family obligations are associated with increased motivation in high school (Suarez-Orozco & Suarez-Orozco, 1995), our results suggest that those who anticipate helping more in the future while in high school may find that motivation and value of education may not be enough during the college years, given the actual helping behaviors that go along with family obligations during this period. This interpretation is consistent with the marginal association between current assistance two years after high school and persistence, controlling for the high school and college variables. When considered along with the finding that financial contributions to the family 2 years after high school graduation also negatively predicted persistence, it may very well be that after high school, family obligations take the form of being a financially contributing member of the family, in addition to the daily tasks of high school such as translating documents or babysitting (Telzer & Fuligni, 2009). With a limited number of hours in the day, these individuals may simply find it impossible to make time for successful school completion. Unfortunately, however, this strategy will likely take a financial toll over one's life span given increased lifetime wages for college graduates (Day & Newberger, 2002; Halperin, 1998).

Receiving financial aid, on the other hand, was associated with increased rates of persistence. However, financial aid was not experienced uniformly, with Asian students being the most likely recipients. While some differences in receipt of financial aid may be due to individual differences in the colleges that participants attend (e.g., two-year vs. four-year, private vs. public in-state), some of the differences may also be due to participants' ability to seek out financial aid resources. While not necessarily overtly discriminatory, ethnic differences in social capital pertaining to these resources may reinforce ethnic differences in college enrollment and persistence (Auerbach, 2004; Crosnoe, et al., 2003). It is notable that financial contributions to the family and receipt of financial aid were significant predictors of persistence above and beyond our measure of SES, as defined by parental education and occupation, suggesting that students' college-related financial experiences vary among those with similar SES backgrounds in meaningful ways for persistence.

Interestingly, while perceptions of discrimination by adults in high school predicted college persistence, perceptions of discrimination two years after high school were not associated with persistence. One interpretation is that discrimination during adolescence has stronger and more long-term effects on academics than during college. Because a major task of adolescence is to develop a sense of identity (Erikson, 1968), perceptions of identity threat or exclusion may be especially salient at this time. Discrimination during adolescence may also shape youths' academic experiences (e.g., academic motivation, Wong et al., 2003;

GPA, Huynh & Fuligni, 2010) and decisions that have consequences for future success and attainment (Blank et al., 2004; Garcia Coll, Crnic, Lamberty, & Wasik, 1996). Discrimination during college, on the other hand, may affect different aspects of adjustment not measured in this study (e.g., psychological well-being). Whereas high school students need to make the important decision of if and where to apply to college, college students in our sample already made that choice by the time they reported about discrimination in the second wave of our study. Thus, these youths may have already made the decision to persist. These explanations can also help explain why perceptions of discrimination did not mediate the ethnic difference in persistence. It is possible that the effects of discrimination were already reflected in the model in terms of high school GPA and the sample in terms of the decision to enroll in college after graduation.

Another explanation could be that experiences of discrimination during the transition to adulthood are qualitatively different from those in high school. The types of discrimination college students face may be less overt because it is not socially acceptable to openly discriminate, especially in light of many universities' commitment to ethnic diversity (Association of American Colleges and Universities, 2011; McConahay, Hardee, & Batts, 1981). However, Huynh and Fuligni (2012) found that individuals do not have to experience overt discrimination in order to recognize the subtle ways that their ethnic group is devalued or negatively stereotyped; this recognition, in turn, was associated with worse mental health. Thus, although discrimination during the transition to adulthood may not associated with persistence, it continues to have associations with depressive and somatic symptoms (e.g., stomachaches; Huynh & Fuligni, 2012), which are also important to consider in our understanding of whether an individual has made a successful transition to adulthood. Finally, given that for many individuals, college is a time of identity exploration (e.g., Syed, 2010), the timing of the impact of perceptions of discrimination during college may vary at an individual level. Thus, our single assessment two years into college may have been less effective than a measure that allowed for an assessment of the fluidity of students' experiences across their college careers.

Mediators of Ethnic and Generation Differences in Persistence

In addition to understanding the variety of ways in which social experiences are associated with persistence, we also explored these variables as mechanisms for the ethnic and generation differences in persistence. In order to understand which of the social and financial factors explain the ethnic and generation differences in persistence, we first tested high school GPA and SES as mediators. When tested individually, each explained a significant portion of the ethnic differences in persistence, consistent with other work demonstrating ethnic differences in these variables as well as associations between each of these features and college persistence (e.g., GPA: Daugherty & Lane, 1999; Hagelskamp, et al., 2010; SES: Bowen et al., 2009; Pong & Landale, 2012). However, neither mediated the generation difference for Latino participants. While others have found stronger support for the immigrant paradox for school achievement when controlling for SES (Crosnoe, 2012), this was not the case in this sample. It may be that our sample had a relatively restricted SES range such that we were not able to see the immigrant advantage at the very lowest SES levels. Additionally, all participants in the sample completed the survey in English,

suggesting that even our first generation participants were not particularly recent immigrants. Indeed, 72% of first generation participants arrived in the U.S. at age 10 or younger.

Of the factors that were associated with persistence beyond high school GPA and SES, only receipt of financial aid mediated the persistence difference between Asian and Latino participants and contributing financially to one's family mediated the difference between European and Latino participants, when considered alongside all of the other variables we explored. While the specific financial factor that mediated the ethnic difference varied between the groups, the take-home message of these findings is the same. That is, compared to Asian and European American individuals with similar SES backgrounds, Latino students have additional financial burdens that make persistence more challenging. Given differences in family obligations, some of these burdens may be related to cultural rather than absolute differences.

None of the factors we explored helped us understand the generation difference in persistence for Latino participants. It is possible that this is related to our limited sample size, particularly among first and third generation Latinos. Given the magnitude of the reduced generation difference with the inclusion of contextual high school factors (an additional 20%), with a larger sample, expectations of future family assistance during high school may emerge as a significant mediator of these generation differences. It is also possible that our categorization of generation was too simplistic and that other measures of acculturation or identity could help elucidate the process by which individuals from different backgrounds experience college itself (e.g., Azmitia et al., 2008).

Limitations and Future Directions

While this study is important in our understanding of the ethnic and generation differences in college persistence, there are a number of limitations that should be addressed in future work. First, in exploring ethnic and generation differences, we were limited by the reality of the demographics of the Los Angeles area, from which the sample was originally drawn. In particular, we had very few Latino and Asian youth from non-immigrant families in the sample, and very few immigrant youth with European backgrounds. This made it difficult to make comparisons across ethnic groups about generation differences. Due to sample size issues, we also were unable to draw conclusions about variations among individuals from different groups within the Latino and Asian panethnic categories. Similarly, there were socioeconomic status differences across ethnic groups. While controlling for SES helps this somewhat, it is clear that the day-to-day economic reality of an individual's life is far more complex than this single snapshot based on parental education and occupation (see also Fuligni & Yoshikawa, 2003). The other financial factors that we explored in this study shed some light on this issue, suggesting that need for financial aid and access to financial aid are not necessarily one and the same.

Additionally, there were differences in the high school characteristics between participants who completed the postsecondary follow-up surveys and those who did not, with those who did participate possessing characteristics (e.g., high school GPA, SES, and adult discrimination) that may have made it more likely that they would persist towards

graduation. While this may have made our tests more conservative than they would have otherwise been, it is also possible that students who seem at risk in high school vary in terms of the patterns we explored here in ways that we were not able to test.

Finally, while there were advantages to examining students across a number of colleges, this approach presents limitations as well. In particular, colleges vary tremendously in terms of both cost and availability of financial aid. A student attending a more expensive school may thus have a greater need for financial aid than a student attending a less expensive school, regardless of family financial circumstances. Differences in the expense of college are particularly pronounced between two- and four-year colleges. Receipt of financial aid may therefore predict persistence because of other features of the college, rather than financial need itself. Additional explanatory variables such as college cost and availability of college-based financial aid should be explored in the future.

Conclusion

First generation Latino students face challenges to their successful school completion at every stage of the educational pipeline. Even among the select sample of high school graduates that we examined here, these students persisted towards a four-year college degree at a rate substantially lower than their peers. These differences were explained by differences in financial burdens. More research is needed to further flesh out these findings, and to incorporate these results with other work on the importance of college social factors such as belonging on persistence (e.g., Witkow, Gillen-O'Neel, & Fuligni, 2012). However, these findings suggest that reducing ethnic disparities in college graduation rates involves attention not only to academic factors, but also to young adults' family and social circumstances that may cause college attendance to be a hardship. Given that some of these burdens may be due to lack of information about college costs and financial aid itself (Dounay, 2008), closer connections between colleges and K-12 institutions (see Venezia et al., 2005) may help alleviate some of the disconnect between graduating from high school and successfully completing college, particularly for students from traditionally under-represented groups.

References

Association of American Colleges and Universities. 2011. Retrieved August 28, 2011, from http://www.aacu.org/about/index.cfm

Auerbach S. Engaging Latino parents in supporting college pathways. Lessons from a college access program. Journal of Hispanic Higher Education. 2004; 3(2):125–145.10.1177/1538192703262514

Azmitia, M.; Syed, M.; Radmacher, K. On the intersection of personal and social identities: Introduction and evidence from a longitudinal study of emerging adults. The intersections of personal and social identities. In: Azmitia, M.; Syed, M.; Radmacher, K., editors. New Directions for Child and Adolescent Development. Vol. 120. 2008. p. 1-16.

Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology. 1986; 51(6):1173–1182.10.1037/0022-3514.51.6.1173 [PubMed: 3806354]

Benitez M, DeAro J. Realizing student success at Hispanic-serving institutions. New Directions for Community Colleges. 2004; 127:35–48.

Blank, RM.; Dabady, M.; Citro, CF., editors. Measuring racial discrimination. National Academies Press; 2004.

Bowen, WG.; Chingos, MM.; McPherson, MS. Crossing the finish line: Completing college at America's public universities. Princeton, NJ: Princeton University Press; 2009.

Cabrera NL, Padilla AM. Entering and succeeding in the "culture of college": The story of two Mexican heritage students. Hispanic Journal of Behavioral Sciences. 2004; 26:152–170.10.1177/0739986303262604

California Department of Education. School summary data. 2006. Retrieved January 27, 2006, from http://dq.cde.ca.gov/dataquest/

Cooper CR, Chavira G, Mena DD. From pipelines to partnerships: A synthesis of research on how diverse families, schools, and communities support children's pathways through school. Journal of Education for Students Placed at Risk. 2005; 10(4):407–430.10.1207/s15327671espr1004_4

Crosnoe, R. Studying the immigrant paradox in the Mexican-original population. In: Garcia Coll, C.; Marks, AK., editors. The Immigrant Paradox in Children and Adolescents: Is Becoming American a Developmental Risk?. Washington, DC: American Psychological Association; 2012. p. 61-76.

Crosnoe R, Cavanagh S, Elder GH. Adolescent friendships as academic resources: The intersection of friendship, race, and school disadvantage. Sociological Perspectives. 2003; 46(3):331–352.10.1525/sop.2003.46.3.331

Daugherty TK, Lane EJ. A longitudinal study of academic and social predictors of college attrition. Social Behavior and Personality. 1999; 27(4):355–362.

Day, JC.; Newberger, EC. Current Population Reports. US Census Bureau; 2002. The big payoff: Educational attainment and synthetic estimates of work-life earnings.

Dounay, J. Strategies to empower low-income and minority students in gaining admission to and paying for college. Denver, CO: Education Commission of the States; 2008.

Erikson, E. Identity: Youth and crisis. New York: Norton; 1968.

Fuligni AJ. The academic achievement of adolescents from immigrant families: The roles of family background, attitudes, and behavior. Child Development. 1997; 68(2):351–363. [PubMed: 9180006]

Fuligni AJ, Tseng V, Lam M. Attitudes toward family obligations among American adolescents with Asian, Latin American, and European backgrounds. Child Development. 1999; 70(4):1030–1044.10.1111/1467-8624.00075

Fuligni AJ, Witkow M. The postsecondary educational progress of youth from immigrant families. Journal of Research on Adolescence. 2004; 14(2):159–183.10.1111/j.1532-7795.2004.01402002.x

Fuligni, AJ.; Yoshikawa, H. Socioeconomic resources, parenting, and child development among immigrant families. In: Bornstein, MH.; Bradley, RH., editors. Socioeconomic Status, Parenting, and Child Development. NJ, US: Lawrence Erlbaum Associates Publishers; 2003. p. 107-124.

Garcia Coll C, Crnic K, Lamberty G, Wasik BH. An integrative model for the study of developmental competencies in minority children. Child Development. 1996; 67(5):1891–1914. [PubMed: 9022222]

Greene ML, Way N, Pahl K. Trajectories of perceived adult and peer discrimination among Black, Latino, and Asian American adolescents: patterns and psychological correlates. Developmental psychology. 2006; 42(2):218. [PubMed: 16569162]

Hagelskamp C, Suarez-Orozco C, Hughes D. Migrating to opportunities: How family migration motivations shape academic trajectories among newcomer immigrant youth. Journal of Social Issues. 2010; 66(4):717–739.10.1111/j.1540-4560.2010.01672.x

Halperin, S., editor. The forgotten half revisited: American youth and young families, 1988–2008. Washington, DC: American Youth Policy Forum; 1998.

Hao, L.; Ma, Y. Immigrant youth in postsecondary education. In: Garcia Coll, C.; Marks, AK., editors. The Immigrant Paradox in Children and Adolescents: Is Becoming American a Developmental Risk?. Washington, DC: American Psychological Association; 2012. p. 275-296.

Hardway C, Fuligni AJ. Dimensions of family connectedness among adolescents with Mexican, Chinese, and European backgrounds. Developmental Psychology. 2006; 42(6):1246–1258.10.1037/0012-1649.42.6.1246 [PubMed: 17087556]

Herr, NA. Mediation with Dichotomous Outcomes. undatedRetrieved October 23, 2013 from website: http://www.nrhpsych.com/mediation/logmed.html

Huynh VW, Fuligni AJ. Discrimination Hurts: The Academic, Psychological, and Physical Well Being of Adolescents. Journal of Research on Adolescence. 2010; 20(4):916–941.

Huynh VW, Fuligni AJ. Perceived Ethnic Stigma Across the Transition to College. Journal of Youth and Adolescence. 2012:1–14.

IES. Retention of first-time degree-seeking undergraduates at degree-granting institutions, by attendance status, level and control of institution, and percentage of applications accepted: 2006 to 2011. 2012. Retrieved from: http://nces.ed.gov/programs/digest/d12/tables/dt12_378.asp

Juang LP, Cookston JT. A longitudinal study of family obligation and depressive symptoms among Chinese American adolescents. Journal of Family Psychology. 2009; 23(3):396. [PubMed: 19586202]

Kao G, Tienda M. Optimism and achievement: The educational performance of immigrant youth. Social Science Quarterly. 1995; 76(1):1–19.

MacKinnon DP, Fairchild AJ, Fritz MS. Mediation analysis. Annual Review of Psychology. 2007; 58:593–614.10.1146/annurev.psych.58.110405.085542

Marks AK, Ejesi K, Garcia Coll C. Understanding the U.S. immigrant paradox in childhood and adolescence. Child Development Perspectives. 2014; 8(2):59–64.

McConahay J, Hardee B, Batts V. Has racism declined in America? It depends on who is asking and what is asked. Journal of Conflict Resolution. 1981; 25(4):563–579.

Nora A. The role of habitus and cultural capital in choosing a college, transitioning from high school to higher education, and persisting in college among minority and nonminority students. Journal of Hispanic Higher Education. 2004; 3(2):180–208.

Nora A, Cabrera AF. The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. The Journal of Higher Education. 1996; 67(2):119–148.

Pong S, Landale NS. Academic achievement of legal immigrants' children: The roles of parents' pre- and postmigration characteristics in origin-group differences. Child Development. 2012; 83(5): 1543–1559.10.1111/j.1467-8624.2012.01790.x [PubMed: 22966922]

Pong, S.; Zeiser, KL. Student engagement, school climate, and academic achievement of immigrants' children. In: Garcia Coll, C.; Marks, AK., editors. The Immigrant Paradox in Children and Adolescents: Is Becoming American a Developmental Risk?. Washington, DC: American Psychological Association; 2012. p. 209-232.

Somers P. A comprehensive model for examining the impact of financial aid on enrollment and persistence. Journal of Student Financial Aid. 1995; 25(1):13–27.

Steinberg L, Dornbusch SM, Brown BB. Ethnic differences in adolescent achievement: An ecological perspective. American Psychologist. 1992; 47(6):723–729.10.1037/0003-066X.47.6.723 [PubMed: 1616171]

Suarez-Orozco, C.; Suarez-Orozco, MM. Transformations: Immigration, family life, and achievement motivation among Latino adolescents. Stanford, CA: Stanford University Press; 1995.

Suarez-Orozco, C.; Suarez-Orozco, M. Children of immigration. Cambridge, MA: Harvard University Press; 2001.

Swail WS, Redd KE, Perna LW. Retaining minority students in higher education: A framework for success. ASHE-ERIC Higher Education Report. 2003; 30(2)

Syed M. Memorable everyday events in college: Narratives of the intersection of ethnicity and academia. Journal of Diversity in Higher Education. 2010; 3(1):56–69.10.1037/a0018503

Telzer EH, Gonzales N, Fuligni AJ. Family obligation values and family assistance behaviors: Protective and risk factors for Mexican–American adolescents' substance use. Journal of Youth and Adolescence. 2014; 43(2):270–283. [PubMed: 23532598]

Telzer EH, Fuligni AJ. A longitudinal daily diary study of family assistance and academic achievement among adolescents from Mexican, Chinese, and European backgrounds. Journal of Youth and Adolescence. 2009; 38:560–571.10.1007/s10964-008-9391-7 [PubMed: 19636728]

Tofighi D, MacKinnon DP. RMediation: An R package for mediation analysis confidence intervals. Behavior Research Methods. 2011; 43:692–700. [PubMed: 21487904]

Tseng V. Family interdependence and academic adjustment in college: Youth from immigrant and U.S.-born families. Child Development. 2004; 75(3):966–983. [PubMed: 15144497]

US Census Bureau. 1975–2002 March Current Population Survey, 2003–2012 Annual Social and Economic Supplement to the Current Population Survey. 2013. Retrieved 2/18/13 http://www.census.gov/hhes/socdemo/education/data/cps/historical/fig10.jpg

U.S. Department of Education; National Center for Education Statistics, Common Core of Data (CCD), . State Nonfiscal Survey of Public Elementary/Secondary Education," 1996–97 through 2008–09; and National Public Elementary and Secondary High School Graduates by Race/Ethnicity Model, 1995–96 through 2007–08. 2011. (This figure was prepared February 2011.). Retrieved 1/10/13 from: http://nces.ed.gov/programs/projections/projections2020/figures/figure_07.asp?referrer=list

U.S. Department of Education. National Center for Education Statistics. Profile of Undergraduates in US Postsecondary Education Institutions: 1995–96. Washington, D.C: 1998.

Venezia, A.; Callan, PM.; Finney, JE.; Kirst, MW.; Usdan, MD. The governance divide: A report on a four-state study on improving college readiness and success. San Jose, CA: Institute for Educational Leadership; 2005.

Wintre MG, Bowers C, Gordner N, Lange L. Re-evaluating the university attrition statistic: A longitudinal follow-up study. Journal of Adolescent Research. 2006; 21(2):111–132.10.1177/0743558405285658

Witkow MR, Gillen-O'Neel C, Fuligni AJ. College social engagement and school identification: Differences by college type and ethnicity. Journal of Applied Developmental Psychology. 2012; 33:243–251.10.1016/j.appdev.2012.06.003

Wong CA, Eccles JS, Sameroff A. The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. Journal of Personality. 2003; 71(6):1197–1232. [PubMed: 14633063]

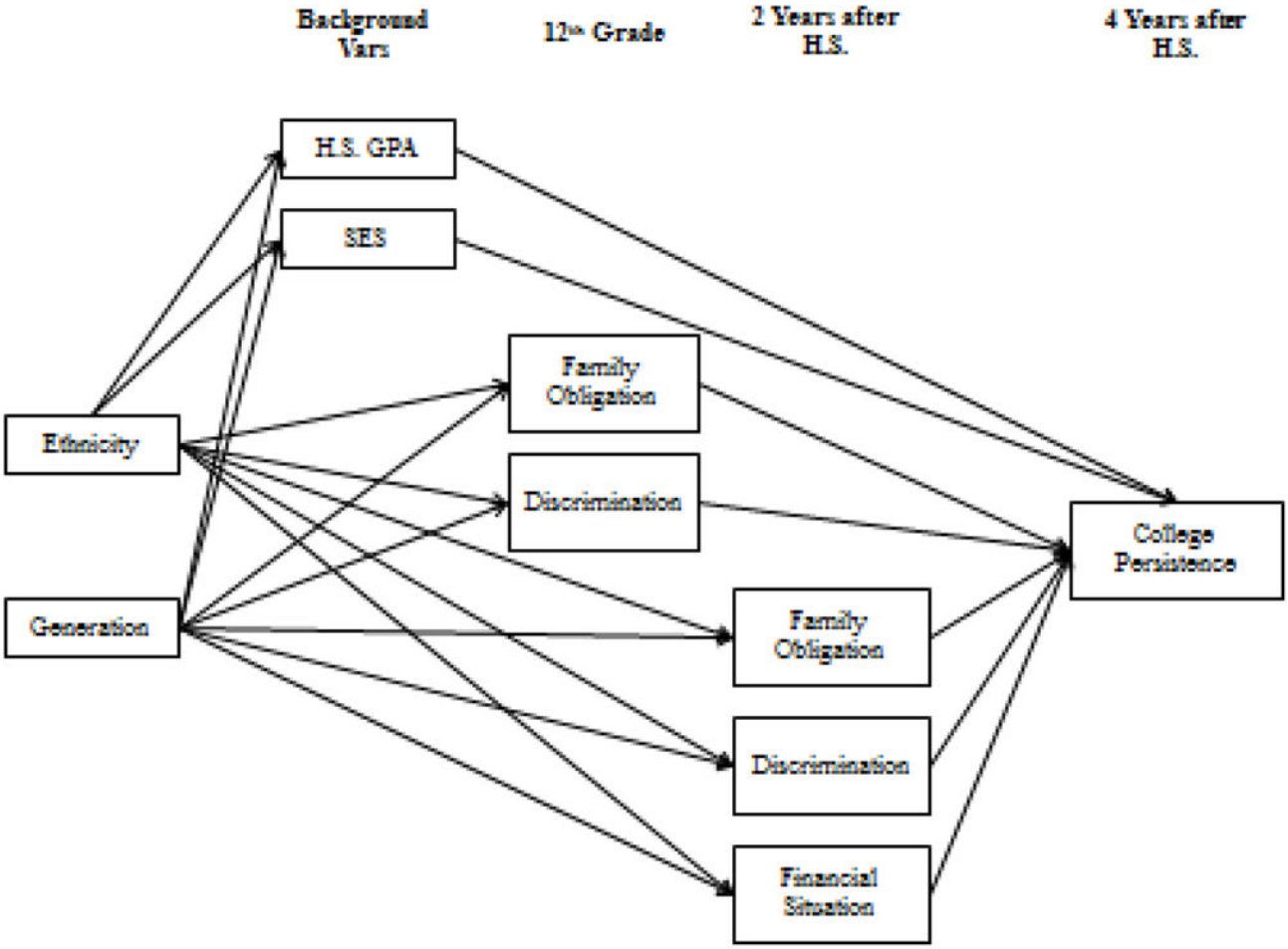

Figure 1.
Conceptual Model of Hypothesized Associations

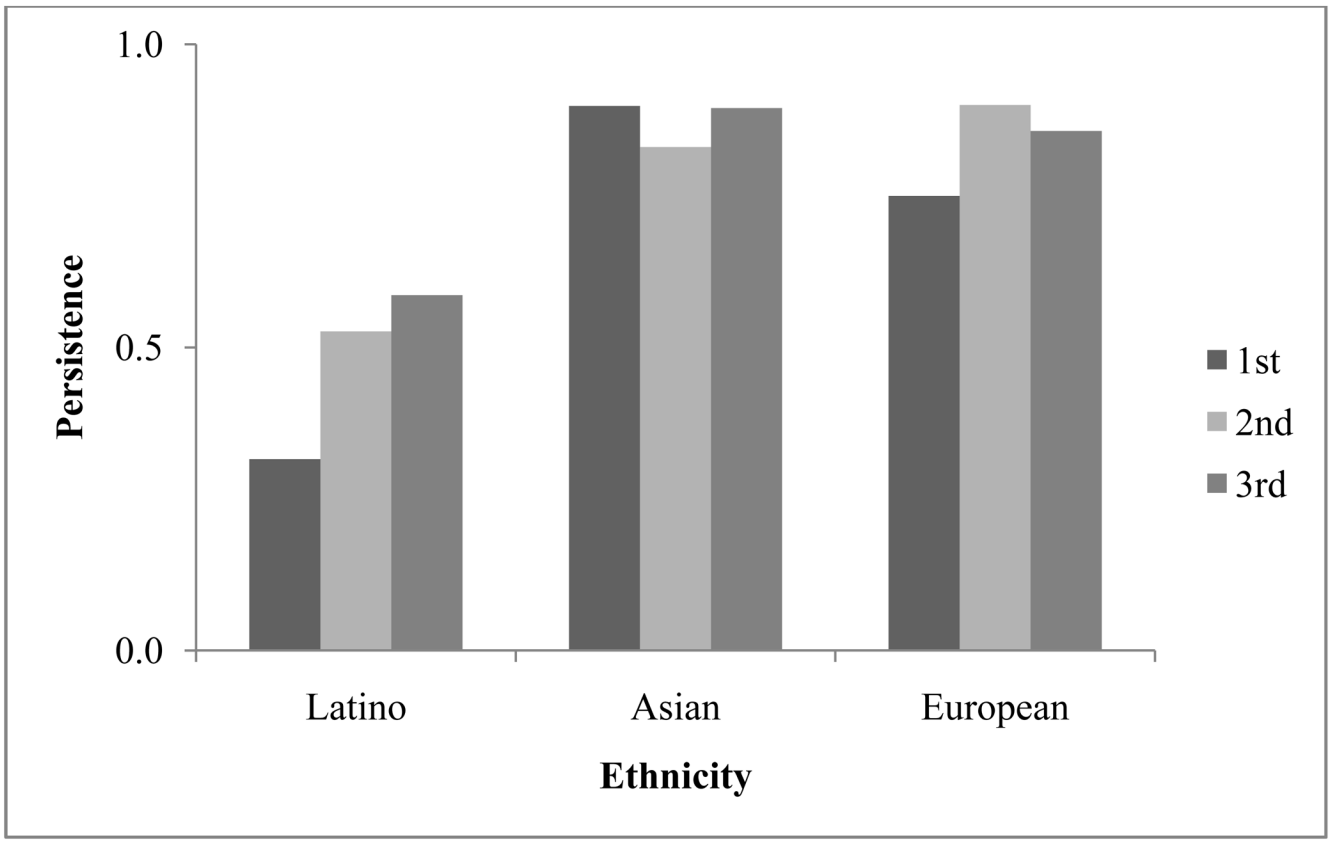

Figure 2.
Ethnic and Generation Differences in Persistence Four Years after High School

Table 1

Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
12th Grade Predictors														
1. GPA	--													
2. SES	.14**	--												
3. Current	−.01	−.08	--											
4. Future	−.06	−.25***	.56***	--										
5. A Disc	−.16**	−.20***	.12*	.11*	--									
6. P Disc	−.08	−.22**	.08	.09	.83***	--								
Postsecondary Predictors														
7. Current	−.02	−.16**	.50***	.38***	.13*	.13**	--							
8. Future	.02	−.24***	.37***	.51***	.13*	.14*	.44***	--						
9. A Disc	−.11*	−.18***	.04	.08	.44***	.41***	.08	.09+	--					
10. P Disc	−.08	−.11*	−.05	−.01	.35***	.37***	.02	.05	.77***	--				
11. Contri	.27***	−.14**	.09	.12*	.15*	.11*	.10*	.06	.21***	.14**	--			
12. Work	−.13**	−.04	.03	.17	−.05	−.06	−.03	−.05	−.06	−.12*	.12*	--		
13. F Aid	.10*	−.16**	.05	.06	−.02	−.02	−.04	.09+	.02	.05	−.02	.04	--	
Outcome: 4 years after high school														
14. Persist	.44***	.27***	−.05	−.19***	−.20***	−.11*	−.09+	−.04	−.10*	−.05	−.33***	−.12**	.24***	--

Note.

+ p < .10;

* *p* < .05;

** *p* < .01;

*** *p* < .001.

A Disc = adult discrimination, P Disc = peer discrimination, Contri = financial contribution to others, F Aid = receives financial aid.

Table 2

Ethnic Differences in Study Variables

	Latino *M* (*SD*)	Asian *M* (*SD*)	European *M* (*SD*)	*F* (2,398) value; Post hoc differences
12th Grade Predictors				
SES	−.29(.76)	−.00(.88)	.63(.60)	15.52, p <.001 E > A > L
GPA	2.69(.71)	3.30(.50)	3.22(.57)	25.39, p <.001 E & A > L
Current Assistance	3.39(.75)	3.53(.72)	3.17(.64)	1.36, p =.26
Future Assistance	3.31(.86)	3.48(.69)	2.84(.64)	4.70, p = .01 A & L > E
Adult Discrimination	1.85(.94)	1.60(.73)	1.30(.52)	5.12, p < .01 L > A > E
Peer Discrimination	1.84(.92)	1.69(.77)	1.39(.51)	2.97, p = .05 A & L > E
Postsecondary Predictors				
Current Assistance	3.18(.75)	3.32(.73)	2.90(.73)	1.17, p = .31
Future Assistance	3.19(.94)	3.42(.78)	2.70(.67)	3.63, p = .03 A > L > E
Adult Discrimination	1.79(.87)	1.55(.72)	1.22(.45)	6.62, p <.01 L > A > E
Peer Discrimination	1.65(.85)	1.48(.66)	1.33(.50)	1.23, p = .29
Family Contributions	.40(.49)	.20(.40)	.10(.30)	8.53, p <.001 L > A & E
Work Status	.29(.46)	.24(.43)	.27(.45)	1.97, p = .14
Financial Aid	.61(.49)	.77(.42)	.57(.50)	3.40, p = .03 A > L & E

Note. L = Latino, A = Asian, E = European.

Table 3

Generation Differences in Study Variables

	First *M* (*SD*)	Second *M* (*SD*)	Third *M* (*SD*)	*F* (2,398) value, Post hoc differences
12th Grade Predictors				
SES	−.13(.90)	−.16(.85)	.52(.60)	10.83, p <.01 3rd > 1st & 2nd
GPA	3.20(.57)	3.05(.66)	3.11(.65)	.12, p =.88
Current Assistance	3.37(.68)	3.54(.76)	3.21(.66)	2.40, p =.09
Future Assistance	3.42(.71)	3.48(.77)	2.89(.65)	6.47, p < .01 1st & 2nd > 3rd
Adult Discrimination	1.62(.68)	1.70(.83)	1.45(.77)	1.16, p = .34
Peer Discrimination	1.67(.73)	1.76(.83)	1.61(.75)	1.33, p = .27
Postsecondary Predictors				
Current Assistance	3.09(.76)	3.29(.72)	2.89(.71)	3.43, p = .03 2nd > 3rd
Future Assistance	3.33(.81)	3.39(.86)	2.76(.70)	6.47, p < .23 1st & 2nd > 3rd
Adult Discrimination	1.63(.74)	1.64(.80)	1.34(.62)	1.06, p = .35
Peer Discrimination	1.56(.73)	1.55(.74)	1.37(.59)	1.23, p = .29
Family Contributions	.27(.45)	.29(.46)	.14(.34)	3.11, p =.046 2nd > 3rd
Work Status	.23(.42)	.29(.45)	.24(.43)	0.74, p = .46
Financial Aid	.74(.44)	.72(.45)	.55(.50)	4.82, p < .01 1st & 2nd > 3rd

Note. L = Latino, A = Asian, E = European.

Table 4

Logistic Regressions Testing Ethnic, Generation, and Ethnic x Generation Differences in Persistence Four Years after High School

	B	SE
Asian	3.02***	.65
European	1.92*	.95
3rd gen	1.17+	.62
2nd gen	0.93+	.54
Female	0.24	.25
Asian x 3rd	−1.22	1.06
Asian x 2nd	−1.51*	.73
European x 3rd	−0.48	1.09
European x 2nd	0.18	1.44
Constant	3.02+	.65
R^2	0.21	

Note.

+ p < .10;

* $p < .05$;

*** $p < .001$.

Table 5

Predictors of Persistence Four Years after High School

	Model 1		Model 2		Model 3		Model 4	
Predictor	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***
Asian	1.79***	0.27	1.04**	0.31	1.18***	0.32	0.83*	0.37
European	1.73***	0.36	0.73+	0.42	0.45	0.43	0.36	0.53
Female	0.26	0.25	0.02	0.27	0.14	0.29	0.12	0.31
GPA			1.31***	0.22	1.27***	0.23	1.22***	0.25
SES			0.66***	0.17	0.55**	0.18	0.71***	0.20
Future Family Assistance					−0.77**	0.23	−0.83**	0.27
Current Family Assistance					0.31	0.23	0.51+	0.28
Adult Discrimination					−0.74*	0.31	−1.00**	0.35
Peer discrimination					0.51	0.31	0.60+	0.35
Financial Contributions							−1.25***	0.33
Work status							−0.43	0.34
Receive Financial Aid							1.63***	0.34
2yr Future Family Assistance							0.18	0.23
2yr Current Family Assistance							−0.22	0.25
2yr Adult Discrimination							0.30	0.32
2yr Peer discrimination							−0.00	0.32
Constant	−0.14	0.23	−3.33***	0.64	−1.36	1.04	−2.02+	1.29
R^2	0.19		0.35		0.4		0.51	

Note.

+ p < .10;

* *p* < .05;

*** *p* < .001.

Table 6

Predictors of Persistence among Latinos Four Years after High School

	Model 1		Model 2		Model 3		Model 4	
Predictor	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***
3rd Generation	1.24*	0.62	1.16+	0.69	0.92	0.75	0.86	0.82
2nd Generation	1.00+	0.54	1.39*	0.62	1.37*	0.65	1.32+	0.70
Female	−0.32	0.38	−0.42	0.41	−0.25	0.44	−0.26	0.48
GPA			1.14***	0.31	1.05**	0.32	1.08**	0.35
SES			0.67*	0.28	0.65*	0.30	0.72*	0.33
Future Family Assistance					−0.71*	0.32	−0.55	0.37
Current Family Assistance					−0.20	0.35	0.26	0.41
Adult Discrimination					−0.28	0.41	−0.58	0.48
Peer discrimination					0.28	0.42	0.47	0.49
Financial Contributions							−0.69	0.49
Work status							−1.06+	0.56
Receive Financial Aid							1.21*	0.49
2yr Future Family Assistance							0.04	0.30
2yr Current Family Assistance							−0.57	0.38
2yr Adult Discrimination							0.09	0.46
2yr Peer discrimination							0.43	0.47
Constant	−0.69	0.52	−3.74***	1.07	−0.48	1.74	−1.65	1.99
R^2	0.05		0.25		0.34		0.47	

Note.

+ p < .10;

* *p* < .05;

*** *p* < .001.