

## **The First Year of Acculturation: A Longitudinal Study on Acculturative Stress and Adjustment Among First-Year International College Students**

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### **ABSTRACT**

We analyzed 192 first-year international college students in the Mid-Atlantic region to examine the change in international students' acculturative stress, adjustment, and collegiate experiences during their first year of enrollment in U.S. higher education. We found that male students, students from low socioeconomic status backgrounds, and students majoring in the humanities showed higher rates of acculturative stress and lower rates of satisfaction with college experiences compared with their counterparts. International students reported decreased acculturative stress and homesickness and increased English proficiency, social connectedness, and satisfaction with college experiences during the last week of the first year compared to the first week of their first semester. Satisfaction with college experiences, English proficiency, social connectedness, and self-esteem were significant predictors of acculturative stress. Lastly, acculturative stress at the beginning of the first year and satisfaction with college experiences at the end of the first year affected each other reciprocally over 1 year, according to our longitudinal investigation. Implications for research and practice are discussed.

**Keywords:** acculturative stress, adjustment difficulties, English proficiency, first-year college students, homesickness, international students

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## INTRODUCTION

International students contribute to the United States in many ways, such as growing the economy and helping the United States lead in innovation (NAFSA, 2019). In addition, international students, particularly those in graduate schools, bring a wide range of skills and knowledge, thus enriching the intellectual capital of U.S. universities and the U.S. workforce (Zhang, 2016). Further, the individual resources of international students promote the internationalization of higher education and enrich diverse campus climates (Ward et al., 2015).

International students, however, face many challenges while pursuing their degrees at U.S. higher education institutions. Living and studying in a foreign country can lead to experiences of acculturative stress (i.e., stress from life changes through the acculturation process) and adjustment problems (Berry, 2006). Research has found that international students encounter difficulties with language barriers, finances, adjustments to a new educational system, social customs and norms, and homesickness (Gold, 2016; Ma, 2020; Mukminin, 2019; Tang et al., 2018; Telbis et al., 2014; Xing & Bolden, 2019). These challenges can impact their mental well-being (Forbes-Mewett & Sawyer, 2016; Koo, Kim, et al., 2021). Researchers estimate that 15%–20% of international students are at risk of experiencing mental health problems due to acculturative stress and acculturation-related problems (Zhang & Goodson, 2011). In addition, while researchers have studied first-year college students' adjustment-related difficulties with mental health concerns (Boyras et al., 2017), social development (Means & Pyne, 2017), and academic adjustment (Lattuca & Stark, 2009), first-year experiences among international students have received little attention.

Many studies have been conducted on international students' acculturative stress and adjustment in the United States (Luo et al., 2019; Sullivan & Kashubeck-West, 2015; Telbis et al., 2014; Xiong & Zhou, 2018). However, researchers have not focused on predictors of acculturative stress but on acculturative stress itself. Additionally, although there is a growing body of research on international students, there is a paucity of longitudinal studies. With the exception of a few longitudinal designs, (e.g., Cemalcilar & Falbo, 2008), research on international students' adjustment has used cross-sectional designs to assess their developmental processes (e.g., Luo et al., 2019; Koo, Nyunt, et al., 2021). Such designs do not enable researchers to explore change over time. There are also few studies empirically exploring relationships among diverse factors (e.g., relationships among English proficiency, length of stay, social connectedness, and self-esteem, etc.) and acculturative stress.

Understanding stressors as predictors of acculturative stress will provide in-depth knowledge about international students' adjustment. In addition, given the fact that the first-year transition presents various challenges and adjustment difficulties (Means & Pyne, 2017), studying first-year international college

students and factors associated with acculturative stress will provide useful insight.

Therefore, the purpose of the study is to examine changes in first-year international college students' acculturative stress and collegiate experiences from the beginning of their first semester to the end of their first year in college. Four research questions guided this study:

1. How does the rate of acculturative stress among first-year international students vary based on students' gender, major, and socioeconomic status (SES)?
2. How do acculturative stress and collegiate experiences change over 1 year among first-year international students?
3. What are the predictors of acculturative stress among first-year international college students, and how do these change during their first year?
4. How does adjustment impact students' acculturative stress, and how does acculturative stress impact students' adjustment reciprocally over one year?

## **LITERATURE REVIEW**

### **Acculturation and Acculturative Stress Among International Students During the First Year in College**

The growing literature on college student mobility and the international dimensions of American higher education includes few studies of international students in the United States during this critical first year. Much of the literature addresses persistence and retention (Bowman & Holmes, 2017; Cintina & Malia Kana'iapuni, 2019; Sansone & Tucker Segura, 2020), adjustment (Espinoza, 2018; York & Fernandez, 2018), and first-year experiences (Boyraz et al., 2017; Tukibayeva & Gonyea, 2014). Little addresses the experiences of international students who face additional challenges beyond those experienced by most college students (Yan & Sendall, 2016).

The limited research examining international student experiences tends to problematize the first year as one of stress and challenge. One finding is that while colleges tend to aggressively recruit international students, these students often do not feel integrated into American campuses and frequently feel that university functions do not operate harmoniously to support their success (Briggs & Ammigan, 2017). Structured support systems that help international students adjust to the first year seldom exist. Further, little research explores international students' first year of college and its impact on acculturative stress.

## **Acculturation and Acculturative Stress During the First Year of College**

Acculturation entails “the transferring of culture from one group of people to another group in response to contact with one another” (Amason et al., 1999, p. 312). Originally conceptualized as a process by which new immigrants become incorporated into the dominant culture (Padilla & Perez, 2003), in the 21st century, the unidimensional nature of acculturation has been reduced, with institutions viewing international students as sources of both revenue and diverse cultural exposure rather than as individuals to be assimilated (Chankseliani, 2018).

Acculturative stress is a particular type of stress resulting from the process of acculturation (Berry et al., 1987). It refers to mildly pathological and disruptive behaviors and experiences commonly generated during acculturation. Symptoms may include depression, anxiety, physical complaints, anger, identity confusion, substance abuse, and family conflict (Berry & Kim, 1988; Sandhu & Asrabadi, 1994). Berry (2006) argued that the degree to which an individual feels able to cope with the stress introduced via the acculturation process influences the degree of acculturative stress experienced. International students with adequate resources and strategies to overcome acculturative stress tend to experience it less strongly than those lacking adequate coping mechanisms or utilizing maladaptive coping strategies (Berry, 2006).

### **Factors Associated With Acculturative Stress Among International Students**

Race/ethnicity, geographical region, marital status, sex/gender, age, English proficiency, length of residency in the United States, social connectedness, self-esteem, and academic adjustment have been investigated in studies regarding acculturation and adjustment difficulties among international students (Hirai et al., 2015; Lopez & Bui, 2014; Luo et al., 2019; Telbis et al., 2014). Consistent contributing factors include perceived English proficiency (Luo et al., 2019), social connectedness (Sullivan & Kashubeck-West, 2015), self-esteem (Lopez & Bui, 2014), and adjustment difficulties (Jackson et al., 2013). Demographic predictor variables have produced inconsistent results (Poyrazli et al., 2001).

International students with better social connectedness show less adjustment strain, better adjustment to the host culture, and better academic performance (Luo et al., 2019; Sullivan & Kashubeck-West, 2015). Social connectedness, particularly to domestic students, has also been shown to increase retention rates (Trice, 2004). International students lacking social connectedness also face academic issues and higher dropout rates (Li et al., 2010). Social connectedness, then, is important for the successful acculturation of first-year international students.

Higher self-esteem predicts academic adjustment of international students (Telbis et al., 2014), and better psychological adjustment among international students (Jackson et al., 2013). Self-esteem is a personality trait that contributes to psychological well-being, sociocultural adjustment, and health-promoting behaviors (Wei et al., 2008). Unfortunately, self-esteem often suffers among

international students, which can lead to reduced physical and mental health. A lack of culturally responsive treatment approaches on many college campuses further exacerbates this problem.

International students who feel comfortable speaking English show better psychological and sociocultural adjustment (Luo et al., 2019; Ma, 2020) and lower levels of acculturative stress (Poulakis et al., 2017). Perceived English proficiency also strongly influences social connectedness and academic success, key factors in acculturative stress (Wang et al., 2018; Xing & Bolden, 2019). More frequent interactions and perceived confidence in one's English skills can lead to positive feelings of adjustment and reduced loneliness (Poulakis et al., 2017). Additionally, research has found that perceived English proficiency facilitates more successful interpersonal relationships with English-speaking students (Mukminin, 2019). High English proficiency also affects international students' academic accomplishment (Li et al., 2010), encourages them to speak in class (Yeh & Inose, 2003), and produces better psychological adjustment (Poyrazli, 2003). One challenge international students must also navigate is pressure to utilize English in all aspects of daily life, which can increase stress (J. Lee, 2017; Shahjahan & Kezar, 2013; Suspitsyna & Shalka, 2019). Models of mutual engagement between international students and domestic peers could alleviate some of these concerns, but conceptualizations of English based on mutual reciprocity have been limited in research and practice (Thomas et al., 2018).

Academic stress related to adjusting to a different educational environment is one of the largest sources of acculturative stress (Ying, 2005). Challenges with academic adjustment often result from the difference between international students' experiences of classroom life in their home countries and their experiences in the United States (Zhou & Zhang, 2014). International students may be unaccustomed to instructors asking questions in class and be particularly troubled if called upon without having raising their hands (Tang et al., 2018). While limited programming efforts to help international students adapt to American academic expectations and norms exist, few institutions have embraced such programs (Smith & Khawaja, 2011; Yan & Sendall, 2016).

## **THEORETICAL FRAMEWORK**

We used Ward and Kennedy's (1994) psychological and sociocultural adjustment model to frame international students' acculturative stress and adjustment processes. This model is frequently employed in studies of acculturative stress and adjustment (Luo et al., 2019; Xiong & Zhou, 2018). It conceptualizes adjustment as the sum of two distinctive types—psychological and sociocultural adjustment—and investigates the relationship between acculturation attitudes and cross-cultural adjustment (Ward & Kennedy, 1994). According to Ward and Kennedy (1994), these adjustment types involve different predictors: Psychological adjustment involves personality, life changes, self-esteem, and social support, and sociocultural adjustment involves length of stay in the host country, ethnic identity, contact with individuals from the host country, and language proficiency. We explore these interrelated concepts of psychological

and sociocultural adjustment among first-year international students. Based on our literature review, we conclude that both psychological and sociocultural adjustment factors are in play when international students begin studying in the United States. We selected Ward and Kennedy's (1994) model for the depth of its conceptualization of psychological and sociocultural adjustment, alignment with our research questions, and centering of the experiences of international students abroad.

## **METHOD**

### **Procedure**

The first wave of data was collected during the first week of the fall semester in September 2010, and the second in May 2011, via online surveys. Students were recruited during the new international student orientation, where the first author of this study gave a brief presentation about the study. An email invitation was sent at the end of the orientation day; interested students visited the online survey and participated. Twenty percent of participants had a chance to win a \$25 Starbucks gift card as compensation. Data from participants who completed both the first and second wave surveys were included for analysis.

### **Participants**

Participants included 192 international students from 12 different countries who enrolled in a degree program at a large private research university in the Mid-Atlantic region under F-1 visas. Fifty-eight percent were female, 33% were from China, 30% from India, 15% from South Korea, 8% from Saudi Arabia, 2% Turkey, and 2% from Greece. Ninety-five percent were single, and 81% spoke English as a second language. Lastly, 42% indicated that they came from a high SES family, 47% from a middle-class family, and 11% from a low SES family.

### **Instruments**

#### ***Acculturative Stress***

We used the Acculturative Stress Scale for International Students by Sandu and Asrabadi (1994) to measure acculturative stress. This scale was developed to measure culture-related stress among international students in the United States. It consists of 36 questions scored on a 5-point Likert scale. Sample questions include "I feel lost leaving my relatives behind," and "I am treated differently in social situations." Cronbach's  $\alpha$  for the current study was .91.

#### ***Homesickness***

To measure homesickness, we employed the Utrecht Homesickness Scale (UHS) developed by Stroebe and colleagues (2002). The UHS consists of 20 items under five subscales scored on a 5-point Likert scale: missing family, missing

friends, feeling lonely, having difficulty adjusting, and ruminating about home. Sample questions include “Do you miss your family?” and “Do you miss home?” Cronbach’s  $\alpha$  for the current study was .90.

### ***Adjustment Difficulties***

We used the adjustment difficulties subscale of the UHS (Stroebe et al., 2002) to measure adjustment difficulties. This includes four items scored on a 5-point Likert-type scale. A sample question is “I feel uncomfortable in a new situation.” For the current investigation, Cronbach’s  $\alpha$  was .87.

### ***Self-Esteem***

We employed the Unconditional Self-Regard Scale by Betz and colleagues (1995) to measure self-esteem. This scale was developed to capture individuals’ perceived self-esteem. The scale is a 28-item measure scored on a 5-point Likert scale. Sample items are “I really value myself,” and “Whether other people criticize me or praise me makes no difference to the way I feel about myself.” For the current investigation, Cronbach’s  $\alpha$  was .91.

### ***Social Connectedness***

We applied the Social Connectedness Scale by R. Lee and Robbins (1995) to measure social connectedness. It includes eight items scored on a 6-point Likert-type scale. A sample item is “I catch myself losing all sense of connectedness with society.” For the current investigation, Cronbach’s  $\alpha$  was .92.

### ***Satisfaction with College***

To measure international students’ satisfaction with overall college experiences, we utilized 27 items on the Satisfaction with Overall College Experiences section from the College Student Survey administered by the Higher Education Research Institute (Astin, 1993). All responses are scored on a 6-point Likert-type scale. A sample question is “I am satisfied with overall experiences in college.” For the current investigation, Cronbach’s  $\alpha$  was .92.

### ***English Proficiency***

We used four questions about perceived level of English mastery in listening, speaking, reading, and writing skills to measure English proficiency.

### ***Demographic Information***

A brief questionnaire asked for demographic information regarding nationality, age, gender, marital status, education, major, ethnicity, SES, and length of stay in the United States.

## **Data Analysis**

To explore participants' overall characteristics, we performed descriptive statistics. For within-group comparisons of answers to the first research question, we performed cross-tabulations. We employed a paired *t* test to investigate changes in students' experiences over two semesters to answer the second research question. Upon correlation analysis to explore relationships among variables, we performed hierarchical multiple regression to examine predictors of acculturative stress to answer the third research question. Lastly, we performed an autoregressive cross-lagged (ARCL) panel model approach (Curran, 2000) to explore causal and reciprocal impacts between acculturative stress and satisfaction with college experiences in two semester intervals to answer the last research question. We used SPSS 23.0 and Mplus 6.12 for data analysis.

## **RESULTS**

### **Descriptive Statistics**

As displayed in Table 1, male students, students with low SES backgrounds, and students majoring in the humanities reported higher rates of acculturative stress compared to their female peers, mid-high SES students, and STEM and social science counterparts. For satisfaction with overall college experiences, female students, mid-high SES students, and social science majors were more likely to be satisfied. Female students, mid-high SES students, and social science majors' grade point averages (GPAs) were slightly higher than those of their counterparts.

### **Change Over Time: Beginning Versus End of the First Year**

For longitudinal comparison of acculturative stress and college experiences between the first week of the first semester (Time 1) and the last week of the second semester (Time 2), we utilized paired *t* tests (see Table 2). International students reported lower levels of acculturative stress, higher rates of social connectedness, lower rates of homesickness, lower levels of adjustment difficulties, and higher rates of English proficiency at the end of the first year than at the beginning. These factors were statistically significant at the  $p < .001$  and  $p < .01$  level. Self-esteem and satisfaction with overall college experiences increased after two semesters, but these differences were not statistically significant.

**Table 1: Distribution of Acculturative Stress, Satisfaction with College Experiences, and GPA at the end of the First Year by Gender, SES, and Major**

	Gender		SES			Major	
	M (n = 84)	F (n = 108)	Low (n = 17)	Mid-high (n = 182)	High- upper (n = 8)	SS (n = 40)	STEM (n = 142)
<b>Acculturative stress</b>							
Low	6.4	15.2	3.3	9.6	1.3	2.5	1.7
Middle	64.1	53.5	58.0	56.8	54.6	50.5	57.4
High	29.5	26.3	36.5	33.4	51.1	47.0	41.9
<b>Satisfaction</b>							
Low	5.7	2.2	16.8	13.3	28.6	20.4	20.6
Middle	36.9	37.4	51.8	60.7	52.9	38.8	46.6
High	57.3	60.4	33.4	25.7	28.6	40.8	31.4
<b>GPA</b>							
Low	12.2	10.9	10.7	2.3	12.5	6.9	13.9
Middle	60.3	64.4	59.5	67.0	55.4	64.1	61.1
High	24.6	27.7	21.6	28.3	22.1	27.5	24.3

Note. N = 192. SES = socioeconomic status; SS = social sciences; STEM = science, technology, engineering, and math; GPA = grade point average.

**Table 2: Means, Standard Deviations, and Results of the t-Test Comparisons Between Time 1 and Time 2**

Variable	Time 1		Time 2		t value
	M	SD	M	SD	
Acculturative stress	2.58	0.58	2.25	0.60	-3.022***
Satisfaction overall	3.31	0.65	3.34	0.61	0.49
Self-esteem	3.23	0.69	3.28	0.68	0.85
Social connectedness	3.32	0.64	3.69	0.63	1.23***
Homesickness	3.52	0.74	3.21	0.80	-1.72**
Adjustment difficulties	2.86	0.93	2.56	1.03	-0.58*
English proficiency	2.95	1.00	3.12	1.03	0.64**

Note. N = 192. \*p < .05, \*\*p < .01, \*\*\*p < .001

**Predictors of Acculturative Stress over the First Year**

Table 3 shows the R<sup>2</sup> change for the regressions performed at Time 1 and Time 2. The amount of variance explained by the independent variables was similar between groups, with 47% explained for Time 1 and 45% for Time 2. We entered variables into the regression model in seven blocks according to Ward and

Kennedy's (1994) model. We entered students' background and demographic information first, followed by satisfaction with overall college experiences in Block 2, self-esteem (Block 3), social connectedness (Block 4), homesickness (Block 5), adjustment difficulties (Block 6), and English proficiency (Block 7). The dependent variable was students' self-reported acculturative stress.

Table 3 also illustrates predictors of acculturative stress in the regression model at the beginning of the first semester and the end of the second semester. Gender, self-esteem, social connectedness, and English proficiency were significant predictors of acculturative stress among first-year international students at both Time 1 and Time 2. Adjustment difficulties and homesickness were significant predictors of acculturative stress only at Time 1. First-year international students with higher self-esteem, higher levels of English proficiency, and higher levels of social connectedness were less likely to experience acculturative stress. These factors were significant at the  $p < .001$  and  $p < .05$  levels.

**Table 3: Predictive Model for Acculturative Stress for Time 1 and Time 2.**

Block	Time 1			Time 2		
	$R^2$	$\beta$ at entry	Final $\beta$	$R^2$	$\beta$ at entry	Final $\beta$
1. Characteristics	.05			.09		
Age		.026	.02		.025	.05
GPA		-.045	-.03		-.088	-.07
SES		-.04	-.03		-.049	.001
Gender		.15***	.06*		.275***	.116*
Parents' ed		-.007	-.005		-.053	-.040
2. Satisfaction	.22	-.023	-.030	.23	-.087	-.002
3. Self-esteem	.42	-.275***	-.139***	.44	-.112***	-.113***
4. Social	.45	-.174***	-.139***	.45	-.107*	-.077*
5. Homesickness	.46	.068**	.051**	.46	.111	.03
6. Adjustment	.46	.074*	.052*	.47	.067	.018
7. English	.47	-.113***	-.113***	.48	-.096*	-.096*

Note. GPA = grade point average. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### ARCL

As observed in Table 4, the estimation of the ARCL model indicated an acceptable fit to the observed data among the variables of gender, SES, stress, and adjustment to overall college experiences. As shown in Table 4 from the ARCL analysis, the two semesters' lagged effect of acculturative stress on satisfaction with overall college experiences was not statistically significant ( $\beta = -.013, p > .05$ ). The two semesters' lagged effect of adjustment to overall college experiences was statistically significant ( $\beta = -.104, p < .05$ ). At baseline, gender was positively related to acculturative stress ( $\beta = .606, p < .05$ ) and adjustment to overall college experiences ( $\beta = .121, p < .05$ ). SES was negatively related to stress

( $\beta = -.071, p < .05$ ) and positively associated with adjustment to college experiences ( $\beta = .435, p < .05$ ).

**Table 4: Predictors of Acculturative Stress for Time 1 and Time 2**

Predictors	Outcome	$\beta$	<i>SE</i>
Gender	T1-Stress	.606	.028**
	T1-Adjustment	.121	.022**
SES	T1-Stress	-.071	.035**
	T1-Adjustment	.435	.032**
Time 1 Acculturative stress	T2-Stress	.471	.008**
	T2-Adjustment	-.013	.006
Time1 Adjustment to college	T2-Stress	-.104	.010**
	T2-Adjustment	.681	.005**

*Note.*  $\beta$  = standardized coefficient; *SE* = standard error of the estimate; SES = socioeconomic status. \*\* $p < .01$ ; \* $p < .05$

## DISCUSSION

This study examined first-year international students' acculturative stress, adjustment, and associated factors using a longitudinal design exploring changes in these factors over a year. Overall, male students, students from low SES backgrounds, and students in humanities majors appeared to be more stressed by acculturation, while female students, students with mid-high SES backgrounds, and students in social science majors were more likely to be satisfied with their overall college experiences. Findings suggest that there was a significant decrease in acculturative stress and adjustment difficulties between the first week of the first semester and the end of the first academic year. It appears that there was a significant increase in social connectedness and English proficiency in one academic year. In other words, international students reported less acculturative stress and fewer adjustment difficulties and an increased sense of social connectedness and improvements in English proficiency within one academic year.

Additionally, we examined relationships among acculturative stress and associated factors. We found that acculturative stress was positively associated with adjustment difficulties and negatively associated with social connectedness and English proficiency. This finding is supported by previous research (Sullivan & Kashubeck-West, 2015; Zhang & Jung, 2017). Moreover, adjustment difficulties were negatively associated with social connectedness and English proficiency. The findings suggest that international students with more social connectedness have fewer adjustment difficulties and report less acculturative stress. In addition, those with more English proficiency report more social connectedness, fewer adjustment difficulties, and less acculturative stress. Overall, social connectedness, English proficiency, and adjustment difficulties are significant indicators of acculturative stress among international students, and these factors and outcomes change over one academic year. Findings suggest that

English proficiency plays a significant role in reducing acculturative stress and adjustment difficulties and increasing social connectedness.

Within-group comparisons show that male students, students from low SES backgrounds, and students in the humanities showed higher levels of acculturative stress. Although our findings are not consistent with a previous study by Zhang and Jung (2017) that reported no significant differences in acculturative stress by gender and major, we inferred that female students are more adaptive to new environments, which may cause them to feel less stressed by acculturation. Gender comparison of acculturative stress is an underdeveloped area of study; more investigations are needed. We also inferred that international students studying humanities are more likely to feel stressed than their counterparts in STEM because the humanities require advanced cultural and social knowledge and more advanced language skills compared with other disciplines (Edmunson, 2013; Lewis, 2017). Subgroup analysis of international students' adjustment and acculturation by major may be informative.

Regarding the causal directions of acculturative stress and adjustment to overall college experiences, the findings point to detrimental effects of acculturative stress on levels of adjustment. Acculturative stress and adjustment to overall college experiences during the first week of the first semester predicted international students' level of acculturative stress during the final week of their first year. Therefore, the reciprocal and causal relationships between these two factors was confirmed. The findings partially support the adjustment model (Ward & Kennedy, 1993) in that social connectedness was related to psychological adjustment. In addition, perceived English proficiency was significantly related to sociocultural adjustment, which supports Ward and Kennedy's (1994) adjustment model. With respect to bivariate relationships between associated factors and acculturative stress, international students who were confident in English and socially active reported fewer adjustment difficulties and less acculturative stress, which is consistent with findings using multinational international student samples (Yeh & Inose, 2003). Regarding the best model for acculturative stress, perceived English skills and social connectedness were significant contributing factors. These findings are consistent with previous studies (Yeh & Inose, 2003) in which both perceived English skills and social connectedness were found to be significant predictors of acculturative stress.

Answering our fourth research question with ARCL analysis, our findings confirmed that international students' acculturative stress at the beginning of the first year is related to their satisfaction with their overall college experience at the end of that year. With the ARCL method, reciprocal and causal directions between acculturative stress and satisfaction with college experiences within two semesters of the first year were explained. Such findings strengthen recommendations to enhance orientation and support programs for international students in the first few weeks at U.S. institutions. The significant association between the first week's acculturative stress and the final week's satisfaction with college also provides the insight that creating a positive campus climate during the first semester is crucial to reduce first-year international students' acculturative stress. In a recent study by Yoon and Martin (2017), sharing culture and languages with

native English-speaking peers built a learning environment where all students, including international students, improved their confidence and better understood other cultures, thus developing a positive campus climate. It is assumed that other associated factors also impact the relationship between international students' acculturative stress and adjustment. Further investigation of associated factors is needed.

### **Limitations**

This study has limitations. One is that the data were collected during the 2010–2011 academic year. Changes to U.S. and international higher education over the past 8 years could mean that the study results no longer hold true. However, we see this as unlikely. The primary changes to U.S. higher education for international students revolve around the 2016 election of Donald Trump and the accompanying increase in visa scrutiny (Chen et al., 2019; Hefner-Babb & Khoshlessan, 2018). Practical challenges (such as securing legal immigration status) have impacted international student recruitment since the post-9/11 period (Johnson, 2018), a trend that has continued since 2016 (Chen et al., 2019; Hefner-Babb & Khoshlessan, 2018). While increasing legal barriers have a serious impact on international higher education, they do not relate directly to our dependent or independent variables; in our review of the literature, we found no evidence that post-2016 visa policy changes impact acculturative stress, self-esteem, English proficiency, social connectedness, or homesickness. Research on the acculturative experiences of international students also seems not to have changed very much in the last decade (reflecting approximately 6 years prior to and 4 years after the election of Donald Trump). This suggests that using data from 2010–2011 does not obscure factors related to acculturative stress caused by or associated with changes in U.S. visa policy following the 2016 election. The dataset employed in our study is, to our knowledge, the only longitudinal data set that examines acculturative stress among international students during the first year of college. We contend that the value of such data far outweighs the possibility that the findings may differ if the study were conducted today.

### **Research Recommendations**

The findings suggest several research directions. It is important to continue examining relationships between various contributing factors and acculturative stress so that academic advisors, staff, faculty, and student affairs professionals understand how to best support international students.

This research studied international students from different countries as one group; comparing experiences of students from different countries is a useful future research direction. Students from different countries and cultural backgrounds may have different experiences of acculturation and adjustment. Therefore, subgroup analysis and comparisons will provide additional insight. We recommend two approaches to address these questions. Most studies in this area have utilized cross-sectional research designs. Further longitudinal studies are

necessary because it is important to detect changes over time in this population and its subgroups. We also suggest that further research on the relationships between variables is merited. Similar to prior studies, our research does not show whether the relationships among the variables explored are reciprocal or causal (Koo, 2021a). More work is needed to understand how these variables interact with and influence one another.

Based on the finding about the relationship between English proficiency and acculturative stress, in-depth analysis of the impact of English proficiency and the benefits of language training programs would help advisors and student affairs professionals better understand international students and make appropriate referrals. While our study addressed the relationship between English proficiency and acculturative stress, it did not examine the impact of specific language-related interventions. This is a prime area for further research, especially as more college campuses invest in language programming.

Lastly, we recommend further exploratory qualitative study to capture students' genuine and vivid experiences of acculturative stress and adjustment difficulties so that in-depth life stories behind factors found from this study can be presented.

### **Practical Implications**

This study's results offer significant insights for practitioners seeking to help international students. Our research demonstrates that those who are socially connected exhibit lower levels of acculturative stress. We recommend that student affairs practitioners design intentional social experiences that foster relationships among international students, their domestic peers, and staff and faculty. While many institutions already engage in such practices, we suggest that they could be expanded. We also recommend that student affairs practitioners become acquainted with clubs, organizations, and groups on campus that may be of interest to international students. Such organizations need not be focused on international student issues. Rather, the idea is to provide access to organizations, groups, clubs, sports teams, etc. that offer a chance to meet domestic students and develop interpersonal relationships with them.

A key factor influencing international students' ability to develop meaningful interpersonal relationships with domestic students and succeed academically is English proficiency. While all international students studying in the United States must demonstrate considerable English proficiency, levels of comfort using English and degrees of proficiency vary. We recommend that institutions invest in courses with a focus on the applied use of English. Student affairs practitioners should develop programming that offers international students informal opportunities to practice their English in small groups. The second author of this article has previously facilitated small conversation circles with groups of international students. These meet for an hour per week, and the focus is on the use of English in day-to-day life. The facilitator (ideally a native English speaker) serves as a guide, helping students feel comfortable speaking in an informal social setting. Other institutions have recently begun to invest in

similar programming, which we see as a positive development in the field of student affairs.

Concerns about the impacts of mental health on the acculturative stress and adjustment of international students should not be ignored. Unfortunately, while mental health concerns are common among students on U.S. college campuses, often campus mental health treatment centers are rooted in Western thinking and practice, to the exclusion of international students (Choy & Alon, 2019; Koo & Nyunt, 2020). We recommend that university counseling centers consider the “systemic and cultural context in which a student presents” (Choy & Alon, 2019, p. 62). A multicultural perspective on mental health counseling could help address challenges that arise when international students seek treatment (Koo & Nyunt, 2020).

We recommend that university counseling centers make explicit their ethical and legal obligation not to disclose to students’ parents or family members the details of their mental health treatment. While this is the standard of practice in mental health treatment, international students may not be aware that they can seek treatment without their families finding out, especially if exposure to a campus counseling center is their first exposure to the American healthcare system. Removing this barrier would offer an opportunity to seek treatment without fear of consequences from family members.

It is of note that for most of our variables, international students reported lower levels of acculturative stress at the end of the first year compared to the beginning. This may suggest that institutions are already engaged in practices that reduce acculturative stress. Alternatively, it may suggest that acculturative stress tends to naturally lessen in intensity with time. Our recommendations for practice bridge this gap by suggesting that while many international students display substantial resilience in navigating acculturative stress, the process of adjustment could be made easier with an increase in targeted institutional interventions.

Higher education institutions need to be supportive of international students’ cultures and their native languages. To address acculturative stress, faculty must connect with students culturally and linguistically to make their learning meaningful and transformative (Koo, 2021b). Higher education institutions need to provide spaces where international students can share and celebrate their cultures and languages with their peers. Thus, institutions need to emphasize the importance of cultural and linguistic diversity on campus.

## **CONCLUSION**

The study contributes to the body of research on first-year international college students’ collegiate experiences, acculturative stress, and predictors of acculturative stress. Given that international students experience unique challenges and stressors that impact the acculturation process (Koo, Kim, et al., 2021), the findings provide insights to help scholars, faculty, and staff who work with international students provide culturally sensitive guidance.

In addition, this study reports on stressors associated with international students’ acculturative stress, examined via longitudinal analysis. Analysis of

causal and reciprocal relationships among adjustment issues and acculturative stress is still underdeveloped; thus, the reciprocal and causal relationship found between adjustment and acculturative stress among first-year international college students contributes to this body of literature.

Interpretation of the results should take into consideration specific teaching tools or educational interventions that have contributed to changes in international students during their first year in college. This study suggests educational mechanisms that colleges should adopt so that international students can enjoy smooth academic progress and a comfortable life on campus. Faculty should utilize educational intervention programs, like culturally responsive instruction (Koo & Nyunt, 2020), to reduce international students' acculturative stress. We hope that this study will assist educators, administrators, policy makers, and researchers in better meeting the needs of international students.

## REFERENCES

- Astin, A. W. (1993). *What matters in college?* Jossey-Bass.
- Amason, P., Allen, M. W., & Holmes, S. A. (1999). Social support and acculturative stress in the multicultural workplace. *Journal of Applied Communication Research*, 27(4), 310–334.
- Berry, J. W. (2006). Stress perspectives on acculturation. In D. L. Sam & J. W. Berry (Eds.), *The Cambridge handbook of acculturation psychology* (pp. 43–57). Cambridge University Press.
- Berry, J. W., & Kim, U. (1988). Acculturation and mental health. In P. R. Dasen, J. W. Berry, & N. Sartorius (Eds.), *Health and cross-cultural psychology* (pp. 207–236). SAGE.
- Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, 21(3), 491–511.
- Betz, N., Wohlgemuth, E., Serling, D., Harshbarger, J., & Klein, K. (1995). Evaluation of a measure of self-esteem based on the concept of unconditional self-regard. *Journal of Counseling and Development*, 74(1), 76–83. <https://doi.org/10.1002/j.1556-6676.1995.tb01826.x>
- Bowman, N. A., & Holmes, J. M. (2017). A quasi-experimental analysis of fraternity or sorority membership and college student success. *Journal of College Student Development*, 58(7), 1018–1034.
- Boyraz, G., Horne, S. G., & Granda, R. (2017). Depressive symptomatology and academic achievement among first-year college students: The role of effort regulation. *Journal of College Student Development*, 58(8), 1218–1236.
- Briggs, P., & Ammigan, R. (2017). A collaborative programming and outreach model for international student support offices. *Journal of International Students*, 7(4), 1080–1095.
- Chankseliani, M. (2018). Four rationales of HE internationalization: Perspectives of U.K. universities on attracting students from former Soviet countries. *Journal of Studies in International Education*, 22(1), 53–70.
- Chen, Y. A., Li, R., & Hagedorn, L. S. (2019). Undergraduate international student enrollment forecasting model: An application of time series analysis.

- Journal of International Students*, 9(1), 242–261.  
<https://doi.org/10.32674/jis.v9i1.266>
- Cemalcilar, Z., & Falbo, T. (2008). A Longitudinal Study of the Adaptation of International Students in the United States. *Journal of Cross-Cultural Psychology*, 39(6), 799–804. <https://doi.org/10.1177/0022022108323787>
- Choy, Y., & Alon, Z. (2019). The comprehensive mental health treatment of Chinese international students: A case report. *Journal of College Student Psychotherapy*, 33(1), 47–66.
- Cintina, I., & Malia Kana'iapuni, S. (2019). Finishing strong: GPA and timely college graduation outcomes among native Hawaiian STEM majors. *The Review of Higher Education*, 42(4), 1459–1487.
- Curran, P. J. (2000). A latent curve framework for the study of developmental trajectories in adolescent substance abuse. In J. S. Rose, L. Chassin, C. C. Presson, & S. J. Sherman (Eds.), *Multivariate applications in substance use research* (pp. 1–4). Erlbaum.
- Edmundson, M. (2013). Why major in humanities? Not just for a good job—for a good life. *Yale Global Online*.
- Espinoza, B. D. (2018). Reconciliatory socialization: Conceptualizing the experiences of Evangelical Christian doctoral students in secular higher education. *International Journal of Christianity & Education*, 22(3), 233–251.
- Forbes-Mewett, H., & Sawyer, A. M. (2016). International students and mental health. *Journal of International Students*, 6(3), 661–677.
- Gold, S. J. (2016). International students in the United States. *Society*, 53(5), 523–530.
- Hefner-Babb, T. S., & Khoshlessan, R. (2018). Iranian student experience pursuing admission to universities in the United States. *Journal of International Students*, 8(4), 1926–1940.  
<https://doi.org/10.5281/zenodo.1482777>
- Hirai, R., Frazier, P., & Syed, M. (2015). Psychological and sociocultural adjustment of first-year international students: Trajectories and predictors. *Journal of Counseling Psychology*, 62(3), 438–452.
- Jackson, M., Ray, S., & Bybell, D. (2013). International students in the U.S.: Social and psychological adjustment. *Journal of International Students*, 3(1), 17–28.
- Johnson, K. A. C. (2018). 9/11 and international student visa issuance. *Journal of Studies in International Education*, 22(5), 393–413.
- Koo, K. (2021a). Am I welcome here?: Campus climate and psychological well-being among racially minoritized students. *Journal of Student Affairs Research and Practice*. 58 (2), 196-213.  
<https://doi.org/10.1080/19496591.2020.1853557>
- Koo, K. (2021b). Distressed in a foreign country: Mental health and well-being among international students in the United States during COVID-19. In K. Bista & R. Chan (Eds.), *Routledge studies in global student mobility series-impact of COVID-19 on global student mobility and higher education*. Routledge

- Koo, K., Kim, Y., & Lee, J., & Nyunt, G. (2021). It's my fault? A qualitative study on Korean international graduate students' psychological well-being and experiences. *Journal of International Students, 11*(4). <https://doi.org/10.32674/jis.v11i4>
- Koo, K., & Nyunt, G. (2020). Culturally sensitive assessment of mental health for international students. *New Directions for Student Services, 2020*(169), 43–52. <https://doi.org/10.1002/ss.20343>
- Koo, K., Nyunt, G., & Wang, B. (2021). Who spends too much time online?: Associated factors of Internet addiction among international college students in the United States. *Journal of International Students, 11*(1), 122–143. <https://doi.org/10.32674/jis.v11i1.2063>
- Lattuca, L. R., & Stark, J. S. (2009). *Shaping the college curriculum: Academic plans in context* (2nd ed.). Jossey-Bass.
- Lee, J. J. (2017). Neo-nationalism in higher education: Case of South Africa. *Studies in Higher Education, 42*(5), 869–886.
- Lee, R., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurances scales. *Journal of Counseling Psychology, 42*(2), 232–241.
- Lewis, C. S. (2017). Crisis rhetoric, stigma play: The contested status of humanities majors on an elite university campus. *Symbolic Interaction, 40*(3), 378–395. doi:10.1002/symb.288
- Li, G., Chen, W., & Duanmu, J.-L. (2010). Determinants of international students' academic performance. *Journal of Studies in International Education, 14*(4), 389–405.
- Lopez, I. Y., & Bui, N. H. (2014). Acculturation and linguistic factors on international students' self-esteem and language confidence. *Journal of International Students, 4*(4), 314–329.
- Luo, Z., Wu, S., Fang, X., & Brunsting, N. C. (2019). International students' perceived language competence, domestic student support, and psychological well-being at a U.S. university. *Journal of International Students, 9*(4), 954–971. <https://doi.org/10.32674/jis.v0i0.605>
- Ma, J. (2020). Supporting practices to break Chinese international students' language barriers: The first step to facilitate their social adjustment. *Journal of International Students, 10*(1), 84–105. <https://doi.org/10.32674/jis.v10i1.773>
- Means, D. R., & Pyne, K. B. (2017). Finding my way: Perceptions of institutional support and belonging in low-income, first-generation, first-year college students. *Journal of College Student Development, 58*(6), 907–924.
- Mukminin, A. (2019). Acculturative experiences among Indonesian graduate students in Dutch higher education. *Journal of International Students, 9*(2), 488–510. <https://doi.org/10.32674/jis.v0i0.265>
- NAFSA. (2019). *International students contribute to our economy and American innovation*. <https://www.nafsa.org/policy-and-advocacy/policy-resources/international-students-contribute-our-economy-and-american-innovation>

- Padilla, A. M., & Perez, W. (2003). Acculturation, social identity, and social cognition: A new perspective. *Hispanic Journal of Behavioral Sciences, 25*(1), 35–55.
- Poulakis, M., Dike, C. A., & Massa, A. C. (2017). Acculturative stress and adjustment experiences of Greek international students. *Journal of International Students, 7*(2), 204–228.
- Poyrazli, S. (2003). Ethnic identity and psychosocial adjustment among international students. *Psychological Reports, 92*(2), 512–514.
- Poyrazli, S., Arbona, C., Bullington, R., & Pisecco, S. (2001). Adjustment issues of Turkish college students studying in the U.S. *College Student Journal, 35*(1), 52–62.
- Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an acculturative stress scale for international students: Preliminary findings. *Psychological Reports, 75*(1), 435–448.
- Sansone, V. A., & Tucker Segura, J. S. (2020). Exploring factors contributing to college success among student veteran transfers at a four-year university. *The Review of Higher Education, 43*(3), 887–915.
- Shahjahan, R. A., & Kezar, A. J. (2013). Beyond the “national container”: Addressing methodological nationalism in higher education research. *Educational Researcher, 42*(1), 20–29.
- Smith, R. A., & Khawaja, N. G. (2011). A review of the acculturation experiences of international students. *International Journal of Intercultural Relations, 35*(6), 699–713.
- Stroebe, M., Van Vliet, T., Hewstone, M., & Willis, H. (2002). Homesickness among students in two cultures: Antecedents and consequences. *British Journal of Psychology, 93*, 147–168.
- Sullivan, C., & Kashubeck-West, S. (2015). The interplay of international students’ acculturative stress, social support, and acculturation modes. *Journal of International Students, 5*(1), 1–11.
- Suspitsyna, T., & Shalka, T. R. (2019). The Chinese international student as a (post)colonial other: An analysis of cultural representations of a US media discourse. *The Review of Higher Education, 42*, 287–308.
- Tang, X., Collier, D. A., & Witt, A. (2018). Qualitative study on Chinese students’ perception of U.S. university life. *Journal of International Students, 8*(1), 151–178.
- Telbis, N. M., Helgeson, L., & Kingsbury, C. (2014). International students’ confidence and academic success. *Journal of International Students, 4*(4), 330–341.
- Thomas, V. F., Ssendikaddiwa, J. M., Mroz, M., Lockyer, K., Kosarzova, K., & Hanna, C. (2018). Leveraging common ground: Improving international and domestic students’ interaction through mutual engagement. *Journal of International Students, 8*(3), 1386–1397. <https://doi.org/10.5281/zenodo.1254599>
- Trice, A. G. (2004). Mixing it up: International graduate students’ social interactions with American students. *Journal of College Student Development, 45*(6), 671–687.

- Tukibayeva, M., & Gonyea, R. M. (2014). High-impact practices and the first-year student. *New Directions for Institutional Research*, 2013(160), 19–35.
- Wang, C. H., Harrison, J., Cardullo, V., & Lin, X. (2018). Exploring the relationship among international students' English self-efficacy, using English to learn self-efficacy, and academic self-efficacy. *Journal of International Students*, 8(1), 233–250. <https://doi.org/10.5281/zenodo.1134299>
- Ward, C., & Kennedy, A. (1993). Psychological and socio-cultural adjustment during cross-cultural transitions: A comparison of secondary students overseas and at home. *International Journal of Psychology*, 28(2), 129–147. doi:10.1080/00207599308247181
- Ward, C., & Kennedy, A. (1994). Acculturation strategies, psychological adjustment, and sociocultural competence during cross-cultural transitions. *International Journal of Intercultural Relations*, 18(3), 329–343. doi:10.1016/0147-1767(94)90036-1
- Ward, T., Jacobs, J., & Thompson, R. (2015). The number of international students. *College and University*, 91(1), 3.
- Wei, M., Ku, T., Russell, D.W., Mallinckrodt, B., Liao, K.Y. (2008) Moderating effects of three coping strategies and self-esteem on perceived discrimination and depressive symptoms: A minority stress model for Asian international students. *Journal of Counseling Psychology*, 55(4), 451–462. <http://doi:10.1037/a0012511>. PMID: 22017552.
- Xing, D. C., & Bolden, B. (2019). Exploring oral English learning motivation in Chinese international students with low oral English proficiency. *Journal of International Students*, 9(3), 834–855. <https://doi.org/10.32674/jis.v9i3.749>
- Xiong, Y., & Zhou, Y. (2018). Understanding east Asian graduate students' socio-cultural and psychological adjustment in a U.S. Midwestern university. *Journal of International Students*, 8(2), 769–794. <https://doi.org/10.5281/zenodo.1250379>
- Yan, Z., & Sendall, P. (2016). First year experience: How we can better assist first-year international students in higher education. *Journal of International Students*, 6(1), 35–51.
- Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counselling Psychology Quarterly*, 16(1), 15–28.
- Ying, Y. W. (2005). Variation in acculturative stressors over time: A study of Taiwanese students in the United States. *International Journal of Intercultural Relations*, 29(1), 59–71.
- York, T. T., & Fernandez, F. (2018). The positive effects of service-learning on transfer students' sense of belonging: A multi-institutional analysis. *Journal of College Student Development*, 59(5), 579–597.
- Yoon, J., & Martin, L. (2017). Infusing culturally responsive science curriculum into early childhood teacher preparation. *Research in Science Education*, 49, 697–710. doi:10.1007/s11165-017-9647-x<sub>2</sub>

- Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations*, 35(2), 139–162.
- Zhang, Y. L. (2016). International students in transition: Voices of Chinese doctoral students in a US research university. *Journal of International Students*, 6(1), 175–194.
- Zhang, Y., & Jung, E. (2017). Multi-dimensionality of acculturative stress among Chinese international students: What lies behind their struggles? *International Research and Review*, 7(1), 23-43.
- Zhou, G., & Zhang, Z. (2014). A study of the first year international students at a Canadian university: Challenges and experiences with social integration. *Canadian and International Education*, 43(2), Article 7.
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