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## **An Examination of Relational Health, Belonging, and Self-Compassion in Chinese International Students**

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An Examination of Relational Health, Belonging, and Self-Compassion  
in Chinese International Students

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A Dissertation

Presented to

the Faculty of the Morgridge College of Education

University of Denver

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In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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by

Elizabeth A. Harris Shaffner

August 2020

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Title: An Examination of Relational Health, Belonging, and Self-Compassion  
in Chinese International Students  
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### **Abstract**

Chinese international students (CISs), the largest segment of international students coming to the US to study at institutions of higher education (IIE, 2016), are reported to experience more acculturative stress than other international students because of the vast differences in social and cultural norms between the United States and China (Li & Glasser, 2005; Yeh & Inose, 2003). The present study used Relational-Cultural Theory (RCT) as the framework to explore the ways undergraduate CISs struggle and thrive in the face of acculturative stress and to understand how positive and negative outcomes are associated with their relational health, sense of campus belonging, and self-compassion. Relational health and sense of campus belonging are constructs of social support within RCT that have been associated with positive outcomes for domestic and international college students (e.g., Frey, Tobin, & Beesley, 2004; Servaty-Seib, Lockman, Shemwell, & Reid Marks, 2016), but have not yet been adequately explored in relation to CISs. Self-compassion is a type of adaptive emotion-regulation strategy that promotes positive psychological health during distressing times, such as the acculturation process (Fong & Loi, 2016). Self-compassion was also examined in relation to outcomes for CISs. While acculturation is associated with negative outcomes such as psychological distress, one of the outcomes under investigation, acculturation may also lead to personal

growth for international students (Brown & Brown, 2009). This study adopted a strengths-based approach by exploring the post-migration growth of CISs. No known study to date has explored this combination of variables of CISs. Hierarchical regression analysis revealed that acculturative stress positively predicted psychological distress but was not predictive of post-migration growth for CISs. Relational health and self-compassion positively predicted post-migration growth, but sense of campus belonging was not predictive of post-migration growth for CISs. Self-compassion was negatively predictive of psychological distress, but neither relational health or sense of campus belonging were significant predictors of psychological distress. Moderation analysis revealed that there is not significant moderation between acculturative stress and self-compassion on psychological distress. Correlational analysis indicated that peer, mentor, and community relational health all had a significant, negative correlation with psychological distress and a significant, positive correlation with post-migration growth. Results, limitations, and implications for clinical practice are discussed.

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## **Chapter 1**

### **Introduction and Literature Review**

Chinese international students are the largest segment of international students coming to the US to study at institutions of higher education (IIE, 2016). Because of the vast differences in social and cultural norms between the United States and China, Chinese international students may be at risk for adjustment difficulty (Wang, Wei, & Chen, 2015). As a group, international students have been reported to have a higher incidence of psychological problems than domestic students and Chinese international students have been reported to experience more acculturative stress than other international students (Li & Glasser, 2005; Wang et al., 2015). Although many institutions of higher learning have adopted practices and policies to promote global education, international student issues are largely neglected on campuses and they remain an underserved, understudied population (Zhang & Goodson, 2011). Qualitative research has revealed some of what Chinese international students experience in terms of their acculturative struggles. Among these struggles, Chinese international students describe how English, as spoken, is different from their expectations in terms of the slang used and that they struggle with the speed with which many Americans speak. They report superficial interactions with Americans and attribute social difficulties to differing interests and cultural contexts. They report difficulty adapting to the interactive

classroom environment and Western learning styles such as skimming readings. They also report daily living challenges such as acclimating to weather, food, transportation, and routines. These students additionally report difficulties with psychological adjustment such as feeling lonely and bored (Li et al., 2017). As an adjunct professor of undergraduate courses at the University of Denver, I have witnessed firsthand the growing number of Chinese international students enrolling in our institution. I have had discussions with other faculty about the insufficient participation, limited intercultural socialization, and language-related academic challenges that are common to our Chinese international students. Additionally, I participated in an international and domestic student partnership program at the University of Denver called “Pioneer to Pioneer,” where I was matched with a Chinese international student to foster international student integration into the campus community. Through this experience, I came to understand some of the ways Chinese international students struggle to adapt to university life in the US. These experiences in combination with my clinical experiences working with international students having difficulty adapting to life at our universities has underscored for me the ethical imperative of conducting scholarly investigations to better support this population and find culturally-relevant ways to meet their needs. As a White person, a citizen of the US, and a native English speaker, I recognize that my privilege in these arenas mean that I have not shared the experiences of the participants in this study. My hope is that this study and others like it will advance the scholarship and move the fields of psychology and higher education closer to appreciating the unique ways that CISs struggle and thrive. I also hope that institutions of higher education will challenge

themselves to involve Chinese international students and other individuals of Chinese cultural heritage in the creation of policies and programs.

In looking at factors that may protect against acculturative stress, social support has been shown to negatively correlate with acculturative stress and to have a buffering effect on acculturative stress and depression in international students (Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004; Smith & Khawaja, 2011). Given the many conceptualizations of social support, it is important to identify a framework that is relevant for Chinese international students. Relational Cultural Theory (RCT) is a theoretical framework that emphasizes the importance of relationships in an individual's optimal growth, resilience, and health, especially for those who have been marginalized (Comstock et al., 2008). Relational cultural theory therefore provides a framework that may be relevant for a non-western, non-individualized understanding of social relations.

Drawing from Relational Cultural Theory (RCT), relational health and sense of campus belonging are two relevant constructs of social support worthy of consideration with a Chinese international student population. Sense of campus belonging can be defined as “the social support that students perceive on campus, a feeling of connectedness, that one is important to others, that one matters” (Strayhorn, 2012, p. 16). Sense of university belonging has been linked to better social adjustment for university students in China (Tao et al., 2000), and to lower attrition rates and academic success for first-year African American and White college students (Hausmann, Schofield, & Woods, 2007). Sense of belonging on campus is linked to reduced mental health outcomes such as depression, anxiety, and stress in general college student samples

(Hoyle & Crawford, 1994), as well as first-generation college students (Stebbleton, Soria, & Huesman, 2014), and multi-ethnic freshman (Mounts, 2004). Scholars who have undertaken research on the concept of university belonging have identified that it is important to both academic (Hausmann et al., 2007; Hoffman, Richmond, Morrow, & Salomone, 2002; Huratado & Carter, 1997; Maestas, Vaquera, & Zehr, 2007) and psychological outcomes (Pittman & Richmond, 2008; Slaten et al., 2014). While relational health and sense of campus belonging have both been shown to be associated with positive outcomes for domestic and international college students (e.g., Frey, Tobin, & Beesley, 2004; Servaty-Seib, Lockman, Shemwell, & Reid Marks, 2016), neither of these variables has yet to be adequately explored in relation to Chinese international students.

Whereas RCT holds that growth-fostering relationships with others lead to positive functioning, in a complementary way, self-compassion embodies a supportive relationship with oneself. Self-compassion is a type of adaptive emotion-regulation strategy that promotes positive psychological health during distressing times, such as the acculturation process (Fong & Loi, 2016). As RCT is concerned with how we relate to *others* authentically, self-compassion can be thought of as how we relate to *ourselves* in an authentic, mindful, compassionate, growth-fostering way. Emerging research has shown self-compassion as an even stronger predictor of well-being than social support (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). Therefore, understanding Chinese international students' self-compassion in light of the acculturative stress they face may highlight another protective strategy worthy of exploration.

Research on acculturative stress has suggested that it is strongly associated with the negative physical and emotional well-being of international students (Yeh & Inose, 2003). However, other research has identified that alternately, acculturation may also lead to personal growth for international student populations (Brown & Brown, 2009). Given this, researchers have called for a strengths-based approach to acculturation research in order to identify variables that promote positive adaptation outcomes for international students (Pan, 2015). One means by which to explore positive outcomes for international students is by way of exploring their post-migration growth (Pan, 2015). Post-migration growth has been defined as, “the positive changes that occur in the process of migration,” (for international students, migration refers to moving abroad temporarily for study) (Pan, 2015, p. 70). Post-migration growth research has identified a number of growth outcomes including improved cross-cultural communication (Brown, 2009), enhanced interpersonal and communication skills (Gu, Schweisfurth, & Day, 2010), an expansion of self, values, and worldview (Gill, 2007), more cross-cultural awareness (Mapp, McFarland, & Newell, 2007), communication skills (Gu et al., 2010), and engagement in new relationships (Gill, 2007). No known study to date has explored relational health, sense of campus belonging, or self-compassion in relation to the post-migration growth of Chinese international students. This study aims to explore the ways undergraduate Chinese international students struggle and thrive in the face of acculturative stress and understand how positive and negative outcomes are associated with relational health, sense of campus belonging, and self-compassion for Chinese international students. The following sections will describe each of these constructs and present the corresponding

bodies of related research. First, information on the experience of Chinese international college students will be presented. Then the relevance of RCT will be explored. Next, the social support variables of relational health and sense of campus belonging and how they relate to Chinese international students will be described. A discussion of the variable of self-compassion and its relation to Chinese international students will follow. Finally, the research questions and hypotheses that guide this study will be presented.

### **Definition of Terms**

The following terms are employed throughout this study. Therefore, definitions have been provided for the reader's reference.

Acculturation. *Acculturation* is the “dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members” (Berry, 2005, p. 698).

Acculturative stress. *Acculturative stress* is the psychological difficulty one encounters while adjusting to a new culture (Smart & Smart, 1995).

Chinese international student (CISs). For the purposes of this research *CISs* refers to international undergraduate students from China, Hong Kong, or Taiwan. Due to their common language and Chinese cultural heritage they will be referred to under one umbrella term, despite having distinct political identities.

Post-migration growth. *Post-migration growth* is the positive adaptation that occurs during the migration process including the absence of psychopathology, the presence of positive health, and the development of competence (for international

students, migration refers to moving abroad temporarily for study). (Luthar & Zigler, 1991; Pan, 2015).

Psychological distress. *Psychological distress* is a range of unwanted symptoms including depression, anxiety, social difficulties- and for individuals from Asian cultures, somatic complaints, (Dennis, 2004; Khawaja & Dempsey, 2007). Relational-cultural theory attributes psychological distress to relational and cultural disconnections (Miller & Stiver, 1997).

Relational health. *Relational health* refers to one's level of satisfaction with peer, community and mentor relationships (Liang, Tracy, Taylor, Williams, Jordan, & Miller, 2002b).

Self-compassion. *Self-compassion* is a positive attitude toward the self that helps to protect against self-judgment, isolation, and rumination (Neff, 2003b, p. 85).

Sense of belonging to campus. *Sense of belonging to campus* is the social support that students perceive on campus, a feeling of connectedness, that one is important to others, that one matters (Strayhorn, 2012, p. 16).

### **International Students in Higher Education**

The number of international students studying at US institutions of higher learning is growing. According to the Institute of International Education (IIE) (2016), 1,043,839 international students studied in various colleges and universities in the United States during the 2015-2016 academic year, topping one million for the first time. This represents an increase of 7% over the prior year and a 91% increase compared to enrollment in the year 2000 (IIE, 2016). Growth of international students studying in the

US is outpacing that of overall enrollment in US Higher Education. Further, in 2015 these students contributed over \$35 billion to the US economy (IIE, 2016). International students also contribute to America's scientific research and enrich US classrooms with their international perspectives (IIE, 2016). The increased number, as well as the economic and academic contribution of international students, speak to the importance of scholarship dedicated to better understanding how to serve these students.

International students studying at institutions of higher education in the United States are a diverse group representing over 200 nations (IIE, 2016). China, India, Saudi Arabia, South Korea, Canada, Vietnam, Taiwan, Brazil, Japan, and Mexico make up the top ten countries of origin (in descending order) for students studying in the US (IIE, 2016). Prior research suggests that the adjustment process can be difficult for all international students, and that adjustment problems are especially acute for students from Asian countries (Abe, Talbot, & Geelhoed, 1998; Heikinheimo & Shute, 1986; Henderson, Milhouse, & Cao, 1993; Toyokawa & Toyokawa, 2002). This is because of the vast differences between the language, culture, and communication styles of most Asian countries and America (Toyokawa & Toyokawa, 2002). Asian international students have indicated difficulties in language, academic performance, and social interactions as considerable problems while studying in the US (Schram & Lauver, 1988; Yang, Teraoka, Eichenfield, & Audas, 1994).

Because they are the largest group of international students undertaking studies in the US (IIE, 2016) and because of the increased adjustment difficulties they may face (Li & Glasser, 2005), Chinese international students (CISs) are a particularly important



population of inquiry. Past research examining a spate of topics has utilized samples of Asian international students, which may include students from East Asia, Central Asia, South Asian, and Southeast Asia. These students, representing nations such as Japan, India, and Malaysia, currently make up 66% of all international students in the US (IIE, 2016). As such, this group merits the attention of research. However, the generalizability of findings that encompass samples that are so varied in terms of their language, religion, and socio-cultural norms, is limited (Constantine, Kindaichi, Okazaki, Gainor, & Badnen, 2005). For this reason, researchers of international student issues have advocated that studies instead select samples with a similar cultural heritage (Bertram, Poulakis, Elsasser, & Kumar, 2014). In particular, Liu (2009) undertook research examining adaptation difficulties of international students in the US and determined that CISs face unique problems that merit independent investigation. Thus, this study focuses upon students from Taiwan or mainland China (including Hong Kong) as the subjects of interest. While sociopolitical and historical differences exist among these groups of international students, those from mainland China and Taiwan share a common cultural heritage such as values pertaining to relationships and collectivism (Wang et al., 2012). There were 333,045 Chinese international students (who will herein be referred to collectively as CISs, despite their distinct political identities) attending institutions of higher learning in the US in the 2015-16 academic year, accounting for approximately 32% of all international students (IIE, 2016) and thusly contributing roughly a third of the money spent by international students in the US (Barta, Chen, Jou, McEnaney, & Fuller, n.d., retrieved Nov. 14, 2017).

## **Stressors Faced as International Students Adapt to a New Culture**

International students can experience numerous stressors upon their arrival to the United States. In Church's (1982) review of over 30 years of research, it was reported that international students confronted "language difficulties, financial problems, adjusting to a new educational system, homesickness, adjusting to social customs and norms, and for some students, racial discrimination" (p. 544). Mori (2000) identified linguistic, academic, interpersonal, financial, and intrapersonal problems as being five unique sources of stress that international students encounter. Lin and Yi (1997) point to academic and English language difficulties, the different educational system, financial pressures, psychosocial stressors, an unfamiliarity with customs and social norms, lack of social support, as well as intrapersonal and interpersonal problems resulting from the process of acculturation as problems that are exacerbated among international students. As a result of dealing with acculturation stressors such as these, a general consensus has emerged among researchers that international students are at higher risk for psychological problems than their American peers (Constantine et al., 2004; Kaczmarek et al., 1994; Lee, Koeske, & Sales, 2004; Mallinckrodt & Leong, 1992; Wei et al., 2007; Yeh & Inose, 2003).

### **Acculturation**

Before commencing a discussion of acculturative stressors for CISs, it is important to discuss the concept of acculturation. The process of cultural adaptation has been the focus of much inquiry over the years (see Berry, 1997; Wang, Lin, Pang, & Shen, 2006) and a number of theories have emerged to explain students' cultural

transitions and acculturative adjustment outcomes. Early models of acculturation focused primarily on the experience of the migrant who was theorized as undergoing a process of shedding their own cultural heritage as they adopted that of the host culture (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Berry Kim, Minde, and Mok, (1987) have put forth a widely used, comprehensive model of acculturation that elaborates upon the uni-dimensional models that focus solely on the migrant, to describe acculturation as a bi-dimensional process that accounts for the cultural change that occurs in the migrant and in the host culture and its members. These pioneers of acculturation research define acculturation as “the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members” (Berry, 2005, p. 698). This conception accounts for changes that are said to be co-occurring at the individual (psychological acculturation) and group level (cultural acculturation) in both the migrant and host cultures (Berry, 2005). The long-term goal of Berry’s acculturative stress and adaptation framework (1997, 2006) is to achieve adaptation, described as the “relatively stable changes that take place in an individual or group in response to external demands” (Berry, 2006, p. 52).

Berry’s framework indicates that stressors related to acculturation, can result in a specific type of stress called “acculturative stress” for international students (1997). If not dealt with sufficiently by one’s coping resources, this type of stress may lead to psychological and sociocultural adaptation difficulties in the acculturation process (Berry 1997, 2006). The model describes factors that moderate the relationship between acculturation and stress. Moderating factors include: the nature of the larger society, the

type of acculturation group, the acculturation mode, and multiple demographic variables and social/psychological characteristics of the individual/group (Berry et al., 1987). As an acculturating group, CISs in universities in the US have migrated voluntarily and are in temporary contact, in which case they are considered sojourners compared to other groups within the model (Berry et al., 1987). Without permanent social supports, they may be expected to experience more mental health challenges than those who are more permanently settled with established social supports, according Berry et al. (1987). Additionally, demographic, social, and psychological characteristics, such as individual coping strategies impact acculturation in the process model put forth by Berry and colleagues (1987). In the present study, relational health and sense of campus belonging are social characteristics under investigation and self-compassion is a psychological coping characteristic under investigation.

### **Acculturative Stress**

During the acculturation process, cross-cultural encounters can lead to physical, social, or psychological problems (Berry et al., 1987). The psychological difficulty one encounters while adjusting to a new culture is referred to as acculturative stress (Smart & Smart, 1995). It can be further defined as “a stress reaction in response to life events that are rooted in the experiences of acculturation” (Berry, 2005, p. 708) or the psychosocial stressors that result from unfamiliar customs and social norms (Church, 1982; Lin & Yi, 1997). Mori (2000) reports that acculturative stress is associated with international students’ reports of a number of somatic complaints including headaches, fatigue, digestive issues, increases in blood pressure, and sleep problems. Further, Mori (2000)

reports that feelings of loss, anger, sadness, isolation, helplessness, hopelessness, and depression are among the psychological symptoms associated with acculturative stress in international students. Additionally, feeling powerless, marginalized, inferior, and alienated are common side-effects of acculturative stress (Berry et al., 1987; Sandhu & Asrabadi, 1998).

When studying in the US, CISs are subject to a number of acculturative stressors including language difficulties (Pan, Wong, Chan, & Joubert, 2008; Pedersen, 1991; Swager & Ellis, 2003; Yeh & Inose, 2003), academic pressures (Pedersen, 1991), perceived discrimination (Sandhu & Asrabadi, 1994), homesickness (Sandhu & Asrabadi, 1994), loneliness (Pedersen, 1999), and cultural differences (Pan et al., 2008; Pedersen, 1991; Swager & Ellis, 2003). Yeh and Inose (2003) suggest that because of the vast differences in social and cultural norms in the United States, CISs are prone to high levels of adjustment difficulty. Because of this greater cultural gap, Asian students report more acculturative stress than European students (Parr, Bradley & Bingi, 1992; Yang & Clum, 1994). CISs may encounter difficulties adapting to the new educational systems and learning styles of the US (Mori, 2000; Wong, 2004). They may face challenges related to becoming a racial and ethnic minority if they were accustomed to being a member of the dominant racial or ethnic group in China (Yoon & Portman, 2004). If this is the case, they may encounter racism, prejudice, and harmful stereotypes, perhaps for the first time in their lives (Johnson & Sandhu, 2007). Stressors such as these have been found to be related to depression, anxiety, and suicidal ideation (Barrett, Sonderegger, & Xenos, 2003; Hovey & King, 1997; Shen & Takeuchi, 2001).

Given the many factors that can contribute to the acculturative stress of CISs including those mentioned above (e.g., academic pressures, language difficulties, difficulties adjusting to cultural values, lack of support, perceived discrimination, and homesickness) (Wei et al., 2007), and given the strong association between acculturative stress and psychosocial adjustment difficulties such as depression and anxiety (Berry, 2006; Wei et al., 2007), the current study examines depression and anxiety as aspects of psychological functioning pertinent to the holistic acculturative stress experiences of CISs. Research investigating psychological distress widely assesses symptoms of depression and anxiety (Wang & Mallinckrodt, 2006). Additionally, because prior research has shown that individuals from Asian cultures tend to have somatic expressions of their psychological distress (Dennis, 2004), a consideration of the physical symptoms of distress is also be relevant for this population. Specific issues related to psychological distress in CISs is presented in greater detail below.

### **Chinese International Student (CIS) Mental and Physical Health**

For those CISs who do experience struggles during the acculturation process, many of them internalize their stress, and become vulnerable to negative emotions and psychosomatic presentations (Wei et al., 2007). Specific research regarding the prevalence of mental illness and suicidality in CISs in the US is lacking (Chen, Liu, Zhao, & Yeung, 2015). Wang, Heppner, Fu, Zhao, Li, and Chuang (2012) found that 21% of CISs surveyed demonstrated psychological distress at high levels during their studies in the United States. Research conducted at Indiana University revealed that of 267 CIS participants recruited through Chinese Student and Scholar Associations, 20.1%

had mild depression, 14.1% had moderate depression, and 2% had severe depression (Bai, 2016). Similarly, survey data collected at Yale university revealed that 45% of CISs surveyed exhibited symptoms of depression and 29% exhibited symptoms of anxiety (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). Comparatively, 9.2% of university students in the US report a diagnosis of depression in the past year and 9.4% report an anxiety diagnosis (American College Health Association, 2010). A recent study of university student in China found that only 11.7% endorsed depressive symptoms (Chen et al., 2013). These findings indicate that, when compared to university students in the US and China, CISs in the US report a higher incidence of psychological symptoms (Chen et al., 2013).

Empirical evidence demonstrates that acculturative stress is one cause of the mental health issues faced by international students from Asia (Yang & Clum, 1995). A number of studies have demonstrated connections between acculturative stress and depression with Asian international students (Dao, Lee, & Chang, 2007; Lee et al., 2004; Pan, 2007; Yang & Clum, 1995; Ying & Han, 2006). Acculturative stress has been positively associated with depression among CISs (Wei et al., 2007) and Taiwanese international students (Ying & Han, 2006). Wei et al.'s (2007) study of 189 CISs at American universities found that acculturative stress served as a significant predictor of depression even after controlling for maladaptive perfectionism and length of stay. When experiencing stress CISs are more likely to identify somatic discomforts than negative emotions (Lippincott & Meirzwa, 1995; Mallinckrodt & Leong, 1992; Tung, 2011). Given the strong association between acculturative stress and negative mental and

physical health outcomes in this population, researchers have emphasized the importance of understanding the link better and identifying factors that reduce or moderate the association for CISs (Wei et al., 2007).

Berry's model (1997) theorizes that length of time may affect acculturation outcomes. Research conducted with Chinese and Taiwanese international students confirmed that duration of stay was significantly and negatively correlated with sociocultural adjustment problems ( $r = -.29$ ) and psychological distress ( $r = -.34$ ) (Wang & Mallinckrodt, 2006). Despite this finding, the empirical research conducted by Wang et al. (2012) found that more than 20% of CISs remained *consistently distressed* or *culture-shocked* (p. 430), following three semesters in the US. Together these findings, while inconclusive, point to the importance of taking length of time in the US into account when examining the association between acculturative stress and mental health outcomes.

### **Underutilization of Counseling Services**

Despite the formidable challenges that international students face and their greater mental health needs, studies have shown that they tend to under-utilize counseling services (Hyun, Quinn, Madon & Lustig, 2007; Mori, 2000; Nilsson, Berkel, Flores, & Lucas, 2004; Raunic & Xenos, 2008). There are a number of reasons that CISs tend not to seek counseling. Being from a collectivist culture, their reluctance to seek help from counseling services may be related to the commonly held cultural belief that psychological problems are best handled alone or with the help of a close friend or family member (Volet & Karabenick, 2006). Researchers pointed out that one student in a



qualitative study exploring acculturation in CISs sarcastically commented that the high stress in China forces students to, “get over it by themselves, or else everyone would need to see a counselor” ridiculing the need for mental health support (Li et al., 2017). Furthermore, these students have been shown to hold more negative counseling attitudes than their US peers (Tedeschi & Willis, 1993; Yoon & Jepsen, 2008). Also, stigma concerns, which are fears of negative judgments because of seeking counseling, may also reduce CISs’ utilization of counseling services (Vogel, Wade, & Ascheman, 2009). Another reason CISs might not seek counseling is because of forbearance coping, a common Chinese coping strategy characterized by minimizing or concealing problems so as not to burden others (Moore & Constantine, 2005; Wei, Liao, Heppner, Chao & Ku, 2012; Yeh, Arora, & Wu, 2006). Such efforts to control one’s emotions often result in students internalizing their stress and attempting to exert willpower over their emotional problems (Mortenson, 2006). Wei et al. (2007), found that CISs are raised to value this type of emotional control, because emotional difficulties are thought to be disruptive of social harmony. Because of their tendency not to seek support through counseling centers, it is important that universities demonstrate to CISs that support networks exist, because research suggests that this type of implicit social support may be more desirable for this group (Kim et al., 2008).

### **Social Support as a Means of Reducing Acculturative Stress**

Understanding social support for CISs becomes vital given CISs’ reluctance to seek support through formal channels such as counseling services, the deleterious effects of acculturative stress, and the protection social support offers against stressful life events

(Cohen & Wills, 1985). Berry's model (1997, 2006) points to social support as a variable that can decrease experiences of acculturative stress and aid in adaptation. The buffering effects of social support on acculturative stress and depression is demonstrated in the international student literature. For example, Yeh and Inose (2002) found that social connectedness and social support network satisfaction significantly predicted acculturative stress for international students and contributed to 18.3% of the variance, compared to region of origin, accounting for 11.4% of the variance, and English language fluency, accounting for 5.2% of the variance. Social support has been shown to have buffering effects on the association between acculturative stress and depression for international students (Smith & Khawaja, 2011) as well as other student populations (Crockett et al., 2007). It has also been demonstrated that social support is negatively correlated with acculturative stress ( $r = -.29$ ; Poyrazli et al., 2004) in Asian international students (Mortenson, 2006; Ye, 2006). In the study by Yeh and Inose (2002) for example, perceived sense of connectedness was significantly and negatively associated with acculturative stress ( $r = -.45$ ) for the 227 Asian international students in the sample. For CISs, some studies have looked at the social support construct of mainstream social connectedness. These studies have found a strong association between feeling socially connected to the mainstream society and of life satisfaction, which appeared to be a stronger association during the first semester ( $r = .45$ ) than during the second semester ( $r = .35$ ) (Wang, et al. 2015). These studies also found that social connection partially mediated the association between acculturation and life satisfaction ( $\beta = .067$ ) as well as that of acculturation and positive affect ( $\beta = .106$ ) (Du & Wei, 2015). Additionally,

high levels of social connection moderated the relation between perceived language discrimination and depression, anxiety, and posttraumatic stress, (Wei, Liang, Botello, & Li, 2015).

### **Barriers to Social Support**

As international students leave their primary support network behind, many experience a deep sense of loss upon their arrival to the US (Sandhu, 1995). A lack of social support in their new environment can lead to academic difficulties and poor psychosocial adjustment (Smith & Khawaja, 2011; Zhang & Goodson, 2011). Furthermore, differences in cross-cultural social interactions can stand in the way of international students forming relationships with their American peers (Mallinckrodt & Leong, 1992). Findings by Heggings and Jackson (2003) and Olivas and Li (2006) suggest that international students frequently experience cultural isolation and lack of support from American students. Students with collectivist cultural backgrounds, such as CISs, may be confused by the independence, assertiveness, and self-reliance of the domestic students with whom they interact (Cross, 1995). They may value close relationships (Markus & Kitayama, 1991) and find social relationships in the US to be superficial (Cross, 1995) and interpersonally unsatisfying (Mori, 2000). These are among the reasons why international students may prefer, instead, to seek emotional support from co-nationals or other international students with whom they share a common linguistic background (Volet & Karabenick, 2006).

English language ability can also serve as a barrier to social support. Yeh and Inose (2003) found English language fluency to be a significant predictor of acculturative

stress. They postulate that English language skills facilitate interactions with the majority group and that ease of communication in the new cultural context encourages feelings of adjustment (Yeh & Inose, 2003). Other studies have also found that Asian international student language ability is significantly negatively associated with acculturative stress (Poyrazli et al., 2004). Because they are not comfortable expressing themselves, language barriers restrict the social interactions of international students, heightening feelings of social exclusion (Jones & Kim, 2013). Our understanding of the relationship English language ability has with acculturative stress and social isolation underscores the necessity of accounting for language proficiency as the association between acculturative stress and mental health outcomes is considered.

### **Family Support**

Another variable that is important to account for when exploring these factors is students' level of family support. Family is considered a primary influence on children's outlook, attitudes, and experiences within the Chinese culture (Chan, 1999; Fukuyama, 1995; Kim, Omizo, & Michael, 2005). This emphasis on strong family ties may lead students studying abroad to have difficulty establishing independence from their parents (Settles, Sheng, Zang, & Zhao, 2012). The subjective well-being of Chinese students has been linked to their fulfilment of role obligations such as academic achievement and to the promotion of family welfare (Lu & Gilmour, 2006). In fact, because academic excellence is a central value in Chinese culture (Stevenson & Lee, 1996), family socialization also emphasizes educational success (Sue & Okazaki, 1990). This familial expectation in relation to achieving good grades has been identified as a main source of

stress for Chinese international students studying in Australia, endorsed by 17% of CISs but only 3% of Australian students surveyed (Redfern, 2016). Other studies have also indicated that Chinese students consider their families to be a source of stress (Heggins & Jackson, 2003). Jeiru Bai uses the term, “guilt toward family,” to express this acculturation stressor experienced by CISs and has incorporated it as a significant variable in the acculturative stress scale for Chinese international students because of its relevance for this population (2016). Because of the impact of familial factors on the well-being of CIS, it is important to consider family relationships as they relate to psychological distress and growth outcomes.

### **Positive Adaptation**

Despite the well-documented negative outcomes with which acculturative stress is associated (Smith & Khawaja, 2011; Zhang & Goodson, 2011), there are also positive adaptation outcomes related to acculturation (Berry, 2006). Empirical evidence suggests that positive affect and distress can co-occur in a stressful situation (Folkman and Moskowitz, 2000). Many international students are able to overcome hardships and exhibit healthy adjustment while studying internationally (Brown & Brown, 2009). In acknowledgment of this, scholars have begun to implement a strengths-based approach to explore the positive outcomes and the protective factors that follow from the process of acculturation (Ehrensaft & Tousignant, 2006; Moores & Popadiuk, 2011; Pan et al., 2008). One such outcome has been identified as post-migration growth.

## **Post-Migration Growth**

Post-migration growth is positive adaptation that occurs during the migration process (for international students, migration refers to moving abroad temporarily for study) (Pan, 2015). A positive adaptation outcome should be thought of not only as the absence of psychopathology, but also as the presence of positive health and the development of competence (Luthar & Zigler, 1991). Post-migration growth is a concept born of the literature on stress-related growth (Park, Cohen, & Murch, 1996). This work acknowledges that instead of distress, stressful life circumstances can lead to personal growth. Both post-migration growth and stress-related growth involve achieving a higher level of functioning than was the case prior to facing stressful life conditions (Linley & Joseph 2004).

Few studies to date have explored the concept of post-migration growth, with the majority of them qualitative. Interest in the concept of personal growth through migration is emergent (e.g., Brown, 2009; Dimmock & Leong, 2010; Gill, 2007; Gu et al., 2010; Jackson, 2006; Pan, Wong, & Ye, 2013). Brown (2009) found that students who studied internationally felt freedom from cultural and familial expectations and that they improved their cross-cultural communication skills and had opportunities for self-discovery. Gill (2007) explored the intercultural learning process of stress, adaptation, and growth and found that international students experience transformative changes that expand their self-knowledge, their awareness of others, and their values and worldview. In a mixed methods study by Gu et al. (2010), empirical investigation showed post-migration growth to occur among international students in terms of their mastery of the

host language, personal development and academic success. Findings revealed that international students' experiences are encompassed within two key themes: (1) experiences of maturation and human development, and (2) experiences of intercultural and academic adaptation to different cultures, societies, and academic environs (Gu et al., 2010). These two main themes were broken down into the four related themes of (1) change influences; (2) conditions for change; (3) change as achievement; and (4) a locus of self: identity, agency, and resilience (Gu et al., 2010). Related to theme 3, "change as achievement," students reported personal achievements as personal independence (67%), broadened life experiences and interests (56%), and improved interpersonal and communication skills (41%) (Gu et al., 2010). Overall, these researchers concluded that despite academic and social challenges, most international students managed to "change, adapt, develop, and achieve," and that their identity change is rooted in growth in terms of maturity and interculturality (Gu et al., 2010, p. 20). Similarly, Li and colleagues (2017) explored the experiences of CISs during their transition to American universities and identified positive growth as a theme. CISs acknowledged that as they adapted to their new environment, the challenges they faced led them to improve academically, to refine their language skills, to develop in their interpersonal communication, and to become more mature, self-confident, and open-minded (Li et al., 2017).

Studies such as these elaborate upon those that focus solely on psychopathology, thereby providing a fractured view of the international adaptation experience. Because of the lack of research that adopts this strengths-based approach, Pan (2015) has called for acculturation research to identify protective factors that promote positive adaptation

outcomes for international students. Factors that predict growth are likely multi-dimensional (Pan et al., 2013). A conceptual model of the determinants of stress-related growth include the personal characteristics of the individual, characteristics of the environment, characteristics of the stress event, and the type of coping behavior employed (Schaefer & Moos, 1992).

Because most of the existing research is qualitative, current knowledge of the correlates of post-migration growth is limited (Pan et al., 2013). However, findings on correlates of the related construct of stress-related growth and post-traumatic growth can provide some relevant information. A meta-analysis including 87 studies revealed that stress-related growth was positively correlated with less depression and increased well-being (Helgeson, Reynolds & Tomich, 2006). Post-traumatic growth has been reported to correlate positively with positive affect (Leloirain, Bonnaud-Antignac, & Florin, 2010; Rabe, Zollner, Maercker, & Karl, 2006) and life satisfaction (Mols, Vingerhoets, Coebergh, & Poll-Franse, 2009; Mosher, Danoff-Burg, & Brunker, 2006).

Research on post-migration growth for international students (Gill, 2007; Gu et al., 2010) as well as studies on the related construct of post-traumatic growth (Ho et al., 2004) have identified that personal growth for international students is a complex process resulting from the interaction of many factors (as described above). Therefore, personal growth for international students can be broadly reviewed by adopting a two-part categorization of intrapersonal and interpersonal dimensions of growth (Pan et al., 2013). Intrapersonal dimensions of post-migration growth can be thought of as such things as an increased ability to overcome life difficulties, clarity of life goals, lifestyle development,



and a greater self-understanding (Pan et al., 2013). Intrapersonal aspects of international student growth that result from study abroad experiences include shifts in their life priorities (Brown, 2009), increased independence and assertiveness (Brown & Brown, 2009), improved self-confidence (Campbell, 2010), increased tolerance of foreign values (Brown, 2009), more cross-cultural awareness (Mapp et al., 2007), the and acquisition of language skills (Yu, 2010). Interpersonal dimensions of post-migration growth can be thought of as improvements in interpersonal skills, appreciation of one's relationships with others (e.g., family), and a deeper understanding of others. Therefore, interpersonal aspects that follow from international study are improved interpersonal communication skills (Gu et al., 2010) and engagement in new relationships (Gill, 2007).

Research with Chinese populations on both post-traumatic growth (Ho et al., 2004) and post-migration growth (Pan et al., 2013) has confirmed that growth appears to be a bi-dimensional construct comprised of an individual-intrapersonal dimension and a relational-interpersonal dimension. Intrapersonal growth findings for CISs have shown that academically CISs developed academic confidence, gained greater responsibility for their learning (Warring, 2010; Gill, 2007), and obtained clarity about their career paths after studying abroad (Dimmock & Leong 2010). Additionally, the intercultural competence of CISs was reportedly improved by their international study experiences in terms of appreciation of differing worldviews (Jackson, 2006) and increased appreciation of diversity (Li & Bray, 2007). Interpersonally, CISs were found to develop interpersonal skills (Jackson, 2006), adapt cross-culturally through relationships, develop social networks, and gain a deeper understanding of others (Gill, 2007).

Using the bi-dimensional construct of growth shown to be relevant for CISs (Pan et al., 2013) allows us to understand more about how sense of university belonging and self-compassion affect the migration experiences of CISs. The dual categories map well onto these variables when considering that sense of university belonging and relational health are variables that are relational-interpersonal in nature and self-compassion is intrapersonal. This study expands the growing body of literature exploring post-migration growth by attempting to better understand how social support factors and self-compassion influence the post-migration growth of CISs.

In sum, CISs are the largest group of foreign students electing to study at universities in the US. As they adapt to the American culture, they face a variety of challenges (Kaczmarek, Matlock, Merta, Ames, & Ross, 1994; Smith & Khawaja, 2011) as well as opportunities for personal growth (Moores & Popadiuk, 2011). These students report experiencing higher levels of acculturative stress than other international students and are at risk for negative psychological and physical consequences as a result. When experiencing psychological symptoms, CISs report a decreased likelihood of seeking support through counseling services. Instead, they may be more likely to deal with problems alone or by seeking support from a close friend or family member. However, upon arriving in the US, they are isolated from family and often lack the social support necessary to buffer acculturative stress. Despite the negative outcomes of acculturative stress, international students are also capable of healthy adjustment (Brown & Brown, 2019). Given the potential for outcomes including distress and growth for CISs, it is important to identify key predictors for understanding their well-being. This study aims

to use a culturally-relevant framework to examine constructs of social support in light of Chinese international student acculturative stress and growth opportunity. Additionally, this study explores CISs self-compassion in relation to outcomes. To these ends, this study is imbedded in a theoretical framework called relational-cultural theory.

### **A New Perspective for Examining Social Support for Chinese International Students: Basic Assumptions of Relational Cultural Theory**

Relational-cultural theory (RCT) is a feminist, multicultural-based counseling theory of human development that emphasizes the importance of relationships in psychological health and resilience (Comstock et al., 2008). Jean Baker Miller, the author of the book that inspired the RCT approach, *Toward a New Psychology of Women* (1976), has criticized prevailing theories of counseling and development for undervaluing important contextual and relational factors that contribute to positive psychological functioning for women, people of color, and others who have been marginalized (Comstock et al., 2008). Whereas traditional theories assume that individuation, separation, and autonomy are indicative of emotional maturity and well-being, she and the other originators of RCT, Irene Stiver, Jan Surrey, and Judith Jordan, adopted the inclusive position that optimal growth occurs by a process of relational development with individuals growing through mutuality in relationships rather than through separation (Jordan, 2000). Relational Model theorists conceptualize that growth occurs as relational complexity and capacity for mutuality increase (Jordan, 2009).

Mutuality follows from what RCT refers to as “growth-fostering relationships” (Jordan, 2008). Growth-fostering relationships have been defined as those where mutual

empathy and mutual empowerment are present, resulting in five good things of well-being which are: an increased sense of zest, empowerment, clarity, sense of personal worth, and desire for additional connection (Miller, 1986; Jordan, 2008). Miller described zest as increased energy and vitality, empowerment as the confidence in one's ability to act and thus one does act, clarity as a person's ability to create an accurate picture of self, sense of worth as seeing oneself as having value, and connections as feeling connected to those individuals within the relationship and being motivated to connect with others outside of the immediate relationship (Miller, 1986). Researchers identified that growth-fostering relationships with peers, mentors, and community members have a negative association with psychological distress in samples of college students (Frey et al., 2004; Frey, Beesley, Miller, 2006) and a positive association with self-esteem (Liang, Tracy, Taylor, & Williams, 2002a; Liang, Tracy, Kenny, Brogan, & Gatha, 2010; Liang et al., 2002b) belonging, and school engagement (Liang et al., 2010).

For Chinese international students, who come from a collectivistic culture, relationship interdependence and harmony may be important factors (Chang, Osman, Tong, & Tan, 2011; Chen, Chan, Bond, & Stewart, 2006; Yang, 1997). In fact, findings in cross-cultural psychology have consistently shown that Chinese people are more relationally oriented and interdependent, when compared to their Western counterparts (Ho, 1999; Ho, Chan & Ho, 2004). These are the values embedded within RCT, which emphasizes interpersonal connectedness and caring for others in relationships (Comstock et al., 2008; Neff, Pisitsungkagarn, & Hsieh, 2008). As a theory offered as a contrast to those theories based on Western individualism, relational-cultural theory may be a theory

that is philosophically in line with Asian collectivistic values. Despite the apparent compatibility for this population, scholarship applying the relational-cultural theoretical framework in studies with Asian international students has yet to be advanced. As a strengths-based model that focuses on the influence of relational and cultural elements on the positive and negative functioning of all people, but especially for marginalized individuals such as CISSs, the RCT framework will be utilized with this population for this study (Jordan, Kaplan, Miller, Stiver, & Surrey, 1991). The social support constructs within the RCT framework that are utilized in this study are relational health and sense of belonging.

### **Disconnection: The Root of Psychological Distress in RCT**

Within RCT, psychological distress is attributed to relational and cultural disconnections (Miller & Stiver, 1997). The experience of disconnection is the opposite of the five good things. When in a state of disconnection, rather than experiencing the positive outcomes of a growth fostering relationship, individuals have decreased energy, an inability for constructive action, confusion, and feelings of worthlessness. Such individuals tend to shy away from relationships with others as a result of their compromised self-worth (Jordan & Dooley, 2000).

Disconnection can result from relational interactions or from social injustices such as sexism, racism, and oppression. Socio-cultural disconnections are especially harmful because of power imbalances (Jordan, 2008). Cultural disconnection is caused when the dominant group in a stratified society denigrates marginal groups in order to exercise power. Judith Jordan, another pioneer of RCT theory, explains that the majority group's

efforts to silence, isolate, and shame are intended to “weaken the representation of [the minority group’s] reality in the dominant discourse” (Jordan, 2013, p. 12). For CISs who may experience forms of racism or prejudice as part of their acculturation experience, these cultural-level experiences can lead individuals to be fearful, frustrated, and humiliated and often to blame themselves rather than the cultural context (Comstock et al., 2008; Johnson & Sandhu, 2007). Such feelings may lead individuals to be mistrustful and suspicious, making it more difficult to move into connection (Comstock et al., 2008).

**Disconnection in Chinese International Students (CISs).** To apply relational-cultural theory to the acculturation experiences of CISs, we must consider both the relational (personal, social) and cultural (contextual, societal) domains of disconnection. The lack of social support that CISs can experience upon arrival to the US can be thought of in the context of relational disconnection (Pedersen, 1991; Sandhu, 1994). RCT posits that optimal growth is contingent upon the quality of one’s relationships (Jordan, 2000), and empirical studies have supported the idea that psychological functioning is positively correlated with the quality of social relationships (Liang et al., 2002b). Conversely, it follows that in the absence of quality relationships, CISs will be at risk for negative outcomes. Research has indicated that the psychological well-being of international students is significantly influenced by a loss of social support (Hayes and Lin, 1994; Mallinckrodt and Leong, 1992; Pedersen, 1991; Sandhu, 1995). For CISs, links have been demonstrated between social support and acculturative stress levels (e.g., Mortenson, 2006; Ye, 2006). Studies have revealed positive correlations between Asian international students’ social connections and sociocultural adjustment ( $r = .61$ , Li &

Gasser, 2005;  $r = .30$ , Ying & Liese, 1994) and CISs who received a balanced array of social support (less percentage of social support from Chinese students and greater percentage from American students and other international students) over the first semester of study revealed better cross-national transition ( $M = 79.86$ ,  $SD = 22.44$  compared to  $M = 98.07$ ,  $SD = 15.35$ ) (Wang et al., 2012).

In addition to the threat of relational disconnection, CISs are likely to be the targets of discrimination, which makes them vulnerable to cultural disconnection (Comstock et al., 2008; Lee & Rice, 2007; Wei, Wang, Heppner, & Du, 2012). Experiences of racism and discrimination have been shown to lead to negative mental and physical health outcomes (Carter, 2007; Choi et al., 2006; Paradies, 2006). In a meta-analysis of published studies on racial discrimination and mental health outcomes in those with an Asian heritage, racial discrimination had a significant positive association with anxiety ( $r = .28$ ), depression ( $r = .26$ ), and psychological distress ( $r = .17$ ) (Lee & Ahn, 2011). Although, of the 24 studies included in the analysis, only three were conducted with a focus on international students: racial discrimination was found to be associated with psychological distress ( $r = .26$ , Chen, Mallinckrodt, & Mobley, 2002), with frequency of utilization of help resource ( $r = .38$ , Frey & Roysircar, 2006), and with depression ( $r = .29$ , Wei, Ku, Russell, Mallinckrodt, & Liao, 2008) in samples of international students. Within RCT, a lack of social support and racial discrimination are types of disconnection that can lead to chronic disconnection, which has consequences such as decreases in energy, difficulties taking constructive action, and feelings of worthlessness and confusion (Jordan, 2009).

**Potential Consequences of Disconnection.** Being relationally and culturally disconnected is also problematic because RCT stresses that high-quality relationships are essential to a person's resilience (Hartling, 2008). Within RCT, growth-fostering relationships are thought to facilitate psychological growth and resilience (Miller & Stiver, 1997). In this way, rather than resilience being conceptualized as an individual competence, RCT moves from myopic thinking about resilience as a personal strength to frame resilience as a relational activity (Hartling, 2008). A person's ability to be resilient in the face of hardships, whether personal or cultural in nature, is dependent on the growth-fostering relationships that person has formed (Hartling, 2008). As one connects through relationships, the individual characteristics that are associated with resilience are strengthened. Growth-fostering relationships can therefore be thought of as resilience-strengthening relationships (Hartling, 2008). Because findings show that resilience serves as a protective factor against stress, and CISs are known to experience acculturative stress, this study explores whether having a resilience-boosting, high-quality relationship relates to outcomes for this population (Li & Gasser, 2005; Pan et al., 2008).

### **Notions of Social Support Within RCT: Relational Health**

Relational health, a term coined by Liang et al. (2002b) to reflect Relational-Cultural Theory concepts, is thought to be dependent on the presence of four characteristics essential to a growth-fostering relationship: mutual engagement, authenticity, empowerment/zest, and the ability to deal with difference or conflict (Liang et al., 2002b). Relational health refers to the quality of the social support an individual garners from their relationships with peers, mentors, and community (Liang et al.,



2002b). Research has indicated that the quality of supportive relationships is of more importance than the quantity (Liang et al., 2002b). Empirical support for the theoretical construct of growth-fostering relationships (relational health) includes studies that have operationalized the construct using the Relational Health Indices (Liang et al., 2002b). Findings have indicated positive associations between growth-fostering relationships and higher self-esteem, increased school engagement, and belonging (Liang et al., 2002a; Liang et al., 2002b). Conversely, growth-fostering relationships have been negatively associated with outcomes such as: psychological distress, depression, stress, and loneliness in studies with college students and adults (Frey et al., 2004; Frey, Beesley, & Miller, 2006; Liang et al., 2002a; Liang & West, 2011). This research demonstrates empirical support for the positive associations of relational health.

Research on social support among CISs tends to focus upon the presence or absence of support, rather than on the quality of support (e.g. Bertram et al., 2014; Wang et al., 2012). In fact, no work has examined empirically the growth-fostering qualities of relational health with CISs, nor has relational health been examined as a factor that promotes positive adaptation in the face of acculturative stress. Studies that explore relational health as a variable with Asian American populations have found that relational health was negatively predictive of depressive symptoms and positively predictive of social competence for Chinese American adolescents, and that Asian American college women reported lower levels of community relational health compared with European American college women (Grossman & Liang, 2008; Lund, Chan, & Liang, 2014). These are however the only studies that could be identified with populations of Asian descent

and the generalizability of this research with CISs is limited. To address this gap in the literature this study explores the quality of growth-fostering relationships CISs have with their peers and the college community as measured by relational health.

### **Notions of Social Support Within RCT: Sense of Belonging**

In addition to dyadic relationships, community relationships have exhibited important connections to functioning (Liang et al., 2002b). Such community relationships contribute to a sense of belonging. Comstock and colleagues (2008) have pointed out that according to relational-cultural theorists, all individuals yearn for belonging, connection, and social inclusion. For those from cultures with collectivist values, such as CISs, this may be particularly true (Markus & Kitayama, 1991).

Theories of belonging stem from the work of Maslow (1970), who conceptualized that people will seek to meet an unmet need to belong. Belonging was popularized as a construct in the field of psychology by Baumeister and Leary (1995) who define belonging as a perception that one has consistent interaction and persistent caring from others. Similar to RCT theorists, Baumeister and Leary argued that having positive, stable relationships is necessary for optimal functioning (1995). Rosenberg and McCullough (1981) describe belonging as a feeling of connectedness, that one matters and is important to others. Anant (1966) asserts that sense of belonging characterizes a person's perceived belief that they are indispensable within a system. Scholars have conceptualized belonging as an aspect of human relatedness most dissimilar to loneliness and most closely analogous to social support (Hagerty, Williams, Coyne, & Early, 1996). Hagerty, Lynch-Sauer, Patusky, Bouwseman and Collier (1992) identify that the defining

attributes of belonging are fit and valued involvement. Fit is the perception of common values and valued involvement is the perception that one is needed and considered important by others (Hagerty et al., 1996). At the core of belonging is a psychological experience and subjective evaluation of the extent of one's integration in a particular context (Strayhorn, 2012).

McMillan and Chavis (1986, p. 9) who relate belonging to community, refer to it as, "a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together." Rather than being synonymous with community, belonging can be thought of as a precursor to community in that members must first trust one another and share a sense of belonging in order to be a community. As compared to the related construct of "mattering," or feeling that one is valued and appreciated by others (Schlossberg, 1985), it can be said that mattering places emphasis on the relational aspects of belonging and is therefore necessary but not sufficient to experience a sense of belonging. Before one believes they belong, they must first believe that that matter in the context. In other words, one must feel they matter in order to have a sense of belonging and they must have a sense of belonging in order to feel they are part of a community.

**The Importance of Belonging to Mental Health.** A large body of research has demonstrated associations between social support and outcomes such as mental health and somatic symptoms across community samples of varying ages (see, e.g., Cohen & Syme, 1985; Payne & Jones, 1987; Thoits, 1995; Veiel, & Baumann, 1992; Yang, Zhang, Liang, & Hu, 2016). Alternatively, small social networks, few relationships, and low

perceived adequacy of social support have links to symptoms of depression (Kawachi & Berkman, 2001). Without a sense of belonging, one experiences a sense of alienation which has been linked to a number of negative outcomes such as low self-esteem and depression (Hagerty, Williams, & Oe, 2002). The importance of sense of belonging is heightened for marginalized individuals who are more likely to feel isolation and loneliness (Strayhorn, 2012), such as CISs have been shown to experience (Hayes & Lin, 1994; Tsai, Wang, & Wei, 2017). In situations when students feel unsupported or unwelcomed, the need to belong takes on increased import (Anderman & Freeman, 2004).

**Belonging in Educational Settings: School Belonging.** Because the primary social context for CISs studying in the US is the university, it is essential to review the belonging literature pertaining to campus settings. Research at the primary level has provided the foundation for understanding university belonging. The concept of connecting to one's academic institution at the K-12 level has been referred to as *school belonging* (Goodenow, 1993b). In Goodenow's (1993a) discussion of belonging she emphasizes the importance of students being accepted, valued, included, and encouraged by both their teachers and peers in the classroom, while also feeling that they are essential to the "life and activity of the class" (p. 25). While related to the constructs of school affiliation and teacher support, school belonging extends these to also include students' perceptions of fitting in and belonging with others at the institution (Anderman & Freeman, 2004). School belonging goes beyond individual relationships with those in the school to a more global sense of connection to the larger community (Pittman &

Richmond, 2008). It encompasses a sense of commitment to the institution and to work within that setting (Pittman & Richmond, 2008).

Research has found a lack of school belonging to be detrimental. Without feeling a sense of belonging at school, a number of success factors are jeopardized, including a student's motivation, engagement, academic achievement, and attendance (Goodenow, 1993b). Other research suggests that students at the K-12 level who do endorse a strong sense of belonging in their academic settings also experience improved adjustment to academic life, lower attrition rates, fewer symptoms of depression, and enhanced social adjustment when compared to students with weak belonging (Baskin, Quintana, & Slaten, 2014; Haslam, Jetten, Postmes, & Haslam, 2009; Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). As a universal human characteristic and basic need (Maslow, 1962), belonging is considered so essential that other academic tasks such as learning and studying are secondary and cannot adequately be attend to until the primary need to belong has been met (Combs, 1982; Strayhorn, 2012).

**Belonging in Educational Settings: Campus Belonging.** At the university level, school belonging is referred to as *university belonging* or *campus belonging* (Slaten, Yough, Shemwell, Scalise, Elison, & Hughes, 2014). In their work at the university level, Tovar and Simon (2010) discuss sense of university belonging as a college student's sense of identification or positioning in relation to a group or to the college community. University belonging has been referred to as the extent to which students feel that they are members of and possess a sense of belonging to the campus community (Locks, Hurtado, Bowman, & Oseguera, 2008). For the purpose of this study we define sense of

campus belonging as “the social support that students perceive on campus, a feeling of connectedness, that one is important to others, that one matters” (Strayhorn, 2012, p. 16).

Scholars who have undertaken work to examine the relevance of the concept of belonging for university students have identified links between belonging and academic factors (Hausmann et al., 2007; Hoffman et al., 2002; Hurtado & Carter, 1997; Maestas et al., 2007), and belonging and psycho-social factors (Pittman & Richmond, 2008; Slaten et al., 2014). Support networks have been shown to be critical to college students’ adjustment (Lamothe et al., 1995; Mattanah et al., 2010; Solberg & Villareal, 1997). Similarly, sense of university belonging has been linked to better social adjustment for university students in China (Tao et al., 2000), and to lower attrition rates and academic success for first-year African American and White college students (Hausmann et al., 2007). Sense of belonging on campus is significantly related to decreases in mental health outcomes such as depression, anxiety, and stress in general college student samples (Hoyle & Crawford, 1994), as well as first-generation students (Stebbleton et al., 2014), and multi-ethnic freshman (Mounts, 2004). It is linked to students’ positive self-perceptions of social acceptance (Freeman, Anderman, & Jensen, 2007; Hoyle & Crawford, 1994), academic competence (Pittman & Richmond, 2008), perceived professor caring (Freeman, Anderman, & Jensen, 2007), and greater involvement in campus organizations (Hurtado & Carter, 1997) in samples of freshman, Latinos, and general undergraduate students. Additionally, belongingness provides a foundation upon which cross-cultural relationships can be explored in a sample of Chinese/Taiwanese international students (Wang & Mallinckrodt, 2006). Thus, the unfolding literature

suggests that like school belonging, university belonging, too, is an important factor of consideration in predicting student outcomes.

**Sense of Campus Belonging in International Students.** Little research has examined sense of campus belonging for international students, and even less has explored the concept for CISs. What exists has shown campus belongingness to be associated with lower rates of suicidal ideation in international students (Servaty-Seib et al., 2016). Being socially connected has been associated with better adjustment for international students and is predictive of their acculturative stress (Duru & Poyrazli, 2011; Yeh & Inose, 2003). According to Glass and Westmont (2014), belongingness mediated the association of discriminatory experiences with academic success for international students, revealing links between belongingness and students' academic success and persistence that were consistent with prior research with other populations (Hausmann et al., 2007). Despite reporting more discriminatory experiences than the domestic students in the study, for international students, a sense of belonging provided the security for the international students to explore cross-cultural relationships with others (Glass & Westmont, 2014). Interestingly, the results demonstrated that a sense of belonging had a more sizeable effect on international students' academic success than on that of the domestic students in the study underscoring the importance of belonging for this population (Glass & Westmont, 2014).

For Asian international students, Slaten, Elison, Lee, Yough, and Scalise, (2016) undertook a qualitative study to understand what factors contribute to university belonging. Factors that contributed to belonging for the participants (eight from China,

two from Malaysia, and one from Vietnam) included a number of psychosocial contexts such as intrapersonal factors (social self-efficacy, personal growth), interpersonal factors (domestic and international friends, professors), environmental factors (university resources, pride, and facilities), and cultural factors (norms, gender roles, language) (Slaten et al., 2016). These results highlight the significance of relationships, both with domestic students and students of a similar national origin, to the sense of campus belonging of Asian international students, as well as the significance of their sense of social self-efficacy, an interpersonal quality which helped them engage on campus (Slaten et al., 2016). The students in this study also reported personal growth opportunities led to them to feel comfortable and connected on campus (Slaten et al., 2016). Furthermore, Atri, Sharma, and Cottrell (2007) found belonging to be critical for the mental health of Asian Indian international students.

Studies that explore sense of campus belonging for CISs are scarce. In one qualitative dissertation that examined sense of belonging in the residence halls CISs reported that cultural differences and language barriers were salient issues that they felt impacted their sense of belonging (Yao, 2014). The students also reported that they felt their sense of belonging in the residence halls was negatively impacted by incidents of discrimination and feelings of being an outsider (Yao, 2014). The same author reported in a published article that most Chinese international student participants in the study lacked a sense of belonging in the residence hall (Yao, 2016). She attributed the CISs' overall low sense of belonging in the residence halls and the interpersonal challenges these



students had with American roommates to a normative environment based on White culture (Yao, 2016).

Research that has explored concepts closely related to sense of belonging have found social support to be negatively associated with psychological distress for Chinese (Ye, 2006). For example, feeling socially connected to the mainstream society mediated the association between acculturation and well-being and was a predictor of life satisfaction (Du & Wei, 2015; Wang et al., 2015). In another study, connection to the mainstream society buffered the positive relationship that existed between perceived language discrimination and depression for CISs (Wei et al., 2015). In other words, the authors state that those with a stronger sense of mainstream social connection “may have more opportunities to receive support and advocacy from those in the mainstream society, thereby decreasing their vulnerability to depression [and] anxiety” (Wei et al., 2015, p. 220). Bertram et al. (2014) investigated social support and acculturation in a qualitative study that revealed CISs were dissatisfied with their social support while attending American universities. While these students reported expanding their social support networks while studying in the US, these relationships reportedly lacked depth and the CISs continued to rely on family and friends in China and Chinese friends in the US for social support (Bertram et al., 2014).

Other research that merits consideration has occurred abroad. For example, for students from Mainland China who were studying in Hong Kong, local connectedness was associated with increased resilience and decreased depression (Cheung & Yue, 2013), and first semester college students in China who perceived greater teacher support

had decreased levels of negative coping (Tao et al., 2000). One study of high school students in China failed to show school belonging to be significantly associated with academic achievement, challenging Western findings (Liu & Lu, 2011). For this reason, scholars have called for additional research to explore forms of school belonging for samples of Chinese students (Ho, Schweitzer, & Khawaja, 2017).

### **The Need to understand Sense of Belonging for Chinese International**

**Students.** Sense of university belonging is a construct that is gaining interest as a means to more adequately understand college students' adaptation, well-being, and achievement. To date, research has explored sense of campus belonging for a number of populations, but this study is one of the first to explore campus belonging for CISs. Other investigations have shown the importance of other constructs of social support for CISs, but campus belonging is an area that merits more exploration, especially in light of the importance Chinese culture places on the social context. Relational cultural theory, with its emphasis on relational connectedness, provides a rich foundation upon which to explore university belonging for these students. Therefore, exploring sense of campus belonging through the lens of RCT holds the potential to add to a small, but growing body of literature examining social connectedness for CISs (Bertram et al., 2014; Du & Wei, 2015; Wang & Mallinckrodt, 2006; Wang et al., 2015; Wei et al., 2015).

### **Self-Compassion**

Another variable that may serve as a protective factor between acculturative stress and negative mental health and may be associated to post-migration growth for CISs is self-compassion (Ehret, Joormann, & Berking, 2014; Fong & Loi, 2016; Leary, Tate,

Adams, Allen, & Hancock, 2007; Neff, 2008). Self-compassion draws on Buddhist writings (e.g., Salzberg, 1997) and is comprised of the facets of self-kindness, common humanity, and mindfulness (Neff 2003a, 2003b, 2008). Self-kindness is the ability to treat oneself with care and understanding instead of with self-judgment during times of suffering or failure. Common humanity is the ability to recognize one's suffering or failure as part of the shared human condition rather than allowing hardships to result in isolation. Mindfulness is the ability to hold emotional pain in nonjudgmental awareness by observing one's thoughts and feelings with openness and clarity rather than over-identifying or avoiding one's painful state. During distressing times, such as during the acculturation process, self-compassion may serve as a type of adaptive emotion-regulation strategy that promotes positive psychological health (Fong & Loi, 2016). It may do so by reducing one's self-judgment and self-criticism, decreasing feelings of isolation, lessening rumination, and limiting avoidance of pain (Neff, 2003a). Not only is self-compassion theorized to reduce these undesirable factors, it has been associated with other desirable factors such as kindness and positive emotion (Trompetter, de Kleine, & Bohlmeijer, 2017). In this way, self-compassion functions to reduce psychopathology and promote positive adaptation and optimal well-being (Trompetter et al., 2017). Self-compassion can therefore be thought of as a positive coping strategy.

Interestingly, research has identified maladaptive coping in Asian international students (Cheng, Leong, & Geist, 1993; Smith & Khawaja, 2011). Specifically, Khawaja and Dempsey (2007) found higher levels of maladaptive coping in a sample of international students who were primarily from Asian countries compared to a sample of

domestic students from Australia. The dysfunctional coping, which included characteristics such as self-blame, was the only significant predictor of psychological distress in the study (Khawaja & Dempsey, 2007). Additionally, an avoidant coping style was associated with psychological distress in Singaporean international students (Kennedy, 1999) and maladaptive perfectionism significantly predicted depression for CISs (Wei et al., 2007). Perfectionism has been identified as having a significant relationship with depression and anxiety in numerous studies (e.g., Flett, Endler, Tassone, & Hewitt, 1994; Hewitt & Flett, 1991; Kawamura, Hunt, Frost, & DiBartolo, 2001), with Chinese and Asian American student populations demonstrating comparatively higher levels of maladaptive perfectionism than other ethnic groups (e.g., Castro & Rice, 2003; Chang, 1998; K. T. Wang, 2010). The self-kindness aspect of self-compassion might be one way to counter the self-blame and perfectionism found in Asian international students in these studies, and the mindfulness aspect could prevent the avoidance they demonstrated. Similarly, Yang and Clum (1994) found that loneliness was correlated with depression, hopelessness, and suicide ideation in a group of Asian international students. The common humanity aspect of self-compassion could encourage a view among these students of suffering as part of the human condition. Through self-compassion, those who are navigating new cultural environs and who are lacking supportive social connections might find ways to self-soothe and show themselves kindness and support, which will improve their coping.

Furthermore, self-esteem, which has been shown to be positively correlated with self-compassion ( $r = .59$ , Neff, 2003b), has been demonstrated to be negatively correlated

with anxiety and depression. For example, in a meta-analysis of 95 studies (77 on depression, 18 on anxiety), low self-esteem was shown to be predictive of both symptoms of depression and anxiety (Sowislo & Orh, 2013). This is concerning given that, according to Swagler & Ellis (2003), Asian international students often experience decreases in self-esteem as they adjust to life in the US (as quoted in Wei et al., 2008). In a sample of Asian international students, 45% of which were Chinese, a negative association ( $r = -.48$ ) was present between self-esteem and depression (Wei et al., 2008). Although self-compassion and self-esteem are correlated, self-compassion has been proposed as an alternative to self-esteem (Neff, 2003b). This is because a high level of self-esteem has negative corollaries such as narcissism, self-absorption, self-centeredness, and a lack of concern for others (Damon, 1995; Seligman, 1995), whereas self-compassion does not (Neff, 2003b).

Smith and Khawaja (2011) indicate that the majority of research has focused on maladaptive coping in international students. Because the international student literature is limited in its review of positive coping strategies, the present study contributes to this neglected line of inquiry by exploring how strongly self-compassion relates to positive as well as negative adjustment for CISs.

### **RCT and Self-Compassion**

RCT supposes that relationships with others are the locus of positive psychological functioning (Miller & Stiver, 1997). Because self-compassion is commonly conceptualized as one's relationship with oneself (Neff, 2003b), the concept is compatible with this RCT assertion. As the "self-directed equivalent to other-oriented

compassion,” (Trompetter et al., 2017, p. 460), self-compassion beholds a caring, empathic, and nonjudgmental orientation towards the self during times of hardship in the same way a growth-fostering relationship would extend such things to others (Jordan, 2008; Neff 2003a). Both RCT and self-compassion are concerned with authentic and compassionate relational transactions that lead to connectedness and growth. For example, self-compassion, with common humanity as a foundational precept, has been shown to invoke supportive feelings of inter-connectedness that contribute to the development of positive social relationships with others (Keyes, 2005; Neff et al. 2007).

### **Self-Compassion and Mental Health**

A substantial research base provides evidence that self-compassion relates negatively to negative affect, depression, anxiety, and stress (Barnard & Curry, 2011; Ehret, Joormann & Berking, 2014; MacBeth & Gumley, 2012; Muris, Meesters, Pierik, & de Kock, 2016), while being positively associated with life satisfaction, connectedness, and personal growth (Neff, 2009, 2003a; Neff, Hsieh, & Dejittthirat, 2005; Neff, Kirkpatrick, & Rude, 2007). Self-compassion accounted for 54% of the variance in an aggregated measure of well-being when added to a regression model, compared to the 16% accounted for by social support, suggesting self-compassion is another important variable to account for in addition to social support (Neely et al., 2009).

Although no studies were identified that explored how self-compassion relates to acculturative stress outcomes, Terry, Leary and Mehta (2013) investigated the role of self-compassion in transitioning to university life and found that students with higher self-compassion were less homesick ( $r = .36$ ) and depressed ( $r = .49$ ). These findings are

in alignment with earlier research showing that those high in self-compassion are more effective at handling stressful situations than those who are low in self-compassion (Terry et al., 2013). This finding is relevant to the current study because of international students' vulnerability to homesickness, and its association with acculturation. Terry and colleagues (2013) also found that self-compassion may improve adjustment in students adjusting to university life. Their findings indicated that highly-compassionate students reported being less affected by social difficulties than those students with low self-compassion (Terry et al., 2013).

There are only a handful of studies that have explored the concept of self-compassion in Asian populations. Lin and Betz (2009) determined that self-compassion, conceptualized as unconditional positive regard, in CISs was negatively associated with acculturative stress. Other research has demonstrated the existence of an association between self-compassion and well-being for students in China, Taiwan, and Hong Kong. Despite the assumptions that the practice of self-compassion would be more common in Asian cultures than Western cultures because the construct stems from Buddhist psychology, which is an Asian tradition, these studies found comparable levels of self-compassion in Chinese and American students (Birkett, 2014;), slightly lower levels in Hong Kong Chinese students (Yang, 2016) and even lower levels in the Taiwanese students (Neff et al., 2008). These findings suggest that self-compassion is widely relevant for student populations, including those at different levels of acculturation.

Given that to date much of the inquiry into understanding the relationship between acculturative stress and negative outcomes for international students has

examined the effects of types of social support, the Neely et al. (2009) finding that self-compassion accounted for more variation in well-being than social support shows that self-compassion is a promising factor of study that merits exploration as we attempt to better understand factors that protect against the harmful effects of acculturative stress. Furthermore, because personal growth has been identified as a correlate of self-compassion (Neff et al., 2005) and because RCT posits that mutuality in relationships results in optimal growth (Jordan, 2000), it is interesting to explore the post-migration growth of CISs who have experienced acculturative stress.

In summary, the Relational-Cultural framework offers a culturally-relevant approach to explore concepts of social support for CISs. Relational health and sense of campus belonging have not yet been adequately explored with populations of CISs despite the potential they offer as alternative constructs of social support that can aid in our understanding of acculturation outcomes. Furthermore, as a complementary line of inquiry, self-compassion provides a promising lens through which to understand how one's relationship with him- or herself might also impact their experience of acculturation. Because scholars of acculturation have encouraged strengths-based approaches to research given international students' ability to thrive despite hardships, it is important to investigate the post-migration growth of CISs in addition to exploring the psychological distress they might experience as a result of acculturation.

The present study explores whether relational health, sense of campus belonging, and self-compassion are predictive of psychological distress or post-migration growth in CISs experiencing acculturative stress. This study explores the interaction among these



variables. The results of this investigation may contribute to our understanding of what factors may protect against negative psychological outcomes and promote growth outcomes for CISs in the face of acculturative stress. Hypotheses and research questions for this study are detailed below.

## **Research Questions and Hypotheses**

### **Prediction of Post-Migration Growth**

Research question 1: Will acculturative stress, relational health, sense of campus belonging, and self-compassion predict the post-migration growth of CISs?

*H1a: Acculturative stress will negatively predict post-migration growth for CISs.*

This hypothesis stems from research demonstrating that acculturative hassles, which is a construct closely related to acculturative stress, were a significant negative predictor of post-migration growth for CIS (Pan, 2015).

*H1b: Relational health, sense of campus belonging, and self-compassion will positively predict post-migration growth for CISs.*

This hypothesis stems from research findings that social support satisfaction and acceptance coping (conceptually related to social support and self-compassion respectively) were among the significant predictors of stress-related growth (Park, Cohen, & Murch, 1996). Further contributing to this hypothesis, relational cultural theory assumes growth-fostering relationships (measured by relational health) are the major contributor to individuals' ability to be resilient in the face of hardships (Hartling, 2008), making relational health a likely predictor of post-migration growth. Moreover, sense of campus belonging and self-compassion have both been shown to be associated with

growth-related outcomes in ethnically diverse college student populations (sense of campus belonging: Pittman & Richmond, 2008; Slaten et al., 2014; Tao, 2000) (self-compassion: Neff, 2009, 2003a; Neff et al., 2005; Neff et al., 2007). This study is the first to examine this combination of variables with CISs specifically.

### **Prediction of Psychological Distress**

Research question 2: Will acculturative stress, relational health, sense of campus belonging, and self-compassion predict the psychological distress of CISs?

*H2a: Acculturative stress will positively predict psychological distress for CISs.*

A strong association has been demonstrated between acculturative stress and negative mental health outcomes in CIS samples (Wei et al., 2007), providing support that acculturation will have an important role in the prediction of their psychological distress.

*H2b: Relational health, sense of campus belonging, and self-compassion will negatively predict psychological distress for CISs.*

Based on prior research suggesting that social support is a key factor in international student mental health, I hypothesize that relational health and sense of campus belonging, constructs of social support within the relational-cultural framework, will negatively predict psychological distress for CISs. As a general concept, social support has been demonstrated to have buffering effects on depression for international students (Crockett et al., 2007) and other student populations (Smith & Khawaja, 2011). Relational health has been negatively associated with psychological distress, depression, stress, and loneliness in studies with college students (Frey et al., 2006; Frey et al., 2004; Liang et al., 2002a; Liang & West, 2011), and sense of belonging on campus has been related to

decreases in mental health outcomes such as depression, anxiety and stress in college student samples (Hoyle & Crawford, 1994). In students transitioning to university life, high levels of self-compassion were linked to less homesickness and less depression (Terry et al., 2013). Neither relational health, sense of campus belonging, nor self-compassion have been explored with CISs, making this study the first to measure the predictive relationship between these variables and mental health outcomes for this population.

### **Self-compassion as a Moderator**

Research question 3a: Will self-compassion moderate the relationship between acculturative stress and post-migration growth for CISs?

*H3a: Self-compassion will moderate the relationship between acculturative stress and post-migration growth for CISs. More specifically, high levels of self-compassion will moderate the relationship between post-migration growth and acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report higher levels of post-migration growth than those with low levels of self-compassion and high levels of acculturative stress.*

Coping behavior is believed to be a determinant of post-traumatic growth (Joseph, Murphy, & Regel, 2012) and stress-related growth (Schaefer & Moos, 1992), both of which are constructs similar to post-migration growth. This hypothesis is based on these conceptual examples of coping as a determinant of growth as well as empirical evidence that self-compassion predicted well-being in a sample of adolescents (Bluth et al., 2016).

This hypothesis will address calls for acculturation research to identify protective factors that promote positive adaptation outcomes for international students (Pan, 2015).

Research question 3b: Will self-compassion moderate the relationship between acculturative stress and psychological distress for CISs?

*H3b: Self-compassion will moderate the relationship between acculturative stress and psychological distress for CISs. More specifically, high levels of self-compassion will buffer the relationship between psychological distress and acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report lower levels of psychological distress than those with low levels of self-compassion and high levels of acculturative stress.*

This hypothesis is suggested by research that highlights the role of coping in the acculturation of CISs (Du & Wei, 2015). Self-compassion is a type of coping strategy that has been shown to promote positive psychological health during distressing times (Fong & Loi, 2016). Wei et al. (2007) have emphasized the importance of identifying factors that moderate the association between acculturative stress and psychological distress for CISs. This study will explore whether self-compassion might play a role as a moderating coping strategy for CISs experiencing acculturative stress.

### **Exploratory Research Questions: Associations with Relational Health**

Research question 4: Is there an association between peer, mentor, and community relational health and post-migration growth for CISs?

Research question 5: Is there an association between peer, mentor, and community relational health and psychological distress for CISs?

Because relational health has not been studied in this population before, this study examined for the first time the strength of the associations between peer, mentor, and community aspects of relational health and well-being outcomes. Although growth-fostering relationships have not been examined with CISs, the literature indicates that social support negatively correlates with acculturative stress and has a buffering effect on acculturative stress and depression in international students (Poyrazli et al., 2011). Therefore, it is plausible to expect there to be a negative relationship between peer, mentor, and community growth-fostering relationships and psychological distress, and a positive relationship between these growth-fostering relationships and post-migration growth.

## **Chapter II: Methods**

### **Participants**

A power analysis was completed using G\*Power software (Faul, Erdfelder, Lang, & Buchner, 2007). Methodological standards demonstrated in prior psychological well-being research with Asian international students suggests small and medium effects sizes are common in this research area (e.g. Han, Pistole, and Caldwell, 2017; Kline and Liu, 2005; Wang and Mallinckrodt, 2006; Wei et al., 2007; Wei et al., 2008; Yeh and Inose, 2003; Ying and Han, 2006). A power analysis using a medium effect size (.15), an alpha level of .05, power of 0.95, and four predictor variables, indicated a sample size of 85 participants was necessary. Research exploring participant drop-out rates for internet mediated studies (which this study is) found that approximately 12% of participants do not complete a survey they begin (Hoerger, 2010). Therefore, this study sought the involvement of approximately 100 participants to account for anticipated drop-out.

Undergraduate international students age 18 or older from China, Hong Kong, or Taiwan were invited to participate in the study. Undergraduate students were the focus of this study because there are more undergraduate CISs studying in the US than there are CIS graduates. Additionally, undergraduate students are more financially dependent on family sources of finance than graduate CISs, and thus separating these two populations of CISs is important when considering the potential generalizability of the study's

findings on relational variables (IIE, 2017). Additionally, differences exist between undergraduate and graduate populations in terms of their developmental phase (Erikson, 1997). For example, undergraduate college students face the sequential tasks of divesting in childhood ties, investing in college life, developing their interests and goals, mastering study skills and commitment to their work and finally anticipating their future careers (Medalie, 1981). These are social, emotional, and occupational tasks that are presumably already completed by those at the graduate level (Medalie, 1981). For these reasons, researchers decided that focusing on a sample of undergraduates only would strengthen the potential generalizability and implications of the current study.

Data was collected over the span of thirteen months beginning in the fall of 2018. It is important to note that data collection was completed several months before the COVID-19 pandemic. The coronavirus outbreak was a time of increased racism toward individuals of Asian descent and it is likely that the results of the following measures would be different following this period (Ruiz, Horowitz, & Tamir, 2020). Two hundred thirteen participants began the survey. One participant declined to agree to participate in the study, and seven more responded that they were not an international student from a Chinese speaking country and were therefore taken to a page that indicated the end of the survey. To assess participant attrition in the remaining 205 cases, a cutoff of 15% missing data was used. This threshold was determined based upon cutoff recommendations in counseling psychology research (Schlomer, Bauman, & Card, 2010). Missing data analysis revealed that 60 of the cases were less than 85% complete. These cases were

eliminated, resulting in a final sample of 145 usable cases (70.7% of the total who accepted consent and met inclusion criteria).

Participants were recruited from the University of Denver (48) participants, New York University (90 participants), and other academic institutions (4 participants) (3 participants did not endorse an academic institution). The average age of participants was 22.11 years, with a range of ages between 19 and 32 and a standard deviation 2.6 years. Participants reported their country of origin as China (128 participants), Hong Kong (7 participants), and Taiwan (8 participants) (2 participants did not endorse a country of origin). The demographic characteristics of the participants are detailed in *Table 1* below.

### **Procedures**

An email invitation to participate in the study was disseminated to international student email lists via International Student and Scholar Services offices, through academic programs, or through other student services-related arms of these institutions. Initially, distribution efforts were focused on universities in the researcher's home state. When the offices and program were unwilling to share the invitation with their students, the researcher then cast a wider net and reached out to the universities in the US that have the largest international student populations. Ultimately, the two universities that yielded the most participants were the institutions where the researcher had the strongest personal connections, the University of Denver and New York University. For example, CISs taking undergraduate classes taught at the University of Denver were invited to participate through an email invitation distributed to the class by their professors or by their academic program. Other recruitment techniques included reaching out to Chinese



student organizations that had a contact email address posted on their institution's website or on Facebook. Additionally, word of mouth efforts were also promoted to share the study announcement. The email invitation included a secure link for students interested in participating.

Participants were directed to an informed consent available online via Qualtrics data collection software. The consent form described the eligibility requirements: the student must be at least 18 years old and an undergraduate international student from China, Hong Kong, or Taiwan. The informed consent also clarified that participation in the study is voluntary. The recruitment email and informed consent explained that participants who complete the study had the opportunity to be entered into a raffle for one of eight \$25 gift certificates. Once they provided consent, participants were able to proceed with the Qualtrics survey. The email invitation, consent form and survey were all in English. Researchers were advised to conduct the research in English in order to maintain the validity of the measures used. Additionally, given the expectation that scales are written at an eighth grade reading level and the international students studying in the US would be assessed for English competency prior to their admittance to an American university, their English reading proficiency should be adequate (R.C.-L. Chao, personal communication, April 18, 2018). English proficiency was assessed and is reported in Table 2 below. The participants of this study rated their English reading ability an average of 3.00, 0.78 SD, on a scale of 1 = poor to 4 = excellent. Prior research with CISs that has provided participants the option of completing the survey in English, Traditional Mandarin Chinese, or Simplified Mandarin Chinese has demonstrated comparable

coefficient alpha scores between the English and Chinese scales used (Wei et al., 2007; Wei et al., 2012).

No identifying information was collected apart from the participants' IP address, which is automatically registered by the Qualtrics software but was deleted when participant data was downloaded. At the end of the survey, participants were presented with a list of resources providing mental health support and services for international students, such as the University of Denver Health and Counseling Center. Researchers conducted a pilot study with five international students prior to the launch of the final survey in order to gather information about the survey experience, the cultural appropriateness of the survey items, and the amount of time to complete the survey. Feedback from the pilot study was incorporated into the design of the final study. For example, pilot participants identified language used in the survey that CISs might not be familiar with, such as the words "sojourn" and "co-national." Demographic questions were altered to omit these terms and replace them with more common words. Rather than asking about how much time the student spent on this "sojourn" the survey question became, "How long have you been in the US for this study experience?" Additionally, rather than using the term "co-national," participants were instead asked about "someone from your home country." Another concern pilot participants raised was related to addressing international students "from China, Hong Kong, or Taiwan." One student suggested using Chinese Taipei to avoid irritating Chinese participants, and another feared doing so might be offensive to Taiwanese people. In an effort to resolve this issue, in consultation with faculty researchers, it was determined that the survey should address

“International College Students who speak Chinese languages.” Though imperfect, it was agreed that this language was least likely to be off-putting to any participant for political reasons. Pilot participants were also able to notice technical and typographic errors that were corrected prior to the survey going live.

## **Measures**

### **Demographic information**

A demographics survey was developed for this study that solicited information about the participants’ gender, age, relationship status, year in college, academic major, academic institution, housing, and country of origin. In addition to these questions, participants were asked if they are seeking a degree from their American institution, or if not, are they: studying the English-language, an exchange student (someone who is here for a portion of their studies but will matriculate at a home institution), or “other.” They were asked about the degree of family support of their major of study by answering the following question: “How supportive is your family of you studying this major?” Item responses were on a 5-point scale with items ranging from: 1 – not supportive, to 3 – somewhat supportive, to 5 – very supportive.

Participants were asked to indicate the length of time they have been in the US on this sojourn. Following the example of Wang and Mallinckrodt (2006), the length of time in the US was assessed using the following ordinal item offering six choices: less than 6 months, 6 months to 1 year, 1–2 years, 2–3 years, 3–4 years, longer than 4 years. A note clarified, “Please indicate the time you have been in the US beginning with your arrival for your studies and excluding any brief trips (less than 2 months) home.” An additional

question asked, prior to your arrival, had you spent any time in the US before? If the student endorsed “yes” to this question they were taken to another question that asked how much time the student spent on that prior trip using the same choices as the question above. Together, these two questions captured consecutive and cumulative time spent in the US.

To capture English language proficiency, students’ self-reported English proficiency was assessed. The self-report is preferable over their scores on the Test of English as a Foreign Language (TOEFL) because the TOEFL only assesses students’ written English ability. Because spoken English proficiency plays an important role in acculturation and adjustment, this study relied on a self-report using the following three questions: “How would you rate your English language ability in reading?” “How would you rate your English language ability in writing?” “How would you rate your English language ability in speaking?” These questions were followed by four ordinal choices: poor, fair, good, and excellent.

Following the example of Lerner et al. (2005) in their work on youth development with Chinese adolescents, to understand the nature of the relationship participants have with their parents, they were asked to rate the degree of family support the experience by responding the following four items on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree): “I get along with my parents,” “My parents give me help and support when I need it,” “I have lots of good conversations with my parents,” and “In my family, I feel useful and important.” Additionally, participants were asked how many hours per week they communicate with family and friends back home. They were asked via what

communication method they communicate (e.g., telephone, text, skype, or social media sites).

Key demographic information is reported above. The additional demographic information that was collected about the participants of the study is as follows. All but two participants (98.6%) reported that they are a degree-seeking student. Of the two participants who indicated they are not a degree-seeking student, both reported their status as “other” rather than selecting “exchange student” or “English-language student.” More than half of participants (60%) endorsed majoring in a business-related field ( $n = 51$ ), or in a field related to natural science, mathematics, or engineering ( $n = 36$ ). In terms of reported family support of their major, the average support endorsed was 4.21 (1 = not supportive, 5 = very supportive), with a range between 1 and 5 and a standard deviation of 0.98. In terms of those who live on campus, 41.4% reported that they live in campus housing and 58.6% reported that they do not. When asked the duration of their current stay in the US, 44.8% of participants reported that they had been in the US for two years or less, and 55.2% of participants reported being in the US for two or more years. Ninety-four participants indicated that they had been in the US for a trip prior to the current stay and 80.9% of these individuals reported a prior stay of less than one year.

Participants were asked about their language ability in English and responded as follows, all with a range between 1 and 4 (1 = poor, 4 = excellent): the average reading ability was 3.00, with a standard deviation of 0.78; the average writing ability was 2.78, with a standard deviation of 0.82; and the average speaking ability was 2.82, with a standard deviation of 0.90. An overall English language ability was created from the sum

of the reading, writing, and speaking ability results. The average overall ability was 8.6, with a range between 4 and 12 and a standard deviation of 2.19.

Participants were asked to rate four items related to parental support on a scale of 1 to 4, with 1 indicating “strongly disagree” and 4 indicating “strongly agree.” The overall mean of the sum of these items was 3.32, with a standard deviation of 0.67 and a range between 1 and 4. Participants were also asked how many hours per week they spend communicating with family and friends back home. The average time spent was 5.72 hours, with a standard deviation of 7.04 hours and a range between 0 and 50 hours. Participants were asked what modes of communication they were able to use to keep in contact with friends and family back home. They were able to endorse multiple modes and the results are as follows: 97 participants endorsed using WeChat, a Chinese multi-purpose messaging and social media app that allows users to send text and voice messages, make voice calls, and video calls, in addition to sharing updates and photos; 28 participants endorsed using phone calls; 27 participants endorsed using text messages; 31 participants endorsed using video calls; and 16 participants endorsed using other platforms of communication. This demographic information is detailed in *Tables 1-2* below.

### **Acculturative Stress**

The Acculturative Stress Scale for Chinese College Students in the United States (ASSCS; Bai, 2016) was used to assess CISs’ acculturative stress. The ASSCS is a relatively new measure that was developed specifically for use with CISs in the US. Development of the scale included review of three well-validated acculturative stress

scales: Sandhu and Asrabadi's Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1998); Yang and Clum's Index of Life Stress for Asian Students (ILS, Yang & Clum, 1995), and Pan et al.'s Acculturative Hassles Scale for Chinese Students (AHSCS, Pan, Yue & Chan, 2010). Bai generated initial items based upon these scales and gaps identified during in-depth qualitative interviews with Chinese undergraduate students (2016). Following factor analysis, a five-factor scale with 32-items was generated. The resultant culturally relevant scale is available in English and Chinese with factors including: Language Insufficiency, Social Isolation, Perceived Discrimination, Academic Pressure, and Guilt Toward Family. The first factor, Language Insufficiency is reflected in items such as, "I shy away from social situations due to my limited English." The second factor, Social Isolation is reflected in items such as, "My social circles shrank after I came to the US." The third factor, Perceived Discrimination, is reflected in items such as, "I feel that I receive unequal treatment." The fourth factor, Academic Pressure, is reflected in items such as, "I often have to work overtime in order to catch up." The final factor, Guilt Toward Family, is reflected in items such as, "I feel guilty to leave my family and friends behind." Item response options are on a 7-point scale ranging from 1 (never occurred), to 7 (occurred all the time). The ASSCS was developed and validated with a sample of CISs and demonstrated high internal consistency with an overall Cronbach's alpha of 0.94 (Bai, 2016). To examine criterion validity the sum score was used to predict CISs' depression (measured by Zung's Self-Rating Depression Scale; Zung, 1965) and life satisfaction (measured by one question: "Overall, what is your satisfaction degree with your life in the US as an international

student?"). After controlling for demographic variables, acculturative stress was a significant predictor of depression ( $\beta = 0.49$ ) and of life satisfaction ( $\beta = 0.51$ ) (Bai, 2016). The ASSCS was developed to address weaknesses in existing scales measuring acculturative stress in CISs studying in the United States (Bai, 2016). No studies could be located that examined the discriminant validity, test-retest reliability, or predictive validity of the ASSCS. Additional studies will be necessary to evaluate and improve the psychometric properties of this new measure. For this investigation, the Cronbach alpha reliability was 0.94 for the total scale.

### **Relational Health**

In this study, relational health was operationalized using The Relational Health Indices (RHI; Liang et al., 2002b; Liang et al., 2007). The RHI has 3 indices to assess growth-fostering relationships with a close peer (RHI-Peer; 8 items), a mentor (RHI-Mentor; 9 items), and the community (RHI-Community; 10 items) using the three dimensions of engagement, authenticity, and empowerment/zest. Sample items for the scales respectively include, "My friendship causes me to grow in important ways," "My mentor gives me emotional support and encouragement," and "I feel understood by members of this community."

The RHI subscales were first validated with an ethnically diverse sample of college-aged women (Liang et al., 2002b). The Cronbach's alpha coefficients for scores on the indices were shown to be: RHI-P ( $\alpha = .85$ ), RHI-M ( $\alpha = .86$ ), and RHI-C ( $\alpha = .90$ ), indicating internal consistency (Liang et al., 2002b). Later studies demonstrated reliability and validity for use with men (Liang et al., 2007) and with school-aged youth



(Grades 6 and 9) as well as college students and adults (Liang et al., 2010). Although none of the RHI scales have been used with Chinese international student samples, the peer and community subscales have demonstrated high levels of internal consistency for Asian American women ( $\alpha = .80, .85, \text{ and } .88$  for peer, mentor and community subscales, respectively; Lund et al., 2014).

Convergent validity in the RHI-P was evidenced by correlations with The Mutual Psychological Development Questionnaire (MPDQ; Genero, Miller, Surrey, & Baldwin, 1992) as well as with the Quality of Relationships Questionnaire (QRI; Pierce, Sarason, Sarason, Solky-Butzel, & Nagle, 1997). Convergent validity ( $r = .68$ ) was found between the MPDQ, a 22-item Relational Model measure that reflects concepts such as perceived mutuality in close relationships and the RHI-P scale (Liang et al., 2002b). The QRI assesses support, depth, and conflict in dyadic relationships (Pierce et al., 1997). When comparing the RHI-P with the Support scale and the Depth of Relationship scale of the QRI convergent validity of  $r = .61$  and  $r = .64$  was found, respectively (Liang et al., 2002b). When examining the convergent validity of the RHI-M, it was compared to the MPDQ and  $r = .68$  was found when comparing the two (Liang et al., 2002b). When comparing the RHI-M to the Support scale and the Depth of Relationship scale of the QRI, convergent validity of  $r = .58$  and  $r = .51$  were found, respectively (Liang et al., 2002b). No equivalent measure exists to assess the quality of community relationships, so convergent validity in the RHI-C has not been assessed.

A number of scales were used to examine the concurrent validity of the RHI (Liang et al., 2002b). Individuals' self-perception was assessed with Rosenberg's Self-

Esteem Scale (Rosenberg, 1989). Loneliness was assessed with the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). Depression was assessed with the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Level of stress was assessed using the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). Results indicated a negative relationship between the three scales and loneliness (RHI-P,  $r = -.35$ ; RHI-M,  $r = -.14$ , & RHI-C,  $r = -.47$ ), as measured by the UCLA Loneliness Scale. Negative correlations were also found between the RHI-C and the CES-D ( $r = -.39$ ) and the PSS ( $r = -.32$ ), providing evidence of concurrent validity with college women (Liang et al., 2002b). Subsequent efforts have revealed negative associations between the three indices and psychological distress in samples that include college men and women (Frey et al., 2004; Frey et al., 2006). For the current study, the Cronbach's alpha coefficients for scores on the indices were shown to be: RHI-P ( $\alpha = .90$ ), RHI-M ( $\alpha = .93$ ), and RHI-C ( $\alpha = .80$ ). Overall, the Cronbach's alpha coefficient for the total scale was ( $\alpha = .92$ ).

Item responses were on the following: 5-point Likert scale: 1 – never, 2 – seldom, 3 – sometimes, 4 – often, 5 – always. Respondents were provided with the following definition in a prompt prior to responding to RHI-Peer items:

“The following questions pertain to your friendships with peers (excluding family members or a romantic partner) over the past year. A close friend is someone whom you feel attached to through respect, affection and/or common interests, someone you can depend on for support and who depends on you. Please answer

the next questions regarding just ONE of your closest friends. (Please do not select a family member or romantic partner).”

Participants were then asked to rate a close friendship based on items such as the one indicated above and to identify whether this peer is a co-national met at home, a co-national met at the university, an international student from another country met at the university, or a domestic student met at the university, or “other.” Results are detailed in *Table 4* below.

Respondents were provided with the following prompt prior to responding to RHI-Mentor items:

“The following questions pertain to your relationships with "mentors" (other than your parents or a person who raised you) who you have gone to for support and guidance over the past year. A mentor is not a peer or romantic partner. Even if you do not refer to the person you chose as a mentor, by mentor, we mean someone who sometimes is older than you, has more experience than you, and /or is willing to listen, share her or his own experiences, and guide you through some area of your life (e.g., academic, work/career, social, athletic, religious, or personal).”

Participants were then asked to rate their mentor based on items such as the example indicated above. Participants were then asked to rate their mentor based on items such as the example indicated above and to identify whether this mentor is someone from home, someone from the university, or “other.”

Respondents were provided with the following prompt prior to responding to RHI-Community items:

“The following questions pertain to your university community. Next to each statement below, please indicate the number that best applies to your relationship with or involvement in this community over the past year.”

Participants were then asked to rate the university community based on items such as the one indicated above.

### **Sense of Belonging to Campus**

The measure of sense of belonging that was used in this study is based upon Hurtado and Carter’s (1997) concept of belonging and modeled after prior research on sense of belonging on campus (Locks et al., 2008). Items consisted of CISs’ level of agreement with the following items: (a) “I see myself as a part of the university community,” (b) “I feel a sense of belonging to this university,” and (c) “I feel that I am a member of the University community.” Item response options were on a 4-point scale ranging from 1 (strongly disagree), to 4 (strongly agree). Past studies investigating sense of belonging on campus (e.g. Hurtado & Carter, 1997; Hurtado & Ponjuan, 2005; Johnson et al., 2007; Locks et al., 2008) have measured the construct with items such as these, however psychometric data has not been reported to assist in the evaluation of the reliability and validity of these items. For the current study, the Cronbach alpha reliability was 0.89 for the three-item scale. It was anticipated that scores on these items would be highly correlated with those of the RHI-Community scale, given that the constructs of community and belonging overlap. Theoretically, belonging is thought to be a precursor

to community (Strayhorn, 2012). While this is the first study to explore sense of campus belonging along with community relational health, prior research has explored the similar concepts of school belonging and perceived social support, finding the two to be strongly positively correlated ( $r = .69, p < .01$ ; Ho et al., 2017). Similar results were found between scores on the sense of belonging to campus items and the RHI-C for this study. The two were found to be strongly positively correlated ( $r = .63, p < .01$ ). Apart from the intersection of this item, the items exploring sense of university belonging focused on the degree one feels they belong, whereas the other items of the RHI-C focused on relational aspects of belonging. Studying both concepts concurrently provided opportunities to understand potential nuances in CISSs' relationships with the university community compared to their sense of campus belonging in ways that have yet to be explored.

### **Self-Compassion**

Self-compassion was assessed using the Self-Compassion Scale (SCS; Neff, 2003a). This scale consists of 26-items divided among six subscales: Self-kindness (5 items, e.g., "I try to be loving towards myself when I'm feeling emotional pain";  $\alpha = .78$ ); self-judgment (5 items, e.g., "I'm disapproving and judgmental about my own flaws and inadequacies";  $\alpha = .77$ ); common humanity (4 items, e.g., "When things are going badly for me, I see the difficulties as part of life that everyone goes through";  $\alpha = .80$ ); isolation (4 items, e.g., "When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world";  $\alpha = .79$ ); mindfulness (4 items, e.g., "When something upsets me I try to keep my emotions in balance";  $\alpha = .75$ ); and over-identification (4 items, e.g., "When I'm feeling down I tend to obsess and fixate on

everything that's wrong";  $\alpha = .81$ ) (Neff, 2003a). Respondents rated each question on a 5-point scale from 1 – Almost Never, to 5 – Almost Always. Items from the self-judgment, isolation, and over-identification subscales were reverse-scored prior to calculating the total mean score.

The validation of the original SCS instrument occurred with an undergraduate sample of which 21% identified as “Asian” (Neff, 2003a). It is unknown if any of these students were CISs. Confirmatory factor analysis found that the six factors fit the data adequately well (NNFI = .90; CFI = .91,  $p < .001$ ). Results indicated good test-retest reliability over a three-week interval (Neff, 2003a). Adequate internal consistency on scores for the total scale ( $\alpha = .93$ ) was found as was construct validity. Evidence of construct validity included a significant negative correlation with the Self-Criticism subscale of Blatt, D’Afflitti, and Quinlan’s (1976) Depressive Experiences Questionnaire (DEQ),  $r = -.65, p < .01$ ; a significant positive correlation with the Social Connectedness Scale (Lee & Robbins, 1995)  $r = -.41, p < .01$ ; and significant positive correlations with all three subscales of the Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995): Attention,  $r = -.11, p < .05$ , Clarity,  $r = -.43, p < .01$ , and Repair,  $r = -.55, p < .01$ . Evidence of discriminant validity included significant negative correlations with three measures: The Beck Depression Inventory (BDI;  $r = -.51$ ; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), the Self-Criticism subscale of the Depressive Experiences Questionnaire (DEQ;  $r = -.65$ ; Blatt et al., 1976), and the Spielberger Trait Anxiety Inventory ( $r = -.65$ ; Spielberger, Gorsuch, & Lushene, 1970). Convergent validity was demonstrated with significant positive correlations with a sense of social connectedness

( $r = .41$ ; Lee & Robbins, 1995) and with aspects of emotional intelligence as measured by subscales of the Trait Meta-Mood Scale (Attention,  $r = .11$ , Clarity,  $r = .43$ , and Repair,  $r = .55$ ; Salovey et al., 1995), as well as with a significant negative correlation with self-criticism ( $r = -.65$ ; Blatt et al., 1976). The psychometric properties of a Chinese version of the SCS were assessed in a sample of Chinese undergraduates and results indicated Cronbach's  $\alpha$  coefficients of  $\alpha = .84$  and test-retest reliability of  $r = .89$  (Chen, Yan, & Zhou, 2011). The current research yielded a Cronbach's  $\alpha$  coefficient of  $\alpha = .86$ .

### **Post-Migration Growth**

The Post-migration Growth Scale (PMGS; Pan et al., 2013) was used to measure CISs' growth through international study. The PMGS contains 14 items with two factors. It was initially validated in a sample of 400 mainland Chinese students studying in Hong Kong. Exploratory factor analysis confirmed the two factors: intrapersonal growth and interpersonal growth (Pan et al., 2013). Confirmatory factor analysis with a sample of 154 Chinese international students in Australia cross-validated the two factors. Highly satisfactory internal consistency was found ( $\alpha = .93$  for the total score, and  $\alpha = .90$  &  $\alpha = .89$  for Factor 1 and 2 respectively; Pan et al., 2013). The PGMS had significant positive correlations with positive affect ( $r = .31$ ) and life satisfaction ( $r = .36$ ) and significant negative correlations with negative affect ( $r = -.19$ ) indicating some evidence for good concurrent validity.

Participants were asked to rate items on a 6-point Likert scale ranging from 1 – not at all to 6 – quite a bit, based on the degree to which they experienced each item upon arriving in the host country. Items were averaged into a total score, with higher scores

indicating higher levels of post-migration growth. Sample items include: “My self-confidence in overcoming difficulty and coping with stress has improved,” and “I have learned how to communicate with people from different cultural backgrounds.” For the current study, the Cronbach alpha reliability was  $\alpha = .90$  for the total mean score.

### **Psychological Distress**

The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2000) was used to assess psychological distress. The BSI-18 is a condensed version of a 53-item Brief Symptom Inventory (BSI), which was derived from the Symptom Check List-90-Revised (SCL-90-R) (Derogatis, 1993). The BSI-18 was developed for use with medical and community populations. Its development was meant to improve upon the structural validity of the BSI-53. The BSI-18 has been validated across different cultures, including CISs (Derogatis & Savitz, 2000; Ramírez, Álvarez, & Galán, 2000; Wang & Mallinckrodt, 2006). It contains 18 items and three subscales, Depression, Anxiety, and Somatization. Subscale scores range from 0 to 24 with higher scores indicating increased levels of distress. Subscale scores are totaled providing a global severity index (GSI) from 0 to 72 (Derogatis, 2000). Scores on the BSI-18 subscales and global index have demonstrated internal consistency reliability: Depression ( $\alpha = .84$ ), Anxiety ( $\alpha = .79$ ), Somatization ( $\alpha = .74$ ), and GSI ( $\alpha = .89$ ) (Derogatis, 2000). Evidence of validity has been obtained through strong correlations between the 53-item BSI total score and other established instruments measuring psychological symptoms (Derogatis, 2000). The BSI-18 has been established as having good construct validity, concurrent validity and factorial validity (Boothroyd, 2003).



Studies have indicated that individuals from Asian cultures tend to express psychological distress somatically (Dennis, 2004); therefore, the BSI-18 was selected because of the inclusion of a somatization subscale. The reliability of the BSI-18 has been demonstrated for CISs with a coefficient alpha of  $\alpha = .88$  (Wang & Mallinckrodt, 2006). Each of the three subscales appears valid for CISs, as each was positively associated with CISs stressful life events (Chen, Mallinckrodt, & Mobley, 2002). Participants were asked to respond to items based on how much a problem such as “Nausea or upset stomach,” “Feeling blue,” or “Feeling tense or keyed up,” for example, has distressed or bothered them in the past seven days. Item responses were on a 4-point scale: 1 – not at all, 2 – a little bit, 3 – moderately, and 4 – quite a bit. The Cronbach alpha reliability found for the current research was  $\alpha = .95$  for the total mean score. *Table 3* details the range of scores, scoring method, mean, SD, and internal consistency of the above measures, according to the participants’ responses in this study.

Table 1. Demographic Characteristics of Participants		
<i>Age</i>	<i>N</i>	<i>Percentage</i>
19	15	10.3
20	26	17.9
21	26	17.9
22	16	11.0
23	21	14.5
24	8	5.5
25+	20	13.8
Not reported	13	9
<i>Gender Identity</i>	<i>N</i>	<i>Percent</i>
Woman	88	60.7
Man	56	38.6
Other identity	1	.7
<i>Relationship Status</i>	<i>N</i>	<i>Percent</i>
Single	116	80

Married	4	2.6
Partnered	23	15.9
Separated	1	.7
Other	1	.7
<i>Rank</i>		
<i>Rank</i>	<i>N</i>	<i>Percent</i>
First year	49	33.8
Second year	35	24.1
Third year	17	11.7
Fourth year	39	26.9
Not reported	5	3.4
<i>Academic Institution</i>		
<i>Academic Institution</i>	<i>N</i>	<i>Percent</i>
DU	48	33.1
NYU	90	62.1
Other	4	2.8
Not reported	3	2.1
<i>Country of Origin</i>		
<i>Country of Origin</i>	<i>N</i>	<i>Percent</i>
China	128	88.3
Hong Kong	7	4.8
Taiwan	8	5.5
Not reported	2	1.4
<i>Academic Major</i>		
<i>Academic Major</i>	<i>N</i>	<i>Percent</i>
Business	51	35.2
Natural Science, Mathematics, and Engineering	36	24.8
Social Science	27	18.6
Arts and Humanities	19	13.1
Other	12	8.3
<i>Live on Campus</i>		
<i>Live on Campus</i>	<i>N</i>	<i>Percent</i>
Yes	60	41.4
No	85	58.6
<i>Current Time in US</i>		
<i>Current Time in US</i>	<i>N</i>	<i>Percent</i>
< 6 months	8	5.5
6 months to 1 year	32	22.1
1-2 years	25	17.2
2-3 years	24	16.6
3-4 years	25	17.2

4+ years	31	21.4
<i>Past Time in US</i>		
	<i>N</i>	<i>Percent</i>
< 6 months	66	45.5
6 months to 1 year	10	6.9
1-2 years	4	2.8
2-3 years	3	2.1
3-4 years	7	4.8
4+ years	4	2.8
<i>Communication Method</i>		
	<i>N</i>	<i>Percent</i>
WeChat	97	66.9
Phone	28	19.3
Text	27	18.6
Video Call	31	21.4
Other	16	11.0

<i>Variable</i>	<i>Range</i>	<i>M</i>	<i>SD</i>
Family Support of Major	1.00-5.00	4.21	.978
English Reading Ability	1.00-4.00	3.00	.782
English Writing Ability	1.00-4.00	2.78	.820
English Speaking Ability	1.00-4.00	2.82	.895
Overall Family Support	1.00-4.00	3.32	.671
Hours of Communication	0.00-50.00	5.72	7.04

<i>Measure</i>	<i>Possible Range</i>	<i>Sample Range</i>	<i>Scoring</i>	<i>M</i>	<i>SD</i>	<i>α</i>
Acculturative Stress Scale for Chinese College Students in the United States (ASSCS)	1.00-7.00	1.00-7.00	1-7 (higher = higher acculturative stress)	2.83	0.96	0.94
Relational Health Indices (RHI)	1.00-5.00	2.06-4.92	1-5 (higher = higher relational health)	3.52	0.53	0.92
Sense of belonging on campus items (SOBC)	1.00-4.00	1.00-4.00	1-4 (higher = higher)	3.03	0.69	0.89

Self-Compassion Scale (SCS)	1.00-5.00	1.42-4.85	campus belonging) 1-5 (higher = higher self-compassion)	3.16	0.51	0.86
Post-migration Growth Scale (PMGS)	1.00-6.00	1.69-6.00	1- 6 (higher = higher post-migration growth)	4.46	0.83	0.90
Brief Symptom Inventory-18 (BSI-18)	1.00-4.00	1.00-4.00	1-4 (higher = higher distress)	1.90	0.67	0.95

<i>The peer is...</i>	<i>N</i>	<i>Percentage</i>
Someone from your home country whom you met at home	45	31.0
Someone from your home country whom you met at the university	74	51.0
An international student from another country met at the university	7	4.8
An American student met at the university	14	9.7
Other	5	3.4

## Chapter III: Results

### Preliminary Analysis

Several preliminary analyses were conducted prior to hypothesis testing. Below is an explanation of missing data analysis, handling of outliers, and multiple regression assumptions testing. These analyses are presented in the order listed.

**Missing data analysis.** Of the total sample of 205 participants, 140 (68.3%) failed to respond to at least one item in the survey. Little's Missing Completely At Random (MCAR) test was conducted to determine if data was missing in a completely random fashion. Results of this analysis indicated no evidence for the null hypothesis of MCAR ( $p = .268$ ), indicating that data were missing at random. As stated previously, 60 cases were 85% or more incomplete and were therefore eliminated from the final dataset. An expectation maximization analysis was conducted in SPSS Version 26 to impute missing data for the remaining 145 cases.

**Outliers.** After cleaning the data and computing total scores for the study's measures, the Mahalanobis Distance test was used to assess the data for multivariate outliers. This technique calculates the probability that a case contains values outside of the Chi-square distribution of participant responses. Analysis revealed that no cases contained significantly outlying data using a comparison probability of  $p < .001$ . The case with the lowest multivariate outlier probability was  $p = .214$ .

A standardized score analysis was conducted to assess the data for univariate outliers. Items with a Z-score of  $+3.3$   $03$   $-3.3$  were noted and cases were examined for multiple Z-score elevations (Tabachnick & Fidell, 1996). Four cases had three or more items with elevated Z-scores on a specific measure. Researchers considered dropping these cases from the entire survey and also considered dropping these cases only from the measure with the elevation instead, so as not to lose the case completely. Ultimately, because the normality of the measures was not impacted by the items with Z-score elevations, all cases and items were retained.

**Assumptions testing.** The dataset was assessed for violations of normality, homoscedasticity, and noncollinearity, which are the major statistical assumptions of multiple linear regression. Normality was first tested using a normality probability (P-P) Plot of standardized residual terms for each dependent variable. For all outcome variables the observed standardized residuals were normally distributed according to their resultant plots. Next, normality was further tested using the Shapiro-Wilk test to assess the variables. Results indicated that indicated that the following dependent variables violated the normality assumption: acculturative stress (as measured by the ASSCS), sense of belonging on campus (as measured by the SOCB), self-compassion as measured by the SCS), and distress (as measured by the BSI-18). Variables were therefor assessed for skewness and kurtosis. All variables held skewness values with an absolute value less than one besides ASSCS, which showed a positive skewness value of 1.075. All variables also held skewness values with an absolute value less than three. Using the cutoff of  $+3$

or -3 for skewness and +10 or -10 for kurtosis suggested by Weston and Gore (2006), these results suggest univariate normality.

Homoscedasticity was tested by plotting the standardized residual term for each dependent variable against the standardized predicted term for the respective dependent variable. An equal distribution and a diagonal best-fit line was observed for each outcome variable. Additionally, scatterplots of the residuals were examined. Points were equally distributed around zero on both the X and Y axes.

To test for violation of collinearity, the bivariate association of the predictor variables, acculturative stress, relational health, sense of campus belonging, and self-compassion were assessed. No variable pair showed a bivariate association ( $r_s$ ) with an absolute value greater than .90, which is the cutoff suggested by Tabachnick and Fidell (1996). The association between sense of campus belonging and relational health had the highest value at .565. Therefore, multicollinearity was not an issue for the predictor variables in this sample. As additional evidence of the absence of multicollinearity, VIF values were examined. All values were below 10 (Thompson, 2017), indicating that the assumption is met.

### **Statistical Procedure**

This section outlines the statistical procedures that followed preliminary analyses. Procedures used include variable modeling, bivariate associations, and hypothesis testing. The procedures are presented below in that order.

**Variable modeling.** This study's main independent variables of interest were acculturative stress, relational health, sense of campus belonging, and self-compassion.

These independent variables were modeled as continuous variables. Key demographic variables of age, gender, relationship status, academic institution, and rank were also included in correlation analyses to identify which key demographic variables should be incorporated into regression analyses. Age was modeled as a continuous variable, while the other variables were modeled as categorical. The study sample was comprised of “women,” “men,” and “other gender identity.” Relationship status was recoded into two groups, “Single” and “Not Single.” Single relationship status was dummy-coded as “1,” and Non-Single relationship status was dummy-coded as “0.” Academic institution was recoded into three groups, “DU,” “NYU,” and “Else.” DU was dummy-coded as “1,” NYU was dummy-coded as “2,” and Else was dummy-coded as “3.” In terms of academic rank, the study sample was comprised of freshman (dummy-coded as “1”), sophomores (dummy-coded as “2”), juniors (dummy-coded as “3”), and seniors (dummy-coded as “4”). Post-migration growth and psychological distress were the dependent variables of interest. Both dependent variables were modeled as continuous variables. Multiple hierarchical regression, moderation analysis, and simple correlational analysis were the statistical methods employed to explore the hypotheses and research questions in this study. Below is a bivariate correlation matrix of all pertinent variables, a description of statistical procedures used to test each hypothesis, and the results of the analysis.

**Bivariate associations.** In the first stage of data analysis, bivariate associations between measured variables were assessed. Pearson’s  $r$  was used as the correlation coefficient for all continuous variables (including the demographic variable, “age”), and



effect size interpretations are based on conventions proposed by Cohen, with a small effect noted for correlations between .2 and .5, a medium effect noted for correlations between .5 and .8, and a large effect noted for correlations greater than .8 (1988).

Associations involving the key demographic variables of gender, relationship status, academic institution and academic rank were measured using an ANOVA test to evaluate the difference of group means for significance. When examining the key demographic variables, age was significantly correlated and showed a small effect size with acculturative stress,  $r = .25, p = .004$ , and age was also significantly correlated and showed a small effect size with distress,  $r = .23, p = .008$ . The positive correlation between age and acculturative stress and distress can be interpreted such that older participants reported higher levels of acculturative stress and distress than their younger counterparts.

When evaluating the categorical demographic variables, a main effect was found when comparing the mean acculturative stress scores of students based on their academic institution,  $F(2, 141) = 7.63, p < .001$ . Participants from DU reported significantly more acculturative stress ( $M = 3.24, SD = 1.05$ ) than participants from NYU ( $M = 2.61, SD = .83$ ) or those from other academic institutions ( $M = 2.47, SD = 1.14$ ). Similarly, a main effect was found when comparing the mean distress scores of students based on their academic institution,  $F(2, 141) = 3.29, p = .04$ . Participants from DU reported significantly more distress ( $M = 2.10, SD = .69$ ) than participants from NYU ( $M = 1.80, SD = .64$ ) or those from other academic institutions ( $M = 1.76, SD = .95$ ). A main effect of gender was found for distress,  $F(2, 144) = 4.86, p = .009$ . Male-identified participants

( $M = 2.08$ ,  $SD = .74$ ) and the one participant identifying as other gender identity ( $M = 2.83$ ) reported significantly more distress than female-identified participants ( $M = 1.77$ ,  $SD = .59$ ). The main effect of relationship status and of academic rank were not significant on any of the measured variables, and thus not included in regression analyses. Mean comparisons are reported in Table 5a below.

Between Groups	Academic Institution		Gender		Academic Rank		Relationship Status	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.
SOBC	.679	.509	1.445	.239	1.476	.224	1.075	.302
ASSCS	7.633**	.001	.229	.795	1.135	.337	1.683	.197
RHI	.636	.531	1.838	.163	.411	.745	.017	.897
SCS	.045	.956	.426	.654	1.023	.385	1.646	.202
PMG	.242	.786	1.288	.279	1.104	.350	1.084	.300
BSI	3.290*	.040	4.862**	.009	1.239	.298	2.126	.147

\*. Correlation is significant at the .05 level.

\*\*. Correlation is significant at the .01 level.

Sense of campus belonging correlated significantly and showed a small effect size with acculturative stress,  $r = -.28$ ,  $p < .001$ , self-compassion,  $r = .21$ ,  $p = .010$ , and post-migration growth,  $r = .39$ ,  $p < .001$ . Sense of campus belonging correlated significantly and showed a medium effect size with relational health,  $r = .57$ ,  $p < .001$ . Acculturative stress correlated significantly and showed a small effect size with relational health,  $r = -.27$ ,  $p < .001$ , and self-compassion,  $r = -.20$ ,  $p = .014$ . Acculturative stress correlated significantly and showed a medium effect size with distress,  $r = .57$ ,  $p < .001$ . Relational health correlated significantly and showed a small effect size with self-compassion,  $r = .36$ ,  $p < .001$  and distress,  $r = -.30$ ,  $p < .001$ . Relational health correlated significantly and showed a medium effect size with post-migration growth,  $r = .51$ ,  $p < .001$ . Self-

compassion correlated significantly and showed a small effect size with post-migration growth,  $r = .40, p < .001$  and distress,  $r = -.43, p < .001$ . Post-migration growth correlated significantly and showed a small effect size with distress,  $r = -.25, p = .002$ . Correlations are reported in Table 5b below.

Table 5b: Correlations

	1	2	3	4	5	6
1. SOBC						
2. ASSCS	-.276**					
3. RHI	.565**	-.267**				
4. SCS	.213**	-.204*	.357**			
5. PMG	.388**	-.078	.508**	.398**		
6. BSI	-.119	.567**	-.301**	-.426**	-.250**	
7. Age	.014	.252**	-.110	-.145	-.003	.229**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

(The above variables are represented by the following measures: Sense of Campus Belonging –from Locks et al., 2008; Acculturative Stress – Acculturative Stress Scale for Chinese College Students in the United States; Relational Health – Relational Health Indices; Self-Compassion – Self-Compassion Scale; Post-migration – Post-migration Growth Scale; Distress – Brief Symptom Inventory-18.)

**Hypothesis Tests.** Below is an explanation of the method and results of the six hypotheses tests and two research questions. A multiple regression framework was used to test all hypotheses, including the two moderation hypotheses. All hypothesized moderation models were tested using PROCESS macro for SPSS (Hayes, 2013). Using the PROCESS macro, bootstrap confidence intervals are generated to estimate indirect effects. This method of nonparametric resampling has been recommended, as it has greater power and involves fewer assumptions (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). A table accompanies the description of each hypothesis test and

research question. Furthermore, Tables 14a and 14b provides a simplified display, listing the result of each hypothesis test and research question.

**Research question 1: Will acculturative stress, relational health, sense of campus belonging, and self-compassion predict the post-migration growth of CISs?**

*H1a: Acculturative stress will negatively predict post-migration growth for CISs.*

A hierarchical (i.e., sequential) framework was used to predict the amount of variance in post-migration growth accounted for by acculturative stress while controlling for demographic variables. Demographic variables, including academic institution and age, were entered into the first step of analysis. Acculturative stress was entered in the second step. The model fit did not reach significance for the control variables in the first step,  $F(2, 127) = .20, p = .98$ . Regarding the main independent variable of interest, acculturative stress, the model fit also failed to be significant,  $F(3, 126) = .31, p = .82, R^2 = .007$ . Therefore, Hypothesis 1a was not supported. Acculturative stress explained less than an additional .7% of variance in post-migration growth when added to the model.

Table 6: Hierarchical Regression for Hypothesis H1a						
Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1:	.000	.000	127			
Academic institution					.008	.932
Age					-.015	.863
Step 2:	.007	.007	128	.887		
Academic institution					-.041	.664
Age					-.027	.765
Acculturative Stress					-.090	.348

Demographic Coding

Academic institution – DU: 1; NYU: 2; Else: 3

***H1b: Relational health, sense of campus belonging, and self-compassion will positively predict post-migration growth for CISs.*** Multiple regression was used to predict the amount of variance in post-migration growth accounted for by relational health, sense of campus belonging, and self-compassion. No demographic variable were significantly correlated and thus, none were added to the model. The model fit for the regression was significant,  $F(3, 141) = 22.8, p < .001$ . The regression equation indicated the percentage of variance explained in post-migration growth was 33%, but only relational health,  $\beta^* = .34, p < .001$ , and self-compassion  $\beta^* = .25, p < .001$ , were significant predictors of post-migration growth. Sense of campus belonging was not,  $\beta^* = .15, p = .079$ . Given these results, Hypothesis 1b was partially supported.

Table 7: Multiple Regression for Hypothesis H1b				
Predictors	$R^2$	$df$	$\beta^*$	$p$
Step 1:	.327	141		
Relational Health			.335	.000
Sense of Campus Belonging			.148	.079
Self-Compassion			.249	.001

**Research question 2: Will acculturative stress, relational health, sense of campus belonging, and self-compassion predict the psychological distress of CISs?**

***H2a: Acculturative stress will positively predict psychological distress for CISs.***

Hierarchical multiple regression was used to predict the amount of variance in psychological distress accounted for by acculturative stress while controlling for demographic variables. Demographic variables, including academic institution, age and gender, were entered into the first step of analysis. Acculturative stress was entered in the second step. The model fit was significant for the control variables in the first step,  $F(3,$

126) = 2.67,  $p < .001$ , but only gender,  $\beta^* = .19$ ,  $p < .027$ , and age,  $\beta^* = .20$ ,  $p < .018$ , were significant. Academic institution failed to be significant,  $\beta^* = -.32$ ,  $p < .069$ .

Regarding acculturative stress, the model fit was also significant,  $F(4, 125) = 21.5$ ,  $p < .001$ ,  $R^2 = .41$ . The demographic variable of gender remained significant in step two after acculturative stress was added to the model. Acculturative stress explained an additional 27.5% of variance in psychological distress when added to the model. Therefore, Hypothesis 2a was supported.

Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1: Gender Age Academic institution	.133		126		.192 .203 -.155	.027 .018 .069
Step 2: Gender Age Academic institution Acculturative Stress	.408	.275	125	58.01	.214 .075 .006 .565	.003 .299 .930 .000

Demographic Coding

Gender – Woman: 1; Men: 2; Other gender: 3

Academic institution – DU: 1; NYU: 2; Else: 3

***H2b: Relational health, sense of campus belonging, and self-compassion will negatively predict psychological distress for CISs.*** Hierarchical multiple regression was used to predict the amount of variance in psychological distress accounted for by relational health, sense of campus belonging, and self-compassion. Demographic variables of academic institution, age and gender were entered into the first step of analysis. Relational health, sense of campus belonging, and self-compassion were entered in the second step. The model fit was significant for the control variables of gender,  $\beta^* =$

.17,  $p < .029$ , and academic institution,  $\beta^* = -.17, p < .026$ , in the first step,  $F(3, 126) = 6.4, p < .001$ . Age failed to be significant,  $\beta^* = -.14, p < .061$ . The model fit was also significant regarding relational health, sense of campus belonging, and self-compassion,  $F(6, 123) = 10.23, p < .001, R^2 = .33$ , but only self-compassion  $\beta^* = -.39, p < .001$ , was a significant predictor of psychological distress. Relational health,  $\beta^* = -.16, p = .09$ , and sense of campus belonging,  $\beta^* = .10, p = .29$ , were not. Given these results, Hypothesis 2b was partially supported.

Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1:	.133		126			
Gender					.192	.027
Age					.203	.018
Academic institution					-.155	.069
Step 2:	.333	.200	123	12.31		
Gender					.169	.029
Age					.144	.061
Academic institution					-.169	.026
Relational Health					-.163	.089
Sense of Campus Belonging					.095	.292
Self-Compassion					-.393	.000

Demographic Coding

Gender – Woman: 1; Men: 2; Other gender: 3

Academic institution – DU: 1; NYU: 2; Else: 3

**Research question 3a: Will self-compassion moderate the relationship**

**between acculturative stress and post-migration growth for CISs?**

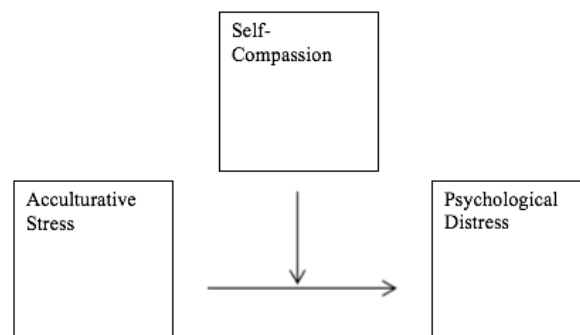
*H3a: Self-compassion will moderate the relationship between acculturative stress and post-migration growth for CISs. More specifically, high levels of self-compassion will moderate the relationship between post-migration growth and*

*acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report higher levels of post-migration growth than those with low levels of self-compassion and high levels of acculturative stress.* Because Hypothesis 1a failed to show a significant relationship between acculturative stress and post-migration growth, this hypothesis was not tested.

**Research question 3b: Will self-compassion moderate the relationship between acculturative stress and psychological distress for CISs?**

*H3b: Self-compassion will moderate the relationship between acculturative stress and psychological distress for CISs. More specifically, high levels of self-compassion will buffer the relationship between psychological distress and acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report lower levels of psychological distress than those with low levels of self-compassion and high levels of acculturative stress.* The multiple regression framework was used to test the moderating effects of self-compassion on the relationship between acculturative stress and psychological distress. The moderation model is portrayed below.

Figure 2  
*Moderation Model for Hypothesis 3b*





The outcome variable for analysis was psychological distress. The predictor variable for the analysis was acculturative stress. The control variables of age, gender, and academic institution were also entered in the first step of the model. The moderator variable evaluated for the analysis was self-compassion. Both Model 1,  $F(5, 124) = 25.80, p < .001$ , and Model 2,  $F(6, 123) = 21.84, p < .001$  were significant. However, when evaluating the interaction between acculturative stress and self-compassion, Model 2 did not account for significantly more variance than just acculturative stress and self-compassion by themselves,  $R^2$  change = .006,  $p = .23$ , indicating that there is not significant moderation between acculturative stress and self-compassion on psychological distress. Therefore, Hypothesis 3b was not supported.

Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1:	.510		124			
Gender					.197	.003
Age					.059	.372
Academic institution					-.025	.708
Self-Compassion (SC)					-.331	.000
Acculturative Stress (AS)					.486	.000
Step 2: SCXAS	.516	.006	123	1.486	-.557	.225

Demographic Coding

Gender – Woman: 1; Men: 2; Other gender: 3

Academic institution – DU: 1; NYU: 2; Else: 3

**Research question 4: Is there an association between peer, mentor, and community relational health and post-migration growth for CISs?** To explore this research question, the bivariate associations between peer, mentor, community relational health and post-migration growth were assessed. Peer, mentor, and community relational

health were all significantly correlated and showed small effect sizes with post-migration growth: peer relational health and post-migration growth,  $r = .45, p < .001$ , mentor relational health and post-migration growth,  $r = .34, p < .001$ , and community relational health and post-migration growth,  $r = .41, p < .001$ . These results indicate that there is an association between the independent variables and the outcome variable of post-migration growth such that participants who reported higher levels of peer, mentor, community relational health reported higher levels of post-migration growth than those who reported lower levels of peer, mentor, community relational health.

**Research question 5: Is there an association between peer, mentor, and community relational health and psychological distress for CISs?** To explore this research question, the bivariate associations between peer, mentor, community relational health and psychological distress were assessed. Peer, mentor, and community relational health were all significantly correlated and showed small effect sizes with psychological distress: peer relational health and psychological distress,  $r = -.26, p < .001$ , mentor relational health and psychological distress,  $r = -.21, p = .01$ , and community relational health and psychological distress,  $r = -.24, p = .003$ . These results indicate that there is an association between the independent variables and the outcome variable of psychological distress such that participants who reported higher levels of peer, mentor, community relational health reported less psychological distress than those who reported lower levels of peer, mentor, community relational health.

Table 11: Bivariate associations between peer, mentor, and community relational health and psychological distress

	PMG		BSI	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
RHI-P	.453**	.000	-.263**	.001
RHI-M	.338**	.000	-.207*	.013
RHI-C	.412**	.000	-.243**	.003

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

(The above variables are represented by the following measures: Relational Health – Relational Health Indices; Post-migration – Post-migration Growth Scale; Distress – Brief Symptom Inventory-18.)

**Post-hoc analyses.** Two post-hoc analyses were run in order to more thoroughly explain the results of the multiple linear regression analyses above. The first stage of data analysis focused on the key demographic variables of age, gender, relationship status, academic institution, and rank. The post hoc stage of data analysis will focus on the additional demographic variables of academic major, housing, country of origin, whether or not the student is degree-seeking, the degree of family support of their major, current and prior length of time in the US, English language ability, overall family support, and number of hours per week they communicate with family and friends back home. Bivariate associations between these additional demographic variables and outcome variables were assessed. Pearson’s *r* was used as the correlation coefficient for all continuous variables and an ANOVA test was used to evaluate the difference of group means for categorical variables. When examining the additional demographic variables, family support of major was significantly correlated and showed a small effect size with post-migration growth,  $r = .31, p > .001$ . The positive correlation between family support of major and post-migration growth indicates that the more family support of major

participants reported, the higher their post-migration growth. Time spent in the US for this study experience was also significantly correlated with post-migration growth, and showed a small effect size,  $r = .18, p = .035$ . This result indicates that the longer the participant reported being in the US for the current study experience, the more post-migration growth they reported. Overall English language ability was significantly correlated and showed a small effect size with post-migration growth,  $r = .24, p = .003$ , revealing that those who endorsed overall higher English language ability also reported higher post-migration growth. Finally, overall family support was another variable that was significantly correlated and showed a small effect size with post-migration growth,  $r = .26, p = .001$ . The variables in this stage of analysis that revealed significant association with outcome variables will be included in the regression analysis for hypotheses that relate to post-migration growth. The main effect of other additional demographic variables was not significant on any of the outcome variables, and thus were not included in regression analyses.

***H1a: Acculturative stress will negatively predict post-migration growth for CISs.*** The key demographic variables of age and academic institution, as well as the additional demographic variables of family support of major, current length of time in the US, English language ability, and overall family support were entered into the first step of analysis to evaluate whether the additional demographic variables impacted the model. Acculturative stress was entered in the second step. The model fit was significant for the control variables in the first step,  $F(6, 123) = 4.80, p < .001$ , but only family support of major,  $\beta^* = .25, p = .008$ , and English language ability,  $\beta^* = .21, p = .020$ , were

significant. Current length of time in the US,  $\beta^* = -.06, p = .495$ , and overall family support,  $\beta^* = -.16, p = .084$ , failed to be significant. The model fit was also significant in the second step,  $F(7, 122) = 4.1, p < .001, R^2 = .19$ . The demographic variables of family support of major and English language ability remained significant in step two after acculturative stress was added to the model. Acculturative stress failed to be significant,  $\beta^* = -.22, p = .81$ . Therefore, acculturative stress was not a predictor of post-migration growth after controlling for the additional demographic variables of family support of major, current length of time in the US, English language ability, and overall family support.

Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1:	.190		123			
Academic institution					-.008	.932
Age					-.115	.863
Family support of major					.246	.008
Current length of time in the US					.062	.495
English language ability					.207	.020
Overall family support					.156	.084
Step 2:	.190	.000	122	.058		
Academic institution					-.120	.185
Age					-.002	.983
Family support of major					.247	.008
Current length of time in the US					.057	.533
English language ability					.202	.028
Overall family support					.156	.086
Acculturative Stress					-.022	.810

***H1b: Relational health, sense of campus belonging, and self-compassion will positively predict post-migration growth for CISs.*** None of the key demographic variable were significantly correlated and thus, none were added to the model. The additional demographic variables of family support of major, current length of time in the US,

English language ability, and overall family support were entered into the first step of analysis to evaluate whether the additional demographic variables impacted the model. Relational health, sense of campus belonging, and self-compassion were entered in the second step. The model fit was significant for the control variables in the first step,  $F(4, 140) = 6.68, p < .001$ , but only family support of major,  $\beta^* = .20, p = .026$ , and English language ability,  $\beta^* = .18, p = .025$ , were significant. Current length of time in the US,  $\beta^* = .10, p = .229$ , and overall family support,  $\beta^* = .15, p = .078$ , failed to be significant. The model fit was also significant in the second step,  $F(7, 137) = 12.1, p < .001, R^2 = .38$ . Only the additional demographic variable of family support of major remained significant in step two after relational health, sense of campus belonging, and self-compassion were added to the model. The regression equation indicated the percentage of variance explained in post-migration growth was 38%, but only relational health,  $\beta^* = .31, p < .001$ , and self-compassion  $\beta^* = .24, p < .001$ , were significant predictors of post-migration growth. Sense of campus belonging was not,  $\beta^* = .09, p = .300$ . Therefore, relational health and self-compassion were predictors of post-migration growth after controlling for the additional demographic variables of family support of major, current length of time in the US, English language ability, and overall family support.

Predictors	$R^2$	$\Delta R^2$	$df$	$\Delta F$	$\beta^*$	$p$
Step 1:	.160		140			
Family support of major					.196	.026
Current length of time in the US					.096	.229
English language ability					.180	.025
Overall family support					.152	.078
Step 2:	.383	.223	137	16.479		
Family support of major					.173	.024

Current length of time in the US English language ability					.068	.334
Overall family support					.121	.086
Relational Health					-.005	.951
Sense of Campus Belonging					.314	.000
Self-Compassion					.087	.300
					.241	.001

Table 14a: Results of Hypothesis Testing	
Hypothesis	Result of Hypothesis Test
H1a: Acculturative stress will negatively predict post-migration growth for CISs.	Hypothesis failed to be supported
H1b: Relational health, sense of campus belonging, and self-compassion will positively predict post-migration growth for CISs.	Hypothesis partially supported
H2a: Acculturative stress will positively predict psychological distress for CISs.	Hypothesis supported
H2b: Relational health, sense of campus belonging, and self-compassion will negatively predict psychological distress for CISs.	Hypothesis partially supported
H3a: Self-compassion will moderate the relationship between acculturative stress and post-migration growth for CISs. More specifically, high levels of self-compassion will moderate the relationship between post-migration growth and acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report higher levels of post-migration growth than those with low levels of self-compassion and high levels of acculturative stress.	Not tested
H3b: Self-compassion will moderate the relationship between acculturative stress and psychological distress for CISs. More specifically, high levels of self-compassion will buffer the relationship between psychological distress and acculturative stress such that those with high levels of self-compassion and high levels of acculturative stress will report lower levels of psychological distress than those with low levels of self-compassion and high levels of acculturative stress.	Hypothesis failed to be supported

Table 14b: Results of Exploratory Analysis	
Research Question	
Research question 4: Is there an association between peer, mentor, and community relational health and post-migration growth for CISs?	Association found
Research question 5: Is there an association between peer, mentor, and community relational health and psychological distress for CISs?	Association found

Table 14c: Results of Post-hoc analysis	
Hypothesis	Result of Hypothesis Test
H1a: Acculturative stress will negatively predict post-migration growth for CISs.	Hypothesis failed to be supported
H1b: Relational health, sense of campus belonging, and self-compassion will positively predict post-migration growth for CISs.	Hypothesis partially supported



## **Chapter IV: Discussion**

This project explored the relation that acculturative stress, relational health, sense of campus belonging, and self-compassion have with post-migration growth and psychological distress using the theoretical framework of Relational-Cultural Theory. While previous research has explored acculturative stress, social support, and self-compassion with relation to psychological distress, there is limited research exploring these factors for CISs. The current study adds to the literature exploring how positive and negative outcomes are associated with the relational health, sense of campus belonging, and self-compassion of undergraduate CISs. To our knowledge, the current study is the first to examine this constellation of variables for CISs. Below is a discussion of findings, implications for clinical practice, limitations of the study, and future directions in researching these topics. To begin the discussion, the correlational relationships between the study's predictor, outcome, and demographic variables will be discussed in relation to one another and framed in the context of previous research. This discussion is followed by an account of the relationships among acculturative stress, relational health, sense of campus belonging, and self-compassion and the outcome variables of the study: post-migration growth and psychological distress. Finally, the clinical implications of the study, its limitations, and the implications to future research are discussed.

## **Acculturative Stress Correlates**

**Acculturative stress and demographic variables.** In the current study, acculturative stress showed a significant correlation with the demographic variable of age, but not gender for CISs. This finding is partially consistent with prior research that designates age and gender as moderating factors to be accounted for in the acculturation process. For example, in Berry's (1997) comprehensive model of the acculturative process, age and gender are among the personal demographic variables that have a known relationship to the process of acculturation. For this reason, researchers of acculturative stress tend to include age and gender as control variables in their studies (e.g. Qi, Wang, Pincus, and Wu, 2018). In the current study, age was significantly correlated with acculturative stress and showed a small effect size. The positive correlation between age and acculturative stress was in the expected direction: the older participants reported higher levels of acculturative stress than their younger counterparts. This finding is in accordance with past research with Chinese immigrant students that found older Chinese students had significantly higher levels of acculturative distress (Yeh, 2003). It is possible that as students grow older and approach independence, additional confusion and anxiety regarding one's future plans and identity results (Yeh, 2003). This, in turn, could exacerbate identity concerns that may arise in relation to acculturative stress, amplifying the overall acculturative stress experience. Unlike prior findings, neither gender nor length of time in the US were significant factors in determining acculturative stress in the current study.

Interestingly, CIS participants from the University of Denver (DU) reported significantly more acculturative stress than participants from New York University (NYU) or those from other academic institutions. This result could be related to the racial and ethnic make-up of the universities and of the metropolitan areas where those institutions are located. The University of Denver reports 64% of students are White, and of the remaining students, only 4% are Asian (University of Denver, 2018). Overall, the racial and ethnic make-up of the city of Denver is 69% White, with only 1.4% Asian (United States Census Bureau, 2010). Comparatively, New York City is comprised of 45% White and 12% Asian, and NYU's student population is 21% White and 18% Asian (United States Census Bureau, 2010 and New York University, 2018). Prior research has posited that acculturative stress is impacted by the nature of the host society: when acculturation is occurring within a multicultural ideology of tolerance and cultural diversity, acculturative stress is expected to be lower than with an assimilationist ideology where conforming to a single cultural standard is expected (Qi, et al., 2018). It can be argued that with its history as a hub for immigration, the ethnic diversity of New York City makes it one of the most multicultural cities in the US, whereas the demographic make-up of the city of Denver may result in a more assimilationist ideology comparatively. When examining the Perceived Discrimination subscale of the ASSCS, DU students endorsed a higher, though non-significant, mean score than students from NYU or other institutions.

Through the lens of RCT, the experience of the CISs from DU might be considered an example of cultural disconnection. As has been discussed, when CISs

experience forms of racism or prejudice as part of their acculturation experience, these cultural-level experiences can lead individuals to be fearful, frustrated, and humiliated and often to blame themselves rather than the cultural context (Comstock et al., 2008; Johnson & Sandhu, 2007). Such individuals tend to shy away from relationships with others as a result of their mistrust, suspicion, or compromised self-worth (Jordan & Dooley, 2000).

Chinese international students who live on campus (in campus housing) reported significantly less acculturative stress than students living off campus. While no studies were found that explicitly linked campus housing to acculturative stress, accommodation issues have been identified as an acculturative stressor experienced by international students (Smith & Khawaja, 2011). It is likely that the support structures of their university provide students in campus housing networks of support (e.g., social, administrative) not afforded to students living in off-campus environments. Prior studies have pointed out that off-campus housing options can negatively impact CISs' "sense of belonging and integration in the campus community" (Brunette, Lariviere, Schinke, Xing, & Pickard, 2011, p. 223). From the lens of RCT, living on campus can be thought of as promoting relational connectedness, especially to one's community. Through the growth-fostering relationships that are formed via on-campus living, the characteristics that are associated with resilience are strengthened. Because findings show that resilience serves as a protective factor against stress, it follows that such relational connection could function to lessen the impacts of acculturative stress (Pan et al., 2008).

Another significant negative correlation existed between overall English language ability and acculturative stress. Other studies have previously found that Asian international student language ability is significantly negatively associated with acculturative stress (Poyrazli et al., 2004). It is well established in the literature that English language ability is a factor that can encourage acculturative adjustment (Lin & Yi, 1997; Mori, 2000; Yeh & Inose, 2003), and Language Insufficiency is the ASSCS factor that has been determined to be the primary barrier to CIS adjustment to American life (Bai, 2016).

**Acculturative stress and other variables.** With relation to the other predictor and outcome variables, acculturative stress correlated negatively and significantly with small effect size with (in order of correlational strength) sense of campus belonging ( $r = -.276$ ), relational health ( $r = -.267$ ), and self-compassion ( $r = -.204$ ) for CISs, meaning that those who endorsed greater sense of campus belonging, relational health, and self-compassion, endorsed less acculturative stress. These results are all in the expected direction based on prior research (Barnard & Curry, 2011; Frey et al., 2004; Frey, Beesley, & Miller, 2006; Hoyle & Crawford, 1994; Liang et al., 2002a; Liang & West, 2011; MacBeth & Gumley, 2012; Muris, Meesters, Pierik, & de Kock, 2016; Terry et al., 2013).

Intriguingly, there was not a significant relationship between acculturative stress and post-migration growth for CISs in this study. This finding suggests that despite a participant's endorsement of high, moderate, or low acculturative stress, there was no association with their level of post-migration growth. Because both acculturation and

growth are processes that occur over time, a longitudinal study will be more apt to parsing out any potential associations between the variables. Additionally, it is possible that the current sample size lacked the necessary power to detect such an effect.

### **Relational Health Correlates**

**Relational health and demographic variables.** Not surprisingly, in the current study relational health correlated positively and significantly with demographic variables that measured an element of support from or connection to family and friends. For example, family support of major, overall family support, and frequency of communication with family and friends all had a significant positive relationship with relational health. While associations between these specific variables and relational health are not documented in the literature, prior research has highlighted the importance of one's family as a source of social support. Yan and Berliner (2011) found that for CISs, family was ranked as the most preferred source of support for mental health related issues, over friends, church or professionals. Other research has identified that most CISs seek the support of parents and of friends in China to deal with acculturative stress and other difficulties (Bertram et al., 2014). Because of the primacy of family support for CISs and because Chinese collectivist culture values closeness and intimacy, as hypothesized, it appears that relational health is a salient construct for CISs that captures the ways the quality of their relationships corresponds to the support of and contact with their family and friends in China.

Similarly, English language ability was another factor that correlated significantly and positively with relational health. As described above, research has documented the

important role of language ability in adjustment. Similarly, English language skills facilitate interactions with the majority group and provide opportunities for connection in the new cultural context (Yeh & Inose, 2003). It is interesting that in this study, less than 10% of participants chose an American peer when responding to the items of the RHI-P. This suggests that for CISs, overall English language ability may be a factor that facilitates a sense of connection to others in a more global sense than on a personal level with American peers.

**Relational health and other variables.** With relation to the other predictor and outcome variables, relational health correlated significantly with all other variables. More specifically, relational health correlated significantly and positively to sense of campus belonging ( $r = .565$ ) and post-migration growth ( $r = .508$ ) with medium effect sizes, and self-compassion ( $r = .357$ ) with small effect size. Relational Health correlated significantly and negatively to acculturative stress ( $r = -.267$ ) and psychological distress ( $r = -.301$ ) with small effect size for CISs. The positive relationship that exists between relational health and belonging has been established in the literature (Liang et al., 2002a; Liang et al., 2002b), but this research is the first know study to establish a significant positive relationship between relational health and sense of *university* belonging. This finding is significant because it expands upon the understanding of relational health from being associated with belonging in a general sense, to being a concept that is relevant specifically for CISs at universities in the US. This additional specificity addressed important questions regarding “for whom and when.” The finding that relational health is associated with campus belonging has wide implications for university professionals who

understand the other positive outcomes of campus belonging, and who hope to engender a sense of university belonging in their international students. Some of the positive outcomes pointed to by past research include improved adjustment to academic life, lower attrition rates, fewer symptoms of depression, and enhanced social adjustment when compared to students with weak belonging (Baskin, Quintana, & Slaten, 2014; Haslam, Jetten, Postmes, & Haslam, 2009; Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). The association between relational health and sense of campus belonging gives administrators further understanding of the importance of fostering the relational aspects of the CIS experience.

Relational health has been shown to have a positive association with self-esteem (Liang et al., 2002a; Liang et al., 2002b), but the current study is the first known to document the positive and significant association to the related concept of self-compassion (small effect size). The authors of this study conceptualized self-compassion as a growth-fostering relationship towards the self during times of hardship. In this way, it may be expected that those who have empathic and nonjudgmental relationships with others might also have a similar orientation to themselves.

Regarding the positive association between relational health and post-migration growth (medium effect size), the interpersonal dimensions that have been found to relate to post-migration growth for CISs include interpersonal skills (Jackson, 2006), adapting cross-culturally through relationships, developing social networks, and gaining a deeper understanding of others (Gill, 2007). It follows that these relational components of post-migration growth might result in a positive association with relational health. This



finding allows the psychologists developing interventions for use with CIS populations, and administrators who desire that international students cultivate protection from the harmful effects of acculturative stress, to understand the role that the quality of one's relationships has in the resilience, and ultimately in the capacity of CISs to grow following a stressful experience.

As stated above, the negative association between relational health and acculturative stress is in the expected direction based on prior research. Not surprisingly, relational health was also significantly and negatively associated with psychological distress for CISs. This relationship, too, is expected, given past findings (Frey et al., 2004; Frey, Beesley, Miller, 2006; Miller & Stiver, 1997). It appears from this finding that as the quality of one's relationships improves, they have fewer experiences of the negative outcomes of disconnection.

### **Sense of Campus Belonging Correlates**

**Sense of campus belonging and demographic variables.** The demographic variables from the study that correlated significantly with sense of campus belonging for CISs were time spent in the US, family support of major, overall family support, and overall English language ability. It is interesting that in the current study, length of time in the US was not correlated with acculturative stress, but it is correlated with a student's sense of campus belonging. Slaten et al. (2016) qualitative study found that Asian international students reported personal growth opportunities led to them to feel comfortable and connected on campus. It might be theorized that the more time spent adapting to the cultural context of the US, and to the university itself, the more

opportunities for personal growth. Wei et al. (2015) wrote that those with a stronger sense of mainstream social connection “may have more opportunities to receive support and advocacy from those in the mainstream society” (p. 220). Similarly, it is possible that the same stands in the case of sense of belonging. Perhaps those with a strong sense of campus belonging have additional support and advocacy opportunities from the campus community. Perhaps time spent in the US is a factor that influences CISs’ sense of connection to their campus in a similar way as it has been shown to influence their connection to the mainstream society.

Little research exists to substantiate the relationship between a sense of family support and a sense of campus belonging, but given that sense of campus belonging is a social support construct like relational health, the conversation above applies. Because of the critical importance of family in the support of CISs’ well-being, it follows that high levels of family support might be facilitative of one’s sense of belonging to their university, especially when the family is in support of the student’s academic pursuits. Considering that within Chinese culture, family is considered a primary influence on children’s outlook, attitudes, and experiences (Chan, 1999; Fukuyama, 1995; Kim, Omizo, & Michael, 2005), and also because of the emphasis on academics in Chinese families (Lu & Gilmour, 2006), such a relationship is plausible.

The discussion of the correlates of relational health above noted that English language skills facilitate interactions with the majority group and provide opportunities for connection in the new cultural context (Yeh & Inose, 2003). Among these connections, it appears, is the ability for the student to feel that they are a part of the

campus community. Yao (2014) found that CISs felt that a language barrier was a salient issue that negatively impacted their sense of belonging in university residence halls.

**Sense of campus belonging and other variables.** When examining the association between sense of campus belonging and the other predictor and outcome variables, sense of campus belonging correlated negatively and significantly with acculturative stress with small effect size, positively and significantly with relational health with medium effect size and self-compassion and post-migration growth with small effect size for CISs. There was no association with psychological distress. The finding that sense of campus belonging has a negative relationship with acculturative stress is in line with prior research that has exhibited that social connection is associated with better adjustment for international students and is predictive of their acculturative stress (Duru & Poyrazli, 2011; Yeh & Inose, 2003). The relationship demonstrated between sense of campus belonging and relational health is as expected, especially given that the RHI-Community subscale operationalizes the concept of community relational health, which is related to sense of belonging, and there is a demonstrated association between growth-fostering relationships and increased school engagement (Liang et al., 2002b). The positive correlation between sense of campus belonging and self-compassion is also as anticipated, given that self-compassion can function to promote positive adaptation and optimal well-being (Trompetter et al., 2017) and is theorized to reduce feelings of isolation (Neff, 2003a).

**Sense of campus belonging and outcome variables.** This study is the first to explore the variables of sense of campus belonging and post-migration growth together.

Sense of campus belonging correlated positively and significantly with post-migration growth with small effect size. The finding that when sense of belonging at one's university is high, so is that person's experience of post-migration growth, is compelling. The lack of a significant relationship between sense of campus belonging and psychological distress is in contrast to prior research that demonstrates a significant relationship between the two in general college student samples (Hoyle & Crawford, 1994).

### **Self-Compassion Correlates**

**Self-compassion and demographic variables.** Self-compassion did not correlate significantly with any of the demographic variables for CISs in the current study. Prior self-compassion research has revealed that women report lower self-compassion levels than men in studies with university students in the US (Neff, 2003b, Neff et al., 2005) as well as in studies comparing American undergraduates with Chinese undergraduates (Birkett, 2014), and Taiwanese undergraduates (Neff, Pisitsungkagarn, & Hsieh, 2008). Some prior self-compassion research has revealed that age positively correlates with self-compassion across a broad span of ages (Hwang, Kim, Yang, & Yang, 2016), while other findings fail to show age-group differences between adolescents and young adults (Neff & McGehee, 2010). The current research failed to demonstrate prior findings that men and older CISs report higher levels of self-compassion. This is the first study to explore self-compassion in CISs and it appears those findings do not hold for the current sample. Further research on self-compassion with CISs will help determine if similar trends are applicable for this population.

**Self-compassion and other variables.** Self-compassion did, however, correlate significantly with all the other predictor and outcome variables. The negative association between self-compassion and acculturative stress, and the positive associations between self-compassion and relational health and sense of campus belonging have been detailed above.

Additionally, self-compassion correlated negatively and significantly with psychological distress with small effect size, and positively and significantly with post-migration growth with small effect size for CISs. The negative association between self-compassion and psychological distress has been well-documented in the literature (Barnard & Curry, 2011; Ehret, Joormann & Berking, 2014; MacBeth & Gumley, 2012; Muris, Meesters, Pierik, & de Kock, 2016, Trompeter et al., 2017), and held true for CISs. The positive association between self-compassion and post-migration growth has not yet been demonstrated, as this is the first known study to examine the two variables jointly. However, a recent study on the posttraumatic growth, a concept closely related to post-migration growth, found positive self-compassion to be associated with more adaptive cognitive processes, which was in turn associated with higher posttraumatic growth levels (Wong and Yeung, 2017). This finding suggests that as self-compassion rises, so too might one's ability to adapt positively after a difficult experience.

### **Post-Migration Growth Correlates**

**Post-migration growth and demographic variables.** Regarding associations with the demographic variables of the study, post-migration growth revealed a positive and significant correlation with time spent in the US, family support of major, overall

family support, and overall English language ability. Because most of the existing post-migration growth research is qualitative (Pan et al., 2013), there is little prior quantitative research available to compare with this study's findings. The results of this study indicate that CISs who report longer stays in the US also report higher post-migration growth. This finding is supported by the logic that growth is a time-bound process. While there is no prior evidence to suggest an association between the degree of family support a CIS experiences and their post-migration growth, it may be that contexts of support may impact one's potential for growth. The qualitative literature on post-migration growth suggests that improved interpersonal communication skills are an interpersonal dimension of post-migration growth (Gu et al., 2010). In this way, it follows that higher English language ability might co-occur with higher post-migration growth.

**Post-migration growth and other variables.** Post-migration growth correlated significantly with all of the other predictor variables except for acculturative stress. The relationships between post-migration growth and these variables have been detailed above. Post-migration growth was also significantly correlated with the other outcome variable, psychological distress with small effect size. The negative relationship between these two variables indicates that as one's report of post-migration growth increases, their report of psychological distress decreases, and vice versa. Because post-migration growth is defined as positive adaptation that occurs during the migration process (Pan, 2015), and post-migration growth researchers have indicated that a positive adaptation outcome includes the absence of psychopathology and the presence of positive health (Luthar & Zigler, 1991), the inverse relationship between post-migration growth and psychological

distress is as would be expected. Data for this study was collected at a single timepoint and a longitudinal study will be better suited to explain any causal factors in the relationship between psychological distress and post-migration growth.

**Relational health and post-migration growth.** The study explored a research question related to whether an association exists between peer, mentor, and community relational health and post-migration growth for CISs. This study was the first to examine the associations between peer, mentor, and community aspects of relational health and post-migration growth for this population. Peer, mentor, and community relational health were all found to significantly and positively correlate with post-migration growth. This finding is consistent with previous research on stress-related growth with college students that has substantiated the significant relationship between stress-related growth and social-support satisfaction, concepts that are closely related to post-migration growth and relational health respectively (Park, Cohen, & Murch, 1996). Unlike past studies that have evaluated the presence or absence of support for CISs, relational health evaluates the *quality* of one's relationships (Bertram et al., 2014; Wang et al., 2012). The finding that the quality of CISs' social support is associated with their growth is especially valuable. The discussion below describing relational health as a predictor of post-migration growth will further expand on this relationship.

### **Psychological Distress Correlates**

**Psychological distress and demographic variables.** A main effect of gender was found for distress in CISs. Together with the one participant who identified as other gender identity, the male-identified participants reported significantly more distress than

female-identified participants. This finding is consistent with the Yale University study that found male CIS respondents had a marginally (non-significant) higher mean score on the PHQ-9, an assessment for depression (Han et al., 2013). However, the same study found that female CISs reported a non-statistically significant higher GAD-7 scores, an assessment for anxiety (Han et al., 2013). Other past research with CISs has also demonstrated that female participants endorse significantly higher distress than males (Wang et al., 2012). Research studying mental health in broad university populations in the US has also found that female participants report higher distress (American College Health Association, 2010). For this reason, the relationship between gender and psychological distress for CISs appears complex and signifies an urgent need for additional research focused on the mental health of CISs, a perspective shared by other researchers (Bai, 2016).

Age was another demographic variable that significantly correlated with distress. The positive correlation between age and distress can be interpreted such that older participants reported higher levels of distress than their younger counterparts. This finding is also consistent with the Yale study that found older CIS students reported a higher, though non-significant mean score on the PHQ-9, and a higher, non-significant mean score on the GAD-7 (Han et al., 2013). Similarly, in a study of university students in China, Chen et al., (2013) found that students who were older than 25 years old were significantly more likely to have depressive symptoms. As was described above regarding the correlation between age and acculturative stress, it is possible that the developmental tasks of the age group in the sample (19-32 years old) is a factor in their



increasing psychological distress with age. Yeh (2003) found age to be a significant predictor of mental health symptoms and theorized that the pressures of a student's developmental stage might be a contributing factor. For the current sample, the younger participants (19-25 years old) are considered to be in the early adulthood stage, while the older participants (25 years old and older) are considered to be in the adulthood stage. Forming close relationships is the primary task of early adulthood and finding one's purpose is the task of adulthood (Erikson, 1997). The current study only included undergraduate students, and it might be that the older undergraduate students in the sample experienced heightened psychological distress related to anxiety and confusion about their delayed timeframe for beginning their careers- finding their purpose, especially in light of the common expectation in Chinese families that children support their parents financially (Lu & Gilmour, 2006).

Similar to what was found for acculturative stress, CIS participants from DU reported significantly more psychological distress than participants from NYU or those from other academic institutions. As was discussed above, this result is likely related to the racial and ethnic make-up of the universities and surrounding areas. Past empirical research that has examined racial discrimination and mental health outcomes in those with an Asian heritage, has found significant positive associations between racial discrimination and anxiety, depression, and psychological distress (Chan, Tran, & Nguyen, 2012; Lee & Ahn, 2011). Studies also found racial discrimination to be associated with psychological distress and with depression in samples of international students (Chen, Mallinckrodt, & Mobley, 2002; Wei et al., 2008). As previously

mentioned, the CISs from DU had a higher mean score on the Perceived Discrimination subscale of the ASSCS. It could be possible that the lack of ethnic and racial diversity at the University of Denver is a factor that may lead to experiences of racial discrimination for CISs, and in-turn, lead to increased experiences of psychological distress.

**Psychological distress and other variables.** Psychological distress correlated significantly with all of the other predictor variables except for sense of campus belonging. Psychological distress was found to have a significant and positive relationship with acculturative stress, and a significant and negative relationship with relational health and self-compassion. The relationships between psychological distress and these variables have been detailed above. Psychological distress was also significantly and negatively correlated with the other outcome variable of the study, post-migration growth. This relationship has also been discussed above.

**Relational health and psychological distress.** The study explored a research question related to whether an association exists between peer, mentor, and community relational health and psychological distress. Peer, mentor, and community relational health were all shown to have a significant, negative correlation with psychological distress. While this is the first study to examine the relational health of CISs, past research has provided evidence of similar relationships. For example, empirical studies have indicated that social support has a buffering effect on depression in international students (Poyrazli et al., 2011), and found psychological functioning to correlate positively with the quality of social relationships in general college populations (Liang et

al., 2002b). This finding is the first to establish a relationship between the quality of CISs' relationships and mental health outcomes.

### **Prediction of Post-Migration Growth**

**Acculturative stress as a predictor of post-migration growth.** The hypothesis that acculturative stress would negatively predict post-migration growth for CISs was not supported in this study. This is the first study to explore this relationship. However, previous research by Park and Fenster (2004, p. 196) on stress-related growth has indicated that, "reporting positive changes does not appear to negate the adverse impact and suffering that people typically experience following negative events, but seems, instead, to be another aspect of the overall experience of coping with and adjusting to stressful events." This perspective is helpful when considering the lack of predictive relationship between acculturative stress and post-migration growth. It suggests that the level of stress that one experiences may not be necessary to consider with relation to growth experience.

The result that acculturative stress did not negatively predict post-migration growth for CISs is inconsistent with prior research exploring the relationship between post-migration growth and *acculturative hassles*, a construct that is similar to acculturative stress. While acculturative stress is defined as an interactive process between acculturative stressor, cognitive appraisal and coping, and adaptation outcome (Berry, 2006), acculturative hassles are "the daily hassles encountered specific to the migration status in the context of acculturation" (Pan, Yue, & Chan, 2010, p. 164). In research exploring predictors of post-migration growth, acculturative hassles accounted

for an additional 5% of the variance in post-migration growth after controlling for demographic variables (Pan, 2015). The research leading to this finding was conducted with 227 Chinese international students in Australia, and acculturative hassles were measured by the Acculturative Hassles Scale for Chinese Students (AHSCS) (Pan, Yue, & Chan, 2010). The AHSCS includes the four factors of language deficiency, social interaction, academic work, and cultural difference. This compares to the five ASSCS factors of language insufficiency, social isolation, perceived discrimination, academic pressure, and guilt toward family. The AHSCS was validated with mainland Chinese students studying in Hong Kong, whereas the ASSCS was validated with CISs in the US. It is possible that the inconsistency in the results between acculturative hassles and acculturative stress in relation to post-migration growth is a function of the differences in the samples used to validate the original measures and demonstrate the negative relationship with post-migration growth. An alternative explanation might be related to the differences in the constructs and the factors of their related measures. Notably, the ASSCS includes factors for perceived discrimination and guilt toward family, while the AHSCS has a factor for cultural difference. It could be that these elements impact the prediction of post-migration growth. Another explanation could be that the sample in the current study did not result in sufficient power to detect the association. Additionally, both the current study and the research that identified the predictive association between acculturative hassles and post-migration growth were cross-sectional research designs, and therefore causal relationship cannot be determined.

**Relational health, sense of campus belonging, and self-compassion as predictors of post-migration growth.** The hypothesis that relational health, sense of campus belonging, and self-compassion would positively predict post-migration growth for CISs was partially supported in this study. Relational health and self-compassion were significant predictors of post-migration growth, but sense of campus belonging was not when accounting for the other predictors. While the current study is the first to explore these specific predictors in relation to post-migration growth, related research has undertaken investigations of the similar constructs of social support satisfaction and acceptance coping, which were significant predictors of stress-related growth (Park, Cohen, & Murch, 1996). Social support satisfaction is conceptually related to relational health and sense of campus belonging, acceptance coping is related to self-compassion, and stress-related growth is related to post-migration growth. It is well-documented that social support offers protection against stressful life events (Cohen & Wills, 1985). Theoretically, Gill (2007) identified cross-cultural adaptation through relationship and deeper understanding of others, as aspects of the relational-interpersonal dimension of post-migration growth. Therefore, the predictive relationship that was demonstrated between relational health and post-migration growth was expected. Theoretically, Relational Model theorists conceptualize growth as occurring along with one's capacity for the type of relationships the RHI measures (Jordan, 2009). Connecting through relationships strengthens the individual characteristics that are associated with resilience. The growth-fostering relationships measured by relational health are therefore thought of as resilience-strengthening relationships (Hartling, 2008). Considering the collectivist

nature of Chinese culture and the importance of relational interdependence, it follows that the quality of relationships would play an important role in their experiences of post-migration growth.

Conversely, sense of campus belonging, the other social support construct in the current study, was not a significant predictor of post-migration growth for CISs. The current study was one of the first to explore sense of campus belonging for CISs, therefore there is limited empirical research upon which to draw comparisons. From a theoretical perspective, relational-cultural theorists hold that all individuals yearn for belonging, connection, and social inclusion (Comstock et al., 2008), and this is likely true for CISs in particular, given the collectivist values that are common (Markus & Kitayama, 1991). Glass and Westmont (2014) found that a sense of belonging provided international students the security to explore cross-cultural relationships with others. As shared above, adaptation through cross-cultural relationships is theorized as part of the interpersonal dimension of post-migration growth (Gill, 2007). Such theoretical perspectives lead us to expect that sense of campus belonging might predict post-migration growth, however it failed to do so. It is possible that sense of campus belonging is not a salient construct for CISs, given this finding and a similar past finding that failed to show school belonging to be significantly associated with another well-established correlate in the belonging literature for high school students in China (Liu & Lu, 2011). It may also be that the most critical aspects of social connection for post-migration growth are better captured in relational health than in campus belonging; peer,

mentor, and communication relations may represent the essence of the social connections needed for post-migration growth.

As hypothesized, self-compassion positively and significantly predicted post-migration growth for CISs. While self-compassion has never before been explored as a predictor of post-migration growth, this result is consistent with prior research and theory. Personal growth has previously been identified as a correlate of self-compassion (Neff et al., 2005). Additionally, other forms of positive coping have been shown to have relationships with stress-related growth and post-migration growth (Pan, 2015; Park & Fenster, 2004). For example, in their investigation of predictors of stress-related growth, Park and Fenster (2004) used a framework that proposed the outcomes of stressful encounters were influenced by variables including coping activities. Their research established that coping processes were related to growth. Pan's (2015) examination of the predictors of post-migration growth found that sense-making coping significantly accounted for an additional 14% of the total variance of post-migration growth. Sense-making coping is a way to develop an acceptance of an adverse event and its implications (Pan, 2015). As a form of coping, self-compassion reduces self-judgment and self-criticism, decreases feelings of isolation, lessens rumination, and limits avoidance of pain (Neff, 2003a). In this way, self-compassion can be thought of as another notable form of positive coping that is predictive of post-migration growth for CISs. What is interesting is that in Pan's (2015) article, the example of sense-making coping that was effective for CISs includes a normalization of their intercultural difficulties, which aligns with the

universality component of self-compassion, suggesting an area of overlap for these coping strategies.

### **Prediction of Psychological Distress**

**Acculturative stress as a predictor of psychological distress.** As hypothesized, acculturative stress was a significant predictor psychological distress for CISs. Results indicating a positive relationship between the two variables are consistent with prior research findings. The strong association between acculturative stress and psychosocial adjustment difficulties such as depression and anxiety have been documented in the literature (Berry, 2006). A number of studies have demonstrated the ways acculturative stress corresponds with depression in the Asian international student population (Dao, Lee, & Chang, 2007; Lee et al., 2004; Pan, 2007; Yang & Clum, 1995; Ying & Han, 2006) and with international students in general (Mori, 2000). Acculturative stress has been positively associated with depression among CISs (Wei et al., 2007) and Taiwanese international students at American universities (Ying & Han, 2006). Wei and colleagues (2007) found that acculturative stress served as a significant predictor of depression even after controlling for other variables. The results that acculturative stress is a predictor of psychological distress is further evidence of this relationship.

**Relational health, sense of campus belonging, and self-compassion as predictors of psychological distress.** The hypothesis that relational health, sense of campus belonging, and self-compassion will negatively predict psychological distress for CISs was partially supported. Results showed that relational health and sense of campus belonging were not significant predictors of psychological distress, but self-compassion



was. The results that relational health was not predictive of psychological distress is in contrast to prior empirical studies that have found that relational health was negatively predictive of depressive symptoms for Chinese American adolescents (Grossman & Liang, 2008). Because of the negative correlation that was demonstrated between relational health and psychological distress in this study and past studies with college students and adults (Frey et al., 2004; Frey, Beesley, & Miller, 2006; Liang et al., 2002a; Liang & West, 2011), and the positive correlation between psychological functioning and the quality of social relationships (Liang et al., 2002b), the potentially predictive relationship merited exploration, but was found to be an insignificant predictor for the CISs in this study. A longitudinal study design may allow further exploration of the causal relationship between these variables.

Sense of campus belonging also failed to be a significant predictor of psychological distress, which is not surprising given the lack of association between the two variables in this study. Scholars have advocated for additional research to investigate forms of school belonging for samples of Chinese students (Ho, Schweitzer, & Khawaja, 2017), and the current study is the first to explore sense of campus belonging in relation to psychological variables for CISs. Although no past research was identified that established a predictive relationship between these variables, studies have demonstrated that constructs related to belonging play a role in psychological outcomes. For example, as noted above, studies have demonstrated that social support in general has a buffering effect on depression in international students (Poyrazli et al., 2011). Despite this

evidence, the current study did not indicate that sense of campus belonging was a significant predictor of psychological distress for CISs.

Self-compassion was the only predictor found to be significant for psychological distress for CISs in the current study. The negative association between self-compassion and psychological distress has been well-documented in the literature (Barnard & Curry, 2011; Ehret, Joormann & Berking, 2014; MacBeth & Gumley, 2012; Muris, Meesters, Pierik, & de Kock, 2016, Trompeter et al., 2017), and prior research has found self-compassion to be a stronger predictor of well-being than social support for college students (Neely et al., 2009). The current study replicated these findings and extended them to the population of CISs. Furthermore, in a study of Asian international students in Australia, dysfunctional coping, which included self-blame, was the only significant predictor of psychological distress in a study that included the following: accommodation satisfaction, financial satisfaction, language proficiency, perceived discrimination, mismatched expectations, dysfunctional coping, social support and academic stress as predictors. (Khawaja & Dempsey, 2007). This finding is relevant to the discussion of self-compassion as a predictor, given that self-compassion reduces one's self-judgment and self-criticism and as such, is contrary to self-blame. The importance of self-compassion as a predictor of CISs psychological distress is a notable finding.

### **Self-Compassion as a Moderator**

Because there was no significant relationship between acculturative stress and post-migration growth for CISs, self-compassion was not explored as a moderator of acculturative stress. However, the current study found a predictive relationship between

acculturative stress and psychological distress, and also between self-compassion and psychological distress. This provides evidence that self-compassion could be a viable protective factor in the relationship between acculturative stress and psychological distress. However, the interaction of acculturative stress and self-compassion for psychological distress did not account for significantly more variance than just acculturative stress and self-compassion by themselves, indicating that there is not significant moderation between acculturative stress and self-compassion on psychological distress. This hypothesis was based upon research that highlights the role of coping in the acculturation of CISs (Du & Wei, 2015), and identified self-compassion as a coping strategy promoting positive psychological health during distressing times (Fong & Loi, 2016).

### **Strengths and Limitations**

The current study makes a number of contributions to the literature, in particular the identification of relational health and self-compassion as predictors for the well-being of CISs. The current study was the first to explore this combination of social support and coping variables in relation to psychological distress and post-migration growth and adds to understandings of how CISs struggle and thrive in the face of acculturative stress. These are domains that scholars have emphasized as important areas of investigation. For example, scholars have called for acculturation research to identify protective factors that promote positive adaptation outcomes for international students (Pan, 2015), and to identify factors that moderate the association between acculturative stress and psychological distress for CISs (Wei et al., 2007); for additional research to explore

forms of school belonging for samples of Chinese students (Ho, Schweitzer, & Khawaja, 2017); and for research with international students to expand beyond maladaptive coping (Smith & Khawaja, 2011). In particular, the current endeavor addresses the call to consider strengths-based approaches to outcomes for CISs. The consideration of post-migration growth as an outcome and of self-compassion and relational health as positive adaptation strategies expands our current understanding of the protective mechanisms that can lead to positive outcomes. Additionally, consideration of these protective factors underscores the importance to positive outcomes such as growth.

In particular, the study has emphasized the importance of the *quality* of CISs relationships in their experiences of post-migration growth. Relational health has not yet been studied as a variable with samples of CISs, so this study adds a unique contribution in that way. As expected, and likely in relation to collectivist values, relational health appears to be a relevant construct for CISs. Because experiences of racism and prejudice can be part of the CIS acculturation experience, one's peer, mentor, and community relational health can function to enhance the resilience that leads to post-migration growth. Another sources of relational disconnection that occurs is the lack of social support that CISs can experience upon arrival to the US. As described earlier, research shows the psychological well-being of international students is significantly influenced by the loss of social support that occurs upon arrival (Hayes and Lin, 1994; Mallinckrodt and Leong, 1992; Pedersen, 1991; Sandhu, 1995). Because RCT frames resilience as a relational activity, a person's ability to be resilient in the face of hardships, whether personal or cultural in nature, is dependent on the growth-fostering relationships that

person has formed with peers, mentors, and their community (Hartling, 2008). In this study relational health has been shown to be a relational concept that merits continued exploration for CISs.

Further, the focus on CISs is in and of itself a strength of this study. Researchers of international student issues have advocated that studies select samples with a similar cultural heritage in order to improve the generalizability of findings (Bertram, Poulakis, Elsasser, & Kumar, 2014). As noted, CISs have been reported to experience more acculturative stress than other international students (Li & Glasser, 2005; Wang et al., 2015). They are subject to vast acculturative stressors including language difficulties (Pan et al., 2008; Pedersen, 1991; Swager & Ellis, 2003; Yeh & Inose, 2003), academic pressures (Pedersen, 1991), perceived discrimination (Sandhu & Asrabadi, 1994), homesickness (Sandhu & Asrabadi, 1994), loneliness (Pedersen, 1999), and cultural differences (Pan et al., 2008; Pedersen, 1991; Swager & Ellis, 2003). Additionally, as mentioned, acculturative stress has been positively associated with depression among Chinese international students (Wei et al., 2007) and Taiwanese international students (Ying & Han, 2006). Because these students account for a significant portion of the international students studying in the US, and because of their substantial economic and academic contributions, it is imperative to advance research to better understand the ways in which they struggle and thrive.

The major limitation of the current research study is its cross-sectional design, being that a cross-sectional design limits conclusions about causality among the variables. Longitudinal and experimental research is required to replicate the findings of

this study and to examine how the relationships among the predictor variables of relational health and self-compassion and the outcome variables of post-migration growth and psychological distress would play out over time.

The representation of the sample is another limitation of the current research. For example, only 13.8% of study participants were 25-32 years old, and all others were 18-24, which limits generalizability of the findings to older CIS students. Student respondents were mostly from NYU and DU, two private institutions located in urban areas. Therefore, generalizability of findings for CISs in rural and suburban areas is limited. Because participants were Chinese-speaking students from Taiwan, Hong Kong, and Mainland China, the generalizability of the findings to other international students is limited. Additionally, while a variety of distribution avenues were pursued, there is no information on whether there was a selection bias based on who decided to participate. Given that the study included nearly 150 items, there was, not surprisingly, an attrition rate of 27%. It is possible that unknown factors may have affected the participants' completion of this study. For example, the study was only offered in English, which could have impacted the comprehension of survey items for participants with limited English reading proficiency or could have deterred CISs with lower English reading proficiency from beginning the survey in the first place. Replicating the study's findings using translated surveys is necessary.

Also, because self-report measures were utilized, the results are more prone to bias as a result of such factors as social desirability, misinterpretation of questions, and response bias (Meltzoff, 2011).

## **Future Directions**

While results of the current study address several questions about the relationships that acculturative stress, relational health, sense of campus belonging, and self-compassion have with post-migration growth and psychological distress, the results also lead us to questions to be explored in future research. The importance of longitudinal and experimental research designs has already been discussed. Such studies are required to replicate the current findings and to elucidate the temporal relations between the variables of the study for CISs. In particular, examining how the relationship between relational health and psychological distress unfolds over time will be important to fully understand the predictive potential of the quality of one's relationships in determining well-being for CISs. Capturing CISs' level of acculturative stress and psychological distress at a time prior to the measurement of their post-migration growth will further our understanding of whether levels of stress are an indicator of their capacity for growth. Also, more research is needed to determine why some CISs thrive psychologically or experience personal growth following acculturative stress, whereas others do not. Therefore, continued exploration of pertinent protective factors is necessary.

Based on current findings, it will be important to continue to understand the relationships certain demographic and situational variables have with the predictor and outcome variables of the study. For example, the associations that gender and age have with psychological distress for CISs were in line with some prior research and in contrast to other findings. The inconsistent results in the literature point to the need for additional research to pinpoint patterns of CIS mental health. Future studies should make use of

other important indicators that might predict post-migration growth or psychological distress for CISs. Specifically, our results point to experiences of discrimination, and family support as relevant areas of future exploration for CISs.

Additionally, it appears necessary to investigate whether sense of campus belonging is salient for CISs. While an association existed for sense of campus belonging and post-migration growth, the research failed to demonstrate an association with psychological distress, or predictive relationships with either of the outcome variables. If campus belonging can, in fact, be determined a relevant concept for CISs, it will be important to explore how support from one's family influences their ability to feel connected to their campus community, given the association family support of major and overall family support had with sense of campus belonging.

Finally, given the predictive relationship of self-compassion for post-migration growth and psychological distress indicated by this study's results, experimental studies could be conducted to evaluate the effectiveness of self-compassion interventions in fostering growth and encouraging psychological health for CISs. Self-compassion seems to be promising as a potential protective factor for CISs, one that merits additional evaluation. While exploring relational health in an experimental setting may pose challenges, the indication of relational health as a predictor of post-migration growth points to the importance of continued investigation of the relational health of CISs.

### **Implications for Practice and Policy**

The knowledge that international students in general, and CISs in particular, underuse counseling services, seek counseling once their symptoms have become severe,



and are more likely to drop out of counseling prematurely (Nilsson et al., 2004; Raunic & Xenos, 2008; Wang et al., 2012), is important when considering clinical implications for this population. It is necessary to use creative approaches that take into consideration help-seeking behavior and stigma concerns when designing therapeutic services for CISs that may involve the following recommendations. To emphasize the importance of student support programming in serving the mental health needs and positive adaptation of CISs, the considerations of practice and policy are combined.

**Relational health and self-compassion.** Relational health and self-compassion emerged as significant variables for the CISs in this study. Both variables correlated to all other predictor and outcome variables and both positively predicted post-migration growth. Additionally, self-compassion negatively predicted psychological distress. These results point to the relevance of these concepts for CISs. Clinically speaking, it appears important that college counseling centers and others working with CISs take into account the quality of their social support and their levels of self-compassion when formulating interventions or outreach content.

Therapeutic interventions could help CIS clients consider ways they might go about deepening their connections to others. Such interventions might explore how to build meaningful relationships with others from a culturally-sensitive lens that includes approaches that acknowledges CISs' understanding of relationships and challenges them to explore common ways of relating to individuals in the dominant American culture. Therapists working with CISs can help students better understand the connection between their relational health and their well-being and work with students to explore the quality

of their existing relationships. It might also be helpful to encourage CIS students to identify what their values are around relationships and to make strides to live in ways that prioritize their relational values. If a student is interested in building or strengthening relationships with individuals from the dominant American culture, the therapist might share relational strategies that are commonly used with American students such as assertiveness training, boundary setting, or sharing with close others in emotionally vulnerable ways.

With regard to clinical interventions for CISs to encourage their self-compassion, a clinician might explore a student's manner of maladaptive coping. In particular, given that research has shown self-blame (Khawaja & Dempsey, 2007), avoidance coping (Kennedy, 1999), and maladaptive perfectionism (Wei et al., 2007), to significantly predict psychological distress for Asian international students, clinicians working with CISs could explore these areas for the students they work with and explore self-compassion strategies as a more adaptive form of coping that addresses each of the dysfunctional coping styles mentioned above. A helpful self-compassion intervention ought to include a discussion of the advantages of self-compassion over self-esteem (the durability of self-compassion), and an introduction to the pillars of self-compassion including self-kindness, common humanity, and mindfulness (Neff 2003a, 2003b, 2008). Once introduced, the culturally-sensitive counselor ought to assess the relevance of any of the aforementioned interventions for their particular client.

To help CISs facilitate meaningful connections to one another and to other members of their university's community, international student support services could

provide CISs social opportunities by offering campus spaces and a range of social programming to foster relationship-building. CISs could be consulted on a regular basis and involved in the planning of these events to assure their relevance and desirability for the CISs of any individual campus. Some ideas might include game nights, karaoke, or potlucks. Orientation services could include sessions about bolstering one's resilience through self-compassion skills and high-quality social support. Sharing such information in orientation programming could provide an outreach opportunity for counseling centers to deliver strategies in a non-stigmatizing manner and also invite CISs to visit their centers for further skills development and discussion. A strengths-based approach such as this would likely resonate with this population, given their demonstrated stigma concerns related to help-seeking (Vogel, Wade, & Ascherman, 2009).

**Acculturative stress and psychological distress.** Current findings related to the acculturative stress experiences of CISs have substantial implications to policy and practice. It was found that student from DU had significantly more acculturative stress than those from NYU or other schools. It is vital that administrators take measures to understand the acculturative stress experiences of the students on their campuses through needs assessment to direct program planning. One assumption is that the differences in the DU/NYU groups may be related to heightened experiences of discrimination. Should this be shown to be the case through both quantitative and qualitative approaches such as surveys and focus groups, it will be important for campuses situated in areas that lack racial and ethnic diversity to take additional measures to support their CISs in ways that meaningfully buffer their experiences of acculturative stress.

Results indicated that students living in off-campus housing experienced significantly higher levels of acculturative stress. Administrators of international student services must consider ways to provide additional avenues of support to these off-campus students. Otherwise, students could be strongly encouraged to live on campus during their initial transition to living in the US. Brunette, et al., (2011) recommend adjusting application deadlines in order to allow additional time for international students to apply for on-campus accommodation, considering that they might be impacted by such administrative hold-ups as visa delays. Universities might also allocate additional on-campus housing for CISs, with the understanding that accommodation issues are a known acculturative stressor (Smith & Khawaja, 2011). Additionally, dedicated on-campus meeting spaces where CISs can congregate, study, and relax, will help them build connections and a sense of belonging, which will be especially important for students living off-campus (Brunette, et al., 2011). Although acculturative stress was not explored in this study as an outcome variable, the correlation found between sense of campus belonging and acculturative stress might indicate that fostering a sense of campus belonging could be another way to help CISs experiences less acculturative stress.

The discussion of findings related to psychological distress mirrors that of what has been discussed pertaining to acculturative stress. As with acculturative stress, the CISs from DU endorsed higher levels of psychological distress. Therefore, the recommendations above stressing the importance of campus mixed methods needs assessment to understand the psychological distress specific to the CISs on individual campuses will be critical. Once campuses more fully understand the ways their students

are struggling and the factors that are involved, the better tailored counseling services and student support services can be.

Prior approaches suggested in the literature include developing outreach and community-based interventions to address psychological issues related to stress and adjustment (Yakunina, Weigold, Weigold, Hercegovac, & Elsayed, 2013). Social development programs might include connections to international families, peer “buddies,” and business mentors, or cross-cultural conversation partners (Eldaba, 2016; Yakunina et al., 2013). Programs aimed at facilitating adjustment might include CIS support or “discussion” groups or semester-long orientation requirements (Eldaba, 2016; Yakunina et al., 2013). Additionally, campus communities must consider ways the students, faculty, administrators, and university organizations can foster more inviting opportunities for cross-cultural interaction. Implementing programming such as this and those mentioned above, while taking into consideration the specific needs of each campus’s CISs, will enable universities to capitalize of the results of the current study highlighting the importance of relational connections and self-compassion in the overall well-being of CISs.

### **Conclusion**

The current study has provided additional context to understand the significance of a number of variables for CISs studying in the US. This research explored the relationships acculturative stress, relational health, sense of campus belonging, and self-compassion have with post-migration growth, psychological distress, and a number of demographic and situational variables for CISs. With regard to the demographic and

situational variables of the study, this research has drawn attention to the importance of considering variables related to family support and on- or off-campus residence when investigating the adjustment, distress, and relationships of CISs. Additionally, academic institution emerged as significant to the acculturation and psychological distress of CISs of this study. This finding potentially points to the racial and ethnic make-up of the educational institution and surrounding area as an important factor of consideration.

When considering the importance of the findings related to the predictor and outcome variables of the study, the finding that post-migration growth was shown to have significant associations with the other outcome variable and all but one of the other predictor variables of the study for CISs is significant. Notably, acculturative stress was the only predictor variable that post-migration growth did not significantly correlate to, suggesting complex relationships exist between how one experiences acculturative stress and how they ultimately experience growth as a result of the difficulties they have. It is important to consider post-migration growth for CISs so that the factors that encourage positive adaptation can be understood and promoted for these students in spite of any negative acculturation experiences they may have.

The inverse relationship that was shown to exist between post-migration growth and psychological distress confirms the theoretical conceptualization of post-migration growth as a positive adaptation outcome (Pan, 2015). Because much of the research on post-migration growth has been qualitative, this finding is an important contribution to the understanding of post-migration growth correlates for CISs.

Another noteworthy finding was related to the exploratory research question of whether there be an association between peer, mentor, and community relational health. Analysis revealed that indeed, these factors of relational health are all significantly and positively correlated to post-migration growth, amplifying the importance of the quality of each type of relationship to one's ability to be resilient and grow in the face of struggle.

Psychological distress correlated significantly with all of the other variables except for sense of campus belonging, confirming some known relationships and providing evidence of others that have not yet been well-researched for CISs. The study was the first to explore the relational health of CISs as it relates to psychological distress and findings suggest that relational health as a composite, as well as the factors of peer, mentor, and community relational health each showed a significant negative relationship to psychological distress. Prior research has demonstrated this relationship for other populations, but the current study is the first to demonstrate such for CISs.

In terms of significant predictors found in the context of the current study, relational health and self-compassion were found to be significant predictors of post-migration growth. The finding that the quality of CISs' relationships and their ability to show themselves kindness through difficult circumstances are factors that predict post-migration growth is meaningful. This study is the first to explore this combination of variables for CISs and this knowledge has vast implications for policy and practice. The finding that acculturative stress and self-compassion functioned as significant predictors of psychological distress for CISs also had wide implications. There is an abundance of

literature to support the finding that acculturative stress predicts a number of negative psychological outcomes, but this research provides further evidence that such is the case for CISs. That self-compassion predicts psychological distress for CIS is another meaningful aspect of the current undertaking. Knowing that CISs' relationships to themselves is a better predictor of their distress than their relationships with others is an important finding that can inform clinical interventions and programming decisions.

Despite no significant moderation effects being found, this study contributes to the understanding of the association of important variables in the growth and distress of CISs and supports the notion that both relational health and self-compassion are important factors of consideration when examining such positive and negative outcomes in this population. In this way, this research offers new and exciting directions for future investigations of relational health and self-compassion as theoretical constructs and clinical tools.



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