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### **Cover Page Footnote**

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***Kawm Ntawv Qib Siab:***  
**Understanding the Psychosociocultural Educational Experiences  
of Hmong American Undergraduates**

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## **Abstract**

Using a psychosociocultural framework, this study examined the educational experiences of 85 Hmong American undergraduates attending a predominantly-White university. Differences in class standing indicated that upper-division students reported higher confidence in college-related tasks than their lower-division counterparts, yet the upper-division students perceived a less-welcoming university environment that was incongruent with their cultural values than the lower-division undergraduates. Peer support, college self-efficacy and cultural congruity were salient variables in understanding Hmong American undergraduate's educational experiences. The study's limitations, future research directions, and implications for college administrators and faculty are discussed.

## **Introduction**

Although Asian Americans have higher educational attainment than other racial groups in the U.S. (U.S. Census, 2013), not all Asian Americans are academically successful. A bimodal distribution exists as many Southeast Asian refugees have lower academic achievement and higher rates of high school dropouts as compared to other Asian groups (Chiang, Fisher, Collins, & Ting, 2015; Fuertes, Sedlacek, & Liu, 1994; Hsia & Hirano-Nakanishi, 1996; Tang, Kim, & Haviland, 2013). For those who have a lower pre-migration education and less academic and economic capital, educational attainment is also increasingly disproportionate (Chiang et al., 2015; Xiong, 2012). For instance, Hmong individuals migrated to the U.S. when they fled their native homeland due to political and socio-historical factors in the 1970s (Xiong, 2012). With little contact with modern, industrialized cultures, many Hmong people were slash-and-burn farmers and had limited opportunities for formal education (Millett, 2002).



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As a small (i.e., less than 250,000) but rapidly-growing population, more than 40% of the current U.S. Hmong population is under the age of 18 (U.S. Census, 2013) and the first in their families to attend college. In particular, Hmong Americans maintain the highest percentage of under-education (59.6% have a high school diploma or less) than any other Asian ethnic group (19.6% have high school diploma or less) (Reeves & Bennett, 2004). Specifically, only 12.5% have completed a bachelor's degree and only 3.1% have a graduate or professional degree (U.S. Census 2013; Xiong, 2012). Despite low educational attainments, many Hmong families and communities value the role and function of a higher education for their children as a means of economic and social mobility (Lee, 2007).

Within higher education, Hmong American undergraduates are considered an "at-risk" population given their lower levels of educational success (Su, Lee, & Vang, 2005; Swartz, Lee, & Mortimer, 2003). Research suggests that their under-education is due to factors such as truancy, dropout rates, delinquency (e.g., gang activity), limited financial resources, low parental education, and cultural values that are infrequently reflected in higher education (Lee, 2001; Su et al., 2005; Swartz et al., 2003; Xiong & Lam, 2013). As Hmong American students increasingly access higher levels of education, a fuller understanding of their educational and academic persistence processes is warranted.

Within the literature, the academic performance of Hmong Americans is equivocal. Some research indicates that Hmong Americans do not perform well (e.g., Lee, 2001; Reeves & Bennett, 2004), yet two longitudinal studies indicated that their academic achievement is comparable or better than non-Hmong populations (Hutchinson, 1997; Swartz et al., 2003). These studies revealed that Hmong American students had higher levels of retention and educational attainment (e.g., earning a bachelor's degree) than all other racial/ethnic groups within a Midwestern university system. The divergence of findings may in part be due to participants differing in educational age groups (i.e., high school versus college) and non-comparable sample groups (i.e., census data versus a qualitative study with an unspecified sample size).

Despite reports of increased academic success, there remains a need to understand the educational experiences of Hmong American undergraduates to maintain and facilitate their academic persistence (i.e., a student's choice to stay in school, Pascarella & Terenzini, 1980). Previous literature on Hmong American undergraduates serves as a critical foundation for this study, yet it is limited by descriptive overviews of educational attainment (Hutchinson, 1997; Xiong, 2012), the use of undergraduate samples without explicit examination of their educational processes (Lor, 2008; Su et al., 2005), and a focus on high school-aged participants (Lee, 2001; McNall, Dunnigan, & Mortimer, 1994). Further, the research on Hmong American students has focused on cognitive factors such as time spent studying and school dropout rate (McNall et al., 1994) as well as attainment (Swartz et al., 2003), indices which may not fully explain students' educational experiences (Suzuki, 1994).

Unlike traditional approaches of student development that attend to students' cognitive factors (e.g., grade point average, credits to graduation) and educational outcomes (e.g., graduation), scholars call for examinations of non-cognitive factors (Castellanos & Gloria, 2007; Suzuki, 1994) which emphasizes the "whole student" (Canon, 1996) and the varied dimensions of their educational experiences. Thus, a psychosociocultural framework (Gloria & Rodriguez, 2000), which utilizes a non-cognitive approach in which socio-emotional, personal, and contextual considerations explain students' choices to persist or stay in school (i.e., academic persistence), serves as the basis for this study. Based on literature which implicates self-understanding (Fuertes et al., 1994; Gloria & Ho, 2003), interconnections (Fass & Tubman, 2002; Swartz et al., 2003), and cultural context (Chang 2003; Hurtado, 1994) as salient features informing academic persistence, the psychosociocultural approach addresses the dynamic and interdependent relationships of psychological, social, and cultural dimensions for students of color—processes central to understanding their ongoing educational experiences and challenges within the university context (Gloria & Rodriguez, 2000).

Examining this multifaceted process, previous research (e.g., Castellanos & Gloria, 2007; Gloria & Ho, 2003) has supported the three dimensions as salient to the educational experiences of students of color. Designed as a meta-theory, the dimensions (i.e., psychological, social, and cultural) together formulate the holistic framework under which different factors or variables reflect the dimension and population being studied (Castellanos & Gloria, 2007). The dimensions are interrelated areas of study for students of color in higher education (Castellanos, Gloria, & Kamimura, 2006), and thus a precept of the psychosociocultural approach is that each dimension will uniquely and collectively predict academic persistence. For this study, the psychological dimension involved self-beliefs (i.e., perfectionism, self-esteem, college self-efficacy, and imposter syndrome), the social dimension addressed perceived social support (i.e., support from mentors, friends and family), and the cultural dimension included individual and academic university comfort (i.e., ethnic identity, cultural congruity, and university perception).

### **Psychological Dimension – Self-Beliefs**

Defined as how one perceives oneself, self-beliefs have been consistently identified as a significant factor influencing the educational experiences of racial/ethnic minority students (Solberg, O'Brien, Villarreal, Kennel, & Davis, 1993). For Asian Americans, perceptions of self such as academic self-concept and achievement expectancies were significant predictors of performance (i.e., cumulative grade point average) (Fuertes et al., 1994; House, 1997). A closely-related study on Asian American undergraduates indicated adherence to Asian values positively predicted collective self-esteem, and adherence to European American values positively predicted general self-efficacy (Kim & Omizo, 2005). As one of the few studies on factors influencing Asian American undergraduates' academic persistence, self-esteem and college self-efficacy (i.e., confidence in one's ability to complete successfully college related tasks) were significant and positive predictors of persistence (Gloria & Ho, 2003).

As many Hmong American youth are the first in their family to enter college, these students experience inordinate pressure to perform and meet expectations of their parents and Hmong community elders to succeed academically for the purpose of social and economic mobility (Swartz, et al., 2003). For example, many adolescents and young adults are “referred to as ‘you young people’ (*nej cov hluas*) and the ‘intellectual group’ (*yog cov txawj ntse*) who must ‘lead the Hmong to the future’ (*yuav tsum coj haiv neeg Hmoob lawm yav tom ntej*)” (Lee, 2007, p. 5). This phrasing is “demanded by parents, elders, and Hmong leaders as an exhortation to the younger Hmong generations” (Lee, 2007, p. 5). It is thus questioned whether Hmong American students may doubt their ability to meet parental expectations (despite their potential to achieve them), subsequently engendering a sense of excessively high personal standards (i.e., perfectionism; Burns, 1980) or intellectual phoniness (i.e., imposter syndrome; Clance & Imes, 1978; Langford & Clance, 1993).

Further, students may also question their ability or have a sense of imposter syndrome if they feel themselves unwelcomed or not “fitting” in to their academic environment (Gloria & Rodriguez, 2000). Indeed, students' feelings of phoniness extend beyond their cognitive abilities (e.g., grade point average) to their sense or perception of self (Clance & Imes, 1978; Langford & Clance, 1993) or even wellness (Cokley, McLain, Enciso, & Martinez, 2012). For example, King and Cooley (1995) found that undergraduates with a greater orientation toward family achievement had increased levels of feeling like an imposter. Both perfectionism and imposter feelings have yet to be explored fully within the higher educational setting, however these feelings may be evident given their strong family connection (Xiong & Lam, 2013), educational experiences (Xiong, 2012) perception of parental expectations for success (Supple, McCoy, & Wang, 2010), and community expectations as first-generation college students (Lee, 1997).

Only one study to date has quantitatively addressed how familial and community expectations influence self-beliefs, and revealed that intellectual phoniness was the most significant predictor of academic persistence for 103 Hmong American undergraduates (Sengkhammee et al., 2008). Given expectations to advance the family through their own academic success (Lee, 2007; Lor, 2008; Supple et al., 2010; Swartz et al., 2003), it was anticipated that Hmong American undergraduates would question their personal and academic self-esteem, confidence, skills and capability to succeed. This hypothesis would lend explanation as to how self-beliefs might influence academic persistence decisions.

### **Social Dimension – Social Support**

Social support, a construct important to academic persistence, has also been shown to protect against the alienation and subtle discrimination experienced by racial and ethnic minority students (Delgado-Romero & Hernandez, 2002). For example, perceived attachment to parents and peers enhances one's sense of self, internal locus of control, self-esteem, and optimism with a multiethnic college sample (Fass & Tubman, 2002). For Asian American undergraduates, social support was the strongest predictor of academic persistence, with perceived support from friends consistently higher than perceived familial support (Gloria & Ho, 2003). As a result, Gloria and Ho (2003) emphasized the importance of support from individuals (i.e., fellow students) who have the functional knowledge and skills to manage academics in combination with familial support to enhance Asian American undergraduates' academic persistence.

For many Hmong individuals, the value of community through family (kinship) provides Hmong American students with the strong social support and cultural network that drives their educational pursuits (Hutchinson, 1997; McNall et al., 1994; Moua, 2003). Because many Hmong families, and parents in particular, highly value education (Her & Gloria, 2015; Hutchinson, 1997), family support and parental expectations to earn a degree and provide familial financial support have been revealed as primary influences in their children's educational attainment (Lee, 1997; Lor, 2008; Swartz et al., 2003). With prescribed gender roles for Hmong females and males (Moua, 2003; McNall, et al., 1994) that influence expectations for education (Her & Gloria, 2015; Lee, 1997; Ngo, 2002), differences in general educational experiences were anticipated by gender.

The social support of mentorship also plays a critical role in the academic achievement of Hmong American students. For example, in two different qualitative studies (Lor, 2008; Swartz et al., 2003) Hmong students reported that their association with academically-oriented peers inspired them to similarly engage academically and these peers were salient to their educational experiences. Such mentorship is evidenced as upper division Hmong students often serve as role models and “pass on” knowledge to lower division students on how to succeed academically—a process that also occurs between Hmong siblings (Hutchinson, 1997). As first-generation college students navigating unfamiliar academic environments, it is likely that the perceived support received from family and friends will affect their educational experiences.

### **Cultural Dimension – University Comfort**

A sense of comfort within the university environment is frequently implicated as a critical element to social adjustment, academic resilience (Suzuki, 1994), perceptions of a welcoming environment (Hurtado, 1994), and academic persistence decisions, especially for racial ethnic minorities (House, 1997) and Asian ethnic groups in particular (Gloria & Ho, 2003). University comfort addresses both the meaning and importance of culture for individuals within the environment (i.e., ethnic identity) and the influence of

academic culture on the person (e.g., cultural congruity refers to the degree of fit of one's personal values and the values of the university environment, Gloria & Robinson Kurpius, 1996). For example, perceptions of campus climate differ among racial groups with students of color generally perceiving a more negative campus climate than White students (Chang, 2003; Rankin & Reason, 2005) as they contend with cumulative effects of racism and discrimination on a day-to-day basis (Sue & Sue, 2009).

As upper division Hmong American undergraduates held more negative perceptions of the university environment and a decreased level of cultural incongruity, Sengkhamee et al. (2008) suggested that older students were more likely to identify and perceive oppression in their academic lives. Additionally, to manage unwelcoming contexts that frequently occur (Hurtado, 1994), students who hold a strong sense of cultural self (Torres & Hernandez, 2007) and positive self-concept (Fuertes et al., 1994) were more likely to navigate successfully the university environment. Together, varying perceptions of the university environment, cultural congruity, and ethnic identity among students in different class standings are anticipated.

Ultimately, comfort within the university environment affects Asian American students' social adjustment and academic resilience (Suzuki, 1994), with university perception differing by Asian ethnic group (Gloria & Ho, 2003). As recent immigrants with strong cultural and familial traditions (Moua, 2003), it was anticipated that Hmong American undergraduates would have a strong sense of ethnic identity, less positive perception of the environment, and lower cultural congruity. Thus, an incongruent cultural fit within the university and or engagement within an unfriendly academic environment would influence Hmong American undergraduates' experiences within their academic context.

Based on the holistic framework of student academic persistence developed by Gloria and Rodriguez (2000), and also extending Gloria and Ho's (2003) work with Asian Americans, this study posed two primary questions to investigate the educational experiences of Hmong American undergraduates. Hypotheses were formulated from the psychosociocultural framework and supporting educational literature on Asian American and Hmong Americans. Based on previous differences within the literature (Gloria, Castellanos, Orozco, 2005; Sengkhamee et al., 2008), the first question asked how psychological, social, and cultural factors differed by gender and class standing (lower and upper division) for Hmong Americans. Per Sengkhamee et al.'s (2008) findings, it was anticipated that females and upper division students would report higher self-beliefs and increased social support. Females were also anticipated to report higher cultural congruity and more positive perceptions of the university environment, as consistent with previous research (Gloria, Hird, & Navarro, 2001). Further, upper division students were expected to report lower cultural congruity, less positive perceptions of the university environment, and increased levels of ethnic identity (Sengkhamee et al., 2008; Torres & Hernandez, 2007).

With expected interrelationships between the psychological, social, and cultural dimensions (Gloria & Rodriguez, 2000) for Hmong American undergraduates, the second research question asked how the three variable sets were interrelated and assessed students' overall educational experiences. It was anticipated that the three dimensions would be significantly and positive correlated, again consonant to the findings with Asian American (Gloria & Ho, 2003) and Hmong American (Sengkhamee et al., 2008) undergraduates.

A follow-up question was posed to determine which of the study's variables was most predictive of academic persistence decisions. Based on high expectations of educational achievement for Hmong youth as first generation college students (Lee, 2007; Supple et al., 2010; Swartz, et al., 2003), it was anticipated that imposter syndrome would emerge as most predictive of persistence.

## Method

### Student Participants

Collected as part of a larger study on Asian American undergraduates, 85 Hmong American students participated in the study. A total of 36 males and 49 females were included with 33 (38.8%) freshmen, 17 (20.0%) sophomores, 26 (30.6%) juniors, and 9 (10.6%) seniors. Ranging in age from 17 to 23 ( $M = 19.33$  years,  $SD = 1.25$ ), the participants reported a mean grade point average of 2.95 ( $SD = .46$ , range = 1.60 to 4.00). Most participants reported that their mothers (52.9%) and fathers (28.2%) had no formal schooling, and some indicated that their mothers (15.3%) and fathers (27.1%) had a high school degree or general educational development proficiency. Students financed their education through several means, including their parents ( $n = 36$ ), relatives ( $n = 4$ ), work study programs ( $n = 39$ ), financial aid/scholarships ( $n = 80$ ), student loans ( $n = 26$ ), savings ( $n = 17$ ), personal finances ( $n = 7$ ), and other ( $n = 2$ ). The majority of the students ( $n = 57$ , 68%) were first-generation U.S.-born and the remaining participants ( $n = 9$ , 11%) were born in their native country and later immigrated to the U.S. A total of 18 (21%) students did not report this information.

### Instrumentation

The survey took approximately 45 minutes to complete, and consisted of general demographic questions and 11 scales (10 standardized and 1 researcher-developed). Because of the large number of instruments used, only a brief review is provided for each.

#### **Psychological dimension - self-beliefs variable set.**

*Perfectionism.* The *Perfectionism Scale* (Burns, 1980) assesses self-oriented perfectionism (10 items). Responses are rated from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating higher levels of perfectionism. Use of the scale with Japanese male college students revealed adequate internal consistency of .63 (Sumi & Kanda, 2002).

*Self-Esteem.* The *Rosenberg Self-Esteem Scale* (Rosenberg, 1965) measures general feelings of acceptance and self-worth (10 items) rated from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher scores indicate increased perceptions of self-worth. Use of the scale with Asian American undergraduates indicated adequate internal consistency of .88 (Lee & Yoo, 2004).

*College Self-Efficacy.* The *College Self-Efficacy Inventory* (Solberg et al., 1993), originally-developed for Latino students, examines confidence in one's ability to complete specific college-related tasks. The scale consists of three subscales, of which only course efficacy and social efficacy were used (14 items total). Scores range from 1 (*no confidence at all*) to 7 (*complete confidence*). Higher scores reflect a greater level of confidence in completing college-related tasks. Use of the inventory with Asian American undergraduates yielded adequate internal consistency of .82 (Gloria & Ho, 2003).

*Phoniness.* The *Imposter Syndrome Scale* (Harvey, 1982) measures the degree to which individuals experience imposter feelings (14 items). Rated from 1 (*not at all true*) to 7 (*very true*), higher scores suggest an increased sense of intellectual phoniness. In a study with diverse college students, a Cronbach's alpha of .82 was reported (Ross, Stewart, Mugge, & Fultz, 2001).

#### **Social dimension – social support variable set.**

*Mentoring.* The *Mentoring Scale*. (Gloria, Robinson Kurpius, Hamilton, & Willson, 1999) assesses perceived university mentorship. The five items are rated from 1 (*strongly disagree*) to 4



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(*strongly agree*). Previous use with Asian American undergraduates (Gloria & Ho, 2003) yielded a Cronbach's alpha of .71.

*Parental Encouragement.* The *Parental Educational Encouragement Scale* (Gloria et al., 1999) assessed parental encouragement of education. Rated from 1 (*strongly disagree*) to 4 (*strongly agree*), increased scores represent higher perception of parental support for education. Use with Latina/o students has yielded adequate internal consistency of .89 (Gloria et al., 2005).

*Friend Support.* The *Perceived Social Support Inventory - Friends* (Procidano & Heller, 1983) measures the extent to which one believes that his/her needs for support, information, and feedback are being met by friends (20 items). Using slightly modified instructions (i.e., asking participants to respond in relation to friends who were also attending college), ratings were based on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Higher scores reflect an increased perception of support from friends. Use of the scale with Asian American college students yielded adequate internal consistency of .79 (Gloria & Ho, 2003).

### **Cultural dimension – university comfort variable set.**

*Identity.* The *Multiethnic Identity Measure* (Phinney, 1992) consists of two scales (Ethnic Identity-14 items; Other-group Orientation-6 items) and three subscales. Only the ethnic identity scale was used to assess attitudes and sense of belonging. Items are rated from 1 (*strongly agree*) to 4 (*strongly disagree*) with higher scores reflecting a more positive ethnic identity. A strong Cronbach's alpha of .90 was revealed for Asian American undergraduates (Lee & Davis, 2000).

*Congruity.* The *Cultural Congruity Scale* (Gloria & Robinson Kurpius, 1996) measures the degree to which racial/ethnic minority students feel a sense of cultural congruency with the values of the academic environment (13 items). Items (five are reverse-coded) are rated from 1 (*not at all*) to 7 (*a great deal*), with higher scores reflective of increased congruency. Use of the scale with Asian American students has yielded a .76 internal consistency (Gloria & Ho, 2003).

*Environment.* The *University Environment Scale* (Gloria & Robinson Kurpius, 1996) assesses the degree to which students feel welcomed in the college environment (14 items). Rated on a 7-point scale ranging from 1 (*not at all true*) to 7 (*very true*), high scores represent a positive perception of the university environment. Adequate internal consistency coefficients of .82 were reported with five Asian American ethnic undergraduate groups (Gloria & Ho, 2003).

### **Criterion variable.**

*Persistence.* The *Persistence/Voluntary Dropout Decisions Scale* (Pascarella & Terenzini, 1980) explores the academic persistence decisions of undergraduates. Rated from 1 (*strongly disagree*) to 5 (*strongly agree*), this 30-item scale has five subscales (i.e., Peer-Group Interactions, Interactions with Faculty, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development, and Institutional and Goal Commitments). Higher scores on the scale reflect fewer nonpersistence decisions or more positive decisions to stay in school. Adequate internal consistency coefficients of .71 were yielded when used with Asian American undergraduates when used as a total scale score (Gloria & Ho, 2003).

### **Study Setting and Procedure.**

This study was conducted at a large public predominantly-White Midwestern university in which five percent of the undergraduate population is Asian American and approximately 250 students are Hmong. After securing appropriate institutional review board approval, students were recruited at ethnic-specific student organization meetings and events. Students were also recruited at other central locales

(e.g., library) and via the non-parametric method of “snowballing.” Participants were informed of the study’s purpose and their rights as participants. Surveys were returned directly to the researcher (serving as study consent) at the time of distribution. Students were also provided self-addressed envelopes to return their survey via campus mail if needed. Upon return of the survey, students received a pre-paid ticket to the local movie theater as incentive for their participation.

## Results

Adequate internal consistency coefficients were achieved for each scale from .73 to .92. Descriptives and correlations for each of the study’s variables are presented in Table 1.

### *Question 1 – What are the differences by gender and class standing for the study’s variables?*

A 2 (gender) X 2 (class standing) multivariate analysis of variance was used to determine the group means differences for the study’s variables. Anticipated findings were generally supported as both main effects were significant [ $\lambda = .74$ ,  $F = 2.04$ ,  $p < .05$ ,  $\eta^2 = .26$  and  $\lambda = .62$ ,  $F = 3.66$ ,  $p < .001$ ,  $\eta^2 = .38$ , respectively]. The gender by class standing interaction was not significant [ $\lambda = .89$ ,  $p > .05$ ,  $\eta^2 = .11$ ]. By gender, a significant difference was found for friend support [ $F(1, 79) = 9.55$ ,  $p < .005$ ,  $\eta^2 = .11$ ] with females perceiving higher support than their male counterparts ( $M = 3.85$ ,  $SD = .64$  and  $M = 3.45$ ,  $SD = .61$ , respectively). By class standing, significant differences were revealed for congruity [ $F(1, 79) = 5.15$ ,  $p \leq .05$ ,  $\eta^2 = .06$ ] and environment [ $F(1, 79) = 5.72$ ,  $p \leq .05$ ,  $\eta^2 = .07$ ]. Specifically, lower-division students indicated a greater fit between self-values and the values of the academic environment than upper-division students ( $M = 5.14$ ,  $SD = .86$  and  $M = 4.63$ ,  $SD = .91$ , respectively). Also, lower-division students ( $M = 5.05$ ,  $SD = .66$ ) indicated a more positive perception of the university environment than upper-division students ( $M = 4.67$ ,  $SD = .73$ ). Differences were also found for self-efficacy [ $F(1, 79) = 5.48$ ,  $p \leq .05$ ,  $\eta^2 = .07$ ]. Upper-division students indicated greater levels of confidence than lower-division students in completing college-related tasks ( $M = 5.20$ ,  $SD = .93$  and  $M = 4.78$ ,  $SD = .86$ , respectively). Differences also emerged for friend support [ $F(1, 79) = 5.48$ ,  $p \leq .05$ ,  $\eta^2 = .06$ ], where upper-division ( $M = 3.82$ ,  $SD = .62$ ) reported a higher perception of social support from friends than lower-division ( $M = 3.57$ ,  $SD = .66$ ) students.

### *Question 2 – What are the relationships of the psychological, social, and cultural variable sets?*

To investigate the linear combination of the emergent factor variable sets (i.e., self-beliefs, social support, and university comfort), canonical correlations were determined the most appropriate analysis (e.g., variables continuous, normalcy of variables) to explore the combination of the variable’s relationships (see Table 2). Each of the constructs was operationalized by the variables chosen to represent the observed variables (Cole, Maxwell, Arvey, & Salas, 1993). The self-beliefs variable set included perfectionism, self-esteem, self-efficacy, and phoniness, whereas the social support variable set included mentoring, encouragement, and friend support. The university comfort variable set consisted of identity, congruity, and environment. The linear combination of one variable set correlated with a linear combination of a second variable set is the canonical covariate. The correlation of the covariates is the canonical correlation and the covariate pair is the canonical root. Specifically, the canonical coefficient indicates the weighting of each scale in each covariate and reflects the degree to which that scale holds meaning for the covariate. The total amount of shared variance among the covariates is the squared canonical correlation of significant roots (Harris, 1985; Stevens, 1986; Weiss, 1972). Each successive

canonical correlation accounts for less variance than the previously extracted canonical roots in which the highest number of possible roots equals the number of variables in the smallest variable set (Harris, 1985; Stevens, 1986; Weiss, 1972). Three roots were thus possible as each variable set had at least three scales. Given the study's smaller sample size, only the first significant root was presented and interpreted per Stevens (1986) recommendation to ensure accurate interpretation of the findings. That variable sets were examined, the likelihood of Type I error associated with univariate correlations was decreased (Harris, 1985). Canonical roots significant with  $\beta$ s close to or above .60 were interpreted.

Results revealed significant relationships between the variable sets. Self-beliefs and friend support were related [canonical correlation = .72,  $F(12.00, 190.79) = 5.28, p \leq .001$ ], with one significant root ( $p \leq .001$ ). The pattern of coefficients revealed that decreased college self-efficacy beliefs (-.88), increased perceptions of being an imposter (.87), and decreased self-esteem (-.65) were related with decreased friend support (-.96), which accounted for 52% of the variance.

Next, the coefficient pattern for the self-beliefs and university comfort factors variable sets were significantly related [canonical correlation = .71,  $F(12.00, 201.37) = 5.39, p \leq .001$ ], with two significant roots ( $p \leq .001$  and  $p \leq .05$ , respectively). The first canonical root accounted for 55% of the variance. The canonical covariate indicated that lower self-esteem (-.87), increased imposter feelings (.93), and decreased college self-efficacy (-.58) were strongly associated with decreased perceptions of ethnic identity (-.77) and cultural congruity between self and the academic environment (-.86).

Finally, the social support and university comfort factors were significantly related [canonical correlation = .66,  $F(9.00, 182.68) = 6.61, p \leq .001$ ], with two significant roots ( $p \leq .001, p \leq .05$ ). The first canonical root accounted for 40% of the variance of the variable sets. The pattern of coefficients revealed that decreased perception of friend support (-.91) and encouragement from family (-.64) was related to lower ethnic identity (-.91) and cultural congruity between self and the academic environment (-.72).

### *Question 3 – What is the strongest predictor of academic persistence decisions?*

Posed as a follow-up question, a stepwise regression was conducted to determine which of the study's individual variables was most predictive of academic persistence. Important to note is that statistical packages correctly identify the best single predictor via a stepwise regression, yet incorrectly compute the degrees of freedom as subsequently variables are added (Thompson, 1995). Three of the ten study's variables (i.e., phoniness, congruity, and friend support) were entered into the omnibus equation [ $F(1, 78) = 54.69, p \leq .001$ ]. As expected, phoniness emerged as the strongest predictor (42%,  $\beta = -.64, t = -7.40, p \leq .001$ ).

Table 1  
*Descriptives and Correlations for the Study's Variables*

Variable	<i>M</i>	<i>SD</i>	<i>α</i>	Correlations									
				2	3	4	5	6	7	8	9	10	11
1. Perfectionism	3.06	.61	.73	-.27*	-.31**	.31**	-.12	-.04	-.19	-.15	-.32**	-.23*	-.11
2. Self-esteem	3.15	.51	.86		.45**	-.65**	.18	.33**	.42**	.45**	.53**	-.27*	.51**
3. Self-efficacy	4.94	.89	.90			-.52**	-.22**	.33**	.59**	.37**	.31**	.21**	.43**
4. Phoniness	3.42	.76	.77				-.31**	-.31**	-.59**	-.51**	-.55**	-.28*	-.58**
5. Mentoring	2.77	.66	.79					.10	.31**	.29**	.14**	.35	.21
6. Encouragement	3.34	.57	.87						.32**	.37**	.28*	.14	.35**
7. Friend support	3.66	.64	.92							.49**	.39**	.20	.55**
8. Identity	3.19	.50	.87								.37**	.24*	.43**
9. Congruity	4.87	.70	.81									.51**	.46**
10. Environment	4.86	.93	.77										.48**
11. Persistence	3.55	.46	.80										

Notes. \*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$ .

1. Perfectionism Scale, 2. Rosenberg Self-Esteem Scale, 3. College Self-Efficacy Inventory, 4. Imposter Syndrome Scale, 5. Mentoring Scale, 6. Parental Educational Encouragement Scale, 7. Perceived Social Support Inventory-Friends, 8. Ethnic Identity, 9. Cultural Congruency Scale, 10. University Environment Scale, 11. Persistence/Voluntary Dropout Decisions Scale.

Table 2  
*Canonical Covariates for the Study's Variables*

Variable Set	Root 1 $\beta$	Canonical Correlation	Root 2 $\beta$	Canonical Correlation
Self-beliefs <sup>a</sup>	$p \leq .001$	.72	$p \geq .05$	.13
Perfectionism	.26		-.07	
Self-esteem	-.65		-.63	
Self-efficacy	-.88		-.11	
Phoniness	.87		-.19	
Social Support				
Mentoring	-.40		.17	
Encouragement	-.52		-.85	
Friend support	-.96		.23	
Self-beliefs <sup>b</sup>	$p \leq .001$	.71	$p \leq .05$	.19
Perfectionism	.38		.79	
Self-esteem	-.87		-.12	
Self-efficacy	-.58		.29	
Phoniness	.93		-.11	
University Comfort				
Identity	-.77		.60	
Congruity	-.86		-.49	
Environment	-.43		-.49	
Social Support <sup>c</sup>	$p \leq .001$	.66	$p \leq .05$	.41
Mentoring	-.46		.87	
Encouragement	-.64		-.10	
Friend support	-.91		-.20	
University Comfort				
Identity	-.91		.07	
Congruity	-.72		-.16	
Environment	-.45		.75	

Notes. Only roots significant at  $p \leq .01$  were identified as significant.

<sup>a</sup> $F = (21, 181.45) = 3.33, p \leq .001$ . <sup>b</sup> $F = (15, 199.16) = 4.64, p \leq .001$ . <sup>c</sup> $F = (15, 199.16) = 4.64, p \leq .001$ .

See previous table for key to scales.

## Discussion

Using a psychosociocultural framework to understand the factors influencing students' educational experiences and academic persistence processes (Gloria & Rodriguez, 2000), this study explored the educational experiences of 85 Hmong undergraduates. Two-thirds of the students were first-generation college students, most of whom (95.3%) received educational scholarships. Psychological, social and cultural dimensions were salient to interpret Hmong American students' educational processes, with self-efficacy, imposter feelings, and peer social support, in particular, contributing to this understanding.

Most likely "separated" from their families and communities for the first time, students may have relied more on their peer network than their families for academic support. As first-generation college students, whose families were likely unable to provide academic support given their lack of familiarity or understanding of the higher education system (Sengkhamee et al., 2008; Tang et al., 2013), self-beliefs and social support from friends took a more prominent role than family in the study's findings. Similar to previous research (Gloria & Ho, 2001; Steinberg, Dornbusch, & Brown, 1992), the influences of

confidence in oneself and ability to succeed as well as a support system from friends were prominent for Hmong American undergraduates. Specifically, decreased perception of support from friends was related to a lower sense of confidence in their ability to complete college-related tasks along with lower self-esteem and higher imposter feelings. As many of the study's participants were recruited through Hmong student campus organization, it is likely that social connections and mentorship from fellow Hmong American undergraduates served as a means of academic success (Swartz et al., 2003) and educational encouragement.

In addition, decreased support from friends and family and lower self-beliefs were related to lower ethnic identity and cultural incongruity between self and the academic environment. As most participants were affiliated with Hmong student organization, they were likely encouraged to identify with their Hmong culture and maintain familial cultural values within the academic environment. As a result, they may (a) establish trusting supportive relationships with these ethnically-similar peers who buffer the impact of incongruent cultural values and (b) believe they are capable of succeeding despite feeling unwelcomed and alienated in their educational context. For students who recently immigrated from Southeast Asia, having a safe place where familial cultural values are shared is important (Tang et al., 2013), especially if faculty and staff are not familiar and integrative of Hmong values.

By class standing, upper-division students reported higher college self-efficacy and perceived social support from friends than did lower division students. Having spent more time at the university, upper division students indicated an increased sense of confidence in their ability to complete successfully college-related academic tasks—a finding consistent with self-efficacy theory (Bandura, 1986) and college self-efficacy research on students of color (Hurtado & Carter, 1997). Perhaps as a function of feeling more confident and supported by friends, these Hmong American undergraduates may have used networking or building relationships as coping strategies to help them persist in the perceived challenging academic environment, a similar process used by other racial and ethnic minority students (Delgado-Romero & Hernandez, 2002).

Although navigating the educational system and strengthening their peer support networks the longer they were in school, the upper-division Hmong American undergraduates perceived the environment as more unwelcoming and culturally incongruent than their lower-division counterparts, findings similar to Sengkhamee et al.'s research (2008). That is, over time upper-division students may have experienced increased racial discrimination (Fuentes et al., 1994), more accurately assessed the degree to which they were valued as an ethnic group, or identified differences in their cultural values and those of the university. Yet simultaneously, an overall decreased perception of cultural incongruity between self and the university environment for the study's Hmong American undergraduates was related to a lower sense of self-esteem and confidence, underscoring the potential impact of the sociocultural context on students' psychological and educational processes (Gloria & Rodriguez, 2000).

A salient self-belief that emerged from the study's finding was that Hmong American students' sense of intellectual phoniness was the strongest predictor of academic persistence. Despite the students doing well academically (i.e., 2.95 grade point average), an increase in feelings of phoniness was related to decreased academic persistence decisions. Given the university context and climate for students of color, and Asian American students specifically, it is feasible that they experienced negative and stereotypical messages from campus (e.g., faculty and peers) (Cokley et al., 2012; Ong, Burrow, Fuller-Rowell, Ja, & Sue, 2013). Further, popular media and literature reinforces a "model minority" image of Asian Americans as educationally successful and "problem-free" (Suzuki, 2002). The study's Hmong American students may have felt pressure to uphold an even greater level of academic prowess consistent with a model minority stereotype, and in turn questioned their intellectual ability and subsequent welcome or belonging on campus. Their imposter feelings may have also stemmed from familial pressures (King &

Cooley, 1995; Supple et al., 2010), as families and communities encourage them to stabilize, advance (Lee, 1997), and propel others economically and socially (Hutchinson, 1997) via higher education. Such familial perceived pressures and assumed responsibilities, which have been associated with increased anxiety and stress (King & Cooley, 1995), may nonetheless result in students' perceived uncertainty, despite their academic capabilities, to persist academically.

Perhaps most surprising was the limited role that perceived parental encouragement had within the interrelationships of the study's variables. Counter to research in which Hmong families (and specifically parents) had a significant influence on their children's educational pursuits (Her & Gloria, 2015; Hutchinson, 1997; Lor, 2008; Supple et al., 2010), lower perceived parental encouragement was associated with cultural factors (i.e., lower ethnic identity and cultural incongruity), yet not related to students' self-beliefs. Understandably, the perception of parental encouragement can simultaneously increase one's confidence and engender concern or doubt, yet the encouragement may not have included the specific academic-related information needed for the students to negotiate educational challenges and ultimately make informed decisions about their academic persistence (Her & Gloria, 2015). Although the degree that parents were aware of their children's academic experiences was not assessed, questions emerge as to whether Hmong parents have knowledge of (a) how the American higher education system functions, (b) their children's academic demands, (c) their students' experience of culture shock, and (d) the subsequent impact of an unwelcoming university environment on their general well-being. Given that parents and family members are often identified as the most influential people in students' educational pursuits and goals (Lor, 2008; Supple et al., 2010; Swartz et al., 2003), it is clear that more research is needed to support or refute this study's findings, as well as to determine the nuances of parents' roles within the educational process of their undergraduates.

Finally, females reported higher perception of peer social support than males, the only significant finding by gender. Of the research with Hmong undergraduates, Lee (1997) reported that Hmong females are more assertive and active college students than Hmong males. By pursuing higher education, young Hmong women challenge the traditional values of a patriarchal culture and notions of early marriage and motherhood to gain independence (Lee, 1997). As this study did not specifically examine traditional gender roles, research which explores the proximal issues underlying gender difference in Hmong American undergraduates' educational experiences and persistence decisions is warranted.

### **Implications of Study Findings**

The study's findings have multiple direct implications for college campuses to best support the educational experiences and persistence of Hmong American undergraduates. These implications were addressed through the Psychosociocultural framework (Gloria & Rodriguez, 2000) and indicators from the Culturally Engaging Campus Environment Model (Museus, 2014) to assist in educational success. First, to ensure cultural familiarity (Museus, 2014) and opportunity to have social connections (Gloria & Rodriguez, 2000), universities would do well to support Hmong-specific student organizations by allowing them the opportunity to physically, socially, and culturally connect with others with whom they share congruent backgrounds and values (e.g., group emphasis orientation). Hmong American and others racially diverse students who are numerically under-represented on campus and/or are newer to the academic environment (i.e., first-generation college, immigrant, lower socioeconomic status) could benefit from engaging with peers who are experiencing similar educational challenges.

Second, these findings emphasize the significance of cultivating holistic and integrative support through formal and informal relationships (Gloria & Rodriguez, 2000; Museus, 2014) to counteract imposter feelings. Universities would do well to increase the number of Hmong faculty, administrators,

and academic staff (e.g., student advisors) to provide a stronger academic mentoring community beyond family and peers (Museus & Neville, 2012). Allowing Hmong students to engage in relationships that are congruent to their values and worldviews as well as allow them to learn from other experiences could decrease students' sense of intellectual phoniness. For example, if a Hmong advisor or faculty member shared their cultural narrative and successful management of educational challenges with a Hmong undergraduate, the student may feel that they could similarly achieve academic success.

Finally, all university personnel should gain more knowledge and understanding of the needs and values of the fast-growing Hmong American student population to ensure culturally-competent learning spaces (e.g., classroom) and culturally-validating environments (Gloria & Rodriguez, 2000; Museus, 2014). Having validating spaces for Hmong American undergraduates could ultimately allow them a greater sense of belonging, mattering, and propensity for educational success.

### **Study Limitations and Future Research Directions**

Several of the study's limitations should be considered in light of the findings. Using a cross-sectional approach and nonrandom sampling method, generalizability of the study's finding to Hmong American students attending other university settings should be made with caution. Although a relatively small sample size was secured, which may have affected the power of the study's analysis, almost one-third of the Hmong American undergraduate population on campus participated in the study, which nonetheless yielded significant differences. Despite the smaller sample size, the canonical correlations were strong: .66 to .72, and yielded significant relationships. Further, only the first significant root was interpreted to ensure reliable interpretation of findings (Steven, 1986). Given their low representation on campus, future research would do well to collaborate with university administrators to identify the entire Hmong American undergraduate population potentially available for study inclusion.

Next, that data was collected primarily from Hmong student organization sponsored events, the ethnic identity of the participants may have been stronger than those who did not attend events nor participate in the study. Similarly, the degree to which participants may have perceived stronger peer support (especially from ethnically-similar peers experiencing comparable struggles) may have influenced their educational experiences differently than those not associated with Hmong-specific student organizations. Given the significant role that student organizations play for minority students in creating family and providing socio-emotional support (Delgado-Romero & Hernandez, 2002), future studies should explore their influence on Hmong American students' educational experiences and ultimate academic persistence.

Furthermore, the majority of the study's Hmong American students received some form of financial aid and university scholarship. A question emerges as to whether this study's sample had an overrepresentation of Hmong American undergraduates who were affiliated with some form of federally-funded programming (i.e., are of low-income background) or if the majority of Hmong American students at the university at which the study was conducted received some form of funding in order to attend school. Nonetheless, finances play an important role in students' educational experiences (Carter, 2006) and likely influenced their educational experiences (Xiong & Lee, 2011). For example, research indicated that Hmong American undergraduates reported lack of finances as the largest obstacle in their educational pursuits (Xiong & Lee, 2015; Vang, 2015). For this current study, the role of finances was not addressed and more importantly how students and their families experienced financial stress and strains and resulting influence on their pragmatic ability to persistence in higher education (i.e., pay for college; Huffcutt, 2010) was not explored. Future studies would do well to examine how financial stress and strain



for Hmong American students continue to be a prominent factor despite receiving financial assistance (Vang, 2015) and subsequently influence their educational experience.

Although the study's measures were generally created and validated for and with racial and ethnic samples, additional research is needed to expand on the educational constructs and verify their utility with Hmong American undergraduates. For example, despite adequate internal consistency, the Parental Educational Encouragement Scale may not have captured parents' educational encouragement. Given that educational encouragement often includes family members beyond their parents (e.g. grandparents, aunts, uncles, and siblings) and involves pressures to advance the family (Swartz et al., 2003), this scale may not have fully tapped the cultural and contextual nuances of parental encouragement experienced by immigrant, first-generation college students. Ultimately, in-depth explorations and longitudinal studies of Hmong American students' educational experiences can increase persistence and retention rates and direct university personnel to provide culturally-contextualized student programming that ensures students' personal and academic well-being and success. With the paucity of research on Hmong American undergraduates, quantitatively-focused, theoretically-grounded, and interdisciplinary studies which address their educational needs and processes can direct a much needed line of inquiry.

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