

A Comparison of First-Year International Students' Adjustment to College at the Undergraduate and Graduate Level

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ABSTRACT

Predictors of first-year undergraduate and graduate international students' adjustment to college were examined using an online survey in 2019. The research sample consisted of 95 international students attending two universities in the United States. Findings showed a statistically significant difference between first-year graduate and undergraduate international students, as related to college adjustment. Further analysis discovered significant relationships among the predictor variables - resilience, relational skills, acculturative stress - and the criterion variable, which is adjustment to college, explaining 55% of the variance. Implications of findings for educators, college counselors, and college administrators, are provided, as well as directions for future research.

Keywords: acculturative stress, college adjustment, international students, relational skills, resilience

INTRODUCTION

Each year, thousands of international students from countries across the globe travel to the United States to obtain degrees in higher education at colleges and universities in all fifty states (Brunton & Joffrey, 2014). These students contribute to the diversity and internationalization within their campuses, classrooms, and communities, and they enrich the university environment by bringing together faculty and students from different cultural backgrounds (Valdez, 2015). Most students face adjustment challenges when entering college (Jou & Fudaka, 1996). However, first-year international students are confronted with unique challenges when pursuing a college degree outside of their home country (Tan, 2019; Yakunina et al., 2013). Some of these challenges are universal, while others depend on the institution and community in which one undertakes their studies (Sabbadini et al., 2013). These challenges include, but are not limited to, language, anxiety, depression, climate differences, cultural practices, financial hardship, university procedures and politics, and homesickness. Unfortunately, the result is often culture shock that occurs to students when studying abroad (Ji-yeon & Pistole, 2014; Nasirudeen et al., 2014; Pei & Friedel, 2019; Rabia & Karkouti, 2017; Telbis et al., 2013; Yakunina et al., 2013).

Engagement in activities with students from the US helps international students become more involved in college life and in their overall adjustment to the university (Gomez et al., 2013). Gebhard (2012) has also suggested that international students become involved in religious activities that can help them connect with domestic students, therefore avoiding isolation from others. US universities and colleges can be overwhelming

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for first-year international students (Telbis et al., 2013). Many undergraduate students, particularly those who go to college abroad, embark upon significant changes, including leaving the security of home and family, taking on additional responsibilities, and seeking independence. The everyday stresses and challenges of first-year undergraduate and graduate university students are substantially increased for the 1,097,729 international students enrolled in the US who are going through an acculturation process, requiring both time and priority management skills (IIE, 2017; Lowinger et al., 2014). Acculturation issues facing international students may give rise to adjustment problems that can be stressful physically, socially, or psychologically (Mesidor & Sly, 2014; Morrell et al., 2013; Onabule & Boes, 2013).

BACKGROUND AND LITERATURE REVIEW

The United States has historically been the most frequent destination for international students due to its quality higher education system, welcoming culture, and relatively open labor market (Banjong, 2015; Eland & Thomas, 2013). The plight of international students enrolled in the US university educational system is well documented in terms of language, adaptation, and cultural barriers (Cao, 2019; Hong & Jianqiang, 2013; Yakunina et al., 2013), yet this population persists in seeking this educational experience because the perceived benefits can outweigh the challenges (Borgia, 2011). Cultural adjustment is one of the most common social challenges first-year international students face while studying abroad. The available literature on this topic emphasizes the importance of acclimation and integration if international students are going to adjust to studying abroad (Cheng & Erben, 2012; Mamiseishvili, 2012).

College Adjustment

Adjustment, derived from the Latin word *ad-justare*, is the process by which one balances the needs and the obstacles in their environment (Gebhard, 2012). Yi et al. (2003) identified five areas in which first-year international students are likely to experience adjustment issues. These areas included academics, physical health, finances, vocation, and personal/social conflicts. Gebhard (2012) also studied these issues and found that students encountered problems in adjustment in three primary areas: academic, social interaction, and an emotional reaction to their new environment. Language barriers, an unfamiliarity with available resources and how to access those resources, as well as a lack of an established social support system and social network, compound the students' problems (Johnson, 2019; Leong, 2015) and often manifest in depression, loneliness, and isolation (Valdez, 2015). Wang et al. (2015) used the term "cross-cultural loss" to describe the process in which international students struggle to adjust to the loss of things familiar to them (e.g., personal relationships and the educational system of their home countries) while trying to adjust to a new culture and environment (p. 263). Wang et al. (2015) found that cross-cultural loss tended to decrease with the existence of life satisfaction, positive affect, general self-efficacy, and social connection with peers and academic communities, all of which are indicators of increased cultural adjustment or acculturation.

Acculturative Stress

Acculturative stress represents a growing threat to the health of many first-year international students as they seek knowledge in an unfamiliar cultural environment (Li et al., 2014). A study conducted by Russell et al (2010) involving 900 international students attending colleges in the US showed that 41% of these students experienced substantial levels of stress in their first year. Language is considered one of the most significant issues causing stress and hindering a seamless adjustment to college for international students (Reid & Dixon, 2012; Trice, 2004). Robertson et al (2000) surveyed international college student athletes'

experiences with non-educational staff members. Findings indicated that most staff members lacked empathy as related to international students' language deficits, an unfortunate common occurrence that can further create a sense of social isolation and anxiety. In a longitudinal study, Mamiseishvili (2012) found that first-year international students who are less fluent in English have trouble integrating into peer groups and experience lower levels of academic tenacity.

A study by Poyrazli and Kavanaugh (2006) affirmed that language issues place international students at a higher risk for academic difficulties when compared to domestic students. According to Gomez et al. (2014), low levels of acculturation have been found to be associated with psychological symptoms of depression and suicide among international students. This research supports the notion that language deficits, a lack of group interaction, and academic difficulties are perhaps the main concerns of international students. Language issues also may have an adverse effect on the relational skills of international students, thus contributing to adjustment problems.

Resilience

Resilience is an important variable associated with adaptation to the university environment (Mamiseishvili, 2012; Mesidor & Sly, 2016; Wang, 2009). Research shows that resilience can reduce the risk of psychological distress, assist with the management of academic demands, and can improve academic outcomes, while also facilitating effective coping strategies when faced with academic challenges (Constantine et al., 2004). The lack of resilience can affect a student's mental health, increase psychological distress, and result in greater adjustment problems (Brandner, 2019; Pittman & Richmond, 2008). Research on resilience has primarily focused on individuals who are affected by short and long-term adversities such as registering for classes, completing assignments, and facing academic stressors and environmental pressures (Lee & Robbins, 2000; Pei et al., 2019; Zhang, 2016). Research findings suggest that resilience in the university environment is positively associated with better mental health, as well as a successful transition and adjustment to university life, indicating that international students need to possess effective resilience strategies if they are to succeed in their new academic environment (Drotos, 2019; Pei et al., 2019; Peng et al., 2012).

Relational Skills

In addition to being resilient, international students must develop effective relational skills in order to interact with their peers. Positive interactions with peers perhaps can increase the student's level of adjustment and overall satisfaction with college life. Unfortunately, there exists additional complications as scholars have noted that international students learn differently than their domestic counterparts (Kezar & Moriarty, 2000; Kuh et al., 2008; Kuh & Hu, 2001). Based on a qualitative study with 24 international students from over 15 countries, Lee and Rice (2007) asserted that international students who studied in the US often felt uncomfortable in relating to others when participating in group activities. Interactions with their classmates and the use of relational skills might be difficult for many international students because of their constant worries about their proficiency in English. Researchers have examined the impact of student-faculty interactions on international student development and learning outcomes. McFadden (2014) found that student-faculty interactions are positively associated with a wide range of student outcomes, such as students' self-assessed leadership abilities and social self-confidence (Lee & Rice, 2007; Lundberg & Schreiner, 2004). It is further believed that relational skills can play a role in the degree to which international students interact with faculty.

International students, both graduate and undergraduate, experience a great amount of stress and anxiety when they enroll in a university outside of their country of origin (Li et al., 2014; Russel, 2010). Acculturative stress - as well as adapting to a new culture, language, and customs - plays a significant role in the students' levels of anxiety. Adjustments may require a certain level of resilience, which becomes an important factor in the international students' ability to register for classes, complete assignments, face academic stressors, and adjust to a new environment (Brandner, 2019; Lee & Robbins, 2000; Zhang, 2016). According to Russel and Petrie (1992), the inclusion of personal factors for international students, such as resilience and relational skills to academic challenges, were expansions of the original research conducted by Tinto (1975) and Bean (1980; 1982). Russel and Petrie (1992) demonstrated that personal factors, in addition to those of previous studies, play an essential role in students' decisions to withdraw from college or persist and graduate. Baker and Siryk (1989) identified a wide range of college adjustment factors by incorporating theories of Bean (1980; 1982), Russel and Petrie (1992), and Tinto (1975; 1986) in order to develop a comprehensive measure of student adjustment. They assumed that starting university life, which is a significant challenge for most students, requires adjustment to a variety of demands that are social in nature. Therefore, being able to develop relational skills and build relationships are salient factors related to international students' success in higher education. Acculturative stress is associated with depressive and anxiety symptoms which might hinder college adjustment for international students. However, with a healthy sense of resilience, international students can tackle obstacles and try new experiences, and relational skills can help them learn a range of critical social emotional skills, such as cooperation and problem-solving strategies which can help them adjust positively in the US. In consideration of the above discourse, it seems appropriate to examine resilience, acculturative stress, and relational skills (independent variables) as they predict college adjustment (dependent variable) of first-year undergraduate and graduate international students in the United States.

METHOD

A survey was conducted among first-year undergraduate and graduate international students on resilience, acculturative stress, and relational skills as they predict these students' college adjustments, and the results were included in a regression analysis. Multiple regression procedures were considered appropriate for this investigation due to their history of being used in nonexperimental research and their flexibility (Hoyt et al., 2006). A standard multiple regression was used to identify contributing factors to international students' adjustment to college. Standard multiple regression allows the researchers to examine the variables in the regression equation in order to see relationships between predictor (resilience, acculturative stress and relational skills) and criterion (college adjustment) variables, rather than searching for a relationship between only one predictor variable and a criterion variable. Specifically, quantitative data were collected and analyzed to address the three research questions below and to gain insight into variables predicting international students' college adjustment:

1. Are there differences between first-year undergraduate and graduate international college students' levels of resilience, relational skills, and acculturative stress on college adjustment?
2. Do resilience, relational skills, and acculturative stress predict a significant percentage of the variance in college adjustment among first-year undergraduate and graduate international students?

3. Is there a difference in model fit between first-year undergraduate and graduate international students for the predictive model regressing resilience, relational skills, and acculturative stress on college adjustment?

After Institutional Review Board (IRB) approval, data were collected in March of 2019. The aim was to recruit first-year undergraduate and graduate international students from different colleges and departments. An email, which included a brief explanation and purpose of the study, was sent to professors and the International Student Offices within two universities where international students were recruited. We scheduled class visitations with professors who willingly gave up 30 minutes of their class time in order to help recruit volunteer research participants.

The age criterion to participate was 18 years old or older. Participation was voluntary, and responses were anonymous. A survey link including an information letter, demographic form, and instruments measuring the study constructs (Brief Resilience Scale [Smith et al., 2008], The Acculturative Stress Scale for International Students [Sandhu & Asrabadi, 1994; 1998], Relational Skills Inventory [Smith, 2019], and the Inventory of New College Student Adjustment [Watson & Lenz, 2018]) were given to volunteer participants. Before taking the survey, participants were asked to read the information letter.

International student participants were asked to complete the following five sections of the survey:

Demographic Information

Demographic information included participant's age, gender, country of origin, academic major, degree level (e.g., bachelor's, master's, or doctoral), years of residency in the U.S., and name of the university.

The Brief Resilience Scale

The Brief Resilience Scale assesses resilience as the ability to recover or bounce back from stressful or difficult situations (Smith et al., 2008). The Brief Resilience Scale is a 6-item self-report scale in which respondents rate the degree to which they agree with an item, using a 5-point Likert scale. Responses range from 1= "Strongly Disagree" to 5= "Strongly Agree." A total scale score for resilience is calculated by dividing the total score by 6, the number of items on the scale. Scores can range from 6 to 30, with higher scores indicating higher resilience. Smith et al (2008) reported good internal consistency for the Brief Resilience Scale. Based on scores across two college student samples, the Cronbach's alpha reliability coefficient ranged from 0.80 to 0.91 (Smith et al., 2008).

The Acculturative Stress Scale for International Students

The Acculturative Stress Scale for International Students was developed to measure cultural stress reported by international students living and studying in the US (Sandhu & Asrabadi, 1994; 1998). ASSIS assessed students' perceptions of stresses experienced by circling a number that best described their response to each of the 36 items on a 5-point Likert-type scale, anchored by 1= "Strongly Disagree" and 5: "Strongly Agree." Total scores could range from 36 to 180, with higher scores indicating higher levels of acculturation stress. Sandhu and Asrabadi (1994) reported that Cronbach alpha internal consistency for the scale was .95 among international students, like Yeh and Inose's value (2003) of .94.

The Relational Skills Inventory

The Relational Skills Inventory has 32 items and was developed to measure attributes of individuals as they engage in interpersonal relationships (Smith, 2019). Fifty-four items were initially constructed. A content analysis was conducted using suggested procedures (Lawshe, 1975), and this narrowed the number of usable items to 32. The RSI includes four factors: general relational attributes (disposition toward self and others), core communication skills (listening, understanding, and empathy), trust (trust in self and

others), and creating a safe environment (ability to emit safety and openness), each of which are grounded in research and theory. The Relational Skills Inventory is based on Relational Leadership Theory (RLT) by Uhi-Bien (2006), Humanistic Theory by Rogers (1959), Trust Theory by Castelfranchi and Falcone (2010), and Social Cognitive Theory by Bandura (2001). The Relational Skills Inventory uses a 5-point Likert scale ranging from 1 (not at all) to 5 (very much).

The Inventory of New College Student Adjustment

The Inventory of New College Student Adjustment was developed to assist college employees in assessing adjustment problems experienced by first-year college students (Watson & Lenz, 2018). The newly developed questionnaire consists of two sub-scales, including 14 items rated on a 4-point Likert scale to assess participant responses from 1 (strongly disagree) to 4 (strongly agree). The (INCA) sub-scales measure adjustment strain based on participants' responses to items within the following sub-scales: supportive network and belief in self. A sample of 696 young adult Ghanaian college students reported alpha reliability coefficients of .74 for both the Belief in Self subscale and the Supportive Network subscale.

Sample

Participants of this study were first-year international students enrolled in undergraduate and graduate level courses at two south Texas universities. A total of 103 students volunteered for this study from a pool of 148 potential subjects, 51 from one campus and 97 from a second nearby campus. Of the completed surveys, 40 participants were undergraduate international students and 55 were graduate international students. Eight of the surveys were found to be incomplete, which makes the total of the successfully completed surveys 95. A priori power analysis yielded a total sample size of 86, as recommended to find statistical significance with a moderate effect size ($f^2 = .15$). Based on this recommendation, the sample size of 95 was deemed appropriate for finding differences between groups, should they exist.

The mean age of undergraduate international student participants was 21.60 years ($SD = 3.7$; range: 18-35 years). A larger number of men ($n = 24$; 60 percent) participated, as compared to women ($n = 16$, 40 percent). Undergraduate level participants in this study came from a variety of countries (see Appendix A). For undergraduate student participants college majors, see Appendix C. Twenty-six undergraduate participants (65 percent) reported that they arrived in August 2018, and 14 participants (35 percent) reported they arrived in January 2019.

The mean age of the graduate international student participants was 29.19 years ($SD = 3.9$; range: 22-40 years). More men ($n = 37$, 67.3 percent) than women ($n = 18$, 32.7 percent) participated in this study. Participants reported their academic levels as master's ($n = 48$, 87.3 percent), and doctoral ($n = 7$, 12.7 percent). Graduate level participants studying in the US came from a variety of countries (see Appendix B). For graduate student participants college majors, see Appendix D. With respect to when graduate participants arrived in the US, 44 (80 percent) reported that they arrived in August 2018, and 11 (20 percent) reported arriving in January 2019.

Analysis

For this study, data were analyzed using the Statistical Package for the Social Sciences (SPSS) 22.0 software. Before data analysis, data were screened for entry errors and missing values. Missing values were replaced with the series mean (missing values of 428 which implies 4.7% of the cases). Descriptive statistics, multiple regression models, Fisher's z transformation, and MANOVA were conducted to address the research questions. Descriptive statistics were used to summarize and organize the data, such as means, standard deviations, percentages, and range scores. Furthermore, model assumptions for each analysis were

reported. A total of 103 participants initially volunteered for this study. The data utilized in the study were derived from a single administration of the RSM (n= 103), the RMS (n= 102), the ASSIS (n=101), and the INCA (n=102). Eight cases were removed from the graduate and undergraduate international student groups due to incomplete survey responses, reducing the initial sample from n=103 to n=95.

RESULTS

Research Question 1

We conducted a one-way MANOVA to determine if differences existed in levels of variables for the first-year undergraduate and graduate international students. An alpha level of .05 was utilized as the criterion for determining statistical significance. Descriptive statistics for the independent variables across the first-year undergraduate and graduate international students' college adjustment are presented in Table 1. It was found there was no significant difference between undergraduate and graduate international students in level of resilience, relational skills, and acculturative stress on college adjustment. $F(11, 162) = 1.51, p > .05$; Wilk's $\lambda = 0.12$, partial $\eta^2 = .51$. Using Wilks's Lambda, there was a significant effect of relational skills and acculturative stress, $\Lambda = .93, F(4, 54) = 7.53, p = .001$ on student groups. A separate univariate ANOVAs on students' groups revealed a non-significant effect of resilience, $F(4, 89) = 7.53, p = .233$ (See Table 2).

Table 1

Means and Standard Deviation for Student Groups and Four Variables

Variable	Undergraduate		Graduate		α
	M	SD	M	SD	
Relational Skills	97.50	15.84	119.35	25.51	.97
Resilience	3.37	1.11	3.61	1.41	.68
Acculturative Stress	121.02	29.11	113.75	33.39	.98
College Adjustment	37.40	5.97	41.32	4.83	.93

Table 2

Multivariate and Univariate of Variance for Standard Groups Measures

Source	Multivariate			Univariate		
	df	F ^a	Relational Skills	Resilience	Acculturative Stress	College Adjustment
Student Group (SG)	4, 54	7.53*	26.64*	7.53	18.65*	4.18

* $p < .05$

Research Question 2

We performed a standard multiple regression analysis to evaluate the relationship between resilience, relational skills, and acculturative stress on college adjustment (see Table 3). Resilience, relational skills, and acculturative stress were added to the model as predictor variables, with college adjustment as the

criterion. This is because the literature did not indicate a strong relationship between resilience, relational skills, and acculturative stress on college adjustment. The researchers of this study postulated that unique factors - such as relational skills, resilience, and acculturative stress - will provide a better understanding of the differences between undergraduate and graduate international students when adjusting to their new learning environment. These predictor variables (resilience, acculturative stress, and relational skills) statistically predicted college adjustment, $F(3, 90) = 36.72$, $p < .001$, $R^2 = .550$. Relational skills and acculturative stress added statistically significantly to the prediction, $p < .05$, and resilience did not add statistically significantly to the prediction, $p > .05$. In summary, relational skills and acculturative stress were positively correlated with undergraduate and graduate international students' college adjustment, while resiliency was not positively correlated (see Table 3).

Table 3

Summary of Regression Model for Resilience, Relational Skills, and Acculturation Stress as Predictors of College Students

Variable	B	SEB	B	T	sr ²	F	R ²
						36.7*	.55
Relational Skills	.507	.068	.677	7.39*	.615		
Resilience	.133	.320	.041	417	.044		
Acculturative Stress	-.084	.023	-.287	3.72*	.365		

Note. N = 95.

* $p < .05$.

Research Question 3

To address research question 3, we ran a series of simultaneous multiple regression analyses to examine the relationships between resilience, relational skills, and acculturative stress on college adjustment and to compare the models derived from undergraduate and graduate international students. The amount of variance accounted for by the predictor variables was 49% for undergraduate students and 55% for graduate students. Comparing the model fit for the undergraduate and graduate international student groups revealed no significant difference between their respective R^2 values, Fisher $Z = -0.42$, $p > .05$. A comparison of the structure of the models from the two groups was also conducted by applying the model derived from international graduate students to the data from undergraduate international students and comparing the resulting crossed R^2 with the direct R^2 obtained initially from these groups. The direct $R^2 = .46$ and crossed $R^2 = .50$ were not significantly different. Fisher $Z = -1.11$, $p > .05$, indicated that the apparent differential structure of the regression weights from the two groups described above do not warrant further interpretation and investigation.

DISCUSSION AND IMPLICATIONS

This study examined the extent to which relational skills, resilience, and acculturative stress predict first-year undergraduate and graduate international students' adjustment to college. The findings suggest that relational skills and acculturative stress relate to how well international students adjust to college while resilience does not. Additionally, there was no difference (statistically) in resilience among the group of

students, undergraduate and graduate; suggesting both groups were affected similarly. This supports previous research that suggests relational skills are an essential factor contributing to international students' adjustment to college (Duru & Poyrazli, 2007). In a related study, Hendrickson et al. (2011) found that nearly 40 percent of undergraduate international students reported having no close American friends as a result of internal factors, such as limited language proficiency or shyness. However, beyond language proficiency, undergraduate international students may not always be interested in initiating contact with domestic students, faculty, or staff, which may result in lower relational skills among this group (Tan, 2019). Furthermore, Borland and Pearce (2002) reported that undergraduate international students' language knowledge without relational skills is not enough to adjust to college. Compared to graduate students, undergraduate students are more likely to be younger and have fewer professional opportunities to build relational skills. Additional factors that may lead to higher levels of adjustment to college by graduate students include a greater number of experiences adjusting to academic demands, building adult-life skills (such as cooking for oneself), and managing time between school-life and home-life responsibilities. Additional considerations are that graduate students perhaps have more time to gain familiarity with their professors and may benefit from being enrolled in smaller classes. Time pressure and homesickness have been found to be stressful experiences, particularly among undergraduate international students (Erichsen & Bolliger, 2011). Furthermore, alienation, concern about future academic prospects, work demands, a lack of familiarity with educational and cultural norms, and anxiety are most often considered major stressors attributed to undergraduate international students (Poyrazli, et al., 2004).

A pattern found in the current study of the college adjustment of undergraduate international students is their low mean scores for relational skills, resilience, and college adjustment, and a high mean score for acculturative stress, particularly when compared to the graduate student group (see Table 1). Given this information, the barriers related to communication, language, age, life experience, and culture shock may contribute to low relational skills, low resilience, and a higher level of acculturative stress; these factors might eventually lead to a lower level of college adjustment for these students. A standard multiple regression analysis used in this study showed that relational skills and acculturative stress strongly predict first-year undergraduate and graduate international students' adjustment to college. This finding also suggests there is a difference in how undergraduate and graduate international students adjust to college based on relational skills and acculturative stress. Komiya and Eells (2001) state that international students face challenges in developing satisfying social relationships and face numerous stressors and challenges to accomplishing their academic goals. Therefore, university administrators are strongly encouraged to enhance the integration of international students enrolled in US universities. For example, it might be wise to introduce international students into settings where they can connect and interact with domestic students, international alumni, and university staff, perhaps at the beginning of every semester.

Results from the use of a regression analysis showed that resilience did not predict how undergraduate and graduate international students adjust to college. This finding suggests that undergraduate and graduate international students may have enrolled in the university after meeting several challenges and were confident about thriving while attending a US university. International students bring with them many assets characterized by feelings of excitement that can be helpful when adjusting to a new learning environment (Ramsay, et al., 2007). Upon enrolling in a US university, these students might feel good about themselves, with visions of starting a new adventure, support from friends and family, and the perception they have of themselves and their potential for success. They may feel a sense of accomplishment because they are

learning in a foreign land and their dreams are about to come true (Cao 2019; Holmes & Vaughn, 2015). For students not experiencing this excitement, perhaps it is essential for their university to incorporate activities and training programs that might increase their level of self-confidence.

Consistent with previous findings (Constantine, et al., 2004; Gomez, et al., 2014; Jou & Fudaka, 1996), the results of this study indicate that relational skills and acculturative stress were positively associated with undergraduate and graduate international students' adjustment to college. Studies have shown that international students learn relational skills by interacting with faculty, staff, and family members, as well as socializing with their peers and the community (Kuh & Hu, 2001; Lee & Robbins, 2000). Healthy relational skills among first-year international students can reduce stress, resolve conflict, improve communication, increase understanding, and promote joy (Jou & Fukada, 1996; Misra & Castillo, 2004). Using a statewide college-adjustment dataset, the above cited study found that acculturative stress is a significant and negative factor of adjustment among international students. These findings suggest that colleges and universities that serve international students should provide a wide range of social support networks, as well as create new directions for counseling students who are dealing with acculturative stress. International students can benefit from athletics, student clubs, counseling, volunteering, and various extra-curricular activities. By participating in these activities, international students might increase the likelihood of developing relationships, which could minimize acculturative stress and maximize a belief in self.

An important finding of this study is the three predictor variables reporting no significant differences between the first-year undergraduate and graduate international students. It appears from the findings these variables play a parallel role in the adjustment process for these students. On the contrary, while there is no difference in the model fit for the two groups, our results from the regression analysis show that relational skills and acculturative stress variables have significant correlations among these students (see Table 3). These findings point out the need for further investigation on factors such as grit, achievement motivation, self-efficacy, hope, and self-esteem that might play a role in predicting the adjustment of both undergraduate and graduate international students in US colleges and universities.

Although adjusting to US college and university culture can be a very stressful experience for both undergraduate and graduate international students, some students are able to traverse through this process quickly and with minimal stress while others might find it challenging to adjust; these findings have led researchers to identify relational skills as an essential factor for the adjustment of these students (Andrade, 2006; Antonio, 2001). Constantine et al. (1996), Duru and Poyrazli (2007), and Terui (2011) state that peer and faculty members' interactions with international students have a positive influence on their adjustment. It is concluded that modifications should be made in and outside of the classroom in order to respond to the needs of international students. Therefore, practices such as group projects, workshops, conferences, presentations, classroom discussions, and other campus activities should be introduced to help connect international students with domestic students and the community. Campus programs may be beneficial to international students, primarily if led by an international professor or staff members with a similar background as the students who are attempting to adjust to their new environment. These programs may help international students feel more comfortable in asking questions. Additionally, international students may have opportunities to further acclimate to the US culture by attending social gatherings (e.g., churches, mosques, parties, and carnivals), as well as through the media (e.g., watching television, communicating through Facebook, listening to the radio, and reading newspapers). Based on the findings of this study,

helping international students build relational skills, reduce stress, and increase resiliency might improve students' self-belief and adjustment to college.

Limitations

This study was limited by the relatively small sample size of students who had been in the United States for less than one year. The sample from only two universities in the Southwest region of the US is also a limitation. Therefore, results are not to be generalizable to international students attending universities across the United States. In addition, while the dataset used in this study provided vital information related to the adjustment of international students, this study was limited to the investigation of the three independent variables and one criterion variable, adjustment to college. Additional variables not included in this study (e.g., self-efficacy, grit, and achievement motivation) could play a prominent role in adjusting to college. The Inventory for New College Student Adjustment (INCA) (Watson & Lenz, 2018) was designed for first-year, first semester students at the undergraduate level. In this study, the INCA was used to investigate the adjustment of first-year undergraduate students, as well as graduate international students. Also, while measures included in this study were supported by their psychometric properties, the most recent instrument, Relational Skills Inventory, was in the process of analysis, (EFA and CFA). Finally, response bias, due to the use of self-report questionnaires, increases errors of validity and reliability.

CONCLUSION

By employing quantitative research methods, this study compared first-year undergraduate and graduate international students on factors related to adjustment to college life. The study included students from a wide range of countries. The findings indicated that international undergraduate and graduate students differ in terms of relational skills and acculturative stress. It might be surmised that, during their first year at US colleges, international students are generally private in their social lives - keeping their own company or interacting only with other international students. The adjustment to the US culture is believed to take time and effort, and it often requires university support programs. A better understanding of how international students adjust to college through the assessment of resilience, relational skills, and acculturative stress might help in addressing one's readiness for college. Accommodations should be provided in universities in order to meet the needs of international students. College counselors can implement activities to enhance relational skills and manage stress for newly enrolled international students, particularly those at the undergraduate level. Finally, creative programs seem to be needed that connect international students with domestic students and community members, thus helping students adapt and succeed in new cultural surroundings.

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APPENDIX A**Undergraduate International Student Participants' Nationality**

Nationality	Percentage
Australia	2.5 percent
Bangladesh	10 percent
Canada	5 percent
China	10 percent
Ecuador	7.5 percent
Ghana	2.5 percent
India	15 percent
Jordan	10 percent
Nigeria	12.5 percent
South Korea	5 percent
Sri Lanka	2.5 percent
Taiwan	5 percent
Venezuela	2.5 percent
Vietnam	12.5 percent

APPENDIX B**Graduate International Student Participants' Nationality**

Nationality	Percentage
Bangladesh	5.5 percent
Canada	5.5 percent
China	20 percent
Ecuador	1.8 percent
Ghana	1.8 percent
India	34.5 percent
Jordan	3.7 percent
Nepal	1.8 percent
Nigeria	18.2 percent
Vietnam	3.7 percent

APPENDIX C**Undergraduate International Student Participants' College Majors**

College Major	Number	Percentage
Business and Management	8	20 percent
Education	16	2.5 percent
Liberal Arts	2	5 percent
Nursing	5	12.5 percent
Science and Engineering	24	60 percent

APPENDIX D**Graduate International Student Participants' College Majors**

College Major	Number	Percentage
Business and Management	11	20 percent
Education	2	3.6 percent
Liberal Arts	4	7.3 percent
Nursing	3	5.5 percent
Science and Engineering	35	63.6 percent