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ACCULTURATION STRESS AND DEPRESSION AMONG FIRST-YEAR INTERNATIOANL GRADUATE STUDENTS FROM CHINA AND INDIA AT THE UNIVERSITY OF SOUTH CAROLINA

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For the Degree of Doctor of Philosophy in

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DEDICATION

To study participants

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ACKNOWLEDGEMENTS

I want to acknowledge my committee members for their support: Dr. Pitner, my superb advisor who is intellectual, humorous, approachable, and humble, Dr. Roth who is one of the great thinkers of our time and who listens to students wholeheartedly, Dr. Sakamoto who added depth to my study with her cultural insights and who nurtured me emotionally with her deep sense of understanding of my situation as an international student, and Dr. Levkoff who fed us, hungry doctoral students, both intellectually and physically like a mother for her children. I have been shamelessly bragging about being your student to everyone I meet on and off campus, and this bragging will continue even after I graduate from the university. Thank you so much for having made me a better scholar. I would also like to thank Dr. Patricia Sharpe who first encouraged me to pursue this study topic for my dissertation. Her guidance at the start of the project was invaluable.

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ABSTRACT

This cohort study used a mixed-methods pretest/posttest measurement study design. The quantitative method was used to explore the relationship between acculturation stress and depression among first-year international graduate students from China and India enrolled at the University of South Carolina(UofSC), examine the role that social support plays in that relationship, and identify changes in acculturation, social support, and depression over one academic year. The qualitative method helped to further explore how Chinese and Indian international graduate students experienced acculturation stress and to what extent social support helped them cope with their stress.

The sample included 55 students. Primary data were collected through two-time online surveys which consisted of demographic and psychosocial measures of acculturation stress, depression, and perceived social support. Focus group discussion refined and expanded findings gleaned from quantitative data analysis. A hierarchal regression analysis revealed that acculturation stress was a significant predictor of depression among participants, and the relationship between acculturation stress and depression did not differ by the availability of social support. Paired samples t-tests revealed that social support increased significantly between Time 1 and Time 2. Three acculturation stress-related themes emerged from focus group discussions: lack of diversity on campus, fear of making mistakes, and microaggression. Social support-related themes included a tradition of “paying it forward,” active engagement of

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academic advisors, and informational support offered by the International Student Services (ISS).

Many participants experienced acculturation stress during their transition to the UofSC campus, in part due to conflicting cultural values and different coping strategies. This stress often led to depressive symptoms. Over the year, participants built stronger support networks with co-nationals, academic advisors, and the ISS. While co-nationals offered socioemotional support, the ISS provided informational support. The relationship with academic advisors seemed to positively influence participants' emotional well-being. Practical implications were elucidated for university services and programs. Further research using a larger sample from a more diverse pool is needed to provide stronger empirical support for the study findings.

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CHAPTER 1

INTRODUCTION

This dissertation study examines the relationship between acculturation stress and depression among first-year international graduate students from China and India at the University of South Carolina (UofSC), and the impact of social support on this relationship. This chapter begins with an explication of the problem statement, the relevance of the proposed study to social work, and the significance of the study within the larger context of scholarly literature. Next, the definition of terms, the background of the study, and proposed conceptual model are discussed. The chapter ends with the purpose of the research, specific aims and hypotheses for the quantitative portion, and a research question for the qualitative portion

Problem Statement

As globalization increases, a large number of international students enter the United States (US) every year to pursue their educational goals. The three most heavily represented countries for international student enrollment are China, India, and South Korea, together constituting more than half of the entire international student population. According to the Institute of International Education (2016a, 2016b), during the 2014-2015 academic year, 974,926 students from more than 220 countries enrolled in US universities and colleges, contributing approximately $35.8 billion to the US economy. The diverse cultural heritages and international perspectives of these students enrich the educational experience of all students, and the intellectual capital of these international

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students enhances the knowledge, resources, and skills available at the universities where they study.

While the university community benefits significantly from this increasing globalization, research has revealed the high level of acculturation stress that many international students experience during the transition from their homeland to the host country (de Araujo, 2011; Smith & Khawaja, 2011; Tseng & Newton, 2002). A lack of familiarity with the host culture and educational system, coupled with separation from their family, may intensify this stress. Failing to manage acculturation stress can increase psychological vulnerability to depression (Berry, 1990; Hsiao, 2016; Yang & Clum, 1994). Major stressors for this student group include language barriers, academic demands, financial constraints, homesickness, social isolation, and perceived discrimination (Chen, 1999; Kwon, 2009; Mori, 2000; Poyrazli, 2015; Smith & Khawaja, 2011; Yeh & Inose, 2003; Zhai, 2004). In coping with these challenges, many international students use familiar cultural assets from their own heritage (Kim, 2012a). However, for some students, the cultural values of the host nation may be at odds with the values of their own culture, adding a layer of complexity to the problem.

Although some may argue that acculturation challenges are universal to international students, the severity of stress is believed to be far greater for Asian students (Hsieh, 2006). Many Asian international students shoulder additional stressors that derive from their cultures, such as a greater value of family recognition through academic success, emphasis on emotional suppression, and a heightened distrust of mental health services (Heggins & Jackson, 2003; Wei et al., 2007). For example, Asian international students expect to succeed academically (Wang, 2011). They often equate their academic

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success with self-worth and find it almost impossible to cope with the idea of failing. This expectation involves more than just personal pride; it is how these particular students bring honor to their family (Li & Lin, 2014) and fulfill their social responsibilities (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). ‘Collectivist’ Asian cultures endorse an interconnected social orientation (Triandis, 1995), and the ability to govern and control emotions, particularly negative ones, is paramount to maintain relational harmony (Guo & Uhm, 2014). Hence, Asian international students are more likely to internalize their stress than to share personal problems with outsiders, such as counselors, perceiving this as a slight against the cultural code of mutual reliance among in-group members. Vulnerability of this kind may evoke feelings of shame and guilt (Moore & Constantine, 2005). Additionally, Asians are seen as a model minority who are “hard-working, high-achieving individuals with few psychological difficulties” (Inman &Yeh, 2007, p. 323). This stereotypical perception of Asians may blind university personnel to the challenges faced by Asian international students and preclude the universities implementing proper services to assist them. In this context, isolation from their primary support group, such as family and friends, may adversely affect Asian international students who have not established social support patterns similar to those in their home countries. Despite the scope, growth, and importance of this problem, research examining the impact of acculturation stress on the mental well-being of Asian international students is quite limited.

Significance of the Study

Although the international student community at UofSC has grown, it is still relatively small, constituting 4.8% (*n*=1,632) of the entire student body (International

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Student Services [ISS], University of South Carolina, 2015). The Office of the Provost through Global Carolina is actively engaged in efforts to increase campus globalization by recruiting qualified students from abroad. This proposed study is the first known study to examine acculturation stress that international students encounter during their transition to the UofSC Columbia campus. The area of acculturation stress among students from collectivist societies is, overall, largely unexplored, so this study will have international significance. Findings from this study will expand the currently limited body of literature examining the cross-cultural transition of international students. Additionally, this research will serve as a valuable tool for UofSC to accurately assess the needs of their international students, discover additional ways to assist them in making successful transitions, and take a proactive approach to addressing potential mental health concerns among these students. The impact of this study likely will go beyond the UofSC campus; the findings will offer data to other universities hosting international students and enable them to develop effective services and programs that foster the cultural adjustment for international students at large.

Relevance of Research to Social Work

This study is relevant to social work for two main reasons. First, acculturation is one of the most researched topics in the field of cross-cultural psychology, as it is strongly linked to the psychological well-being of ethnic minorities (Kang, 2010). However, the issue concerning acculturation stress experienced by many international students from collectivist Asian cultures is understudied in the field of social work. Pertinent literature is lacking and undeveloped. The results of this study will fill the current knowledge gaps to enhance the cultural competence of educators, mental health

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practitioners, and social workers in working with Asian international students. Second, despite its robust growth, the population of Asian international students in US universities is traditionally underserved by university mental health services (Galligan, 2016; Li, 2016). Addressing the needs of this unique group and including them in university services would foster an environment of greater social justice, a core commitment of the social work profession. The findings of this study will help empower the international student community by raising awareness of the impact of acculturation stress on the well-being of these students and their university experience.

Definition of Terms

In this dissertation study, *international students* refers to “students who have crossed a national or territorial border for the purposes of education and are now enrolled outside their country of origin” (UNESCO Institute for Statistics, 2006, p. 178). As opposed to refugees and immigrants, international students typically come to the host country with specific academic goals, and the majority of them plan to return to their homeland. Therefore, full cultural adaptation may not occur in this population.

Collectivist culture emphasizes interdependence, harmony, conformity, and mutuality. More often, in collectivist cultures, people have a strong emotional attachment to their in-groups throughout the lifespan and tend to prioritize the good of the group over individual interests. Their goals are communal, and achievements are viewed as a result of collective effort. Members of collectivist cultures desire to contribute to family integrity by fulfilling expected social and familial roles (Triandis, 1995). In collectivist cultures, coping methods highlight adjusting one’s own behavior to maintain fundamental

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connectedness (Inman & Yeh, 2007). Collectivism is commonly observed in Asian, African, and Latin American cultures (Triandis, 1993).

Individualist culture fosters independence, autonomy, assertiveness, and personal achievement. This individualism creates weaker bonds within in-groups. That is, broader and more inclusive yet superficial in-groups are considered the norm. In this culture, personal distinctiveness is greatly emphasized. Individual needs typically outweigh group interests, and achievements are attributed to individual ability (Triandis, 1995). Attendant coping strategies are action-oriented such as problem solving and confrontation (Inman & Yeh, 2007). Individualism is mostly seen in cultures of North America and Western Europe (Triandis, 1993).

It is important to note that in most cultures, collectivist and individualist cultures co-exist and emerge in different contexts (Coon & Kemmelmeier, 2001). The descriptions above represent general patterns of collectivism and individualism, which are dominant characteristics shared as a whole, but are not necessarily displayed by everyone in these cultures. Therefore, caution is required when arguing for universality. Despite shortcomings, this collectivist and individualist dimension provides a helpful framework for explaining acculturation experiences of Asian international students from collectivist cultures.

Background Study

Broadly speaking, acculturation refers to the process of culture change and adaptation that occurs when two dissimilar cultures come in direct contact (Gibson, 2001). It is typically composed of three phases: contact, conflict, and adaptation (Berry, 1992). Acculturation stress, which is defined as psychological difficulties, arises during

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the process of cross-cultural transitions when individuals experience challenges that exceed their available coping resources (Berry, 1997). Acculturation stress may negatively affect mental and physical health (Berry, 1990). An analysis of literature has shown that psychological difficulties occur for international students soon after their arrival in the US (Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Ying & Liese, 1990) because these students are required to adapt quickly in an unfamiliar environment in order to succeed. Adjusting to a new educational system and a new social environment is demanding, exhausts internal resources (Smart & Smart, 1995), and may prove particularly challenging to international students who are temporary residents and have not established permanent social support networks (Berry, Kim, Minde, & Mok, 1987). Maladaptive coping can adversely affect mental and emotional well-being as well as academic performance (Kilinc & Granello, 2003).

Depression is a major mental health concern for international students, and studies have shown a positive association between acculturation stress and depression (M. Liu, 2009; Nilsson, Barker, Flores, & Lucas, 2004; Zhang, 2012). Previous studies suggested second language anxiety, academic pressure, financial concerns, and social isolation as major stressors for these students (Kwon, 2009; Mori, 2000; Sandhu, 1995; Smith & Khawaja, 2011). In light of the cultural values that shape an individual's coping strategies for dealing with stressful situations, psychological problems may arise for non-Western individuals which are not responsive to coping strategies derived from Western approaches (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013; Kuo, 2011, 2013). Asian international students who desire to attain academic success may be particularly vulnerable to depression. In general, many Asian students strive to achieve based on their

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cultural expectation. If this causes them to have stress, they tend to adopt culturally relevant strategies and minimize or conceal their struggles through emotional regulation and self-discipline (Wei, Liao, Heppner, Chao, & Ku, 2012). Some Asian international students may not want to involve others in their personal problems for fear that it would have a negative relational consequence (Yeh, Inman, Kim, & Okubo, 2006). This cultural priority of interpersonal harmony, coupled with the social stigma associated with mental illness, may prevent many Asian international students from seeking help to reduce psychological distress originating from cross-cultural adjustment.

Social support is generally understood in terms of social relationships that surround individuals (House, Kahn, McLeod, & Williams, 1985) and is often derived from similar others who have or are dealing with similar issues or provide positive feedback (Cohen & KcKay, 1984). Social support serves as a protective factor against the impact of stressful events (Cohen & Wills, 1985; Sarason, Levine, Basham, & Sarason, 1983), and a large body of literature provided empirical evidence on its positive role for the psychological adjustment of international students (Atri, Sharma, & Cottrell, 2007; Lee, Koeske, & Sales, 2004; Meghani & Harvey, 2016; Sümer, Poyrazli, & Grahame, 2008; Ye, 2006; Ying & Liese, 1991). Many international students rely more heavily on informal sources of support to help them during the transitional phase (Zhai, 2004), which is evident in underutilization of counseling services. According to Nilsson, Berkel, Flores, and Lucas (2004), only about 2% of international students utilized counseling services provided by their university during a given academic year. It was found that, relative to all ethnic groups, Asian international students use university counseling services the least (Hyun, Quinn, Madon, & Lustig, 2007; Yakunina, 2012). Additionally,

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many US counselors have limited knowledge and experience with non-Western cultures (Sue, Arredondo, & McDavis, 1992; Zhang & Dixon, 2003). This can create a mismatch between needs of Asian students and available services. Removed from their usual support network of family and friends, many Asian international students experience a deep sense of isolation. Counseling services are often unfamiliar to Asian students and may evoke difficult or uncomfortable feelings.

In light of this, Asian international students are more likely to experience high levels of acculturation stress owing to aforementioned culturally-based stressors; hence, they may be at a greater risk of developing depression. Unfortunately, little is known about how prevalent depression is among this cultural population. Therefore, it is extremely important to explore the relationship between acculturation stress and depression, as well as the potential contributing factors, to adequately address this issue. With so much attention on academic progress and immigration regulations, many universities in the US overlook the socio-emotional needs of international students. The findings of this study can shed light on varying degrees of acculturation stress experienced by Asian international students from collectivist cultures. Because the main research questions sought to explain the relationship between acculturation stress and depression, this study focused exclusively on the psychological symptoms of depression that Asian international may experience during their sojourn in the US.

This study is confined to Chinese and Indian students. The Institute of International Education (2016b) reported that in 2015-2016, international student enrollment in the US increased by 7.1% to 1,043,839. Among these students, Chinese and Indian students are the two largest groups, composing 45% of the entire international

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student population. Currently, many US universities are making efforts to increase international exposure on campus by recruiting more international students, primarily targeting Chinese and Indian students. As a result, the number of these students increased by 13% from 436,928 to 494,465 in the past two years. The number of Chinese and Indian students will continue to rise because of these efforts to increase international diversity on US university campuses. For UofSC, students from China and India are also the two largest international student groups. The enrollment of these students is expected to increase as a result of the university's globalization project. Given this enrollment push, the study findings will be especially relevant to this growing number of Chinese and Indian students.

Conceptual Model

The conceptual model for this dissertation study is presented below in Figure 1.1. This conceptual model was adapted from Berry's study in 2005. Berry's model was chosen because it acknowledges individuals' psychological adjustment. This revised model contains Berry's key constructs of acculturation stress and mental health and also includes unique stressors for Asian international students. This expanded model illustrates the particular mental trajectory of international students. The box labeled "stressors" in Figure 1.1 was included as an expansion of Berry's model which diagrams a long-term adaptation process, but not a short-term adjustment outcome. Moreover, additional components of the acculturation process, such as cognitive appraisal and the role of social support, were included to underscore the complex nature of students' cross-cultural experiences. Berry's model does not capture this level of complexity, yet it was

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important to include these factors to more accurately reflect the lived experiences of international students.

Allowing for the general application of acculturation theory, the current conceptual model shows the process of cultural change, potential acculturation stressors (both internal and external), cognitive appraisals of stressful situations, the role of social support, and predicted mental health outcomes. The conceptual model does not cover prior stressful events or negative experiences in the home country. By highlighting the interconnected nature of the key concepts, the conceptual model below provides a roadmap for examining the relationship between acculturation stress and depression that Asian international students may experience during their sojourn in the US.

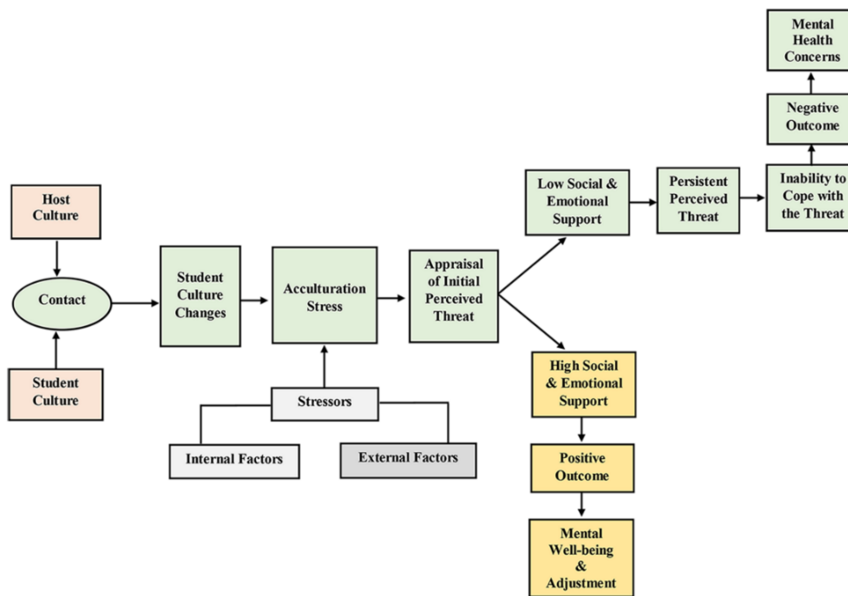

Figure 1.1 Diagram of a General Acculturation Framework

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As can be seen in Figure 1.1, the direct contact between the American culture and the Asian student's home culture yields inevitable cultural changes. These changes are multidimensional and pervasive, and they involve psychological, behavioral, and cultural aspects. Although the linear layout of this conceptual map fails to show it, the changes are bidirectional (Berry, 1992), affecting both host and student cultures simultaneously. However, more profound cultural changes are expected to occur in the students as they are required to learn and operate within the host culture to attain their academic goals.

During cross-cultural transitions, though the intensity may vary, most students experience acculturation stress, which is manifested as internal and external stressors. *Internal stressors* include second language anxiety (Cheng & Erben, 2012), fear of failure/desire to excel academically (Liao & Wei, 2014; Yan & Berliner, 2011), homesickness (M. Liu, 2009; Poyrazli & Lopez, 2007), feelings of loneliness and isolation (Bertram, Poulakis, Elsasser, & Kumar, 2014; Khawaja & Stallman, 2011), and uncertainty about the future (Cho, 2013). Potential *external stressors* are the language barrier (Lee, 2008), interpersonal problems (Ang & Liamputtong, 2008; M. Liu, 2009), academic challenges (Zhai, 2004), financial constraints (Kwon, 2009; Lin & Yi, 1997), and unfair treatment/discrimination (Poyrazli & Lopez, 2007; Wang, 2011).

The conceptual model suggests that when confronted with acculturation challenges, individual students cognitively ***appraise*** their situations (Zhang, 2012). Students with strong ***social support*** networks are less likely to assess their acculturation experiences as stressful events, which makes successful ***adjustment*** to the new culture more likely. As seen in Figure 1.1, this would result in ***mental well-being*** (Chen, Mallinckrodt, & Mobley, 2002; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004; Yeh &

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Inose, 2003). Conversely, students who have a low level of social support may be more likely to perceive their acculturation experiences as a ***threat*** to their mental well-being. These particular students may go through the appraisal process repeatedly, and with insufficient social and emotional support, it could be that they are often faced with excessive stress, which would overwhelm their coping ability. This persistent perceived threat would be exhausting and debilitating and could lead to ***negative mental health*** outcomes.

Repeated exposure to stress interferes with normal functioning of Asian international students (Kim, 2016) by increasing their psychological vulnerability to depression. One possible manifestation of this process is the student's internalization of their vulnerability, which in turn changes their perception of themselves and the outside world. Research has documented a link between acculturation stress and depression among Asian international students (Rice, Choi, Zhang, Morero, & Anderson, 2012; Zhang & Goodson, 2011). The higher the acculturation stress, the higher the levels of depression. Given the magnitude of the problems, it is important to understand the intricate connection between acculturation stress and depression in order to assist the Asian international student population effectively during their transitional phase. This revised conceptual model is comprehensive and lends itself to examining a host of research questions. However, such an examination goes beyond the scope of this dissertation. The goal of this study is not to examine the multiple relationships in the presented conceptual model, but instead to examine specific components of the model—acculturation stress, social support, and depression—to answer the proposed research questions.

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Purpose of Research and Methodology

The purpose of this mixed-methods study was two-fold. The first was to conduct a quantitative study through the administration of online surveys in order to examine the relationship between acculturation stress and depression, to investigate the role of social support in this relationship, and to identify changes in the key variables[1] among first-year international graduate students from China and India at UofSC. The second was to collect qualitative data from focus group interviews with 12 Chinese and Indian international students in order to further explore the students' acculturation experiences.

A mixed-methods approach enhances understanding through a more comprehensive examination of the topic of interest (Haight & Bidwell, 2016). Quantitative research methods provide a broad spectrum of the phenomenon being studied by measuring the distribution of variables and identifying associations between and among them, while controlling for confounding factors (Rubin & Babbie, 2014; Yegidis, Weinbach, & Meyers, 2011). Additionally, validated measures—the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994), the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), and the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988)—improve consistency in the administration across participants and the objectivity of the study. In the qualitative follow-up, focus group interviews enable researchers to collect individual perspectives from community members and further explain the phenomenon based on findings from the quantitative study. Combined use of

[1] The key variables are acculturation stress, social support, and depression, and these variables are discussed in detail in Chapter 3.

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quantitative and qualitative research methods results in each complementing the other, providing a more comprehensive understanding of the research topic (Ivankova & Stick, 2007). For this reason, the researcher chose a mixed-methods study.

Specific Aims and Hypotheses for Quantitative Portion

This dissertation study has the following specific aims and hypotheses:

Specific aims

(1) Explore the relationship between acculturation stress and depression among first-year international graduate students from China and India at Time 1;

(2) examine the impact of social support on the relationship between acculturation stress and depression; and

(3) identify changes in acculturation stress, social support, and depression from Time 1 to Time 2.

Hypotheses

H_1: There will be a positive association between acculturation stress and depression among first-year international graduate students from China and India at UofSC at Time 1.

H_2: The relationship between acculturation stress and depression will differ depending on the availability of social support.

H_3: There will be changes in acculturation stress, social support, and depression levels between Time 1 and Time 2 within this student population.

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It is important to note that some hypotheses are not directional because there is a paucity of research in this area. Thus, directional hypotheses would be premature at this point.

Research Question for Qualitative Portion

The following research question was addressed:

RQ: How do international graduate students from China and India experience acculturation stress and to what extent does social support help the students cope with their stress?

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CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of extant literature. Because of a dearth of literature on this particular topic about international students, this chapter uses studies examining acculturation experiences of immigrants and refugees. The literature review includes competing cultural worldviews in relation to collectivism and individualism elaborated by Triandis's work. The contrasting worldviews are used as an overarching framework to explain the relationship between acculturation challenges and depression among Asian international students during their sojourn abroad. Following these worldviews, acculturation models (unidirectional, bidirectional, and interactive models), characteristics of different groups in the context of a pluralistic society (immigrant, refugee, and sojourner), and stress and coping theories are presented. Although numerous models of acculturation exist, Berry's multidimensional model is utilized for this study to address mental health needs of Asian international students because the model recognizes an individual's psychological adjustment. The last section of the chapter is devoted to explicating acculturation stressors and depression among Chinese and Indian international students as well as social support patterns.

Dissertation studies are typically population-specific, but the majority of acculturation studies involving international students are centered on multinational /multicultural groups. There are some studies, albeit limited, presenting Chinese students' difficulties adjusting to the individualist cultures. In regards to Asian Indian students, so

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far extensive research has shown only two studies examining their acculturation (see Atri, Sharma, & Cottrell, 2006; Meghani & Harvey, 2016). Due to the limited literature, when required, this study synthesized findings from the existing literature examining Asian students broadly because many of these students share similar cultural values, norms, and practices.

Cultural Worldview

One may say that a fundamental difference between the US and Asia is the distinction in cultural values. Hofstede and Hofstede's study (2005) on a cross-cultural analysis of employee work values in a global company supported this view. Their study found that the US, which is a proto-individualist culture, is self-oriented, whereas most Asian countries are located in an opposing collectivist dimension that is characterized by group affiliations. This fundamental cultural difference can present serious adjustment problems when Asian students move to the US to further their education. Understanding contrasting cultural orientations is critical to developing insight into Asian international students' psychological adjustment and coping strategies during their initial transition to US campuses. Using broad templates of collectivism and individualism is helpful when comparing different cultural groups. Resorting to generalization may perpetuate cultural stereotypes by forcing a false assumption of complete homogeneity (Killen, 1997). Therefore, scholars should use caution to avoid a reductionist approach when studying individuals' social behaviors and relationships (Voronov & Singer, 2002). It is important to acknowledge the complexity of human behavior within a particular culture; however, this discussion will eschew this complexity as it goes beyond the scope of this dissertation study. For the purpose of this study, this researcher assumes that members of

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the same cultural group socialize in similar circumstances and are exposed to the same cultural values. As a result, they are more likely to display the same or similar behavioral patterns (Kitayama & Markus, 1994). Therefore, using the collectivism and individualism templates holds significant value in explaining the acculturation process of Asian international students.

Efforts have been made to understand how culture influences individuals' personality and social behaviors, and cultural analysis has been used to dimensionalize cultural variation. One of the most widely used frameworks is the dichotomy of collectivism and individualism. The major difference between individualism and collectivism is how individuals define themselves (Gorodnichenko & Roland, 2012). Generally speaking, people from collectivist cultures see themselves as being embedded in a larger group, whereas those from individualist cultures have an independent view of themselves. Thus, collectivism encourages conformity, cooperation, and loyalty, while individualism rewards individual freedom, competition, and accomplishment (Triandis, 1993, 1995, 2001). Individuals from collectivist cultures, in general, have fewer in-groups than those from individualist cultures. The group membership is exclusive and is often bestowed by family. Consequently, interdependence is strong in group relationships. In contrast, people from individualist cultures tend to have many in-groups; it is relatively easy to form a new group and leave the group membership if it is inconveniently demanding. Therefore, self-sufficiency is emphasized in individualist cultures (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Collectivism features intense continuous contact with in-groups, and maintaining harmony with those groups is key. Confrontation in collectivism is considered rude and undesirable, and is thus

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discouraged. In contrast, confronting conflicts directly is accepted in individualist cultures (Hofstede & Hofstede, 2005). People from collectivist cultures subjugate their individual goals to the goals of in-groups, whereas people from individualist cultures are encouraged to pursue their own interests (Triandis, 1995). That is, one's success in collectivist cultures is perceived as a group success and one's failure is perceived as a group failure, while people from individualist cultures succeed or fail independently without the added responsibility from an in-group.

Hui and Triandis (1986) also supported a general view of collectivist cultures as being other-oriented. Gleaned from the findings of their study that involved a sample of international psychologists and anthropologists, Hui and Triandis proposed the following elements of collectivist cultures: thoughtfulness about the impact of actions or decisions on others, sharing material and non-material resources, willingness to incorporate the opinions and views of others, concerns about the self-presentation and loss of face, awareness of the correspondence of one's own outcomes with the outcomes of others, and involvement in and contribution to the lives of others. Going beyond affection and worry, Hui and Triandis explained the term "concern" in collectivist cultures as "a sense of oneness with other people, a perception of complex ties and relationships, and a tendency to keep other people in mind," as well as the "recognition that the basic unit of survival is a group" (p. 231). A strong sense of connectedness and concern existing in collectivist cultures bonds members to needs of others.

A framework of an interdependent self-construal and independent self-construal is related to the cultural notions of collectivism and individualism. Markus and Kitayama (1991) suggested that "there are significant cognitive, emotional, and motivational

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consequences of holding an independent or interdependent view of the self" (p. 231). Generally speaking, interdependent selves, which are frequently seen in Asian collectivist countries, are fundamentally related to others and social contexts. Interdependent selves strive to fit in with others and meet group standards. Independent selves, which are more prevalent in individualist countries such as the US, are defined as a self-contained entity that strives for uniqueness (Kitayama & Markus, 1994). Additionally, for interdependent selves, the ability to control or adjust their thoughts, behaviors, and emotions to accommodate the needs of others is important to maintain relational harmony. Self-restrictedness and flexibility are perceived as signs of maturity. Self-restricted and flexible interdependent selves are in stark contrast with independent selves that value assertiveness and emotional expressiveness (Markus & Kitayama, 1991).

While the terms collectivism and individualism are used to explain differences at the cultural level, allocentrism and idiocentrism are used to describe differences at the individual level. Allocentrism prefers complementary relationships imbued with a positive affect that is invested in mutual communal behaviors in the absence of any ulterior motive. Conversely, idiocentrism endorses contractual relationships that take into account gain and loss while affect is missing (Verma, 1992). Those who are allocentric emphasize the values of cooperation, equality, and honesty, and those who are idiocentric emphasize the values of comfortable life, equity, competition, pleasure, and social recognition (Triandis, Leung, Villareal, & Clark, 1985). Allocentric individuals are willing to help in-group members even at great cost to self. They are also more likely to receive better quality social and emotional support, which ameliorates the impact of stressful life events (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988; Verma, 1992).

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Idiocentric individuals are usually characterized by achievement, alienation, anomie, and loneliness. Although more allocentrics are present in collectivist cultures, allocentrism and idiocentrism co-exist with different proportions within a culture (Triandis & Suh, 2002). It can be extrapolated from these findings that individuals from collectivist cultures may be more likely than those from individualist cultures to use collective coping.

Acculturation

Human migration resulting from economic globalization and academic internationalization has spurred cultural exchange across the globe. Increased cultural contacts and cross-cultural communications have promoted a scholarly interest in acculturation phenomenon for several decades (Y. Kim, 2012). Scholarly efforts revealed evolving theoretical sophistication from perceiving acculturation as a single dimension measured by a single index (e.g., language skills) to the multidimensional approach that factors in socio-cultural contexts and psychological and behavioral tendencies to show the complexity of the acculturation process (Cuellar, Harris, & Jasso, 1980). The term "acculturation" has been used slightly differently depending on definers and disciplines. Originally, it was used to explain group-level phenomena from the socio-cultural adaption perspective predominantly focusing on the lives of immigrants. Later, individual psychological adjustment was foregrounded by cross-cultural psychologists (Ward, 2001), yielding a fuller understanding of complex acculturation phenomenon. Due to its various definitions, offering a condensed definition is a necessary first step to building a shared understanding of the phenomenon applied to multicultural settings.

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One of the classic definitions of acculturation was provided by Redfield, Linton, and Herskovits (1936). Redfield and his associates defined acculturation as cultural changes that occur when two or more dissimilar cultural groups come into continuous, first-hand contact, with subsequent changes in the original culture patterns of either or both groups. Although this definition implies reciprocal changes, adaptive changes are more likely to occur in acculturating groups (Berry, 2006a) because they are expected to operate within the receiving society. Berry (2005) defined acculturation as "the dual process of psychological and cultural change" that follows cross-cultural contacts (p. 698). Cultural changes include shifts in group customs and socio-economic life. Individual changes alter an individual's social behavior and identity (Yu & Wang, 2011). By expanding the definition to include individual-level acculturation, Berry explained psychological and mental health aspects of acculturation. The two key elements of Berry's theory are (1) cultural contacts (e.g., purpose, duration, and participation in the receiving society) and (2) cultural identity (e.g., renunciation and maintenance). Lastly, Y. Kim (2012) proposed acculturation as the interaction between the stranger and a new cultural environment. In this framework, communication competence—the ability to decode and encode information in congruence with the host culture communication practices—is key to a successful adjustment. The common theme among these definitions is the recognition that acculturation entails thoroughgoing changes both in individuals and groups. It is multifaceted and involves a dynamic process of developing a new social identity in an unfamiliar cultural milieu through internalization and negotiation of cultural differences.

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Although it may not occur at the same rate or in the same direction, acculturation transpires both at individual and group levels (Williams & Berry, 1991). Group-level acculturation involves changes in social and institutional structures as well as cultural practices. Individual-level acculturation entails shifts within the individual's psychological and behavioral state. The psychological components reflect the internal aspect of adaptation, which refers to beliefs, values, attitudes, and perceptions. The behavioral dimension pertains to external aspects, such as how individuals adopt the host culture through social interactions. Berry (2003) identified acculturation as a three-step process of contact, conflict, and adaptation. Contact concerns conditions under which two ethnocultural groups meet, and the purpose and duration of contact play an important role in acculturation. Conflict occurs when less dominant groups resist changes to the dominant culture. Adaptation provides a means to reduce this tension as it increases a fit between the individual and the environment.

Due to the varying degrees of cross-cultural adjustment experienced by individuals, great scholarly efforts have been made to explain or predict potential influences on the acculturation process. Individual-level factors are divided into those *prior to* acculturation (e.g., age, gender, education, preparedness, cultural distance, and language) and *during* the acculturation (e.g., acculturation strategies, attitudes, and behaviors). The socio-cultural level includes ethnic composition and the host society's level of acceptance of cultural pluralism (Berry, 2001, 2005, 2006c). Similar to Berry's standpoint, Ward (2001) proposed psychological and sociocultural dimensions of intercultural adjustment. Psychological adjustment refers to positive mental health or satisfaction during intercultural transitions, and sociocultural adaption indicates the

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ability to fit in to the new culture or build functional relationships in the environment through effective interactions. As shown above, acculturation is multidimensional and infiltrates various aspects of people's lives. Therefore, when exploring acculturation phenomenon, it is important to consider both personal and contextual variables because interface among these variables is likely to influence individuals' adjustment trajectory.

Theoretical Approaches to Acculturation

Although various theoretical models of acculturation exist, this dissertation study reviews three of the most influential models: unidirectional model, bidirectional model, Interactive Acculturation Model. First, a unidirectional model assumes that migrants would discard their original cultural heritage and be gradually absorbed into the host society (Ngo, 2008). In this framework, the end goal of acculturation is complete assimilation. A primary example of the unidirectional tradition is Gordon's (1964) assimilation model. Gordon postulated the following seven stages of assimilation that migrants go through: (1) cultural assimilation (changes in cultural patterns); (2) structural assimilation (large-scale entrance into institutions of dominant culture); (3) marital assimilation (large-scale intermarriage); (4) identificational assimilation (development of a sense of peoplehood based exclusively on the dominant culture); (5) attitude-receptional assimilation (absence of prejudice); (6) behavior-receptional assimilation (absence of discrimination); and (7) civic assimilation (absence of value and power conflicts). According to Gordon, each step brings migrants closer to total assimilation into the receiving society. Full assimilation enables migrants to participate in all aspects of life in the receiving society. This model assumes that being bicultural is not possible and cultures brought by newcomers to the host society are inferior and need to be

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replaced. This process of assimilation is considered irreversible (Adames & Chavez-Dueñas, 2017).

Another conceptual model is bidirectional and this model is central to John Berry's acculturation theory. The bidirectional model recognizes that learning the beliefs, values, and practices of the receiving society does not automatically make migrants forfeit their traditional beliefs, values, and practices. Therefore, the model does not posit assimilation as the final objective (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Berry's theory reasons that acquiring new cultures is an independent dimension of retaining cultural heritage. Individuals or groups determine the degree of involvement and identification with the host society and the level of maintenance of cultural heritage by using one of the four acculturation strategies: assimilation, separation, marginalization, and integration. Assimilation involves forgoing cultural heritage to adapt to the receiving society. Separation rejects the receiving society in preference to cultural maintenance. Marginalization occurs when there is little to no interest in (or possibility of) cultural maintenance and interaction with the receiving society, thereby losing contact with both cultures. Lastly, integration results from mutual accommodation seeking both cultural maintenance and participation in the larger society. Studies have shown that integration is the most preferred strategy and is associated with mental well-being (Berry, 2001; Berry, Kim, Minde, & Mok, 1987; Berry, Phinney, Sam, & Vedder, 2006; David, Okazaki, & Saw, 2009). Although Berry's model has been one of the most referenced models of acculturation, it has been criticized for conceptual limitations (underemphasizing the host culture context) and terminology issues (dominant vs. non-

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dominant culture). For example, using such words may imply preference for conformity to the dominant culture with little room for social justice.

A third model, the Interactive Acculturation Model (IAM), was devised by Bourhis, Moise, Perrault, and Senecal (1997) to better explain the interactive nature of acculturation. The core concepts of the IAM are (1) immigrants' acculturation strategies; (2) the receiving society's orientation towards immigrants; and (3) relational outcomes produced by interplay between immigrants' acculturation strategies and the receiving society's acculturation orientations. To explain acculturation strategies adopted by immigrants, Bourhis and colleagues redesigned Berry's marginalization acculturation strategy into anomie and individualism. This modification was made to include idiocentric people who prefer to identify themselves as individuals rather than as members of a particular culture group and who experience cultural alienation. A proposed model of the receiving society's acculturation orientation was based on their acceptance of immigrants maintaining their cultural heritage and adopting the receiving society culture. The model includes integration, assimilation, segregation, and exclusion and individualism. Lastly, three different relational outcomes were identified for immigrants' acculturation orientations when encountering those of the receiving society such as consensual (e.g., intergroup harmony and low acculturation stress), problematic (e.g., potential communication breakdown and partial agreement) and conflictual (e.g., segregation and tension) outcomes. Just like any other conceptual model, the IAM is not immune to limitations. As shown above, the IAM was expanded from an existing acculturation model, and it does not offer an innovative approach to acculturation issues.

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As Ngo (2008) pointed out, these relational outcomes are arbitrary, unclear, and incoherent thereby requiring more refinement.

Despite weaknesses, all three models have contributed to the development of acculturation studies by offering different perspectives. This dissertation study utilizes Berry's bidirectional model because Berry includes individual's psychological well-being and mental health outcomes in his exploration of acculturation. This bidirectional model is appropriate to explicate the intricate relationship between acculturation and mental health among Asian international students on US campuses.

Group Distinctions in Multicultural Society

Knowing the characteristics of different groups constituting pluralist societies such as the US is important for an understanding of acculturation stressors unique to international students. Previous studies examined factors behind cross-cultural relocations and made distinctions among groups based on the nature of migration (Berry, 1997; Castles & Miller, 2003; Mu & Hu, 2016). Some groups have migrated into the acculturation process voluntarily, while others are brought by force. According to Castles and Miller (2003), voluntary migration is typically economically motivated as migrants seek improved access to quality education, social capital, and financial resources. In contrast, as illustrated by refugees and asylum seekers who move across international borders in search of protection, non-voluntary migration is often the result of unfortunate circumstances in their host country such as natural disaster and political unrest. Another distinction includes temporary foreign workers and students who stay in the host culture for a relatively short period of time and therefore rarely integrate. Castles and Miller (2003) suggested a global approach to human migration that considers all dimensions,

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from socio-cultural practices to broader structures, in the societies concerned because they affect the settlement process.

In a similar vein, Berry (2006a) organized groups based on three dimensions—voluntariness, mobility, and permanence. Although Berry argued for universality in this *basic* process of acculturation across all three groups, he pointed out potential variations in the course, degree of difficulty, and actual outcome of acculturation due to differing resources, power, group size, as well as one's unique attitude and motivation. For example, the experiences of sojourners may be considerably different from those of immigrants and refugees. Their status as temporary residents may deter them from becoming fully involved in the host culture and building intimate relationships with members of the host culture. This situation may add more complexity to the acculturation process experienced by this group.

While examining how sojourners, including international students, have adjusted to the new culture, Gudykunst (2005) identified four needs that must be met to make a successful transition: a sense of predictability, a sense of group inclusion, an avoidance of extensive anxiety, and a sense of sustained self-concept. When these needs are unmet, sojourners will experience increased levels of uncertainty and anxiety, which diminish their ability to successfully interact with host nationals. Failing to reduce uncertainty and anxiety will result in a decline in sojourners' emotional well-being. As temporary residents who have not established permanent social support in the host culture, sojourners are more vulnerable to the negative influence of acculturation challenges (Berry, Kim, Minde, & Mok, 1987). Despite the clear need for a greater focus on acculturation stress experienced by this group, the majority of acculturation-related

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studies have been devoted to examining the lives of permanent residents. This indicates the need for further research and more effective service development to facilitate sojourners' successful transitions into the host culture.

Acculturation Stress and Coping

Stress is an individual's physiological and psychological responses to internal or external pressures. Extraordinary stress responses may trigger a wide range of symptoms, distort worldview, and interfere with daily activities (Comer, 2015). Stress responses necessitate effective coping strategies in order to maintain normal functioning. Various encounters elicit different stress responses as individuals respond to stressors differently according to their goals and available resources (Lazarus, 1984, 1985).

Acculturation stress is specific to intercultural interactions. Individuals experience stress when they face problems originating from intercultural contact that cannot be overcome easily by simply adjusting to challenging situations through behavioral change (Berry, 2006c). Three major theoretical perspectives have been identified by Ward (2001, 2004) with respect to how individuals manage the acculturation process: culture learning, stress-coping-adaptation, and social identification. The culture learning approach, which focuses on a behavioral aspect of the acculturation process, theorizes that acculturation difficulties arise when individuals have a problem regulating social encounters skillfully in a new cultural milieu; therefore, learning culturally relevant social skills, through increased interaction with members of the host society, is important to manage acculturation difficulties. The stress-coping-adaptation approach addresses an affective aspect of the acculturation process. This approach posits that acculturation is a series of stress-provoking life changes that draw on adjustive resources and require coping

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responses. Factors such as life changes, cognitive appraisal of stress, coping strategies, personality, social support, cultural identity, and acculturating groups have been routinely examined to predict psychological adjustment. This perspective is influenced by Lazarus and Folkman's (1984) work on cognitive appraisal and coping, which will be explored extensively later in this section. Finally, the social identification approach in cross-cultural contexts focuses on the cognitive process concerning immigrating individuals' cultural identity development and maintenance in connection to acculturation strategies. This approach also includes assessing the degree of involvement with either the culture of origin, the host culture, or both cultures, while considering the context of and interactions with the host culture (Y. Kim, 2012). The cognitive process of how individuals recognize the existence of other groups and differentiate from out-groups through social comparison is of great importance in this framework because this process helps to define an individual's place in a new society (Tajifel, 1981). Some inevitable consequences of the identification include negative stereotypes, stigmatization, and discrimination of out-groups (Ward, 2001). Exposure to this bias can cause a grave psychological distress among out-group group members.

Berry (1992) defined acculturation stress as "a stress reaction in response to life events that are rooted in the experience of acculturation" (Berry, 2005, p. 708). Adjusting to a different lifestyle, communication patterns, and behavioral norms cause psychological distress if there are scarce resources (Berry, 2001). Continuous exposure to severe acculturation stress adversely impacts emotional and mental well-being. The manifestation of acculturation stress is displayed in a variety of ways. Although this is not exhaustive, somatic symptoms include fatigue, headaches, increased blood pressure,

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and gastrointestinal problems. Psychological symptoms include isolation, helplessness, hopelessness, sadness, feelings of loss, anger, disappointment, sense of inferiority, and clinical depression (Asian American Psychological Association, n.d.). Social support as a coping resource serves as a buffer that attenuates the negative impact of acculturation stress on mental well-being (Berry, 2006c; Crockett et al., 2007; Zhang, 2012).

When transitioning to US campuses, many international students experience acculturation stress due to conflicting cultural values (Chen, 1999; de Araujo, 2011; Khawaja & Dempsey, 2008; Smith & Khawaja, 2011; Zhang & Goodson, 2011). Tseng and Newton (2002) identified four major categories of adjustment challenges faced by international students: (1) general living adjustment, (2) academic adjustment, (3) socio-cultural adjustment, and (4) personal psychological adjustment. General living adjustment includes adjusting to dietary changes, weather/climate, transportation systems, housing arrangements, financial issues, and health care systems. Academic adjustment is needed to navigate a new educational system, improve limited language proficiency, and develop new learning strategies. Socio-cultural adjustment pertains to experiencing culture shock, facing discrimination, and getting familiarized to different values, norms, customs, and cultural activities. Loneliness, feelings of isolation, homesickness, frustration, and identity confusion comprise personal psychological adjustment.

Acculturation stress is often pervasive and intense, and may incur psychological costs to the individual (Smart & Smart, 1995). International students are required to make strenuous efforts to succeed in an unfamiliar milieu. The amount of information that they need to process daily may require a maximum level of cognitive performance, which

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could result in cognitive fatigue and exhaustion (Mori, 2000). Additionally, international students may come to recognize that their experiences are vastly different from US-born peers. This heightened awareness may cause anxiety, and the burden of proving their ability to professors and peers may increase psychological discomfort. Many international students often come from racially homogenous countries. Upon relocating to the new country, they are categorized as a minority. Experiencing or witnessing subtle or overt discrimination toward themselves and other students may make them harbor anger toward the members of the host society. This internalized anger may intensify their psychological distress when they have not yet developed effective coping mechanisms. In general, many international students are high-ranked and successful in their home countries (M. Liu, 2009; Sandhu, 1995; Wu, Garza, & Guzman, 2015), so failing to meet their academic and social expectations may cause some students to feel a sense of inadequacy and inferiority. When these negative feelings are repetitive and develop into thought patterns, students may experience diminishing self-worth, act passively, and withdraw themselves from social interactions (Lee, 2008). When unrecognized or addressed improperly, some of the acculturation challenges may lead to mental health crises.

Coping with stressful situations constructively is essential to successful adjustment. Coping is broadly conceptualized in terms of defensive or ego processes, traits, and demands of particular situations (Conway & Terry, 1992). First, the defensive or ego process is an involuntary regulatory process that focuses on emotional tension reduction by altering perceptions of internal and external reality (Vaillant, 1993). As Folkman and Lazarus (1980) pointed out, this approach is problematic because it views

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tension reduction as mastery to all stressful encounters. Hence, the process of coping is confounded with outcomes. Second, the traits-based approach assumes that coping styles are driven by personality dispositions, not by situational contexts or time. In this framework, stressful situations are perceived as static, and individuals respond similarly to these situations (Porter & Stone, 1996). This viewpoint fails to explain varying coping responses among individuals or to predict coping behaviors in specific contexts (Folkman & Lazarus, 1980; Wong, Reker, & Peacock, 2005). Lastly, Lazarus and Folkman (1984) claimed that coping is a shifting process; as situations change over time, individuals engage in different coping strategies based on their subjective evaluative process. That is, coping is largely influenced by a specific sequence of thought patterns in response to the specific situations.

Lazarus and Folkman (1984) defined psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19). This person-environment relationship is perceived as being dynamic, reciprocal, and bidirectional (Folkman, Lazarus, Gruen, & DeLongis, 1986). Cognitive appraisal and coping are central mediators in this relationship. Cognitive appraisal is an evaluative process through which the individual interprets environmental events (Collins, Sorocco, Haala, Miller, & Lavallo, 2003). These individual appraisals lead to different emotional reactions by each person. Lazarus and Folkman (1984) divided appraisals into two types: primary and secondary appraisals. The primary appraisal classifies the threat value for the event. In this stage, individuals evaluate the event in reference to their well-being, and identify the cause and the extent to which it impacts well-being. The secondary appraisal

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concerns available coping options that inform appropriate actions to take, with the purpose of reducing emotional distress. The primary and secondary appraisals are not mutually exclusive or linear; they can occur concurrently. There are three distinguished types of stressful appraisals: harm-loss, threat, and challenge (Folkman & Lazarus, 1980). Harm-loss refers to psychological damage that has already occurred; threat concerns the possibility of future damage; and challenge refers to demands that hold potential for mastery or gain. Individuals engage in reappraisals following an earlier cognitive evaluation as their relationship with the environment changes, and reappraisals guide further coping efforts based on newly acquired information. Familiarity, experiences, predictability, and effectiveness of coping can impact individuals' psychological adjustment.

According to Lazarus (1993), coping involves "ongoing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 237). Relevant literature identified an abundance of coping strategies that people use to master, tolerate, and/or reduce stressful events. Two major coping methods are problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused coping intends to change the relationship between person and environment by directly acting on the environment or on oneself. In contrast, emotion-focused coping seeks to alter the relational *meaning* of what is happening even if the situation remains unchanged. Problem-focused coping includes aggressive interpersonal efforts to alter the situation, as well as cool, rational, and deliberate efforts to solve problems. Emotion-focused coping includes distancing, self-controlling, seeking social support, escape-avoidance, accepting responsibility, and

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positive reframing aimed to palliate emotional distress (Folkman, Lazarus, Gruen, & DeLongis, 1986). A number of studies have shown that a reliance on problem-focused coping is associated with positive mental health and the use of emotion-focused coping is related to psychiatric symptoms (Compas, Malcarne, & Fondacaro, 1988; Kim, Noh, & Chun, 2016; Knight, Silverstein, McCallum, & Fox, 2000). Lazarus (1993) asserts that Western culture tends to place higher values on problem-focused coping, where individuals attempt to directly solve a problem. Coping among Asians tends to be emotion-focused coping as it involves suppressing emotions, altering perceptions, and reframing stressful situations (Inman & Yeh, 2006). When problems are complex or cannot be immediately resolved, such as acculturation stress, people may benefit from using emotion-focused coping to some extent; however, relying heavily on emotion-focused coping, especially when immediate support from in-groups is not available, may make it difficult to manage acculturation stress effectively.

Social Support and Asian Coping Strategies

The American Psychological Association (2007) described social support as “the provision of assistance or comfort to others, typically in order to help them cope with a variety of biological, psychological, and social stressors” (p. 869). Individuals may derive social support from members of their social networks, ranging from those immediately surrounding the individual to community members who are loving, caring, and available in times of need (Dunn & O’Brien, 2009). House (1981) summarized social support broadly into four types of behaviors: emotional, appraisal, informational, and instrumental. The essence of emotional support includes empathy, love, trust, and concern. Emotional support is typically provided by family and close friends; therefore,

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that support may require certain levels of confidence in and familiarity with other persons. Appraisal support is useful for self-evaluation and is expressed through behaviors such as affirmation, feedback, and social comparison. Informational support takes the form of advice, suggestion, directives, and information. Lastly, instrumental support, perhaps the most tangible form of social support among the four, includes more direct aid, monetary assistance, labor, and time. Mallinckrodt and Leong (1992) asserted that social support is important to positive well-being, but also facilitates coping for individuals experiencing stressful life events, including stress stemming from culture changes.

Understanding the intricate connection between culture and coping is important, because culture not only determines the types of stressors that individuals are likely to experience but also influences the selection of coping strategies that individuals use in a given situation (Aldwin, 2004). Studies have shown that Asians typically engage in collective coping strategies that reflect collectivist cultural values (Inman & Yeh, 2007). Although one may argue that social support behaviors have been observed in Western countries, social support as a coping method has been more widely used in collectivist countries in dealing with changing demands of life, because of a greater cultural emphasis on social connection and relational coping (Kuo, 2013). To many Asians, family support plays a crucial role in dealing with stress. Family members share not only their successes but also failures, and doing so provides a sense of continuity in the face of adversity (Sue & Morishima, 1982). Asians living in the US also seek emotional support from ethnically and racially similar groups as they share similar life experiences. Sharing may facilitate mutual empathy and enhance trust.

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Similar coping patterns were found among Asian Americans (Yeh, Inman, Kim, & Okubo, 2006). Yeh and associates examined coping strategies by interviewing Asian American family members of victims of the World Trade Center attack about their loss. The analysis revealed the following coping methods: individualistic coping, familial coping, intracultural coping, relational universality, forbearance, spirituality, and indigenous healing. Except for one, all coping methods were culture-specific and engaged others in a way that is culturally congruent. Although more research is needed on this topic of explicit and implicit social support, in an experimental study, Taylor, Welch, Kim, and Sherman (2007) reported that compared to European Americans, Asians are more likely to rely on implicit social support. That is, instead of explicit social support in the form of assertive self-disclosure or direct aid, Asians are more likely to seek implicit social support from the presence of significant others who could provide aid without direct discussion of their specific distressing situations. Although these findings may sound contradictory to the act of involving significant others in the coping process, Asian cultures are relation-oriented, and many Asians are uncomfortable with bringing personal problems to others because such an act can be perceived as undermining relational harmony or unduly burdening others (Markus & Kitayama, 1991). As Inman and Yeh (2007) pointed out, both cognitive avoidance and support-seeking behaviors are not mutually exclusive as Asians desire close interpersonal connections while keeping strong emotions to themselves. These culturally-informed coping patterns have also been found among Asian international students to ease their acculturation strains during their education abroad.

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Viewpoints of Mental Health

Traditional Asian beliefs on mental health are different from those found in Western countries like the US. Western cultures widely endorse a dualistic perspective in which mind and body are separate entities. Situated in the framework of the emerging self, psychological distress is understood as a psychological problem pertinent to psychological constructs (e.g., ego), or to psychological processes (e.g., conflict), whereas physical illnesses are caused by genetic factors or germs (Dwairy, 1997). This dualistic approach has inspired intrapersonally centered and context-independent mental health practices in the West with little regard to interdependence in healing; the most common form of mental health services is individual talk therapy (Yeh, Hunter, Madan-Bahel, Chiang, & Arora, 2004). Conversely, Asian cultures tend to have a holistic outlook on mental health issues and place a great emphasis on the integration of mind and body. This outlook also focuses on social contexts (Ying, Lee, Tsai, Yeh, & Huang, 2000), which would expound the prevalent occurrence of somatic symptoms in place of affective ones or the lack of a clear distinction between the two realms (Kalibatseva & Leong, 2011).

In most Asian countries, the self is not distinctively individualized, and mental illness is often believed to be caused by emotional imbalance, violations of moral or religious principles, or spirit possessions (Conrad & Pacquiao, 2005; Kramer, Kwong, Lee, & Chung, 2002). For example, within the religious framework, Asian Indians tend to perceive depression as a form of spiritual suffering that subsequently produces hope (Conrad & Pacquiao, 2005). Chinese often ascribe it to be "hereditary or even ancestral inheritance of misconducts," thereby holding the family responsible for the mental illness

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(Ng, 1996, p. 385). Asians who adhere to the traditional beliefs on mental health are more likely to present their psychological concerns accordingly and utilize alternative resources, including indigenous healing methods, to alleviate their psychological distress (Inman & Yeh, 2007). This discrepancy in viewpoints and preferred mental health services creates a mismatch between needs of Asians in the US and available services, and may even create distrust toward the effectiveness of those services.

Asians tend to express their psychological distress through somatic complaints even when they are aware of depressed feelings (Kalibatseva & Leong, 2011). The somatization of emotional distress was well-documented by M. Kim (2002). Kim's study used the Korean American sample and examined the impact of specific cultural traits on the manifestation of depression. For this sample, the conception of depression included somatic symptoms (e.g., heavy chest, mind pain, lacking energy, etc.), in addition to affective symptoms (e.g., feelings of sadness and low mood). In a study involving a Chinese American college student sample, depression had an additional interpersonal factor. Chinese students are more likely to focus on somatic and interpersonal challenges, rather than psychological distress, when experiencing depressive symptoms. These students are more likely to initially seek medical help over counseling services (Ying, Lee, Tsai, Yeh, & Huang, 2000). Asian cultures are usually reserved about revealing emotional problems in their private life owing to cultural emphasis on emotional control, family integrity, and fitting in (Lin & Cheung, 1999; Liu et al., 2012; Ng, 1996). A sign of an individual's maturity is the ability to control emotion because emotional control enables individuals to attend to the needs of relevant others. In Asian countries, the basic structural unit of the society is the family, not the individual; therefore, coping is

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essentially a family matter. Making self-referrals for mental health services or seeking professional help may be perceived as a violation of family privacy and thus bring disgrace to the family (Inman & Yeh, 2007; Sue & Morishima, 1982). Fitting in socially is important to many Asians. The predominantly negative beliefs about mental disturbance often stigmatize individuals who are afflicted. They may be considered ill-fit to the society and may be socially isolated as a consequence. Somatization may relieve individuals and their family from shame and stigmatization attached to mental illness.

Reviewing existing studies suggests that culture provides a useful framework in which to determine the meaning of illness and guide to the necessary cure. Raising awareness of the complex connection between culture and the self-concept recognizes the interconnectedness in any healing. Discovering the possible reasons for divergence of the conception of depression among Asians should aid in assisting Asian clients in a more culturally sensitive manner. It is likely that some pretesting would help find the culturally appropriate instruments for accurate assessment.

Acculturation Stress among Chinese and Indian International Students

The transition into a different culture and a new academic setting involves many socio-cultural, psychological, and environmental challenges for students. During this process, many international students, including those with host language fluency, experience acculturation stress (Cemalcilar & Falbo, 2008), which is manifested as internal and external stressors. Although some may argue that acculturation stress is experienced by all international students, its severity is potentially far greater in Asian international students because of crucial differences in values and coping strategies from Western cultures (Hsieh, 2006). Asian cultures admire humility and obedience, while

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Western cultures value assertiveness and persistence (Liu et al., 2012). Chinese and Indian students who adhere to their cultural practices may be negatively perceived as noncommittal by faculty members and peers when, in fact, they are actively engaged in learning in a way congruent with their Asian cultures. Chinese students frequently use forbearance coping by minimizing or concealing their problems or concerns (Wei, Liao, Heppner, Chao, & Ku, 2012) because, in part, they want to save face. Maladaptive perfectionism characterized by self-critical perfectionistic performance expectations is common among Chinese and Indian graduate students in the US (Rice, Choi, Zhang, Morero, & Anderson, 2012). This perfectionism driven by a fear of failure is more likely to increase psychological vulnerability among these students. Without a proper outlet, internalized pressure and anxiety are more likely to increase as the students advance in their studies (Wei et al., 2007).

Attempting to adhere to collectivist cultural values in an individualist country can compromise their mental well-being as Chinese and Indian international students pursue their academic goals. This section addresses acculturation stressors experienced by the target student groups for this study. According to Sandhu (1995), drawing a sharp distinction between internal and external stressors may be a difficult task due to a linkage between the two, but to provide a more comprehensive understanding of the acculturation process, attempts were made to differentiate internal stressors from external stressors. Potential *internal stressors* for Chinese and Indian international students include second language anxiety (Cheng & Erben, 2012), desire to excel academically (Liao & Wei, 2014; Yan & Berliner, 2011), homesickness (M. Liu, 2009; Poyrazli & Lopez, 2007), feelings of loneliness/isolation (Bertram, Poulakis, Elsasser, & Kumar, 2014; Khawaja &

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Stallman, 2011), and uncertainty of the future (Cho, 2013). Learning a new language and applying it to real-life situations may significantly elevate psychological discomfort. Persistent apprehension, associated with real or anticipated communication with host culture members, may result in emotional and psychological distress among Asian international students. Compared to Indian students who had exposure to Western cultures growing up as a result of historical contact with Great Britain, Chinese students may have higher second language anxiety because their native language vastly differs from English phonologically and synthetically. They have also had limited exposure to the Western cultures. In light of perfectionism that is commonly observed in both Chinese and Indian international students, fear of inadequate performance in evaluative situations involving verbal encounters will likely increase negative emotions (Rice, Choi, Zhang, Morero, & Anderson, 2012).

The strong desire to succeed academically may add additional pressure (M. Liu, 2009). Students who have unrealistically high expectations of academic success while in an unfamiliar environment may be particularly vulnerable to psychological difficulties (Wei et al., 2007). Asian students commonly strive to excel in academic achievement because they are taught from childhood that it is their duty in life to study hard and succeed for their family and their larger society (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). For them, failure to meet these standards could mean a dereliction of duty that breaches relational harmony. Therefore, failing is essentially unthinkable for many of these students. This mindset may lead to excessive concerns about academic performance and intense (and often unreasonable) self-criticism, which will increase their psychological stress.

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When relocating to a new culture, Chinese and Indian students often experience homesickness while grieving for the loss of support networks integral to successful adjustment (Kegel, 2009). This disrupted social connection would potentially exacerbate feelings of loneliness and isolation. The tension between collectivist and individualist cultures can yield only superficial relationships with host nationals, which cannot compensate for the loss of the home network. Because most members of collectivist cultures view all aspects of life as interconnected, social isolation may be particularly detrimental to Chinese and Indian international students. Disconnected from their in-groups, these students may feel incomplete and vulnerable, leading to feelings of hopelessness and helplessness, as well as serious mental health conditions. Lastly, uncertainty over the future looms large over students during their studies in the host country (Yan & Berliner, 2011); the insecure nature of visa status, potential deportations, changing political climate, and genuine uncertainty regarding the successful completion of study all feed stress.

Potential *external stressors* are language barriers (Dao, Lee, & Chang, 2007; Lee, 2008), interpersonal problems (Ang & Liamputtong, 2008; M. Liu, 2009), academic challenges (Zhai, 2004), financial constraints (Kwon, 2009; Lin & Yi, 1997), and unfair treatment/discrimination (Poyrazli & Lopez, 2007; Wang, 2011). Although the degree of experienced difficulties may vary among individual students, language barriers are more likely to impede them from developing meaningful relationships with American peers and faculty members. These difficulties affect academic performance as well. Interpersonal problems may cause overwhelming feelings of loneliness, isolation, and hopelessness. Specific to the classroom culture, Asian students oftentimes learn through a

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traditional method in which teachers impart knowledge and students assume a passive role in their learning (Mermelstein, 2015). This method stands in sharp contrast to some Western pedagogical methods that view students as co-creators of their learning; therefore, adjusting to different teaching methods and classroom dynamics may provoke anxiety in Chinese and Indian students. Another stressor is financial strain. Financial pressure is enormous for many international students, as they are not allowed to work outside the university (Lee, Koeske, & Sales, 2004). On-campus jobs are usually in limited supply, and international students are not eligible for American federal loans. Financial constraints may force them to accelerate their course of study in order to expedite graduation and ease the financial burden on their family. This added stress could further increase the likelihood of developing mental health problems, such as anxiety, feelings of inadequacy, and depression.

All of these stressors can be seen as a result of cultural identity confusion. From the identity development perspective, international students are assigned the legal status "international students" by their host country upon their arrival. This new identity within a Western culture dilutes their native cultural identities. In addition, this recognition relegates them to a minority group and puts them in a disadvantaged position (Lalonde & Cameron, 1993) when compared to their US-born peers. These students are sometimes subject to stereotypes and unfair treatment including racial microaggressions. Racial microaggressions are defined as "brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color." (Sue et al., 2007, p. 271). Microaggressions often operate from stereotypes of a target group. For

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example, although it is seemingly harmless, the persistent image of Asians as a model minority drawn from cultural traits of being industrious and disciplined (Sue & Morishima, 1982) may inhibit the growth of Chinese and Indian students. This is a serious issue because universities may overlook acculturation challenges experienced by these students, believing that they do not need assistance, when in reality Asian students may encounter more adjustment challenges than students from other regions (Hsieh, 2006). Adjustment to a minority status may be psychologically taxing, and unfavorable experiences associated with racial/ethnic biases and prejudices may significantly affect the international students' emotional well-being.

To sum up, repeated exposure to accumulated stress may have an adverse impact on the emotional well-being of Chinese and Indian students in the US, as it may lead to major mental health conditions (Yang & Clum, 1994). Their lack of general knowledge regarding Western mental health, coupled with the limited ability to describe their symptoms in English, may deter many students from seeking help, which consequently exacerbates the condition. This draws attention to the unique needs of the increasing Asian international student population at US universities. Given the magnitude of these problems, it is important to understand the link between acculturation stress and mental health challenges, in order to assist them effectively and in a proactive manner during their transitional phase. This dissertation begins the necessary empirical exploration into this area.

Depression and Social Support among Chinese and Indian International Students

Depression is often listed as a major mental health concern for international students. Studies have indicated a positive association between acculturation stress and

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depression (Zhang, 2012; Zhang & Goodson, 2011). In a study examining Korean international students living in the Pittsburgh area, Lee, Koeske, and Sales (2004) reported that students with high levels of acculturation stress were more vulnerable to depression. Consistent with these findings, Ying and Han (2006) examined 155 Taiwanese students pursuing graduate education in 31 states and found that acculturation stress was a strong predictor of depression. Those students who experienced high levels of acculturation stress in their first semester were more likely to develop depression in their third semester. Moreover, depressive symptoms have been found to have a direct effect on suicidal ideation for Asian international students (Yang & Clum, 1994).

Length of residence in the host culture is a predictor of depression among Asian international students. Wilton and Constantine (2003) suggested that students who lived in the host culture longer reported lower levels of psychological distress such as depression. This is because students had greater opportunities to interact with host nationals (Li, Wang, & Xiao, 2014), which encouraged them to integrate the values, beliefs, and behavioral norms of the host culture into their own. By contrast, Ying and Liese (1991) compared pre-and-post arrival depression scores among Taiwanese international students and found that out of 171 students, over half of them (94) reported higher depressive levels post-arrival, while the rest exhibited unchanged or fewer depressive symptoms. International students transition into a highly competitive environment where they are expected to produce quality work immediately. Navigating a new educational system while making cultural adjustments may incur psychological costs. Due to limited research on international students, it is difficult to make solid

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inferences on the relationship between length of residence and depression. Further exploration will be beneficial.

Lastly, financial burden is associated with higher levels of depression among international students (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). A quantitative study carried out by Kwon (2009) highlighted financial struggles of international students studying in the US. In a sample of 165 international students (106 came from Asian countries), approximately 60% of the respondents identified financial pressure as their biggest concern. While no official report exists regarding international students' financial struggles, finances clearly present significant challenges to the psychological well-being of many international students (Mackenzie et al., 2011). Although some studies cited in this section are not specifically related to Chinese and Indian students, it seems reasonable to extrapolate that Chinese and Indian students may have a similar depression trajectory as they face similar acculturation challenges.

Previous studies have cited social support as a protective factor that reduces the negative impact of acculturation stress on the mental health of international students (Lee, Koeske, & Sales, 2004; Mallinckrodt & Leong, 1992; Sümer, Poyrazli, & Grahame, 2008). Many Asian students value an emotional connection of social support such as mutual bonding (Bertram, Poulaski, Elsasser, & Kumer, 2014) and a sense of belonging (Atri, Sharma, & Cottrell, 2007). The major sources of social support for Chinese and Indian international students are family and friends back home, fellow international students from the same country, and academic advisors (Atri, Sharma, & Cottrell, 2007; Khawaja & Stallman, 2011; Kwon, 2009; Li & Lin, 2014; Meghani & Harvey, 2016).

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Chinese and Indian international students tend to rely more on informal sources of support, such as friends and families, to mitigate negative adjustment responses during the transitional phase (Hyun, Quinn, Madon, & Lustig, 2007; Zhai, 2004). A qualitative study (including four Chinese and two Indian students) showed that sharing concerns with co-nationals is also common among international students (Khawaja & Stallman, 2011). These students share similar campus experiences. These shared experiences are more likely to foster mutual understanding and forge emotional bonds among the students as they seek guidance from and provide advice to one another. Additionally, Khawaja and Stallman (2011) revealed that support from senior students is important to new international students. The implication is that senior students are valuable resources as they have learned their lessons from trial and error.

The academic advisor is another source of support for international students (Tung, 2014). Studies have shown that the relationship between the international student and his or her advisor is important to the student's psychological and emotional well-being (Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013). In a study of 551 international graduate students at a large US university, 50% of whom were from Asian countries, Han and associates found that international graduate students who had more functional relationships with their advisors reported less emotional distress. In a similar vein, Chinese international students who received attention from their advisors experienced less psychological difficulties. Coming from cultures where students are taught to put their absolute trust in teachers, Asian students may rely much on their advisors for help with successful academic completion and career development, as well as positive

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psychology. Advisors could play a more prominent role in Asian international students' acculturation trajectory as their education advances.

Seeking Mental Health Services

Many Asian international students are inclined to rely on internal resources such as willpower to manage their concerns, rather than seeking professional help (Wei et al, 2007). Asian cultures endorse an interdependent way of self (Markus & Kitayama, 1991) and emphasize family privacy (Inman & Yeh, 2007). Both Chinese and Indian students are more likely than Western students to perceive it as culturally inappropriate to speak of personal problems with people outside of their primary support group, and sharing these problems with outsiders may evoke feelings of shame and guilt (Moore & Constantine, 2005). Asians are generally concerned about the burden they may place on others in the process of coping; therefore, Chinese and Indian international students may be more likely to refrain from expressing their struggles. Moreover, the stigma of mental illness, often described as losing face and embarrassment, may prevent many of these students from seeking help (M. Liu, 2009).

Most counselors in the US may have limited knowledge and experience with non-Western cultures (Sue, Arredondo, & McDavis, 1992), and resources for counseling Asian international students are scarce (Zhang & Dixon, 2003). While a majority of Asian international students may rely on culturally-shaped emotional coping strategies, those few students who may seek help will generally receive counseling services rooted in Western cultural values that tend to be individual-focused and encourage explicit verbal and emotional expressiveness (Sue & Sue, 1977). Approaching Asian students' adjustment issues without referencing cultural factors may hinder mental health

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professionals from accurately assessing their clients' needs. The absence of respect for the students' traditional values, trust, and comfort may prevent Asian international students from seeing counselors as valuable resources. Their unmet needs may make them question the effectiveness of the service. Consequently, persistent unmet needs may lead to premature termination.

Asian international students are often more susceptible to high levels of adjustment difficulties due to additional stressors imposed by Asian collectivist cultures (Liao & Wei, 2014). Prior to coming to the US, a vast majority depended on family and friends in their homeland as a primary source of support. However, relocating to the US makes it difficult for many to receive immediate support from their primary support groups due to geographical distance. In keeping with Asian cultures' emphasis on internal regulation, these students may try to exercise emotional control. This desire to manage their stress through internal regulation can increase the risk of developing depression (Wei et al., 2007). However, heretofore little is known about how prevalent depression is among Asian international students.

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CHAPTER 3

METHODOLOGY

This research study received approval by the University of South Carolina Institutional Review Board for Human Subjects Research before implementation (see Appendix A).

Mixed-Methods Design

The research used a mixed-methods pretest/posttest measurement study design to (1) explore the relationship between acculturation stress and depression among Chinese and Indian international graduate students at UofSC, (2) examine whether social support influences this relationship, (3) identify changes in acculturation stress, social support, and depression, and (4) understand how Chinese and Indian international graduate students experience acculturation stress and to what extent social support can help the students cope with their stress. Most previous research involving acculturation stress in international students uses quantitative frameworks with cross-sectional study designs. As such, data are collected at one time-period and acculturation is treated as a single, isolated event, rather than a process. Acculturation, however, is a cultural change that takes place over time, necessitating the efforts of individuals to form and sustain a functional relationship with the new environment (Berry, 2005; Kim, 2008).

This dissertation study took a different approach by using a design aimed at providing richer and more comprehensive data on the topic through integration of quantitative (online survey) and qualitative (focus group interview) approaches.

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Specifically, two online surveys and two focus group interviews were utilized. For the quantitative portion, a hierarchical regression analysis was conducted to ascertain if a statistically significant relationship existed between acculturation stress and depression, and if social support had an influence on this relationship. Paired samples t-tests were performed to identify mean changes in the aforementioned three primary variables over one academic year. For the qualitative portion, two focus group interviews were conducted with 12 students to obtain a more in-depth understanding of the topic. A focus group offers a setting to explore different perspectives from multiple participants (Krueger & Casey, 2000). The interactive nature of the focus group enables them to listen and reflect not only on their own experiences, but also opinions of others. This allows for shared understanding among the participants. For this reason, a focus group was chosen as a secondary data collection method.

Sampling

Inclusion/Exclusion. This study involved first-year international graduate students from China and India who were matriculated full-time at the UofSC Columbia campus in the fall of 2016. This study focused on Chinese and Indian students because they are the two most highly represented international student groups in the US and come from collectivist cultures. The study sample was limited to first-year international graduate students because of their unique acculturation stress. First-year international students are more likely to face far greater challenges than other students because they are dealing with a new educational system while settling into a new environment (Brein & David, 1971). Additionally, many of them work as teaching/research assistants, which adds pressure. Because graduate programs are intense and the workload is heavy,

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academic pressure and time constraints may severely isolate these students from social support networks, leading to increased acculturation stress. Without social support and proper outlets, first-year international graduate students may be more susceptible to the negative impact(s) of acculturation stress, as the study sought to prove.

In order to participate in the study, students had to meet the following inclusion criteria: Chinese or Indian nationality, F-1 visa status, first-year student, full-time status, and enrolled in a graduate degree program. Students who were from countries other than China and India and students who were enrolled on different campuses, or attended the college part-time, were excluded. Because this study examined a relationship between acculturation stress and depression over one academic year, students with a J-1 visa who stayed in the US for six to ten months in exchange programs did not qualify for the study. UofSC classifies children of undocumented immigrants as international students; however, they are bound by different immigration regulations, such as Deferred Action for Childhood Arrivals (DACA), and are not eligible for student visas. For this reason, those students were also excluded from this study. This study was limited to adult graduate students; therefore, this research did not apply to children, who by definition are under 18 years of age.

Participants. At Time 1 of the study, 42 Chinese students and 26 Indian students were enrolled in various graduate programs, comprising 43% of the entire international graduate student population. Nearly half of them were studying engineering and computer science. As mentioned previously, the decision to limit the proposed study to students from China and India was made because they are the two largest international student groups on the UofSC's campus. Other Asian subgroups were small in number.

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Based on a computer-based statistical power analysis with a medium and high effect size, 103 student participants were required to constitute a sufficient sample size. As previously mentioned, the total number of Chinese and Indian students for fall 2016 was 68, which fell below the appropriate target numbers. That is, this study is underpowered, and the regression model may not approximate the true model for the entire population. Thus, caution is required when drawing conclusions from the data.

A total of 102 international graduate students completed the survey at Time 1. This number included first-year Asian international graduate students (n = 19) who were from countries other than China and India and advanced-level graduate students (n = 28) who responded to the survey link posted on public domains such as the International Student Services (ISS) Facebook page and international students' Listserv. Among these participants, 55 (81%) students met the aforementioned inclusion criteria; responses from 47 students were excluded from data analysis. At Time 2 data collection, 54 students out of 55 (98%) completed the survey.

Recruitment

Both purposive and convenience samplings were used. Participants were recruited over a nearly two-month period, from August 15 to October 13 2016. Various recruitment strategies were employed to promote the study. For example, flyers were posted on bulletin boards in each academic department. For paper-free buildings such as the Darla Moore School of Business and the College of Information and Communication, e-flyers were displayed on monitors. Flyers were also posted in communal campus buildings, coffee shops/cafes, and ethnic churches and restaurants. Recruitment efforts included giving short speeches during incoming student orientations hosted by the Center

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for Teaching Excellence, ISS, and various academic departments. Social media, such as Facebook and WeChat, and word-of-mouth advertising were also used to reach out to students. The presidents of Chinese and Indian student organizations were contacted to strategize and promote student participation. In addition, various volunteer organizations on campus that provide free meals, transportation services, and English conversation partners to international students distributed information about the study. To enhance retention, the respondents were provided with a $30 cash incentive, which they received upon completion of the survey at Time 2.

For the qualitative study, six Chinese and six Indian students were invited to two focus group discussions. Initially, the researcher sent email invitations to the students who completed the online surveys, but the response rate was extremely low. To have enough participants for effective discussion, the researcher talked to Chinese and Indian graduate students she encountered at a central location on campus (i.e., the Horseshoe) and in the library where students visited frequently. Among the focus group participants, five were first-year students and the rest were further along in their degree programs. For details on participant demographics, see Appendix B.

Procedures

Survey questionnaires were developed based on the relevant literature and informal interviews with international students from Asia in the preparation for IRB approval. The questionnaires consisted of demographics and psychosocial measures and were pilot-tested on a small group of international students at UofSC to make sure that the content was clear and culturally appropriate. The primary quantitative data were collected through “SurveyMonkey” in September 2016 (Time 1) and March 2017 (Time

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2). For the Time 1 data collection, a hyperlink to "SurveyMonkey" was posted on the ISS Facebook page and student organizations' websites and Listservs. Messages with an embedded hyperlink were sent to students who then chose to share their email addresses. Students responding to the survey were automatically considered to have given active consent to participate in the study. The completed survey at Time 1 was collected electronically from September 22 to October 13 2016, with email reminders in between. Time 1 data collection served as the baseline data for the quantitative portion of the study. Time 2 data collection was conducted from March 23 to April 13 2017, a full year after matriculation at UofSC in the fall of 2016.

Collected quantitative data were filed and stored on password-protected computers in a locked room for this project. Access was limited to this researcher and one graduate assistant who was hired for data entry and analysis. Because this study measures acculturation stress and depression at two time points during the project period, participants were requested to include their UofSC email addresses in survey responses. International students are required to use their university email addresses when corresponding with the ISS. Therefore, their school email addresses were used to match and track participants from Time 1 to Time 2. To protect the confidentiality of the participants, a unique ID number was assigned to each student, and then a file was created on Excel that matched the ID number to the student's email address. The newly created file was saved on a USB and was managed exclusively by the researcher. The students' email addresses were deleted from the survey responses after the Time 2 data collection. Hard copies of data were printed out only after all identifying information was removed.

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The qualitative portion of the study, which consisted of focus group interviews, was held on campus on March 31 and April 9 2017. The interviews lasted approximately 60 minutes. Group homogeneity is important for a focus group, because people talk more openly if they are in a group of people sharing similar characteristics (Kellogg, O'Brien, Robey, & Toth, 2007; Morgan, 1998). Considering this importance, Chinese students were interviewed separately from Indian students. Based on the findings from preliminary quantitative data analysis, eight main questions pertaining to acculturation stress and social support were developed along with prompt questions (see Appendix C). Open-ended questions seemed appropriate for focus group discussions. Asking open-ended questions enabled individual participants to share their own experiences, thoughts, and feelings as well as their observations of other community members on campus. The open-ended questions also provided the researcher with opportunities to probe, clarify, and verify the participants' responses, enabling certain patterns and themes to emerge. This method helped produce contextual data on the topic under exploration. The researcher was the primary moderator. An assistant took notes and summarized the key points at the end of the discussion to increase the accuracy of information. Focus group discussions were recorded and transcribed verbatim for thematic analysis. To protect confidentiality, all identifying information was removed from the transcripts. Study findings were disseminated to participants and the Asian international community in October 2017.

Measures

This study used the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994), the Center for Epidemiologic Studies-Depression Scale

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(CES-D; Radloff, 1977), and the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). All three measures were validated in college and community samples with high internal consistency, reliability, and good construct validity (see supporting data presented below). Demographic characteristics on the survey included gender, nationality, age, marital status, religiosity, prior education in the US, field of study, pre-departure preparations, English proficiency test score (International English Language Testing System [IELTS] and TOEFL Internet Based Test [iBT]), primary funding source, and primary social support group. These questions were included to obtain background information and to understand participants' cultural distance from the host country. Independent variables (IV) included length of residence in the US, perceived comfort with spoken English, communication with host nationals, funding sufficiency, financial concerns, acculturation stress, and availability of social support. The dependent variable (DV) was depression scores.

Decisions about IVs were based on existing literature. Research has shown that English fluency, length of residence in the US, and financial security are predictors of depression for international students (Dao, Lee, & Chang; Fritz, Chin, & DeMarinis, 2008; Han, Han, Luo, Jacobs, & Jean-Baptiste, 2013; Sumer, Poyrazli, & Grahame, 2008; Wei et al., 2007; Zhang, 2012). Students who possess high English proficiency show lower levels of depression than those students with lower English proficiency, because they adjust better to the new culture due to increased social exposure. Limited communication with host country nationals may lead to feelings of isolation and depression (Trice, 2007). Financial security also affects levels of depression; students under financial stress are at a greater risk of developing depression (Andrews & Wilding,

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2004; Eisenberg, Gollust, Golberstein, & Jennifer, 2007). Lastly, social support is highly correlated with depression among international students (Zhang, 2012). Typically, the greater the social support, the lower the levels of depression.

Pre-testing survey items: To pre-test the survey items, cognitive interviews were conducted with ten international students from different countries who were enrolled in various degree programs at the university or at English Programs for Internationals (EPI), an intensive English learning school affiliated with UofSC. Cognitive interviewing is a technique used "to study the manner in which targeted audiences understand, mentally process, and respond to materials—with a special emphasis on potential breakdowns in this process" (Willis, 2005, p. 3). More specifically, the cognitive interview establishes whether the respondents understood the questions, concepts, and tasks in a consistent manner and as intended by the researcher (Collins, 2003). For this study, the purpose of the cognitive interview was to reduce random and systematic errors in survey questionnaires.

The four steps in cognitive processing of survey questions are comprehension, retrieval, judgment, and responses. Interviewees responded to the survey questions using think aloud and verbal probing methods. For example, one item from the ASSIS, "I feel that my people are discriminated against," asks about racial/ethnic discrimination that international students might have experienced or witnessed during their stay in the host culture, but because of the vague diction, the word "my people" could be interpreted in multiple ways. For clarity, the following probes were developed and asked:

- What do the words "my people" mean to you? (Comprehension)

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- Can you repeat the question that I just asked in your own words? (Comprehension)
- What experience did you draw on to answer the question? (Retrieval)
- How sure are you of your answer? (Judgment)
- Why did you select that specific response? (Response)

A majority of the interviewees identified “my people” as those with whom they developed an emotional bond, for example other international students of the same nationality. One student who came to the US with his family included his fiancée in “my people.” Cognitive interviewing questions also included the term “acculturation,” “cross-cultural adjustment,” “feeling depressed,” and “get going.” Based on these interviews, the survey questionnaire was modified to enhance clarity. The final survey questionnaire is presented in Appendix D.

Acculturative Stress Scale for International Students (ASSIS). The ASSIS was used to assess acculturation stress of international students from China and India. The ASSIS is a 36-item self-report scale designed to measure acculturation stress among adult international students. It is composed of six subscales: perceived discrimination (13 items), homesickness (4 items), perceived hate/rejection (5 items), fear (4 items), culture shock/stress due to change (3 items), guilt (2 items), and non-specific (5 items). Participants are asked to rate the stressfulness of a particular event that has happened to them in a 5-point Likert format, ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Sample items are: “I worry about my future for not being able to decide whether to stay here or to go back” and “I feel guilty that I am living a different lifestyle here.” Previous studies revealed high internal consistency reliability for the ASSIS, with Cronbach’s

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alpha for the total score ranging from .92 to .95 (Sandhu & Asrabadi, 1994; Wei et al., 2007; Zhang 2012). Construct validity was also supported with a negative relationship with cultural adaptation and a positive relationship with psychological distress (Constantine, Okazaki, & Utsey, 2004; Kaul, 2001). In the current study, Cronbach's alpha of the total 36 scale items was .96, indicating high internal reliability.

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS was used to measure the perceived availability of social support across three factors: friends, family, and a significant other. The MSPSS is composed of 12 items, and each item is rated on a 7-point Likert scale. The scale ranges from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Sample items are: "There is a special person who is around when I am in need" and "I can count on my friends when things go wrong." The structure of the MSPSS has good reliability and validity, with Cronbach's alphas ranging from .79 to .95 (Akhtar et al., 2010; Chou, 2000). Cronbach's alpha of the MSPSS for the current Chinese and Indian student sample was .91, indicating high internal reliability.

Center for Epidemiological Studies-Depression (CES-D). Depression of the target student groups was assessed with the CES-D. The CES-D is a 20-item self-report scale that has been widely used in public settings. Each item is rated on a 4-point Likert-type scale. The scale ranges from 1 (*rarely or none of the time*) to 4 (*most or all of the time*), and measures the frequency of participants' experiences with depression during the past week. Sample items are: "I was bothered by things that usually do not bother me" and "I had cry spells." For the CES-D, internal consistency reliability coefficients ranged from .87 to .88 (Wang & Mallinckrodt, 2006; Zhang 2012). The possible range of scores is zero to 60, with the higher scores indicating the presence of greater symptoms of

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depression. The CES-D showed a positive association with a high level of self-concealment and a low level of social self-efficacy for college students from Asia, Africa and Latin America (Constantine, Okazaki, & Utsey, 2004). In this study, high internal reliability was found, with Cronbach's alpha of .90 for the total 20 scale items. CES-D score ≥16 is typically considered to be at risk for clinical depression and usually suggests a referral for a more thorough diagnostic evaluation.

Data Analysis

Variables. Data were exported to a SAS software program and then cleaned up by examining missing values, duplicates, and outliers. For example, one participant's CES-D scores were 56 out of 60. This was as an outlier based on a histogram, which was confirmed by studentized residuals and Cook's D. Therefore, responses from this participant were excluded from the main analysis. Prior to analysis, variables were coded numerically. Detailed description is presented below.

Inclusion/exclusion variables. Nominal variables with two categories, such as first-year student, visa type, and fulltime status, were binomially coded 1 = Yes, 0 = No.

Demographic variables. Age and religiosity were treated as continuous variables. Religiosity was measured by respondents' level of agreement on the statement "I see myself as religious" using a 5-point Likert format ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). All other demographic variables were categorical and coded nominally. This study divided pre-departure preparations into three separate responses: cross-cultural adjustment, English language skills, and academics. Typically, cross-cultural adjustment encompasses English language skills. However, due to the fact that English language preparations means preparing for English tests to most Asian

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international students, this study treated “cross-cultural adjustment” and “English language skills” as separate responses.

English proficiency test scores were treated as an ordinal variable. Considering how English proficiency test scores were calculated, this study set 120 for the highest score and 10 for the lowest score. Anything outside this range was excluded from the analysis. International English Language Testing System (IELTS) and TOEFL Internet-based test (iBT) are the two most standardized English proficiency tests that US universities require international students to take as a part of admission requirements. Based on UofSC score requirements, the following IELTS and TOEFL iBT score tables were created. Participants at levels 1-3 were considered high in English proficiency, levels 4-6 considered intermediate in English proficiency, and levels 7-8 were considered low in English proficiency. In this study, no one’s score fell into level 9.

Table 3.1

IELTS and TOEFL iBT Score Tables

IELTS	iBT	Level
9	118-120	1
8.5	115-117	2
8	110-114	3
7.5	102-109	4
7	94-101	5
6.5	79-93	6
6	60-78	7
5.5	46-59	8
5	35-45	9

Independent variables (IV). IVs were length of residence in the US, perceived comfort with spoken English, communication with host nationals, funding sufficiency, financial concerns, social support, and acculturation stress. With the exception of funding

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sufficiency, all IVs were continuous variables. The length of residence variable measured the time respondents spent in the US in terms of months and years. For analysis purposes, these responses were all converted to months. Perceived comfort with spoken English was measured with the statement "I am comfortable speaking English," using 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Communication with host nationals was measured from a question that assessed how often participants communicated with Americans in the last two months. The responses for this question were on a 5-point Likert-type scale and ranged from 0 (*never*) to 4 (*always*). Funding sufficiency was treated as a dichotomous variable. It was measured with the question "Is your funding sufficient enough for your financial situation?" (1 = Yes, 0 = No). The financial concerns ("I am concerned about my finances") variable was based on answers to the funding sufficiency question. Specifically, respondents who selected "No" for the question about funding sufficiency were asked to indicate the level of their financial concerns on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Respondents who selected "Yes" on funding sufficiency were assigned to 1 (*strongly disagree*). Social support was measured by the 12-item MSPSS and response options for each scale item ranged from 1 (*very strongly disagree*) to 7 (*very strongly agree*). For analysis, responses to each item were summed to create a composite score for the scale. Higher scores on the scale indicated a higher level of social support. Acculturation stress is a primary IV of this study and was measured by the 36-item ASSIS. As mentioned before, each scale item has five response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Similar to the social support measure, responses

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to each item were summed up to produce a composite variable. Higher scores indicate a higher level of acculturation stress.

Dependent variable (DV). Depression was the only dependent measure in this study and was measured by the 20-item CES-D. Response options for the scale ranged from 0 (*rarely or none of the time*) to 3 (*strongly agree*). The scoring of the four positive items (i.e., I feel that I was just as good as other people; I felt hopeful about the future; I was happy; and I enjoyed life.) were reversed before calculating a composite score. The diagram of independent, dependent, and moderating variables is presented below.

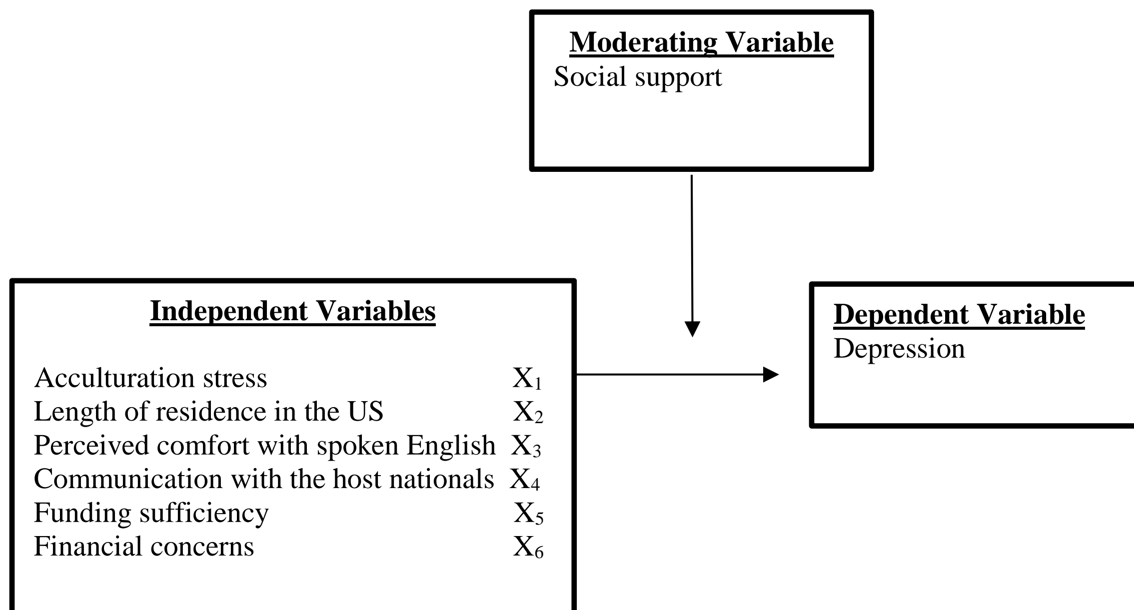

Figure 3.1 Diagram of Independent, Dependent, and Moderating Variables

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Quantitative Data Analysis

Hypothesis 1 stated that there would be a positive association between acculturation stress and depression among first-year international graduate students from China and India at UofSC at Time 1. A hierarchical regression analysis was performed to examine this hypothesis. Hypothesis 2 stated that the relationship between acculturation stress and depression would differ depending on the availability of social support. The moderating effect of social support was examined using a hierarchical regression analysis. Hypothesis 3 stated that there would be changes in acculturation stress, social support, and depression levels between Time 1 and Time 2 within this student population. A series of t-test analyses were used to examine this hypothesis.

Univariate. Descriptive statistics was performed to provide demographic and sample characteristics on the following variables: gender, nationality, marital status, field of study, pre-departure preparations, prior education in the US, English proficiency test score (IELTS /TOEFL iBT), primary funding source, funding sufficiency, and primary social support group. Individual values or a range of values for each variable were tabulated and presented in frequency distribution tables. For age and religiosity, mean (*M*) values and standard deviations (*SD*) were calculated. For continuous variables such as length of residence in the US, perceived comfort with spoken English, communication with the host nationals, financial concerns, acculturation stress, social support, and depression scores, mean values (*M)* were calculated and presented in conjunction with standard deviations (*SD*) and, when needed, skewness (*Sk*), and kurtosis (*Ku*). This study referenced Kim (2013) to determine the acceptable values of skewness (±2) and kurtosis (±4) for normal distributions of data.

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Bivariate. Pearson's product-moment correlation coefficients (in short, correlation coefficients, *r*) were calculated to ascertain (1) if a relationship between two variables existed, (2) if this relationship was linear, and (3) if the linear relationship was positive or negative. The *r* value ranges between -1 and 1. The focus of this analysis was to see if *p*-value was significantly different from 0, which indicates the weakest linear relationship (Puth, Neuhäuser, & Ruxton 2014). Variables measured included length of residence in the US, prior education in the US, pre-departure preparations (cross-cultural adjustment, English language skills, and academics, both individually and combined), perceived comfort with spoken English, communication with the host nationals, funding sufficiency, financial concerns, acculturation stress, social support, and depression.

Multivariate. Prior to performing the regression analysis to answer the research questions, assumptions, outliers, and multicollinearity were examined by following the procedures described by Cohen, Cohen, West, and Aiken (2003). Assumptions about regression models were examined through the visual analysis of data, and the assumptions were met. For example, in all models, the linearity of residuals was examined by reviewing a plot of residuals versus predicted values. Points were symmetrically distributed around a horizontal line with a roughly constant variance. Homoscedasticity of errors was examined through a plot of residuals versus predicted values; errors did not systematically increase in one direction by a significant amount. The normality assumption was met, as points on a normal quantile plot were close to the diagonal reference line. Lastly, independence of errors was also met, because a random display of points was observed in the plot without any patterns. In respect to outliers, one outlier was detected using studentized residuals (> 3) and Cook's D (> 1) and was

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removed prior to the model building. The Variance Influence Factors (VIF) higher than 10 indicate the presence of multicollinearity among IVs (Yoo et al., 2014). In this study, all VIF values were lower than 10. Assumptions for a paired *t*-test were also examined, and no violation was noted. IVs were matched because data were collected from the same group of students at two time points. The normal distribution of data was confirmed with skewness value (± 2) and the kurtosis value (± 4) across acculturation stress, social support, and depression.

Before conducting a multiple regression for inferential statistics, an independent t-test was conducted to see if Chinese and Indian students were comparable across all IVs. Mean comparisons indicated significant group differences on length of residence in the US [$t(42.20) = 2.96$, $p < .01$] and perceived comfort of spoken English [$t(48.5) = -4.82$, $p < .001$]. Chinese students reported the higher mean length of residence and the lower mean scores on perceived comfort of spoken English. However, when these two variables were entered into regression models, they were not statistically significant ($p > .05$) nor had any significant interactions with any of the predictor variables. For this reason, the two groups were collapsed into one. Before conducting regression analysis, continuous variables were centered by subtracting the mean of each variable from the data to improve interpretation of the resulting regression equations as well as reduce multicollinearity (Kromrey & Foster-Johnson, 1998). An alpha of .05 was used as the cutoff for statistical significance. Therefore, the researcher's hypothesis was supported only if *p*-value was less than .05. A hierarchical regression was performed to explore the relationship between acculturation stress and depression when controlling for all other variables. Based on the baseline data, four models were built by adding variables to a

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previous model at each step. As shown below, the variable of primary interest, acculturation stress, was entered into the model first. The purpose of the model building and comparison was to determine whether newly added variables showed a significant improvement in R^2. The five models, including interaction, are presented below.

- Model 1 ($\hat{y}$): $b_0 + b_1 x_1$
- Model 2 ($\hat{y}$): $b_0 + b_1 x_1 + b_2 x_2$
- Model 3 ($\hat{y}$): $b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5$
- Model 4 ($\hat{y}$): $b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7$
- Interaction Model ($\hat{y}$): $b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 (x_1 * x_2)$

In the models above, $\hat{y}$ is the outcome depression, b_0 is the y-intercept, b_1 through b_8 are the slope of each predictor variable that follows. As for predictors, x_1 represents acculturation stress, x_2 social support, x_3 length of residence in the US, x_4 perceived comfort with spoken English, x_5 communication with the host nationals, x_6 funding sufficiency, and x_7 is financial concerns, followed by the interaction between x_1 and x_2.

Demographic variables were excluded from the final regression model because of low variability in responses. This limited variability would negatively affect model fits. The predictive effect of acculturation stress and social support on depression was also examined to answer the second research question. Paired samples t-tests were conducted to identify changes in acculturation stress, social support, and depression. Once all the analysis was completed, study hypotheses were examined to draw conclusions. To

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enhance the accuracy of coding, analysis, and interpretation, a faculty member in the Department of Statistics at UofSC was consulted throughout the project period.

Qualitative Data Analysis

The following research question was developed to further explore the topic of acculturation stress and social support among Chinese and Indian international graduate students: How do international graduate students from China and India experience acculturation stress and to what extent can social support help the students cope with their stress? Qualitative analyses were used to examine this question.

Thematic analysis. Focus group interviews were analyzed using the methods of initial coding, focused coding, and constant comparisons within, between, among, and across data to develop a deeper understanding of the students' acculturation stress and social support. Because this research question sought identification, classification, and description of the students' general perceptions across the data, these procedures were thought to produce relevant, meaningful answers.

When a professional transcriber completed transcribing both interviews, the researcher carefully and thoroughly reviewed the data and listened to the audio files multiple times to detect any missing words or phrases. Some parts in the discussion were marked as inaudible by the transcriber, so the researcher focused more on those areas. When needed, the researcher contacted participants individually via email to verify or obtain additional information. The researcher also sought clarification from participants about interpretation of the data to enhance accuracy. Following the suggestions given by Charmaz (2006) and Strauss and Corbin (1990), the researcher performed the initial coding, which involved generating categories, and labeling ideas and thoughts without

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worrying about a range of categories. Writing notes and drawing a diagram were helpful. The initial coding generated 73 categories. Focused coding involved the process of eliminating, integrating, and clustering categories. During this process, the researcher looked for repeating ideas to discover patterns/themes emerging from the data.

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CHAPTER 4

RESULTS

The purpose of this mixed-methods study was to explore the possible relationship between acculturation stress and depression among first-year international graduate students from China and India at UofSC. The specific aims of the study were to (1) explore the relationship between acculturation stress and depression among first-year international graduate students from China and India at Time 1; (2) examine the impact of social support on this relationship; and (3) identify changes in acculturation stress, social support, and depression between Time 1 and Time 2.

This chapter presents a summary of the characteristics of the study participants and research findings from univariate, bivariate, and multivariate analyses that examine the following hypotheses: (1) There will be a positive association between acculturation stress and depression among first-year international graduate students from China and India at UofSC at Time 1; (2) the relationship between acculturation stress and depression will differ depending on the availability of social support; and (3) there will be changes in acculturation stress, social support, and depression levels between Time 1 and Time 2 within this student population. Lastly, research findings from the qualitative portion of the study are examined.

Participants

As can be seen in Table 4.1, the study sample included 55 Asian international graduate students from China and India, and 54.5% of the participants were enrolled in

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doctoral programs. In the sample, 58.2% were male. Regarding nationality, 58.2% identified as Chinese and 41.8% identified as Indian. In both Chinese and Indian student groups, male representation was higher than their female counterparts. Among the Chinese sample, 56.3% were male and 43.8% were female. Among the Indian sample, 60.9% were male and 39.1% were female. The sample ranged in age from 21 to 39, with a mean age of 25.15 years ($SD = 3.31$). The majority of the participants were single (76.4%), with fewer who were married (14.6%), in a relationship (7.3%), and divorced (1.8%). Regarding their field of study, nearly half of the participants (49.1%) majored in Engineering and Computing, followed by Arts and Science (10.9%), Business (10.9%), Pharmacy (7.3%), Public Health (5.5%), Hospitality, Retail and Sports Management (5.5%), Music (5.5%), Information and Communication (1.8%), Interdisciplinary (1.8%), and Education (1%). When it comes to pre-departure preparations, most students combined language (70.9%) and academic preparations (60.0%), and 16.4% reported cross-cultural preparations. For most participants, UofSC was the first university that they had attended in the US; 83.6% of participants reported that they never attended US universities prior to coming to Columbia, South Carolina. When examining English language proficiency, most participants fell into the intermediate level (84.2%) with TOEFL iBT scores ranging from 80-109, whereas smaller numbers fell into the high (13.2%) and low (2.6%) levels. In terms of religiosity, 36.4% of participants disagreed with the statement "I see myself as religious," 36.4% of participants selected the midpoints, and 27.3% of participants agreed with the statement. The mean value of religiosity was 2.76 ($SD = 1.32$). More than 70% of participants reported that their funding was sufficient. Two major funding sources for the participants were graduate

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teaching/research assistantship (60.0%) and parents and family back home (34.5%). The rest were government scholarship (3.6%) and personal earnings (1.8%). A primary social support for the participants was family/friends back home (50.9%). This was followed by other international students (34.6%), American friends (7.3%), "Other" (3.6%), international student services staff (1.8%), and "None of the above" (1.8%).

Table 4.1

Demographic and Descriptive Characteristics of All Participants (n=55)

Demographics	n (%)	*M(SD)*	Range
Sex			
Male	32 (58.2)		
Female	23 (41.8)		
Country			
China	32 (58.2)		
India	23 (41.8)		
Age		25.15 (3.31)	21–39
21-25	39 (70.9)		
26-30	13 (23.6)		
Above 30	3 (5.5)		
Marital status			
Single	42 (76.4)		
Married and living together	5 (9.1)		
In a relationship	4 (7.3)		
Married and not living together	3 (5.5)		
Divorced	1 (1.8)		
Field of study			
Engineering and Computing	27 (49.1)		
Arts and Science	6 (10.9)		
Business	6 (10.9)		
Pharmacy	4 (7.3)		
Public Health	3 (5.5)		
Hospitality Retail and Sport Management	3 (5.5)		

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Music	3 (5.5)	
Information and Communications	1 (1.8)	
Interdisciplinary	1 (1.8)	
Education	1 (1.8)	
Pre-departure preparation		
Language preparation	39 (70.9)	
Academic preparation	33 (60.0)	
Cross-cultural preparation	9 (16.4)	
Prior education in the U.S.		
Yes	9 (16.4)	
No	46 (83.6)	
English language proficiency level		
80-109	32 (84.2)	
110 and above	5 (13.2)	
Below 80	1 (2.6)	
Religiosity		2.76 (1.32)
Primary funding source		
Graduate assistantship	33 (60.0)	
Parents/Family funds	19 (34.6)	
Government scholarship	2 (3.6)	
Personal earnings	1 (1.8)	
Other	0 (0.0)	
Funding sufficiency		
Yes	39 (70.91)	
No	16 (29.09)	
Primary social support group		
Family/friends back home	28 (50.9)	
Other international students	19 (34.6)	
American friends	4 (7.3)	
Other	2 (3.6)	
International student services staff	1 (1.8)	
None of the above	1 (1.8)	

Note. Due to rounding**,** percentages may not sum to 100.

Univariate Analysis: Key Continuous Variables

Table 4.2 shows descriptive statistics of the primary continuous variables in the study: length of the residence in the US, perceived comfort with spoken English,

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communication with host nationals, financial concerns, acculturation stress, social support, and depression for the study. As mentioned in the previous chapter, this study used indices for acceptable limits of skewness (±2) and kurtosis (±4), respectively. On average, participants lived in the US for 10.46 months (*SD* = 17.38). The values of skewness and kurtosis were 2.27 and 5.43. In response to the question about self-reported comfort in speaking English, 40% of participants strongly agreed with the statement "they were comfortable speaking English." The mean value of this variable was 3.96 (*SD* = 1.07). When assessing the frequency of communication with Americans, on average participants selected "sometimes." The mean value was 2.56 (*SD* = 0.98). Participants' levels of financial concerns were also examined, and results showed that they were in general not very concerned about their finances (*M* = 1.93, *SD* = 1.57). Regarding acculturation stress, the mean value was 75.35 (*SD* = 24.94). Higher scores indicate a higher level of acculturation stress. The mean of variable social support was 50.55 (*SD* = 26.01). Lastly, the average depression score was 12.67 (*SD* = 8.99), which is below the cutoff point of 16. Higher scores indicate the presence of greater symptoms of depression. Individuals whose CES-D score is ≥16 are typically considered to be at risk for clinical depression. Twenty-seven percent of the participants fell above the cutoff point at Time 1 and 24% at Time 2. (These participants were informed of their scores and what those scores meant as well as information about university resources.) Notably, the values of skewness and kurtosis were 2.35 and 9.0. The excessive kurtosis indicated the presence of an outlier that needed to be removed for the main analysis. All other continuous variables in the study, except length of residence in the US and CES-D scores, had no violations of skewness and kurtosis.

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Table 4.2

Descriptive Statistics of Continuous Variables (*n*=55)

Variables	*M (SD)*	*Sk*	*Ku*	*Range*
Length of residence in the US	10.46 (17.38)	2.27	5.43	1–84
Perceived comfort with spoken English	3.96 (1.07)	-0.77	-0.24	
Communication with host nationals	2.56 (0.98)	-0.12	-0.39	
Financial concerns	1.93 (1.57)	1.22	-0.35	
Acculturation Stress	75.35 (24.94)	0.46	-0.37	36–144
Social Support	50.55 (26.01)	-0.40	-1.51	11–84
CES-D	12.67 (8.99)	2.35	9.0	1–56

Note: CES-D is the acronym for the Center for the Epidemiological Studies-Depression

Bivariate Analysis: Correlational Analysis of Key Study Variables

Correlational analyses were performed on 13 key study variables. The results indicate that acculturation stress is positively correlated to depression (r =.408, p < .01), but social support was not significantly correlated with any key study variables. Detailed description of the correlation analysis is presented below in Table 4.3.

A positive correlation was observed between length of residence in the US and prior education in the US (r = .887, p < .001), pre-departure language preparation and pre-departure preparations combined (r = .482, p < . 001), pre-departure academic preparation and pre-departure preparations combined (r = .732, p < .001), perceived comfort with spoken English and communication with host nationals (r = .48, p < .001), acculturation stress and communication with host nationals, and acculturation stress and depression (r = .408, p < .01). Interestingly, acculturation stress among student participants increased as their study in the US lengthened (r = .28, p < .05).

Table 4.3 also shows a significant negative correlation between pre-departure cross-cultural adjustment preparation and pre-departure language preparation (r = -.47,

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Table 4.3

Correlational Analysis of Key Study Variables (n=55)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Length of residence in the US	1												
2. Prior education in the US	0.887***	1											
3. Pre-departure cross-cultural adjustment preparation	-0.21	-0.196	1										
4. Pre-departure language preparation	-0.09	-0.041	-0.474***	1									
5. Pre-departure academic preparation	0.055	0.06	-0.14	0.049	1								
6. Pre-departure preparations combined	-0.145	-0.098	0.137	0.482***	0.732***	1							
7. Perceived comfort with spoken English	-0.024	0.015	0.154	-0.361**	0.077	-0.111	1						
8. Communication with host nationals	0.041	0.149	0.149	-0.206	-0.176	-0.199	0.48***	1					
9. Funding sufficiency	-0.121	-0.041	-0.041	0.119	0.049	0.099	0.167	0.083	1				
10. Financial concerns	0.18	0.084	-0.074	-0.03	-0.014	-0.076	-0.057	-0.081	-0.929***	1			
11. Acculturation stress	0.28*	0.117	-0.078	0.017	0.029	-0.011	-0.255	-0.278*	-0.14	0.092	1		
12. Social support	0.114	0.055	0.046	0.09	-0.111	0.005	0.108	0.157	0.155	-0.121	-0.149	1	
13. Depression	0.114	0.016	0.077	-0.131	-0.205	-0.21	0.076	-0.223	0.003	0.043	0.408**	-0.058	1

Note. *$p < .05$. **$p < .01$. ***$p < .001$

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$p < .001$), pre-departure language preparation and perceived comfort with spoken English ($r = -.361$, $p < .01$), funding sufficiency and financial concerns ($r = -.929$, $p < .001$), and communication with host nationals and acculturation stress ($r = -.278$, $p < .05$). There were no significant correlations for the remaining key study variables.

Multivariate Analysis: Examining the Study's Key Hypotheses

To test the following two hypotheses, a hierarchal regression analysis was conducted: (H_1) There will be a positive association between acculturation stress and depression among first-year international graduate students from China and India at UofSC at Time 1; (H_2) the relationship between acculturation stress and depression will differ depending on the availability of social support. As can be seen in Table 4.4, the hierarchical regression analysis results indicated that acculturation stress was a significant predictor of depression among study participants consistently in every model, but the relationship between acculturation stress and depression did not differ by the availability of social support. These findings supported the first hypothesis but not the second hypothesis.

Hypothesis 1: Positive relationship between acculturation stress and depression at Time 1

A hierarchical regression analysis was employed to examine how acculturation stress predicts depression. As presented in Table 4.4, acculturation stress was entered into the first block (baseline model), followed by social support in the second block. Length of residence, communication with host nationals, and perceived comfort with spoken English were added to the third block. Lastly, funding sufficiency and financial concerns

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were included in the fourth block. Block 1 was significantly associated with depression [Model $F(1, 52) = 26.37$, $p < .001$] and accounted for 33.7% of the variance in depression scores. There was a main effect for acculturation stress ($\beta = .58$, $p < .001$), where higher scores of acculturation stress were associated with the presence of greater symptoms of depression. Block 2 was significantly associated with depression [Model $F(2, 51) = 13.09$, $p < .001$] and accounted for 33.9% of the variance. There was a main effect for acculturation stress ($\beta = .57$, $p < .001$). Adding social support to Block 2 explained an additional 0.2 of the variance after controlling for the variance explained by acculturation stress; however, this change in the variance was not significant ($\Delta R^2 = .002$, ns). Similar to the previous model, Block 3 was significantly associated with depression [Model $F(5, 48) = 5.94$, $p < .001$]. A main effect for acculturation stress ($\beta = .56$, $p < .001$) was observed, which indicated that acculturation stress was a strong predictor of depression. However, as shown in Table 4.4, adding variables (length of residence, communication with host nationals, and perceived comfort with spoken English) to Block 3 did not significantly change the variances ($\Delta R^2 = .043$, ns) while holding acculturation stress and social support constant. Block 4 was significantly associated with depression [Model $F(7, 46) = 4.57$, $p < .001$] and collectively explained 41% of the variance in depression scores. There was a main effect for acculturation ($\beta = .58$, $p < .001$). Addition of the funding sufficiency and financial concern variables to Block 4 did not significantly change the variances ($\Delta R^2 = .028$, ns).

In conclusion, when comparing models in the study, changes in R^2 were consistently non-significant. Thus, Block 1 with acculturation stress alone was the best fitting model for the study and was most associated with higher levels of depression. The

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regression analysis revealed a positive relationship between acculturation stress and depression among the study participants in every model. This result confirmed the first hypothesis pertaining to the association between acculturation and stress.

Hypothesis 2: Interaction between acculturation stress and social support

The interaction between acculturation stress and social support was included in the fifth block (full block) of the hierarchal analysis to determine if the relationship between acculturation stress and depression differed by the availability of social support. Findings showed that collectively, the variables in Block 5 were associated with depression scores [Model $F(8, 45) = 4.48$, $p < .05$] and accounted for 44% of the variance in depression scores. However, when including the interaction term (acculturation stress × social support) in the model, the relationship between acculturation stress and depression did not differ by social support. This finding did not demonstrate the support for the second hypothesis.

Paired Samples T-test Comparisons for Changes in the Key Variables

Two-tailed paired samples t-tests were conducted to identify if there were changes in the means of acculturation stress, social support, and depression between Time 1 and Time 2 (Hypothesis 3). Because this study collected data over one academic year, it was important to first establish a baseline at Time 1 in order to compare differences in participants' mean scores in the key variables from Time 1 and Time 2.

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Table 4.4

Hierarchical Regression Analysis Testing for Predicting Depression and Interaction

Variable	β	*t*	*p*	R^2	ΔR^2
Block 1				0.337	-
Acculturation stress (c)	0.58	5.14	< .001***		
Block 2				0.339	0.002
Acculturation stress (c)	0.57	4.97	< .001***		
Social support (c)	-0.05	-0.45	.6543		
Block 3				0.382	0.043
Acculturation stress (c)	0.56	4.41	< .001***		
Social support (c)	-0.06	-0.48	.6317		
Length of residence in the US	0.07	0.60	.5485		
Communication with host nationals (c)	-0.17	-1.28	.2064		
Perceived comfort with spoken English (c)	0.22	1.64	.1072		
Block 4				0.41	0.028
Acculturation stress (c)	0.58	4.57	< .001***		
Social support (c)	-0.06	-0.51	.6130		
Length of residence in the US	0.03	0.25	.8022		
Communication with host nationals (c)	-0.13	-0.94	.3501		
Perceived comfort with spoken English (c)	0.15	1.09	.2808		
Funding sufficiency	0.46	1.38	.1740		
Financial concerns (c)	0.49	1.47	.1490		
Block 5 (Interaction)				0.443	0.033
Acculturation stress (c)	0.57	4.58	<.001***		
Social support (c)	-0.09	-0.78	.4380		
Length of Residence in US	0.03	0.26	.7936		
Communication with host nationals (c)	-0.1	-0.76	.4534		
Perceived comfort with spoken English (c)	0.16	1.19	.2387		
Funding sufficiency	0.5	1.54	.1303		
Financial concerns (c)	0.53	1.62	.1115		
Interaction	-0.19	-1.64	.1088		

Note. C in parenthesis indicates that the variable was centered at the mean.
$*p < .05$. $**p < .01$. $***p < .001$

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Hypothesis 3: Identifying changes in the key variable between Time 1 and Time 2

Hypothesis 3 stated that there would be changes in acculturation stress, social support, and depression levels between Time 1 and Time 2 within this student population. Paired samples t-tests were performed to identify changes in those variables. As displayed in Table 4.5, only mean social support differed significantly at the .05 significance level. More specifically, a significant difference was detected in mean social support in Time 1 (M = 49.68, SD = 26.02) and Time 2 (M = 67.25, SD = 13.37) at the .05 level of significance, $t(52) = 5.76$, $p < .001$. Thus, mean social support increased approximately by 17 points after Time 1. Cohen's d was estimated at .81 indicating a large effect size based on Cohen's (1987). The researcher is 95% confident that the true mean difference for social support is CI = [11.45, 18.63]. No significant difference was observed in acculturation stress and depression. This analysis revealed partial support for the study hypothesis.

Table 4.5

Paired Samples T-test Results for Acculturation Stress, Social Support, and Depression (n=53)

Measures	Assessment	*M*	*SD*	*t*-value	95% CI for Mean Difference
Acculturation stress	Time 2	77.19	25.23	0.42	-4.80, 18.46
	Time 1	75.92	25.18		
Social support	Time 2	67.25	13.37	5.76***	11.45, 18.63
	Time 1	49.68	26.02		
Depression	Time 2	12.06	5.76	0.08	-1.86, 5.89
	Time 1	11.98	6.81		

Note. *$p < .05$. **$p < .01$. ***$p < .001$

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Qualitative Themes

The researcher conducted focus group interviews to explore how international graduate students from China and India experienced acculturation stress and to what extent social support helped the students cope with their stress. These interviews with two student groups generated three major themes associated with acculturation stress and social support, respectively. For acculturation stress, lack of diversity on campus, fear of making mistakes, and microaggression emerged as salient themes. For social support, a tradition of "paying it forward," active engagement of academic advisors, and informational support from the ISS surfaced as major themes.

Acculturation stress

***Lack of diversity on campus*.** Most participants identified the lack of diversity on campus as a major acculturation stressor. As mentioned previously, the international student community at UofSC is relatively small, constituting less than five percent of the entire student population. This small share of international students often made participants feel like oddities or objects of curiosity. Several participants described discomfort at being the only international student in their academic program. The burden of being different, combined with the accompanying frustration and loneliness, caused them to experience emotional distress. One Indian female participant stated:

> [I]nitially, when I was in class I started feeling like a bit of a commodity because everyone looked at me for, oh, so you have a different perspective. Tell me about that. And I was like I don't even have an opinion on anything just because I'm from a different country. And there was no one else to share that feeling with me.

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> Because I'm with these Americans out of which probably ten to fifteen percent have never even spoken to an international student.

These students felt that they were expected to speak for the entire international student group or for their ethnic group. While acknowledging the benefits of being an actual means of bringing diversity to the campus, the participants also described the challenge of talking about their native culture all the time with little opportunity to engage in genuine conversations. This conflicted with their desire to connect with Americans and learn more about the US culture. Attempts to find a balance presented another layer of stress for the participants.

***Fear of making mistakes*.** Although both Chinese and Indian student participants expressed concerns about making mistakes in public settings such as classrooms where they had limited control, this concern was more prevalent among Chinese participants who were self-conscious about their English language skills. To the participants, this fear of making mistakes pertained to the fear of losing face, rather than perfectionism. Because Asian students have been culturally conditioned to avoid a loss of face, participants discussed using tactics to prevent embarrassing situations. One Chinese female student shared her experience:

> One thing I feel stressful is I still kind of get a question in my class sometimes. That makes me feel stressful. I will suggest them to email me and I will just go to them and recommend articles about details of their questions. But do such things in class in a public area I feel like it's kind of stressful for me. So okay if it happens in a private room when we have a private conversation with students, but it's not okay if it happens in class. That actually a little embarrassed me.

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While recalling an incident, this female participant stated that she generally worried "a lot" about making mistakes, especially when the situation demanded improvisation. One participant added that she was also quite sensitive to making errors and that she would rather be quiet than make mistakes. Another student stated that she would prefer face-to-face meetings because, when writing, her mistakes would become permanent. Overall, fear of making mistakes prevented the participants from fully enjoying communicative tasks.

Studying in new educational contexts in a different language, while assuming many responsibilities, is challenging. The demands seemed to make the participants more vulnerable to making mistakes. Fear of making mistakes and a desire to save face not only led the participants to take a passive role in class, but also increased their psychological vulnerability. This fear is real and plays a pivotal role in their acculturation because it can increase levels of stress. Internalized stress may lead the participants to develop feelings of anxiety, inadequacy, and helplessness. It can also cause low self-esteem unless addressed properly.

Microaggression. Microaggression emerged as another theme in acculturation stress. As suggested by one of the Indian male participants, international students are generally from privileged backgrounds. Yet, on campus in the US, participants mentioned sometimes feeling that they were looked down upon and experienced microaggressions, which come in various forms such as subtle jokes or racial slurs. One Indian male participant described his experience with a European classmate in the following way:

> [W]hen you socialize with particular groups and they become your friends, you don't see the racial tension. You think that they are just cracking a joke, which is

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> a harmless joke. But then when there is a repetition of that particular joke and when you start locating a pattern in that joke, then that's what you call a kind of discrimination or a kind of a slur. But yes, I felt it, but the moment I realized that something was not really right I kind of just moved aside.

One Indian female participant also shared her experience with her American cohort member during the group project:

> And so then she's [cohort member] to become aggressive. She is like, you know how to do this. I'm like, I know it. It was about some track changes or something like a stupid thing, track changes. I'm like fine, I'll do it later on. You don't know how to do it. If you don't know how to do it, go home.

This participant added that she did not think "go home" was a racial slur until another international student in the program pointed that out for her. This was the case for some of the participants. In dealing with microaggression, instead of confronting people, most participants showed a tendency to reframe their situations and focus on a bigger picture in life such as educational goals, future, and the financial contribution to their family. They did not want to "make waves" or cause any more trouble for their already stressful life.

In summary, participants experienced varying levels of acculturation stress while studying at UofSC due to cultural differences between their home and the host cultures, as well as lack of cultural understanding and respect from the students of the host culture. The lack of diversity on campus made them feel isolated, alienated, and marginalized. The fear of making mistakes, which could lead them to lose face, heightened their stress. This was particularly salient in verbal encounters. Lastly, microaggressions ranging from subtle racial jokes to overt verbal assault was a contributing factor to acculturation stress

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for these participants. Acculturation stress impacted the participants' everyday life and they endeavored to cope with the stress by seeking social support.

Social support

Social support is important to overcome the sense of isolation and alienation while pursuing study in a foreign culture. Within social support contexts, the students can express their need for resources and seek comfort. Compassionate understanding from others can ameliorate some of the stress of adapting to a new culture. The major social support themes that emerged from the focus group discussions were a tradition of "paying it forward," active engagement of academic advisors, and informational support offered by the ISS.

A tradition of "paying it forward." Focus group discussions revealed that when adjusting to the new campus life in the US, the participants sought informational and emotional support from students from their home countries. Due to a lack of sophisticated language skills and cultural understanding, they also stated that, culturally, they would not feel comfortable seeking help from strangers. The general pattern of support established showed that senior students provided social support to new Asian international students. One female participant elaborated:

> When I first came here, I got a lot of support from my roommate who is also Chinese. I guess that Chinese students, we can always find friends of Chinese. It's [referring to adjusting] alright because before we came here we can keep contact with each other. They will help me to go to the market and find a place or any questions about the campus we can communicate. After that period, we can go on

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> our own. We can help other students like the new coming students like what they [senior students] did for us.

Some participants described helping other students as their "responsibility" and some students described it as their "culture." This sense of responsibility or cultural practice has been handed down to students who follow. According to the participants, this tradition has provided a sense of belonging and promoted a sense of security and stability in the midst of constantly changing environments.

Active engagement of academic advisors. Participants identified academic advisors as a valuable source of social support. A few participants said that their social network became smaller as their studies advanced and they communicated less frequently with their cohort. Additionally, their research focus became sharper, and they sought more opportunities to research and publish in preparation for future employment. As a result, they tended to rely more on advisors for directions and guidance in their studies. All of the participants valued engaged professional relationships with academic advisors that were built upon mutual goals, respect, and appreciation. Some participants were able to form closer relationships that allowed them to share their personal concerns with their advisors. The participants all agreed that the degree of confidence of their relationships was determined by their advisors because culturally they would not initiate such a relationship. An example of this by a female student:

> [T]he person who hired me for the graduate assistantship, he kind of moved internally. So I was given to her[advisor]. So I was almost an orphan to the department but the way she took me in it. I haven't met somebody in the United States as warm as that woman. I remember last semester, I left class one day a

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> little early because I have migraine issues sometimes. So I actually got a mail from her asking me if I was feeling alright. If I was okay. And I think that's a very nice gesture. I'm in a class of fifteen to twenty students. A student leaves and she would ask. So I think that is the way she set the tone for the equation it was easy for me to apply.

One Chinese female participant's description of her relationship with her advisor emphasized the on-going emotional support that he provided for her by bringing more positivity into her life in times when she struggled.

> It's very upsetting you spend lots of time writing this paper, but you get a rejection review. So you feel like you waste a lot of time and expense and you need the paper to graduate and find a good job. And he's very positive. He says no worries. Not your problem, you just lack some luck. So you feel happy. You feel good about yourself.

To the participants, relationships with academic advisors, regardless of their cultural and linguistic backgrounds, were fundamental to their academic success because engaged academic advisors would identify mutual goals with students and work together toward those goals. Furthermore, nurturing advisors would play an important role in students' cross-cultural adjustment by providing emotional support. This engagement and sensitivity is more likely to reduce acculturation stress among the students.

Informational support offered by the ISS. Many international students rely on support services offered by the ISS (International Student Services) while adapting to the new academic and social environment. The ISS services range from information distribution regarding immigration to cultural events that enable international students to

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socialize with students from different cultures. The focus group participants also benefited from the ISS services, but it appeared that they utilized predominantly information resources. One Chinese male participant stated:

> [A]t the beginning we need to deal with I-20 or social security number like stuff like that. So I did ask several questions about that. Also, every time we go back to China we have to kind of need a stamp [on the I-20]. It's just small stuff, but my impression is really good to them. They are really friendly.

One Chinese female student said: "I like the emails they send to us although it's sometimes you know too much. They have information and activities. I just like those information. I need information." All of the participants agreed that the information from the ISS was very helpful in navigating the university system. However, when it came to the efficiency of the services, some participants offered different opinions. One Chinese male student commented on the service of the ISS:

> Because they[ISS] always assign you to a different student advisor. You always have to explain everything all over again. So if you can keep the same one, you know you will feel like a personal connection with that person and then you know. But if every time you meet a different person, so you have no connection at all.

To these participants, even if the service pertained to information distribution or simple acts of asking questions and receiving answers, building relationships was important to work efficiently. In addition, some participants felt that it required extra efforts to bring their relationship with the ISS advisors up to par to maximize the positive effects of the

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services. Thus, changing advisors at the ISS unintentionally posed a hindrance for the participants' utilizing the services.

Focus group discussions revealed that participants utilized various types of social support to alleviate the negative impact of acculturation stress. They sought socio-emotional support from co-nationals while paving a better way for the next group of international students. While emotional connection and a sense of belonging served as grounding forces in the face of challenges, informational support from the ISS helped the participants navigate immigration rules and regulations. Academic advisors played important roles as participants advanced in their education. Actively engaged advisors not only helped the participants develop academic goals but eased their anxiety and disappointment.

As can be seen from the analyses, the quantitative data analysis provided a two-dimensional picture of acculturation stress and social support among participants, but the qualitative results added depth and texture to the study by revealing different aspects of the phenomena and relationships between them.

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CHAPTER 5

DISCUSSION

The purpose of this study was to investigate the relationship between acculturation stress and depression among first-year Chinese and Indian international graduate students at UofSC and the impact of social support on this relationship. This research also aimed to identify changes in the key study variables over the project period. It was hypothesized that there would be a positive association between acculturation stress and depression among the study sample at Time 1; the relationship between acculturation stress and depression would vary depending on the availability of social support; and changes would be observed in acculturation stress, social support, and depression levels between Time 1 and Time 2 within this student population. These hypotheses were tested in hierarchal regression models and a series of paired samples t-tests. In the follow-up qualitative study, a group of Chinese and Indian students were invited into two separate focus groups to discuss their acculturation experiences specific to the UofSC campus. Included in this chapter are a summary of the study findings, strengths and limitations of the study, as well as implications for university services and programs.

Summary of Study Findings

Acculturation stress, social support, and depression. This study aimed to provide a comprehensive account of acculturation experiences of Chinese and Indian

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international students by integrating quantitative and qualitative research methods. According to Haight and Bidwell (2016), a mixed-methods study offsets limitations inherent in a single method and offers an increased credibility of results. For this study, utilizing mixed methods offered a deeper and richer understanding of the complex phenomenon of acculturation. More specifically, the quantitative method helped provide a general picture, while the qualitative method allowed the researcher to refine this general picture by introducing personal perspectives of Chinese and Indian students. This added strength to the study.

As hypothesized, the study findings confirmed a positive association between acculturation stress and depression among first-year international graduate students from China and India at UofSC at Time 1. Higher levels of acculturation stress predicted higher levels of depression. This result was consistent with previous studies for Chinese and Indian international students (Rice, Choi, Zhang, Morero, & Anderson, 2012; Wei et al., 2007; Zhang, 2012), and may pertain to barriers that many Asian international students confront when coping with acculturation stress. Specifically, many of the study participants left their home countries for the first time to pursue their educational goals. Therefore, homesickness may have contributed to their level of acculturation stress. While adjusting, many Asian international students engage in coping efforts congruent with their collectivist cultural values, relying on support from their in-groups (Inman & Yeh, 2007). As Wei and associates (2012) explained, some of the external stressors, such as perceived discrimination and hate, may be beyond their personal capacity to control. Thus, students who rely on culturally-based coping may be more likely to internalize negative experiences and are therefore more likely to develop depression. Furthermore, a

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majority of Asian international students maintain a high level of identification with their culture of origin throughout their studies (Meghani & Harvey, 2016; Sato & Hodge, 2009). This seemed to be the case for the current study as well. Given this, those who prefer to use their culture of origin as a frame of reference when experiencing acculturation stress may experience even greater psychological difficulty, as this constraint may intensify the clashing cultural norms.

As previously stated, three themes associated with acculturation stress emerged from the qualitative data analysis. They were lack of diversity on campus, fear of making mistakes, and microaggression. These themes contributed to high levels of acculturation stress among the participants, which may have catalyzed depressive symptoms during their education at UofSC. From the participants' perspective, feelings of otherness due to the lack of diversity that was prevalent on campus were common. The genuine lack of cultural awareness among their US-born peers, often manifested through microaggressions, seemed to make them perpetual foreigners in their own classrooms. When participants discerned microaggressions, they either internalized their negative feelings or avoided the situations. The accumulative negative experiences associated with microaggressions seemed to intensify their psychological distress, which could lead to feelings of hopelessness and helplessness. These challenges amplify the need for university support for Chinese and Indian international students through partnership with the student community and advocacy for these students.

The fear of making mistakes was reported by the focus group participants even though it was not identified or addressed in the quantitative measurements as a component of acculturation stress. This fear was more salient during verbal encounters

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and seemed to cause feelings of shame and embarrassment. Given that oral presentations and classroom participation are strongly valued in US academic settings, it could be that the Asian international students in this study were more likely to experience heightened anxiety in class as their fear of making mistakes increased. While enforcing objective performance standards is necessary, US universities need to endeavor to raise their awareness of how cultural differences play out in the classroom settings, and how they possibly impact students' participation and learning.

It was hypothesized that social support would play a moderating role between acculturation stress and depression. However, in the quantitative study results, the relationship between acculturation stress and depression did not differ depending on the availability of social support reported by participants. This may imply that although participants reported social support was available, they may not utilize this support. Some possible explanations for this are that social support, by definition, stems from relationships (House, Kahn, McLeod, & Williams, 1985), and it typically requires time to build social networks. Furthermore, social support was not significantly correlated to any key study variables. The majority of the participants were new to the US, and this study was conducted one month after their entrance to the university. This time frame might have affected participants' responses. Similar to previous studies (Ang & Liamputtong, 2008; Moore & Constantine, 2005; Wang, 2011; Zhai, 2004), participants identified family and friends back home as their primary social support groups, but significant geographical distances may have prevented the participants from receiving immediate emotional support when needed. Furthermore, participants may be culturally encouraged to be reticent when talking or sharing their struggles with their in-groups in order to

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maintain social harmony. These culturally informed coping methods may have hindered the positive effects of social support in moderating depression.

Lastly, when identifying changes in acculturation stress, social support, and depression between Time 1 and Time 2, only social support increased significantly. Because the second survey was administered toward the end of the school year, this may have allowed time for participants to build stronger social networks. When examining the extent of social support through a qualitative approach, results were narrowed down to co-nationals, academic advisors, and the ISS (International Student Services) as being the most significant sources of social support for study participants. Consistent with what Chavajay (2013) and Major (2005) found, this social support may have buffered the negative impact of intercultural challenges.

The qualitative study findings suggest that participants valued quality relationships built upon emotional connection as an important step for effective social support. This may be because of their relation-oriented collectivist cultural values (Triandis, 1995). While Asian students generally value a sense of belonging and emotional connection, US university services tend to prioritize productivity and efficiency over relationship building. As a result, Asian students may not be comfortable utilizing the services. To support Asian international students effectively, this cultural aspect should be addressed in US university efforts. Although social support did not predict depression in the quantitative study, the types of social support described in the qualitative portion of the study may indicate that social support played a role in students' experiences with acculturation stress and depression.

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There are two other examples of social support not captured quantitatively that may buffer the effects of acculturation stress. Because Asian collectivist cultures tend to underscore hierarchy (Liu et al., 2012), many Asian students have a high regard for teachers. This was confirmed by study participants. Participants genuinely appreciated their advisors' hands-on approach to their academic and emotional needs. The general expectation at US universities is that students reach out to professors. However, because Asian students perceive their academic advisors as authority figures, they typically feel uncomfortable initiating contact or bringing personal matters to their advisors. This suggests that advisors need to create a safe space for these students to share in order to develop meaningful relationships with students, not only for the sake of their academic performance, but also their psychological well-being. Lastly, information delivered by the ISS is important because it helps the students maintain legal status during their education in the US. As valuable as information is, participants wished for more direct communication with staff members, maintenance of contact with the same person, and consistency of the services based on continuing relationships. Incorporating relationship elements into the ISS services would enhance their effectiveness for Asian international students.

In summary, the participants experienced high levels of acculturation stress that could potentially lead to depressive symptoms during their education at UofSC. Because the number of Asian international students on the campus is small, and immigration laws and regulations restrict the range of their activities, creating an inclusive and supportive environment may be daunting. Furthermore, the international student community is by nature transitory, which makes it even more difficult to take collective action to bring

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these students in from the margins of the university community. Culturally sensitive institutional support for international students would help these students make a successful adjustment to the campus and maintain their mental well-being.

Other variables. It was anticipated that variables such as length of residence in the host culture, communication with host nationals, perceived comfort with spoken English, funding sufficiency, and financial concerns would be predictors of depression; however, they were not. The small sample size, in part, may have influenced this result. Another interpretation is that these variables may be more linked to acculturation stress than depression. For example, correlational analysis revealed a positive relationship between length of residence and acculturation stress, and showed a negative relationship between acculturation stress and communication with host nationals. Many of the participants were enrolled in the fields of Science, Technology, Engineering, and Mathematics (known as "STEM") which are predominantly populated by Asian students and faculty members. So, while interactions with host nationals were correlated to acculturation stress, it appeared that the study participants naturally interacted among themselves and with their faculty members, limiting their interactions with host nationals. Furthermore, when they received needed practical assistance from these co-nationals to help ease their transition into the new educational setting, these students may not have perceived limited interactions with host nationals as a serious problem that could possibly lead to depression.

Strengths and Limitations

The major strengths of this study are that it measured acculturation stress and depression among the study participants at two time-points over the course of one

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academic year using a mixed methods design. Most acculturation studies involving international students typically use cross-sectional study designs that measure acculturation at a single point in time, treating acculturation as an isolated event rather than a multifaceted process. This study examined the process of change that took place over time, which offered a more comprehensive understanding of the topic under investigation. Additionally, while the quantitative method provided a broad view of the acculturation phenomenon by identifying associations between and among the key study variables, the focus group interviews captured a richer and more detailed explanation of acculturation experiences of Asian international students.

Another strength is that this study was specific to graduate students from China and India, the two most highly represented countries of origin in US universities. Most studies involving international students' acculturation experiences do not distinguish graduate students from undergraduate students (X. Liu, 2009). Oftentimes, they are grouped together as international students when, in fact, these two student groups have many differences and different needs. Focusing only on graduate students filled in some of the knowledge gap existing in the literature.

The last strength of this study is its community engagement focus. The researcher's aim was to identify challenges faced by Asian international students and give voice to their experiences. As described in the Methodology section, Asian international students and study participants were invited in at almost every step of the research, ranging from recruitment, questionnaire development, focus group interviews, and data interpretation. The intention was to bring about positive changes to the university

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community, not only for the current students, but also future students. The current study findings will be instrumental in accomplishing this important goal.

This study has several limitations related to survey research, sampling methods, and the population under study. The setting was confined to one university, indicating that the results may not necessarily apply to students in other universities in the same way. To address this problem, future research should aim to increase the sample size by including universities in different regions of South Carolina and the US. In addition to presenting challenges for the researcher to specify complex models, a small sample size limits both internal and external validity. It affects the reliability of the study and prevents generalization of the statistical analysis results to the overall population (Faber & Fonseca, 2014). This study is underpowered; therefore, caution is warranted when applying the study findings to a larger population. It should be noted that UofSC has a very small number of first-year Chinese and Indian graduate students (n = 68). More than 80% of first-year international Chinese and Indian graduate students participated in the first survey. This indicates that the study sample is an accurate representation of the target population for the study.

Given that respondents who were interested in the topic may have been more likely to participate in the study, the findings might be biased. Because the researcher is also an Asian international student, the participants may have felt culturally obligated to provide her with socially desirable answers. This study's use of online surveys may have decreased this concern. In the future, collaborating with outsider-researchers would help reduce concerns about social desirability. However, an insider-researcher may also offer considerable benefits by bringing in cultural knowledge, which may increase the comfort

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level of the participants. Moreover, the researcher found that some Asian students are not accustomed to filling out online surveys, so future studies may enhance success if they incorporate traditional pen-and-paper methods. Lastly, it is possible that the survey questionnaires used in the study may not have fully captured all the aspects of the key phenomena under investigation. For example, academic pressure is a major stressor among Asian international students, but this was not examined. Furthermore, some of participants in the focus groups were advanced-level students, and their acculturation experiences and social support may be different from first-year students. Researchers need to be mindful of these limitations for future studies.

Implications

The examination of Chinese and Indian international students' acculturation stress, depression, and utilization of social support holds several implications for university services and social work research and practice. Specific recommendations for faculty and staff, the ISS, university-based counselors, and social work researchers and practitioners are provided below. Because this study is confined to Chinese and Indian international graduate students at UofSC, it is difficult to generalize the findings beyond this population. However, the summation of the findings may offer valuable insight on how best to develop programs and services tailored to the needs of Asian international students from collectivist cultures at other universities.

First and foremost, it is important for Asian international students to raise their level of awareness of mental health issues. This may require the development of more effective community leadership. Currently, most campus events for international students are organized around ethnic food, music, and dance, but there seem to be very few events

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that address their acculturation stress. Asian international student community leaders should take initiative to create a space for mental health conversations. This can be achieved through the work of student researchers who are committed to improving the mental well-being of Asian students. In addition, many Asian international students are unaware of what counseling entails, both their responsibilities and counselors' practices. Better communication about mental health concerns within the community will help give these students the language they need to advocate to their counselors and universities.

The findings of this study also highlight the importance of social support that is based on relationship building and suggest practical implications for US universities to further develop services and programs to better support Asian international students. For example, universities may provide education for faculty and staff through mandatory diversity and cross-cultural training programs regarding the acculturation experiences of international students. Actively engaging in these programs could enhance their cross-cultural understanding, help them become attuned to the needs of Asian international students, and foster effective interaction with these students. Given that some Asian international students rely on their academic advisors for emotional support, raising cultural awareness will be particularly important to educators who work with this student group. Deliberately engaging in cultural dialogue with the students from various cultures could be a means of achieving this important goal. This would foster the inclusive element of education that every student deserves. According to study participants, microaggressions occurred mostly in classrooms. This implies that all students could also benefit from diversity awareness education and trainings embedded in the curriculum across the institute. Educators can facilitate creating safe spaces for students to share and

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explore differences and work through them in a respectful manner. Through this open cultural dialogue, universities will gain a better understanding of international students and create specific policies based on their needs.

Although this may not be the case for all universities, institutional orientations for new international students often provide short campus tours in English and are crammed with an overwhelming amount of information, as they are offered before registration (Major, 2005). The content covered during the orientations usually focuses on academics and immigrant regulations. A lack of general knowledge or awareness of university support resources may limit the students' access to and use of the services (Hyun, Quinn, Madon, & Lustig, 2007). These orientations could also highlight the various support services a university provides to assist international students, including university counseling. Continuous promotion of campus resources through the development of culturally sensitive outreach programs can be beneficial and address the psychological distress that many Asian international students experience during their initial transition period. When possible, using senior Asian international students who are familiar with the campus and speak students' native language to conduct the campus tours may help new students become more aware of university services and programs, which would encourage their seeking help when needed.

The current study findings indicated that 27% of participants were identified to be at risk for clinical depression at Time 1 with CES-D scores at and above the cutoff (≥16) (Radloff, 1977). This figure remained steady at Time 2. In comparison, according to the Spring 2017 National College Health Assessment Survey, 15% of UofSC students, the majority of whom were likely American, were treated for depression (Johnson, 2017).

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Although CES-D is not a diagnostic tool, this high percentage found among the study participants has an important clinical implication because of their help seeking behaviors. Many Asian international students feel more comfortable seeking help from counselors of the same or similar ethnicity (Zhang & Dixon, 2003). Issues with the English language, therapeutic alliance, and trust may contribute to this tendency. University-based counselors need to be aware of these potential barriers and develop strategies to reach out effectively to the students. Hiring counselors of Asian ethnic backgrounds may help the students feel more comfortable opening up about their struggles. If this is not feasible, creating a consultation group of Asian student community members would be helpful to assist Asian international clients. University-based counselors may collaborate with the ISS to promote mental health services by periodically sending out information about the counseling process both in English and in students' native languages.

Many American counselors possess limited experience with Asian cultures (Zhang & Dixon, 2003), which may cause them to overlook cultural values of interdependence because they conflict with Western values embedded in traditional psychotherapy (Sue, Zane, Hall, & Berger, 2009). Culturally insensitive counselors may unintentionally negate Asian clients' values and fail to connect emotional regulation to a form of coping; they may also misinterpret somatic symptoms of depression. It is imperative for university-based counselors to develop cultural competence through deep self-reflection and culturally responsive education. This education will help them recognize the unique struggles of Asian international students and approach them in a culturally sensitive and proactive manner.

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Lastly, for social work researchers, this study exposes a gap in the research on acculturation experiences of international students. Most acculturation-related studies tend to focus on immigrants, as opposed to international students (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Even studies examining international students' acculturation experiences do not make a clear distinction across education status or nationality. The need for empirical studies that are population specific is pressing. Future studies can also benefit from factoring in students' previous traumatic/stressful experiences that affect their acculturation stress. In addition, there do not appear to be many studies devoted to the impact of unresolved acculturation stress on students after they return home. Investigating these topics will deepen our understanding of international students and enrich stress-informed practices. Social workers who work with international students should familiarize themselves with the trajectory of acculturation experiences of these students. This will enable them to become more proactive in addressing acculturation concerns rather than reactive to existing problems. The enhanced recognition and institutional practices will contribute to fostering social justice on individual and institutional levels.

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APPENDIX A:

IRB APPROVAL LETTER

OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
EXEMPT AMENDMENT APPROVAL LETTER

Kyunghee Ma
College of Social Work
1512 Pendleton Street
Hamilton College
Columbia, SC 29208

This is to certify that the Amendment requested on **3/27/2017** for research study ***Acculturation Stress and Depression among First-Year International Graduate Students from China and India at the University of South Carolina*** **(Ame3_Pro00055915)** was reviewed and approved by the University of South Carolina Institutional Review Board (USC IRB) on **3/28/2017**.

The requested revision does not change the current Exempt status; therefore, further IRB oversight is not required unless additional changes are required. Because changes could result in a reclassification of the study, you must inform the IRB of any changes in procedures involving humans.

All research related records, including Informed Consent document(s), if applicable, are to be retained for at least three (3) years after termination of the study.

The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). If you have questions, contact Arlene McWhorter at arlenem@sc.edu or (803) 777-7095.

Sincerely,

Lisa M. Johnson
IRB Assistant Director

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APPENDIX B:

FOCUS GROUP PARTICIIPANT DEMOGRPHICS

	Gender	Year in the Program
Chinese	Male	2nd
	Male	3rd
	Female	1st
	Female	3rd
	Female	4th
	Female	4th
Indian	Male	1st
	Male	1st
	Female	1st
	Female	1st
	Female	3rd
	Female	3rd

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APPENDIX C:

FOCUS GROUP QUESTIONS

Acculturation Stress

1. How do you feel as an international student on this campus?
   - What are some enjoyable things about being an international student?
   - What are some stressful things about being an international student?

2. How do you interact with university faculty, staff, or students?
   - Do you usually use email, phone, blackboard, or face-to-face?
   - What purpose do you initiate with faculty, staff, or students?

3. Have you heard of international students at this university who have felt discriminated against?
   - Has this ever happened to you?
   - How did it make you feel? How did you resolve the issue?

Social Support

4. What support systems do you have here?
5. Have you used university support services since you arrived in Columbia?
   - What is your opinion of their effectiveness?
   - Are there any university support services offered that you would not feel comfortable about using?
6. What type of support would you benefit from that you have not had?
7. Is there any issue regarding social support that you have faced which I have not a ddressed?
8. We've talked about some stressful things today. What are some of the strengths you bring as an international student that help you get through difficult times?

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APPENDIX D:

SURVEY QUESTIONNAIRES

Welcome to My Survey!

Thank you for participating in this study examining the experiences that international students like yourself have in adjusting to life at UofSC. This questionnaire is composed of your personal characteristics, campus experiences, emotional well-being, and social support. Please know that your answers will be kept confidential and will be used only for the purpose of this study. This is a longitudinal study, which means that I will contact you within six weeks of the start of the fall semester, and again with your permission in mid-March 2017.

Participation is voluntary, and there will be no penalty for withdrawing from the study prior to completion. If you feel uncomfortable when completing the questionnaires about your adjustment on campus and wish to talk to someone at UofSC, please contact the student counseling center at 803-777-5223.

If you have any questions or concerns, please contact me at kyunghee@email.sc.edu or 803-446-3781.

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Personal Characteristics

Instructions: This section asks questions about yourself. Please read the following questions carefully and select one appropriate answer.

* 1. What is your UofSC email address? (Please be sure to type your UofSC email address. I will contact you for the second survey and incentives.)

* 2. What was your age at your last birthday?

* 3. What is your gender?

- Man
- Woman
- Transgender

* 4. In what country are you a citizen?

* 5. What type of visa do you hold?

- F-1
- J-1
- Other (please specify)

* 6. How long have you lived in the US?

How many month(s):

How many year(s):

* 7. Have you studied at any university in the US before attending UofSC?

- Yes
- No

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* 8. Are you a first-year student?

- ◯ Yes
- ◯ No

* 9. Are you a full-time student?

- ◯ Yes
- ◯ No

* 10. What is your class status? (Choose *all* that apply.)

- ☐ Undergraduate student
- ☐ Master's student
- ☐ PhD student
- ☐ IAP
- ☐ AAP
- ☐ Exchange student

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Personal Characteristics

Instructions: This section asks questions about yourself. Please read the following questions carefully and select one appropriate answer.

* 11. What is your field of study?

- ◯ Arts and Sciences
- ◯ Business
- ◯ Education
- ◯ Engineering and Computing
- ◯ Hospitality Retail and Sport Management
- ◯ Information and Communications
- ◯ Interdisciplinary
- ◯ Medicine
- ◯ Music
- ◯ Nursing
- ◯ Pharmacy
- ◯ Public Health
- ◯ Social Work
- ◯ Undecided and/or conditionally admitted

* 12. What pre-departure preparations did you have in your country? (Choose *all* that apply.)

- ☐ Cross-cultural adjustment
- ☐ English language skills
- ☐ Academics
- ☐ Other (please specify)

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* 13. What was your TOEFL (iBT/PBT/ IELTS/PTE) score? (If you have taken TOEFL (iBT/PBT/ IELTS/PTE) multiple times, please indicate the *highest* score.)

- I do not remember.
- Waived.
- Scores:

* 14. I am comfortable speaking English.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

* 15. In the last two months, how often have you communicated with Americans?

- Never
- Rarely
- Sometimes
- Often
- Always

* 16. What is your primary funding source for your study?

- Personal earnings
- Parents/Family funds
- Graduate teaching/research assistantship
- Government scholarship
- Other (please specify)

* 17. Is your funding sufficient for your financial situation?

- Yes
- No

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Personal Characteristics

Instructions: This section asks questions about yourself. Please read the following questions carefully and select one appropriate answer.

* 18. I am concerned about my finances.

- ◯ Strongly disagree
- ◯ Somewhat disagree
- ◯ Neutral
- ◯ Somewhat agree
- ◯ Strongly agree

* 19. What is your marital status?

- ◯ Single (never married)
- ◯ In a relationship (living together, not married)
- ◯ Married and living together
- ◯ Married and not living together
- ◯ Divorced
- ◯ Widowed

* 20. Who is your primary social support group? (Select*the most important*.)

- ◯ Family/Friends back home
- ◯ American friends
- ◯ Other international students
- ◯ International Student Services (ISS) staff
- ◯ None of the above
- ◯ Other (please specify)

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* 21. I am satisfied with my social support overall.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

* 22. I see myself as religious.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

* 23. I see myself as spiritual.

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree

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Campus Experiences

* 24. **This section is about your experience as an international student in the new culture. Please read each statement carefully. Select the button in the column that best describes your experience. Please respond to what you think or how you feel at this point in time.**

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
I feel that my people are discriminated against.	◯	◯	◯	◯	◯
I am treated differently because of my race.	◯	◯	◯	◯	◯
I am treated differently because of my color.	◯	◯	◯	◯	◯
Many opportunities are denied to me.	◯	◯	◯	◯	◯
I am treated differently in social situations.	◯	◯	◯	◯	◯
Others are biased toward me.	◯	◯	◯	◯	◯
I feel low because of my cultural background.	◯	◯	◯	◯	◯
I feel that my status in this society is low due to my cultural background.	◯	◯	◯	◯	◯
I don't feel a sense of belonging here.	◯	◯	◯	◯	◯
I feel that I receive unequal treatment.	◯	◯	◯	◯	◯
I am denied what I deserve.	◯	◯	◯	◯	◯
I feel angry that my people are considered inferior here.	◯	◯	◯	◯	◯
I feel some people don't associate with me because of my ethnicity.	◯	◯	◯	◯	◯
Homesickness bothers me.	◯	◯	◯	◯	◯
I feel sad living in unfamiliar surroundings.	◯	◯	◯	◯	◯

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	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
I miss the people and country of my origin.	◯	◯	◯	◯	◯
I feel sad leaving my relatives behind.	◯	◯	◯	◯	◯
People show hatred toward me non-verbally.	◯	◯	◯	◯	◯
People show hatred toward me verbally.	◯	◯	◯	◯	◯
People show hatred toward me through actions.	◯	◯	◯	◯	◯
Others are sarcastic toward my cultural values.	◯	◯	◯	◯	◯
Others don't appreciate my cultural values.	◯	◯	◯	◯	◯

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* 25. **This section is about your experience as an international student in the new culture. Please read each statement carefully. Select the button in the column that best describes your experience. Please respond to what you think or how you feel at this point in time.**

	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
I fear for my personal safety because of my different cultural background.	○	○	○	○	○
I feel insecure here.	○	○	○	○	○
I frequently relocate for fear of others.	○	○	○	○	○
I generally keep a low profile due to fear.	○	○	○	○	○
I feel uncomfortable to adjust to new foods.	○	○	○	○	○
Multiple pressures are placed on me after migration.	○	○	○	○	○
I feel uncomfortable to adjust to new cultural values.	○	○	○	○	○
I feel guilty to leave my family and friends behind.	○	○	○	○	○
I feel guilty that I am living a different lifestyle here.	○	○	○	○	○
I feel nervous to communicate in English.	○	○	○	○	○
I feel intimidated to participate in social activities.	○	○	○	○	○
It hurts when people don't understand my cultural values.	○	○	○	○	○
I feel sad to consider my people's problems.	○	○	○	○	○
I worry about my future for not being able to decide whether to stay here or to go back.	○	○	○	○	○

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Emotional Well-being

* 26. **Instructions: Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week. Select the button in the appropriate column.**

	Rarely or none of the time (less than 1 day)	**Some** or a little of the time (1-2 days)	**Occasionally** or a moderate amount of time (3-4 days)	**Most** or all of the time (5-7 days)
I was bothered by things that usually don't bother me.	◯	◯	◯	◯
I did not feel like eating; my appetite was poor.	◯	◯	◯	◯
I felt that I could not shake off the blues even with help from my family or friends.	◯	◯	◯	◯
I felt that I was just as good as other people.	◯	◯	◯	◯
I had trouble keeping my mind on what I was doing.	◯	◯	◯	◯
I felt depressed.	◯	◯	◯	◯
I felt that everything I did was an effort.	◯	◯	◯	◯
I felt hopeful about the future.	◯	◯	◯	◯
I thought my life had been a failure.	◯	◯	◯	◯
I felt fearful.	◯	◯	◯	◯
My sleep was restless.	◯	◯	◯	◯
I was happy.	◯	◯	◯	◯
I talked less than usual.	◯	◯	◯	◯
I felt lonely.	◯	◯	◯	◯
People were unfriendly.	◯	◯	◯	◯
I enjoyed life.	◯	◯	◯	◯
I had crying spells.	◯	◯	◯	◯
I felt sad.	◯	◯	◯	◯

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	Rarely or none of the time (less than 1 day)	**Some** or a little of the time (1-2 days)	**Occasionally** or a moderate amount of time (3-4 days)	**Most** or all of the time (5-7 days)
I felt that people disliked me.	○	○	○	○
I could not "get going".	○	○	○	○

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Social Support

* 27. **Instruction: This section is about social support available to you. Read each statement carefully. Indicate how you feel about each statement.**

	Very strongly disagree	Strongly disagree	Mildly disagree	Neutral	Mildly agree	Strongly agree	Very strongly agree
There is a special person who is around when I am in need.	○	○	○	○	○	○	○
There is a special person with whom I can share my joys and sorrows.	○	○	○	○	○	○	○
My family really tries to help me.	○	○	○	○	○	○	○
I get the emotional help and support I need from my family.	○	○	○	○	○	○	○
I have a special person who is a real source of comfort to me.	○	○	○	○	○	○	○
My friends really try to help me.	○	○	○	○	○	○	○
I can count on my friends when things go wrong.	○	○	○	○	○	○	○
I can talk about my problems with my family.	○	○	○	○	○	○	○
I have friends with whom I can share my joys and sorrows.	○	○	○	○	○	○	○
There is a special person in my life who cares about my feelings.	○	○	○	○	○	○	○
My family is willing to help me make decisions.	○	○	○	○	○	○	○
I can talk about my problems with my friends.	○	○	○	○	○	○	○

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