

Changes in academic aspirations and expectations among Asian American adolescents

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Abstract:

Aspirations and expectations are critical to academic attainment and success, yet little is known about how they change over the high school years. With longitudinal data from 157 Asian American adolescents (60% female), we examined normative and within-person changes in aspirations and expectations, and associations with psychological adjustment. Results suggest that, at the group level, aspirations are relatively stable, but expectations increase over time. At the intraindividual level, higher family obligation attitudes were associated with higher aspirations reported from year to year. Higher ethnic centrality was marginally related to higher expectations, whereas higher perceived discrimination was associated with lower expectations. Although expectations were associated with higher self-esteem, aspirations had adverse associations with well-being. Closer alignment of aspirations with expectations was associated with healthier psychosocial outcomes.

Keywords: longitudinal | intraindividual | adjustment | academic aspirations | academic expectations

Article:

Theory and research on educational socialization and status attainment suggest that aspirations and expectations are critical determinants of adolescents' upward mobility and future success (Beal & Crockett, 2010; Bozick, Alexander, Entwisle, Dauber, & Kerr, 2010). Yet, despite their developmental salience (Eccles, 1983), little work has traced trajectories or predictors of aspirations and expectations over time. In the present study, we use multiwave data from Asian Americans to examine these constructs across the high school years. We investigate normative patterns of change, as well as within-person, culturally relevant correlates of change (ethnic identity, discrimination, family obligation). We also assess how aspirations, expectations, and their concordance are related to psychological outcomes (depressive symptoms, self-esteem).

Our focus on examining these issues among Asian American adolescents is notable for several reasons. First, much of the existing work on aspirations and expectations has centered on European Americans with little analysis on ethnic minorities and immigrants (Kao & Tienda, 1998). Recent research has extended investigations to low-income as well as African and Latin American youth (Gonzalez, Stein, Shannonhouse, & Prinstein, 2012; Lee, Hill, & Hawkins, 2012), but Asian Americans remain understudied. The relatively limited attention toward Asian American youth is particularly problematic, given that they constitute a rapidly growing demographic with a rate of increase surpassing all other group growth rates, including Latin Americans (U.S. Census Bureau, 2011). Second, the bulk of existing research on Asian American development has primarily centered on academic and educational outcomes, perhaps due to the model minority myth which emphasizes school achievement and success (Tuan, 1998). The slim concentration on social and emotional development and on how variables within the academic domain might be meaningfully linked to more general indicators of psychological well-being could thus address recent calls to expand the field's understanding and knowledge of Asian American development (author citation).

Aspirations and Expectations Among Asian American Adolescents

Although conceptually similar, aspirations can be defined as the desire and wish to achieve certain educational levels, whereas expectations refer to the levels that youth anticipate completing (Bohon, Johnson, & Gorman, 2006). Both have been linked to actual achievement, as assessed through diverse outcomes such as test performance and grade point average (Boxer, Goldstein, DeLorenzo, Savoy, & Mercado, 2011; Rothon, Arephin, Klineberg, Cattell, & Stansfeld, 2011; Tynkkynen, Tolvanen, & Salmela-Aro, 2012). Consistent with expectancy-value theory (Wigfield & Eccles, 2000), academic outcomes, persistence, and performance depend on youths' initial educational goals, values, beliefs, and expectations. Aspirations and expectations are thus vital forecasters of academic trajectories and represent crucial processes in development (Mello, 2009). Systematically tracing the development of aspirations and expectations is especially relevant during high school, as youth transition across different environments (e.g., middle to high school), develop more sophisticated thought, build perspectives on future orientation, and manage increased school, work, and family demands (Boxer et al., 2011).

The scarce work that has examined aspirations and expectations among Asian Americans has found that, on average, they report higher aspirations than Latino/a and Black youth, and that their aspirations increase over time (Kao & Tienda, 1998; Mau, 1995; Mau & Bikos, 2000). However, these studies do not go beyond normative, group-level changes, and have not considered individual and contextual characteristics that might be linked with year-to-year, within-person variation in aspirations and expectations. Examining such factors could fill a gap in the literature and allow for better identification of youth who are or are not succeeding.

Correlates of Change

Aspirations and expectations develop within the context of individual and family characteristics, proximal environments, and cultural legacies. Garcia Coll and colleagues' (1996) integrative model pinpoints such contextual influences on the developmental competencies of ethnic

minority children and was, in part, inspired by the social stratification literature and bioecological theory. Bronfenbrenner's (2005) bioecological approach differentiates interactive layers of the environment that come together in dynamic ways to impact development. Our approach draws on these theoretical perspectives by implicating aspirations and expectations as key indicators of individual developmental competencies, and investigating the influence of three culturally relevant predictors, namely, ethnic identity, discrimination, and family obligation. Broadly, ethnic identity and obligation attitudes are aspects of adaptive culture and family that were expected to promote aspirations and expectations. In contrast, stemming from processes of social stratification, perceived discrimination was expected to serve as a possible deterrent.

Ethnic Identity

One key component to Garcia Coll et al.'s (1996) model is adaptive culture, which encompasses aspects of acculturation, cultural traditions, and identity. Ethnic identity, whether defined through Eriksonian dimensions of exploration and commitment or social identity perspectives of regard and centrality, has been directly and indirectly linked to numerous indicators of adjustment within the academic domain, such as achievement and self-efficacy (Rivas-Drake et al., 2014). Although much of the existing literature has been conducted with African Americans, similar associations between ethnic identity and academic outcomes have been found among Asian Americans (Fulgini, Witkow, & Garcia, 2005; author citation).

One explanation behind these positive links is that ethnic identity could provide a sense of purpose or meaning that translates into academic goals and motivation (Kiang & Fulgini, 2009). Another is that, for Asian Americans who are often socialized to prize academics, a strong ethnic identity might be linked to an internalization of their group's presumed values (Hogg, 2006). Precise mechanisms notwithstanding, we anticipated positive links between ethnic identity and both aspirations and expectations for academic success. More specifically, we defined ethnic identity via Sellers, Rowley, Chavous, Shelton, & Smith (1997) conceptualization of centrality, which refers to adolescents' endorsement that ethnicity is important to their overall sense of self.

Perceived Discrimination

While ethnic identity might be promotive, racial or ethnic discrimination could hinder aspirations and expectations. Discrimination is a macrolevel social position variable that maintains social stratification and affects development (Garcia Coll et al., 1996). Discrimination can lead to perceived barriers that thwart goals and plans (Perreira, Kiang, & Potochnick, 2013), perhaps by reducing one's school belonging and academic motivation (Ojeda & Flores, 2008). Discrimination could also affect relationships, support systems, and school climate, which each have implications for success (Grossman & Liang, 2008).

It is worth noting that discrimination might not be universally detrimental. In the face of adversity, some might overachieve in order to compensate for observed structural barriers (Sue & Okazaki, 1990). However, based on the broad literature documenting academic liabilities (Perreira et al., 2013), we expected that perceptions of discrimination would be linked to lower aspirations and expectations. Negative associations with both outcomes were expected, but the

link with expectations was anticipated to be especially strong, given discrimination's close ties to structural barriers that could be perceived as direct impediments to actual academic success.

Family Obligation

Given the importance of family relationships on academic outcomes (Garcia Coll et al., 1996; Mau & Bikos, 2000; Portes, Vickstrom, Haller, & Aparicio, 2013), family obligation could serve as a mechanism that drives familial influences on adjustment. Family obligation is the attitude or belief that children should assist and maintain family functioning by, for instance, helping with chores, taking care of siblings, or providing income and instrumental support (Fuligni, Tseng, & Lam, 1999). Several studies suggest that Asian Americans endorse high levels of family obligation, as well as a sense of family responsibility to academically excel (Fuligni, 2001; Schneider & Lee, 1990). In the spirit of family obligation, Asian American youth are often encouraged to culturally value and view educational attainment as a way to boost family social and economic mobility (Sue & Okazaki, 1990; Kao & Tienda, 1998). We thus expected that, similar to ethnic identity, obligation would promote aspirations and expectations. We also expected that family obligation would be especially strongly linked to the value-laden motivational aspects of aspirations, rather than perceptions of expected success.

Links to Psychological Adjustment

Surprisingly, explicit inquiry into the links between aspirations, expectations, and adjustment has been limited and inconsistent. Positive benefits have been found with aspirations correlating with high self-esteem (Mau, 1995). The work on self-regulated learning similarly suggests that goals and expectations are related to positive self-evaluations (Zimmerman, 2008). However, aspirations and expectations could be detrimental to well-being, particularly if goals are not achieved. Indeed, the inconclusive literature could be partially due to the interplay and concordance between goals and expectations (Reynolds & Baird, 2010).

Among ethnic minorities, gaps between the constructs have been shown as problematic (Mickelson, 1990). For example, Boxer et al. (2011) found that discrepancies in aspirations and expectations were linked with behavioral problems and emotional distress in early adolescents. Given that aspirations are considered more abstract and value-laden while expectations signify more realistic evaluations of success (Mickelson, 1990), their discordance is often characterized by expectations falling short of aspirations (Hanson, 1994; St-Hilaire, 2002). Drawing on Higgins' (1987) self-discrepancy theory, in which discrepancies between ideal and real selves can be harmful, at least among European Americans, we anticipated that a mismatch would be detrimental. To our knowledge, our approach is unique in using a within-person longitudinal approach to study the psychological consequences of how aspirations and expectations align.

Considering Gender, Generational Status, and Socioeconomic Status

Demographic variables such as gender and generational status could have implications for aspirations and expectations (Ojeda & Flores, 2008). In terms of gender, abundant research points to girls faring better than boys among a range of academic outcomes (Kiang, Supple, Stein, & Gonzalez, 2012; Mau & Bikos, 2000; Qin, 2006). However, for aspirations and

expectations specifically, some research suggests that girls report higher expectations compared to boys (Hanson, 1994), while other work has found either no differences (Flores, Navarro, & DeWitz, 2008), or opposite patterns in which aspirations and expectations are both higher and more closely aligned among boys (Crowley & Shapiro, 1982; Marini & Greenberger, 1978).

The literature involving generational status also has been inconsistent. In line with the “immigrant paradox,” some research suggests that foreign-born or first-generation adolescents exhibit higher aspirations and expectations than their U.S.-born counterparts, perhaps due to social capital, family resources, or the pursuit of upward mobility through academic success (Kao & Tienda, 1998; St-Hilaire, 2002). However, other work supports the idea that second-generation youth might have an academic advantage over their first-generation peers in better understanding the U.S. culture and educational system (McBrien, 2005). Additional challenges such as low socioeconomic status (SES) or language barriers also might be associated with more recent immigration (Glick & White, 2004), which could lower goals and expectations for success.

SES is also important to consider, as research has consistently found that low SES and socioeconomic stress are risks for school achievement and success (Kiang, Andrews, Stein, Supple, & Gonzalez, 2013). The impact of SES on many outcomes, including specific measures of aspirations, expectations, and their concordance has been documented among ethnically diverse youth (Boxer et al., 2011; Tynkkynen et al., 2012).

Taken together, gender, generational status, and SES were included as covariates and moderators in all analyses. Gender and generational effects are not consistently understood, but girls were expected to report higher aspirations and expectations compared to boys (Kiang et al., 2012; Qin, 2006). In line with the immigrant paradox, first-generation youth were expected to report higher aspirations and expectations compared to the second-generation (Kao & Tienda, 1998; St-Hilaire, 2002). For girls and the first-generation, culturally relevant factors (centrality, obligation) were expected to be especially influential given their salience to girls who are often seen as “culture keepers” and to recent immigrants who might be more closely tied to their ethnic heritage (Stritikus & Nguyen, 2007). The first-generation was also expected to be more sensitive to discrimination, due to their more recent arrival and newcomer status. Consistent with past work (Kiang & Luu, 2013), we expected that high SES would be linked to high aspirations and expectations, and its role as a stressor would exacerbate any negative effects of discrimination.

The Current Study

In summary, the current study had three overarching goals. First, we examined normative change in Asian American adolescents’ academic aspirations and expectations across the high school years and expected that both would increase over time. Second, we examined within-person correlations and expected that changes in ethnic centrality would be positively related to changes in both aspirations and expectations, that discrimination would be negatively linked with expectations in particular, and that family obligation would be positively linked to aspirations in particular. Third, we examined within-person associations between aspirations, expectations, as well as their alignment, and self-esteem and depressive symptoms as indicators of psychological adjustment. We expected that higher aspirations and expectations would be linked to healthier

adjustment, and that any mismatch between them would be detrimental. In all analyses, we also examined main and moderating effects of gender, generational status, and SES.

Method

Participants

Participants at the initial recruitment time were 180 ninth (48.3%) and tenth grade Asian Americans (60% female) recruited from six public high schools in the Southeastern U.S. About 74% of the sample was U.S.-born or second-generation. The remaining 26% was foreign-born or first-generation. For those who were foreign-born, age of immigration ranged from 1–14 years ($M = 5.79$, $SD = 4.21$). An open-ended self-report item indicated that adolescents represented a range of specific ethnic identifications including: Hmong (28%), multiethnic (mostly within Asian groups; e.g., Cambodian and Chinese) (22%), South Asian (e.g., Indian, Pakistani) (11%), Chinese (8%), panethnic (i.e., Asian) (8%), and small clusters such as Montagnard, Laotian, Vietnamese, Filipino/a, Japanese, Korean, and Thai (23%). About 84% of adolescents reported that their parents were married, 8% that their parents were divorced, and the remaining 8% of responses were evenly split between widowed, separated, never married, and “other” categories.

Procedure

A stratified cluster design identified public high schools in central North Carolina characterized as having high Asian growth and a student body with relatively large proportions of Asian students (3–10%). The schools varied in ethnic diversity, achievement, SES, and size. In small group settings, students identified as Asian through matriculation forms were invited to participate in a study on the social and cultural issues that affect their daily lives. Students were told that the study was unique given its exclusive focus on Asian American youth. Upon returning parental consent and assent forms during a follow-up visit, participants were administered the packet of questionnaires during school time. The questionnaires took 30–45 min to complete. Approximately 60% of adolescents invited to participate returned consent/assent forms and, of these, 100% participated in the first wave of data collection.

Participants completed follow-up surveys once a year for three additional years. The questionnaire remained consistent in content and length at each wave. For Waves 2 and 3, researchers returned to the schools to distribute questionnaires during class time. Participants were sent questionnaires in the mail if they were no longer in school or if they were absent the day of survey administration. For Wave 4, since our older cohort was one year posthigh school, we collected data entirely through postal mail. Adolescents received \$25 for participating in Wave 1 (which involved an additional daily diary component that is not reported on in the current paper), \$15 for Waves 2 and 3 each, and \$20 for Wave 4. Given our interests in examining change over the high school years, our analyses were conducted such that ninth grade represented the intercept and we excluded posthigh school data. Analyses were thus conducted with four waves of data from the ninth grade cohort and three waves from the tenth grade cohort. Notably, there were no cohort differences in any of the key study variables, $t_s(154) = .52$ – 1.46 , *n.s.*

Measures

Aspirations and expectations. Academic aspirations and expectations were each measured with a single item. For aspirations, youth were asked, “How far would you like to go in school?” To assess expectations, youth were asked, “How far do you think you actually will go in school?” Response options were identical with 1 = *finish some high school*, 2 = *graduate from high school*, 3 = *graduate from a 2-year college*, 4 = *graduate from a 4-year college*, 5 = *graduate from law, medical, or graduate school*. All but a few rated aspirations and expectations that included at least a 2-year college; hence, responses were recoded such that 1 = *graduate 2-year college or less*, 2 = *graduate college*, and 3 = *graduate law, medical, or graduate school*. Consistent with prior work (Boxer et al., 2011; Kiang et al., 2012), responses were treated as continuous with higher values indicating higher aspirations and expectations. Among a subsample with all four waves of data, means of aspirations and expectations ranged from 2.52 to 2.64 and 2.31 to 2.41, respectively. Frequencies of a “match” variable in which we calculated the degree to which aspirations and expectations are aligned ranged from 70–86%.

Ethnic centrality. As used in prior work with youth from immigrant and ethnic minority backgrounds, including Asian Americans (Kiang, Witkow, & Champagne, 2013; Yip, Seaton, & Sellers, 2006), ethnic identity was measured by a shortened Multidimensional Inventory of Black Identity modified to be relevant to and completed by members of any ethnicity. We used the 4-item centrality subscale, which assesses whether individuals feel their ethnicity is central to their self-concept. Sample items read, “In general, being a member of my ethnic group is an important part of my self-image,” and, “I have a strong sense of belonging to my ethnic group”. Items are scored from 1 = *strongly disagree* to 5 = *strongly agree* with higher scores reflecting higher centrality. Internal consistencies ranged from .89 to .90 across the multiple study waves.

Discrimination. To measure discrimination, youth were asked, “How often have you felt racial or ethnicity-based discrimination in the following situations?” in reference to seven items (e.g., being treated unfairly, being disliked). On a five-point scale (1 = *never* to 5 = *all the time*), respondents indicated the frequency of each event. This measure was developed for and has been successfully used with multiple ethnic groups (Greene, Way, & Pahl, 2006) ($\alpha = .87$ to $.92$).

Family obligation. A 12-item scale assessed attitudes toward family obligation and the provision of family assistance (Fuligni et al., 1999). Participants were asked how important each item is on a 5-point scale ranging from 1 = *not at all important* to 5 = *very important* with higher scores reflecting higher family obligation. Sample items include, “Help take care of brothers and sisters,” and, “Run errands that the family needs done.” Six items concerning attitudes toward future support and obligation were also presented. Sample items include, “Help your parents financially in the future,” and, “Spend time with your parents even after you no longer live with them.” As done in prior work (Kiang & Fuligni, 2009), current ($\alpha = .72 - .87$) and future obligation ($\alpha = .78-.81$) items were combined to create a single index of obligation.

Depressive symptoms. The widely used 10-item Center for Epidemiologic Studies Depression scale (CESD-10; Andresen, Malmgren, Carter, & Patrick, 1994) assessed depressive symptoms experienced within the prior week. Items are scored from 0 = *rarely or none of the time* to 3 = *all*

of the time, and were averaged to create an overall symptomatology score. Higher values indicate higher symptoms. Internal consistencies ranged from .75 to .80 within waves.

Self-esteem. The 10-item Rosenberg self-esteem scale (Rosenberg, 1986) measured self-esteem. Items are rated on a 5-point scale ranging from *strongly disagree* to *strongly agree*, with higher values indicating higher self-esteem. Sample items include, “I feel that I have a number of good qualities,” and, “I take a positive attitude towards myself” ($\alpha = .84-.87$).

Socioeconomic status (SES). In line with prior work (Kiang & Fuligni, 2009), an index of SES was created after coding, standardizing, and averaging parents’ education and employment. Education was assessed via, “How far did your parents go in school?” Youth answered separately for each parent (1 = *elementary/junior-high school*, 2 = *some high school*, 3 = *graduated from high school*, 4 = *some college*, 5 = *graduated from college*, 6 = *law, medical, or graduate school*). Employment was assessed by asking and coding the type of job parents had (if any) (1 = *unskilled*, 2 = *semiskilled*, 3 = *skilled*, 4 = *semiprofessional*, 5 = *professional*).

Results

Preliminary Analyses

Before testing our hypotheses, we conducted preliminary analyses to examine whether there were differences in any of our time-varying variables (aspirations, expectations, ethnic centrality, discrimination, family obligation, depression, self-esteem) according to number of waves of participation. Most youth completed all waves, with those who began in ninth grade completing an average of 3.95 ($SD = .22$) waves and those who began in tenth grade completing an average of 2.92 ($SD = .27$) waves. To determine if there were differences in any of the variables as a function of the proportion of possible waves completed, hierarchical linear models (HLMs; Bryk & Raudenbusch, 1992) were estimated using the following equations:

$$\text{Study variable}_{ij} = b_{0j} + e_{ij} \quad (1)$$

$$b_{0j} = c_{00} + c_{01}(\text{Participation}) + u_{0j} \quad (2)$$

Equation 1 represents scores on the key study variable across the waves of participation, and Equation 2 shows how the average score was modeled as a function of number of waves of participation. There were no differences in any of the study variables according to the proportion of waves completed.

Normative Changes in Educational Aspirations and Expectations

The first goal of this study was to examine change over time in adolescents’ reports of their educational aspirations and expectations. Separate HLM models were estimated for aspirations and expectations. The estimated statistical model was as follows:

$$\text{Aspiration/expectation}_{ij} = b_{0j} + b_{1j} (\text{Year}) + e_{ij} \quad (3)$$

$$b_{0j} = c_{00} + c_{01}(\text{Gender}) + c_{02}(\text{Generation}) + c_{03}(\text{SES}) + u_{0j} \quad (4)$$

$$b_{1j} = c_{10} + c_{11}(\text{Gender}) + c_{12}(\text{Generation}) + c_{13}(\text{SES}) + u_{1j} \quad (5)$$

As shown in Equation 3, adolescents' level of aspirations or expectations in a particular year (*i*) for a particular individual (*j*) was modeled as a function of the individual's average aspirations or expectations (b_{0j}) and the year of the study (b_{1j}). Year was coded such that ninth grade = 0, tenth grade = 1, eleventh grade = 2, and twelfth grade = 3. Equations 4 and 5 show how both the average levels of aspirations or expectations and the effect of the year of the study were modeled as a function of the adolescents' gender, generational status, and SES. Gender was coded as females = 0 and males = 1 and generation was coded as foreign-born or first-generation = 0 and U.S.-born or second-generation = 1. The level two variables were grand-mean centered, such that the models can be interpreted as average effects, rather than for a specific group.

As shown in Table 1, while there was no normative change in aspirations, youth reported increasing educational expectations over time. No gender or generational differences were found in either average levels of aspirations or expectations or their normative change over time, although those with higher SES reported higher levels of both aspirations and expectations. Notably, we reran this and all additional models with school as a Level 3 predictor. School was not significant in any of these analyses and the inclusion of school did not change any of the substantive results we report.

Table 1. Hierarchical Linear Models Predicting Change Over Time in Educational Aspirations and Expectations

	Aspirations <i>b</i> (SE)	Expectations <i>b</i> (SE)
Intercept	2.50 (.05)***	2.16 (.07)***
Gender	-.14 (.10)	-.24 (.14)
Generation	.09 (.15)	-.01 (.20)
SES	.30 (.06)***	.32 (.08)***
Year	-.02 (.02)	.07 (.02)**
Gender	-.01 (.04)	.02 (.04)
Generation	-.02 (.05)	-.05 (.07)
SES	-.03 (.02)	-.01 (.03)

Note. $N = 157$. Gender was coded as females = 0 and males = 1 and generation was coded as immigrant = 0 and nonimmigrant = 1. Year was centered at 9th grade and all Level 2 variables were grand-mean centered.

** $p < .01$. *** $p < .001$.

Aspirations and Expectations and Culturally-Relevant Correlates of Change

The next goal of the study was to examine whether intraindividual changes in ethnic centrality, discrimination, and family obligation were associated with concurrent changes in adolescents' educational aspirations and expectations. Ethnic centrality, discrimination, and family obligation were examined within a single model, such that each model tests the independent effects of ethnic centrality, discrimination, and family obligation. The general form of the model used for these analyses was as follows:

$$\begin{aligned} \text{Aspiration/expectation}_{ij} \\ = b_{0j} + b_{1j}(\text{Ethnic centrality}) + b_{2j}(\text{Discrimination}) \\ + b_{3j}(\text{Family obligations}) + b_{4j}(\text{Year}) + e_{ij} \end{aligned} \quad (6)$$

$$b_{0j} = c_{00} + c_{01}(\text{Gender}) + c_{02}(\text{Generation}) + c_{03}(\text{SES}) + u_{0j} \quad (7)$$

$$b_{1j} = c_{10} + c_{11}(\text{Gender}) + c_{12}(\text{Generation}) + c_{13}(\text{SES}) + u_{1j} \quad (8)$$

$$b_{2j} = c_{20} + c_{21}(\text{Gender}) + c_{22}(\text{Generation}) + c_{23}(\text{SES}) + u_{2j} \quad (9)$$

$$b_{3j} = c_{30} + c_{31}(\text{Gender}) + c_{32}(\text{Generation}) + c_{33}(\text{SES}) + u_{3j} \quad (10)$$

Equation 6 shows how adolescents' aspirations or expectations in a particular year (*i*) for a particular individual (*j*) was modeled as a function of each individual's average aspirations or expectations (b_{0j}) and ethnic centrality, discrimination, and family obligation. Year of study was also included as a control variable. Equation 7 shows how average aspirations/expectations was modeled as a function of gender, generational status, and SES, which were coded in the same manner as before. Finally, Equations 8–11 show how the associations between ethnic centrality, discrimination, and family obligation, and aspirations or expectations were modeled as a function of gender, generational status, and SES.

Because we had more Level 1 parameters than time points in the models, some of the Level 2 variances needed to be constrained to zero. A two-step process was used to select the most parsimonious models (see Bryk & Raudenbush, 1992). First, all Level 2 variance parameters were fixed to equal zero except that for baseline adjustment. Additional freed parameters were kept only when a likelihood ratio test indicated a significantly improved overall model fit (i.e., $p < .05$) (see also Nishina & Juvonen, 2005; author citation). Using this method, variance for time was freed for both aspirations and expectations.

As shown in Table 2, different variables were significantly associated with aspirations versus expectations. Family obligation was positively associated with aspirations while ethnic centrality was marginally positively associated and discrimination was negatively associated with expectations. There were some differences according to background variables. First, the

association between centrality and both aspirations and expectations varied according to SES, such that both associations were weaker (but only marginally so for aspirations) for those with lower SES. Second, the association between discrimination and expectations varied according to generation, such that the association was weaker among U.S.-born youth. Finally, the association between discrimination and expectations varied marginally according to gender.

Table 2. HLMs Predicting Aspirations and Expectations From Ethnic Centrality, Discrimination, and Obligations

	Aspirations <i>b</i> (<i>SE</i>)	Expectations <i>b</i> (<i>SE</i>)
Intercept	2.51 (.05)***	2.18 (.07)***
Gender	-.15 (.11)	-.30 (.14)*
Generation	.10 (.15)	-.08 (.18)
SES	.29 (.06)***	.30 (.08)***
Ethnic centrality	.03 (.04)	.08 (.04) ⁺
Gender	.02 (.07)	.12 (.09)
Generation	-.12 (.09)	.16 (.11)
SES	-.07 (.04) ⁺	-.10 (.05)*
Discrimination	.00 (.03)	-.08 (.04)*
Gender	.01 (.08)	.17 (.09) ⁺
Generation	.12 (.09)	.31 (.14)*
SES	.04 (.04)	-.05 (.06)
Family obligations	.07 (.04)*	-.01 (.05)
Gender	-.08 (.08)	-.14 (.10)
Generation	.05 (.08)	-.08 (.13)
SES	.01 (.04)	-.02 (.07)
Year	-.02 (.02)	.06 (.02)*
Gender	.00 (.04)	.06 (.05)
Generation	-.02 (.05)	-.02 (.06)
SES	-.02 (.02)	.00 (.03)

Note. $N = 157$. Gender was coded as females = 0 and males = 1 and generation was coded as immigrant = 0 and nonimmigrant = 1. All Level 2 variables were grand mean centered. Ethnic centrality, discrimination, and family obligations were group mean centered. Year was centered at Grade 9.

⁺ $p < .10$. * $p < .05$. *** $p < .001$.

Given the differences in associations with expectations according to background variables, follow-up analyses were conducted in which the model was run separately for the first and second generation and for boys and girls. For first-generation youth, discrimination was negatively associated with expectations ($b = -.29, p < .01$), but this link was not significant for the second-generation ($b = -.04, ns$). For girls, discrimination was negatively associated with expectations ($b = -.13, p < .01$), while the association was not significant for boys ($b = -.02, ns$).

Concurrent Changes in Associations Between Aspirations and Expectations and Psychological Adjustment

The final goal of the study was to examine whether changes in aspirations or expectations, as well as the match between aspirations and expectations, were associated with concurrent changes in self-esteem or depressive symptoms. First, aspirations and expectations were examined within

a single model, testing the independent effects of each. The same general form of the model described in the Aspirations and Expectations and Culturally-Relevant Correlates of Change section was used, now with self-esteem and depressive symptoms as outcome variables. As shown in Table 3, expectations were associated with higher levels of self-esteem, while aspirations were associated with marginally higher levels of depressive symptoms and lower levels of self-esteem. Again, there were some differences according to demographic characteristics. In addition to SES differences in both depression and self-esteem at the intercept, the association between expectations and self-esteem was stronger for adolescents who were born in the U.S. Follow-up analyses in which this model was run separately across generational status found that the association between expectations and self-esteem was not significant for foreign-born or first-generation participants ($b = -.04, ns$), while it was positive for those born in the U.S. ($b = .27, p < .001$).

Table 3. Hierarchical Linear Models Predicting Depressive Symptoms and Self-Esteem From Aspirations and Expectations

	Depressive symptoms <i>b</i> (<i>SE</i>)	Self-esteem <i>b</i> (<i>SE</i>)
Intercept	1.01 (.04)***	3.78 (.07)***
Gender	-.05 (.09)	.07 (.14)
Generation	-.13 (.12)	.20 (.17)
SES	-.11 (.05)*	.24 (.08)**
Aspirations	.08 (.05) ⁺	-.16 (.07)*
Gender	-.08 (.10)	.04 (.13)
Generation	.02 (.16)	.00 (.17)
SES	-.06 (.06)	.07 (.07)
Expectations	-.05 (.06)	.20 (.06)**
Gender	-.05 (.15)	-.14 (.14)
Generation	-.12 (.16)	.30 (.14)*
SES	-.07 (.09)	-.10 (.08)
Year	.04 (.02) ⁺	.02 (.03)
Gender	.06 (.04)	-.10 (.05) ⁺
Generation	.00 (.05)	-.06 (.06)
SES	-.01 (.02)	.03 (.03)

Note. $N = 157$. Gender was coded as females = 0 and males = 1 and generation was coded as immigrant = 0 and non-immigrant = 1. All Level 2 variables were grand mean centered. Aspirations and Expectations were group mean centered. Year was centered at Grade 9. ⁺ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

We next tested whether the match between aspirations and expectations in a given year was associated with self-esteem and depressive symptoms. The match variable was coded such that a 0 indicated that aspirations were different from expectations, and a 1 indicated that aspirations and expectations were the same. Note that, as expected, the vast majority (97%) of adolescents whose aspirations and expectations did not match reported higher aspirations than expectations. As shown in Table 4, having aspirations and expectations that are the same was associated with higher levels of self-esteem and lower levels of depressive symptoms. The effect of matching aspirations and expectations on self-esteem was marginally stronger for girls, for whom self-esteem at the intercept was lower than for boys.

Table 4. Hierarchical Linear Models Predicting Depressive Symptoms and Self-Esteem From the Match Between Aspirations and Expectations

	Depressive symptoms <i>b</i> (<i>SE</i>)	Self-esteem <i>b</i> (<i>SE</i>)
Intercept	1.16 (.06)***	3.63 (.08)***
Gender	-.08 (.12)	.28 (.16) ⁺
Generation	-.14 (.18)	.19 (.18)
SES	-.04 (.07)	.21 (.10)*
Match	-.19 (.05)***	.15 (.06)*
Gender	.02 (.11)	-.26 (.13) ⁺
Generation	-.04 (.15)	.01 (.12)
SES	-.06 (.06)	.05 (.07)
Year	.04 (.02) ⁺	.03 (.02)
Gender	.06 (.04)	-.11 (.05)*
Generation	.02 (.05)	-.05 (.05)
SES	-.02 (.02)	.02 (.03)

Note. $N = 157$. Gender was coded as females = 0 and males = 1 and generation was coded as immigrant = 0 and non-immigrant = 1. All Level 2 variables were grand mean centered. Match was coded such that a 0 indicated that aspirations were different than expectations, and a 1 indicated that aspirations and expectations were the same. Match was uncentered and year was centered at Grade 9.

⁺ $p < .10$. * $p < .05$. *** $p < .001$.

Discussion

Adolescents' aspirations and expectations have palpable implications for their ultimate attainment of academic and job success (Boxer et al., 2011). Yet, despite their developmental salience, little is known about how goals and expectancies develop over time, how they are aligned with each other, and how they are linked to key cultural, familial, and adjustment factors in adolescents' lives. With a focus on understudied Asian Americans, for whom academic success is particularly relevant and culturally emphasized (Sue & Okazaki, 1990; Kao & Tienda, 1998), we examined normative changes in aspirations and expectations over time, correlated their intraindividual changes with changes in ethnic centrality, discrimination, and family obligation, and investigated links with psychological adjustment.

In terms of normative, group-level change, adolescents' aspirations appear relatively stable over the four years of high school. One explanation for why we found little evidence for either a significant increase or decrease in the educational levels that adolescents aspire to could be that goals for success are deeply rooted in the cultural values that are instilled in adolescents from Asian immigrant families (Fuligni, 2001; Kao & Tienda, 1998). Although research on the direct socialization messages that adolescents from Asian descent receive is still limited, particularly regarding their cultural values or the importance of education (Hughes et al., 2006), it is possible that such messages are internalized by Asian youth from an early age. Although it remains an empirical question, to the extent that this is true, it is possible that Asian American youth enter high school with firm unwavering goals already formed. More longitudinal work that targets adolescents at younger, as well as older, ages could help address whether the stability that we found in aspirations is constant throughout other developmental periods, or whether more variation might be found at other life stages. Recent research with a large nationally

representative sample has indeed found that occupational aspirations are relatively stable right after high school, but then fluctuate several years later (Guo, Marsh, Morin, Parker, & Kaur, 2015). Whether this pattern might be seen among a more unique sample of Asian Americans remains an important empirical question.

However, we did find evidence that educational expectations increase over time. As adolescents progress through high school, it is possible that they gain the necessary information and confidence to understand what might be needed to complete higher education (Flores et al., 2008), and their developing experience could take the form of visualizing more concrete outcomes. As these expectations crystallize, adolescents can then better plan for college, prepare for the next steps in their educational path, and see such paths as more of a reality. All of these processes could be particularly impactful among Asian adolescents who are either immigrants themselves, or who are second-generation youth, and might not have the benefit of parents who are familiar with the U.S. school system. Although we found little distinction between adolescents of the first and second generations, future work should continue investigating whether there might be different patterns of social mobility or assimilation across this key demographic variable (Portes & Rumbaut, 2006), and perhaps include youth of the third or later generations (of which there were none in the current sample). In addition, from both theoretical and empirical standpoints, it would be useful for future work to directly test some of these explanations put forth in terms of Asian adolescents' increasing expectations over time, particularly with the intention to optimize youths' trajectories even more.

Indeed, the patterns of change that were found among our Asian American sample reflect a slightly more optimistic path compared to some work with other samples (e.g., low-income, Latino) in which both aspirations and expectations have been found to decrease over time, perhaps due to perceived structural barriers such as limited school support and witnessing others fail in their academic pursuits (Gonzalez et al., 2012; Hanson, 1994; Lee et al., 2012). The theoretical contribution of our results suggests that status attainment for Asian American adolescents is a potentially moving target, but in a generally upward direction. An important caveat to our results, however, is that our sample was panethnic and heterogeneous. Recent analyses suggest that, when data from panethnic Asian Americans are disaggregated by ethnicity, some subgroups such as Hmong and other Southeast Asians do not exhibit the same positive academic outcomes as others, and might be at great risk for academic and other challenges (author citation). It is thus important to replicate our findings with more panethnic samples as well as with samples that allow for more fine-tuned analyses and ethnic comparisons.

Moving beyond group-level patterns of change, we further examined whether within-person changes in aspirations or expectations are shaped by contextually- and culturally relevant factors in adolescents' lives. We drew on Garcia Coll et al.'s (1996) theoretical framework and implicated ethnic centrality, discrimination, and family obligation as possible influences. In terms of ethnic identity, we hypothesized that higher levels in the degree to which adolescents feel that their ethnicity is central or important to their overall sense of self would be positively correlated with higher levels of academic expectations. Although the effect found was in the predicted direction, the association was only marginally significant. Moreover, the effect was qualified by SES and likely driven by those with high socioeconomic standing. Consistent with Garcia Coll et al.'s idea of "adaptive culture," perhaps ethnic centrality provides Asian

youth, particularly those whose families have already achieved some degree of strong socioeconomic standing, with a broad sense of life purpose or a more specific motivational drive to attain high expectations and success (Fuligni et al., 2005; Kiang & Fuligni, 2009). More empirical work to confirm the marginal and null effects that we found would be necessary to further illuminate the links (or lack thereof) between adolescents' ethnic identity, expectations, and aspirations. One possible direction is to systematically examine whether different dimensions of ethnic identity might be more or less closely tied to academic outcomes. For instance, recent research with Latino/a youth suggests that public regard, or the perception that others in society value one's ethnic group, is positively linked with college-going self-efficacy (which is perhaps closely tied to expectations), whereas one's own private regard for one's group negatively predicts aspirations (Gonzalez, Stein, & Huq, 2013).

While ethnic identity potentially serves as a resiliency factor, experiences of racial or ethnic discrimination were a liability in that greater perceptions of discrimination were linked to lower expectations of academic success. Given that discrimination was significantly associated with expectations and not aspirations, it appears that the mechanisms involved are particularly relevant to perceived barriers to actual success. For Asian American adolescents who must often cope with negative discrimination as well as stereotypes and unfair treatment due to the model minority stereotype (Li, 2005), greater perceptions of these experiences can hinder expectations for achievement, rather than their more personal or internal goals to do well. The implication is consistent with Garcia Coll et al.'s (1996) integrative model and suggests that the influence of discrimination on academic outcomes may stem from direct and indirect effects on structural barriers, perceived supports, or other factors that might challenge expectations of success (Gonzalez, Stein, Cupito, & Kiang, 2014; Grossman & Liang, 2008; Perreira et al., 2013).

Notably, the negative association between discrimination and academic expectations was particularly strong for first-generation or foreign-born youth, as well as for girls. In fact, simple slopes analyses suggested that the effect of discrimination on expectations was not actually significant for the second-generation or for boys. Some existing work does point the idea that newer immigrants encounter different acculturative stressors compared to later generations, and might be more sensitive to negative experiences with the mainstream, such as those that stem from discrimination (Abouguendia & Noels, 2001). For first-generation adolescents, the added strains from acculturation and from coping with experiences such as foreigner objectification could also serve to heighten the negative link between discrimination and expectations (Armenta et al., 2013). Another explanation is that, for first-generation youth with less exposure to the U.S. school system, experiences with discrimination are especially influential in placing a direct barrier for their learning about educational options and developing a clear set of expectations. In terms of gender, girls appeared to be driving the negative effect of discrimination on expectations. Although speculative, it is possible that Asian American girls are more vulnerable to negative culturally relevant interactions, given their socialization as "culture keepers" (Stritikus & Nguyen, 2007). The emphasis on academics among Asian American girls could also speak to why such discrimination experiences are particularly influential in terms of their educational expectations (Kiang et al., 2012; Qin, 2006).

As expected, attitudes toward family obligation were positively associated with higher academic aspirations. One component of family obligation is to perform well, academically, in order to

enhance the family's social and economic standing (Fuligni, 2001; Schneider & Lee, 1990). Our results suggest that Asian American adolescents who report higher levels of duty or obligation to their families report simultaneously high aspirations to go far in school. Perhaps, over time, parents place increased emphasis on the culturally relevant value of their children's academic success, which adolescents then internalize as higher aspirations. Yet, family obligation was not related to educational expectations, which suggests that these family attitudes appear to drive a more intrinsic motivational aspect of academic success (Fuligni et al., 2005), rather than a feeling of confidence or realistic expectation related to expected attainment. This idea could be particularly relevant to immigrant families who might have high aspirations for their children, yet little familiarity with the U.S. school system to help foster concrete success.

In line with perspectives from Garcia Coll et al. (1996), our overall results suggest that adolescents experience promoting (e.g., family obligation) and inhibiting (e.g., discrimination) factors in their home and school environments that both benefit and hinder their developmental competencies. These mitigating factors are critical to understand in the sense that aspirations and expectations are not only important in adolescents' academic lives, but are also linked to their psychological well-being. Similar to prior work (Zimmerman, 2008), higher expectations were associated with higher self-esteem; however, follow-up analyses suggested that this effect was only significant for adolescents who were U.S.-born. Although more work is needed to understand the mechanisms behind such generational differences, our results suggest that one way to boost the self-esteem of Asian American youth, particularly those of the second-generation, is to find ways to promote their academic expectations.

In contrast, we found that high aspirations were linked with low self-esteem. Similarly, a hindering association between greater aspirations and higher depression approached significance. While these patterns are contrary to some prior findings (Mau, 1995), one explanation is that aspirations alone are not necessarily beneficial, especially if they are either not achieved or not expected to be realized (Reynolds & Baird, 2010). Indeed, we further found that the degree of concordance between aspirations and expectations had implications for adjustment. When they did align, Asian American youth tended to report higher self-esteem and less depressive symptoms, and these associations were particularly notable for girls. Although these results are consistent with prior research on aspirations and expectations (Crowley & Shapiro, 1982; Marini & Greenberger, 1978), and in line with self-discrepancy theory more generally speaking (Higgins, 1987), they are contrary to some work by Heine (2001) and others (e.g., Kiang & Luu, 2013) who have found that Asian Americans might not be as concerned with the negative implications of self-discordance or more general threats to self-enhancement. Nonetheless, in light of our findings, it thus appears worthwhile for future work to find ways to equalize adolescents' goals and expectations for success, especially for girls. A related direction is to directly address the moderating effects by gender that we found and to determine why the impact of concordance seems stronger for girls.

Although our research provides important information regarding the development of adolescents' academic aspirations and expectations and related correlates, several limitations are worth noting. Our panethnic sample consisting of relatively small clusters of Asian subethnicities precluded any nuanced analysis of potential ethnic group differences. Although many Asian ethnicities share commonalities in values and cultural traditions, there is vast inter- and

intragroup diversity that should be explicitly examined in future research. This is particularly relevant in terms of issues of academic adjustment in that recent work has documented intragroup differences in achievement among the panethnic Asian American population (Teranishi, Lok, & Nguyen, 2013). Our sample was also drawn from an emerging immigrant community where Asian Americans represent a small, but growing, ethnic minority. Although limiting our generalizability to other groups residing in more ethnically diverse, metropolitan contexts, the use of this sample extends our understanding of academics and development to adolescents among understudied communities who are in need of more research attention (Massey, 2008). It is also important to highlight that, while we focused on psychological adjustment as important correlates of aspirations and expectations, our study was limited in terms of measuring actual academic achievement. Presumably, views on aspirations and expectations are associated with actual success (Boxer et al., 2011; Rethon et al., 2011; Tynkkynen et al., 2012), but how these factors translate into more objective indicators of academic outcomes remains a key empirical question that should be addressed in future research. An additional way to extend our current findings is to examine a longer time frame, and to begin examining patterns of change in earlier developmental periods. Although we found evidence for change in academic expectations, the increase was modest. It would be beneficial for future work to determine if there is more developmental variability in these constructs at earlier stages when youth might be still beginning to form their academic attitudes and ideals. This would be especially worthwhile to clarify among Asian American families, who are often understood to inculcate strong values of academics early in children's development, but are paradoxically still understudied in the realm of the education and socialization literature (Sue & Okazaki, 1990).

Limitations notwithstanding, our study suggests that Asian American youth, as a group, demonstrate high levels of academic aspirations and expectations, and supports the need to further examine individual and contextual characteristics that significantly impact their trajectories. Academic expectations do increase from ninth to twelfth grade, suggesting that as Asian American youth gain more academic experiences in high school, they potentially gain more confidence in their skills and comfort in the culture of the U.S. educational system. However, growth in expectations can be hampered by experiences of ethnic discrimination, which may make youth feel less capable of attaining their goals. On the contrary, family obligation and, to a lesser extent, ethnic identity aid in the growth of aspirations and expectations. The practical importance in understanding trajectories of aspirations and expectations is demonstrated through their implications for adjustment. Adolescents who showed discrepancies between their aspirations and expectations were at risk for negative adjustment. Future research should continue to examine predictors of the developmental trajectories of aspirations and expectations as they are both necessary for academic adjustment, postsecondary education, and well-being.

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