THE IMPACT OF SOCIAL SUPPORT ON THE RELATION BETWEEN
STRESS FROM DAILY LIFE ISSUES AND DEPRESSION AMONG
EAST ASIAN INTERNATIONAL STUDENTS IN THE UNITED STATES

A Dissertation in
Counselor Education

by

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ABSTRACT

Moderation effects of social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students were examined in this study. The results showed that there is no moderation effect of social support on the relation between stress resulting from five daily life issues and the level of depression among this rapidly growing population. Additionally, no moderation effects of social support from a specific source on the relation between stress from a specific daily life issue and the level of depression were found. Even though the findings of this study were not consistent with stress-coping theory and stress-buffering model and did not support the proposed model of this study, it did support that significant and positive relationships between stress resulting from five daily life issues and the level of depression exist and significant and negative relationships between perceived social support and the level of depression exist among East Asian international students in the United States.
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DEDICATION

This dissertation is dedicated to my parents, sisters, and husband.
CHAPTER 1

INTRODUCTION

This dissertation includes five chapters. Chapter One presents the statement of the problem, the purpose of the study, and research questions. The significance of the study is also addressed, followed by limitations, the definition of terms, and the summary. Chapter Two provides the background of international students in the United States, theoretical foundations, and a review of the literature on issues of international students in the United States. The proposed model and research questions are also presented. Chapter Three presents the methodology of this study, including the research design, participants, instruments, variables, data collection procedures, and data analyses. Chapter Four presents the findings of this study. How missing data were handled is addressed, followed by the univariate analysis, bivariate analysis, and the results of the hierarchical multiple regression for the two research questions in this study. Chapter Five presents a discussion on the findings, followed by implications for professionals, limitations, strengths of the study, recommendations for future research, and a conclusion.

Statement of the Problem

According to the report of Altbach, Reisberg, and Rumbley (2009), there were more than two and a half million students studying outside their own country and the estimated number of this population in the world was predicted to be seven million by 2020. The majority of this rapidly increasing population was hosted by the United States (McMurtrie, Bollag, & Maslen, 2001; Organisation for Economic Co-operation and Development [OECD], 2010; Paige, 1990; Verbik & Lasanowski, 2007). Based on the annual statistical report of Institute of International Education (2011), there were 723,277
international students who enrolled in American colleges and universities in the 2010-2011 academic year, which constituted more than 4% of United States total higher education enrollment.

Chen (1999) contented that international students seem to perceive threats and challenges because of the unknown in their daily life and the uncertainty about their future. The literature (Chen, 1999; Hayes & Lin, 1994; Parr, Bradley, & Bingi, 1992; Pedersen, 1991; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004) has shown that international students are more likely to encounter challenges, such as losing established and culturally appropriate social support, identifying their cultural identity, accustoming to American life style, using second language to communicate and learn, adapting to new educational system and keeping good academic performance, building effective interpersonal relationships, maintaining stable financial source, and dealing with their psychological reactions to stress. Moreover, Pedersen (1991) and Ward (1996) suggested that the larger the gap between the original culture and the host culture exists, the more stress and challenges international students may experience. Likewise, researchers (Mitchell, Greenwood, & Guglielmi, 2007; Poyrazli et al., 2004; Sodowsky & Plake, 1992; Wilton & Constantine, 2003; Ying, 2003; Zhao, Kuh, & Carini, 2005) have found that Asian international students are more likely to experience these challenges in their daily life than their American and/or European counterparts. In addition, previous studies (Lin & Yi, 1997; Mitchell et al., 2007; Parr et al., 1992; Wilton & Constantine, 2003) have showed that stress from daily life issues may come along with psychological distress (e.g., depression, anxiety, grief, and confusion). Even though international students, Asian international students in particular, seem to experience more challenges,
stress, and psychological distress, their use of counseling and psychological services on
campus is less than their American counterparts (Leong & Sedlacek, 1986; Mitchell et
al., 2007; Nilsson, Berkel, Flores, & Lucas, 2004). Instead of seeking professional
psychological help, international students seem to rely on their social support to deal with
their stress which is caused by daily life issues and subsequent psychological distress
(Dao, Lee, & Chang, 2007; Mallinckrodt & Leong, 1992; Misra, Crist, & Burant, 2003;
Poyrazli et al., 2004).

Of all the international students in the United States, more than 38% international
students were originally from four of East Asian countries, China, South Korea, Taiwan,
and Japan, which were consistently the top leading countries in the past decade. A dearth
of literature, however, was found targeting East Asian international students from the
four countries, which share similar culture and values, but the majority of previous
studies on international students have focused on all international students or
international students from a specific geographic region. Therefore, this study was to
understand daily life issues which result in stress, the level of depression, and social
support among East Asian international students from China, South Korea, Taiwan, and
Japan. In addition, this study was to explore the role of social support for East Asian
international students during their stay in the United States.

Purpose of the Study

The main purpose of this study was to examine moderation effects of social
support on the relation between stress resulting from five daily life issues (i.e.,
acculturation, second language, academic performance, interpersonal relationships, and
financial concerns) and psychological distress (i.e., the level of depression) among China,
South Korea, Taiwan, and Japan international students. The literature on international students has supported that international students are more likely to deal with issues that may result in stress in their daily life. Daily life issues that cause stress on international students, East Asian international students in particular, included acculturation, second language, academic performance, interpersonal relationships, and financial concerns. Stress resulting from these five daily life issues was treated as predictor variables in this study.

Moreover, previous studies have confirmed that there is a significant and positive relationship between stress and psychological distress. Individuals who have higher level of stress are more likely to exhibit negative reactions to stress and report psychological distress (e.g., depression). Therefore, the level of depression was considered as the outcome variable in this study. Even though international students are more likely to deal with stress resulting from daily life issues and more likely to experience depression and/or higher level of depression, their inclination of seeking profession psychological help and the utilization of counseling services are lower than their American counterparts. The reason of not seeking professional psychological help seems to be that international students are not aware of the availability of psychological services, are not familiar with American counseling services, concern about stigma associated with mental health services, worry about their language barriers, believe that helping professionals do not understand their issues because of different cultures and values, and tend to use their social support system. Therefore, international students are more likely to seek help from family, friends, faculties, and/or staffs, from medical professionals, and/or from
academic/career advisors when they encounter issues or difficulties, confront stress, and/or experience psychological distress.

Furthermore, the literature on social support of international students has led to the conclusion that social support helps international student’s adjustment in the United States. Many studies have suggested that social support from family and old friends in the home country, new friends in the United States (e.g., American students, other international students, and the community), and the university and the college (e.g., faculties, staffs, student associations, and international student center) are the important sources of social support among international students. International students who perceive more social support are less likely to deal with depression resulting from stress that is caused by acculturation, second language, academic performance, interpersonal relationships, and financial concerns. Additionally, international students who perceive more available social support may adjust their life in the United States better and easily. For the reason, social support was handled as a moderator variable in this study. Besides, previous studies have confirmed that stress from daily life issues, depression, and social support of international students may vary based on demographics, such as length of stay in the United States, gender, and age. Therefore, demographic variables with stronger correlations with the predictor variable and/or the moderator variable and the outcome variable were considered as confounding variables and were controlled in the analysis.

**Research Questions**

The relationship between stress that is caused from five daily issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and the level of depression among East Asian international students
was examined in this study. In turn, this study investigated whether perceived general social support has moderation effects on the relation between stress resulting from five daily life issues and the level of depression. Additionally, the researcher explored if perceived social support from a specific source moderates the effect of stress resulting from a specific daily life issue on the level of depression. For example, that support from new friends in the United States has the moderation effect on the relation between stress causing from interpersonal relationships and the level of depression were probed.

This current study was to answer two major research questions.

**Research Question 1**

To what extent does general social support (total scores) moderate the effects of general stress which results from five daily life issues (total scores) on the level of depression while controlling for demographic variables?

**Research Question 2**

To what extent does a specific source of social supports (i.e., social support from family and old friends, new friends in the United States, and the university and the college) moderate the effects of stress which results from a specific daily life issue (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) on the level of depression while controlling for demographic variables?

**Significance of the Study**

There were more than 38% international students from China, South Korea, Taiwan, and Japan enrolled in institutions of higher education in the 2010-2011 academic year in the United States, which was the major host country for international students.
Limited empirical research, however, on issues (i.e., stress from daily life issues, psychological well-being, and social support) of East Asian international students from these four counties, which share similar cultural values and backgrounds, was found. Therefore, the lack of literature on this rapidly growing population and the issues this population may encounter encouraged the necessity of this study.

Moreover, results of this study contribute to the profession of counseling and higher education literature on East Asian international students’ adjustment in the United States and call for empirical research on this growing population and on issues they may encounter in their daily life. In addition, findings of this study help equip staffs, faculties, and professional counselors/therapists working in institutions of American higher education with knowledge on daily life issues, social support system, psychological well-being, and needs of East Asian international students. Furthermore, results of this study assist professionals in higher education and the counseling profession in designing preventive projects and workshops and providing a supportive environment and effective services for this continuously growing population.

**Limitations**

There were limitations in this study. First, this study targeted international students who are originally from four of East Asian countries (i.e., China, South Korea, Taiwan, and Japan); therefore, results of this study may not be generalized to international students from other countries. Second, the timing of data collection may impact on participants’ stress and the level of depression. Target population was contacted at the beginning of the semester; therefore, their stress and their level of
depression may be different from that at the middle of the semester and the end of the semester.

Definition of Terms

International Students

The definition of international students in the United States is individuals who temporary live in the United States for the purpose of getting post-secondary education and who are not citizens, immigrants, or refugees of the United States (Paige, 1990; Verbik & Lasanowski, 2007). Therefore, international students in this study were individuals who are not United States citizens/residents, hold F-1 visa (i.e., student visa), currently enroll in institutions of American higher education, and currently are living in the United States.

Asian International Students

Asian international students in this study were international students who are originally from any of Asian countries, such as China, India, Taiwan, Vietnam, Nepal, Malaysia.

East Asian International Students

East Asian international students in this study were international students whose country of origin is China, South Korea, Taiwan, or Japan. International students from other East Asian countries were excluded from this study because of the small number of international students coming from the country (e.g., Mongolia and North Korea) and the colonization of the country by Western countries (e.g., Hong Kong and Macau).
Stress from Daily Life Issues

Daily life issues referred to issues that international students may need to deal with in their daily life and these daily life issues seem to result in stress among international students. Five daily life issues that cause stress for international students included acculturation, second language, academic performance, interpersonal relationships, and financial concerns. Stress resulting from these five daily life issues was treated as a predictor variable in this study. This variable was measured by the Index of Life Stress (ILS).

Depression

Depression was the psychological distress and one of reactions to stress. The level of depression was considered as an outcome variable in this study. This variable was measured by the Center for Epidemiologic Studies Depression Scale (CES-D).

Social Support

Social support was defined as international students’ perception of available social support. Sources of social support for international students included family and old friends in the home country, new friends in the United States, and American colleges and universities. Social support was handled as a moderator variable in this study. This variable was measured by the Index of Social Support (ISS).

Confounding Demographic Variables

Confounding demographic variables represented demographic variables that may impact on stress, social support, and the level of depression. Demographic variables with stronger correlations with the predictor variable and/or the moderator variable and the
outcome variable were treated as confounding demographic variables. Demographic variables were measured by the demographic questionnaire.

**Summary**

The number of international students is rapidly growing in the world, especially in the United States (McMurtrie et al., 2001; OECD, 2010; Verbik & Lasanowski, 2007). Previous studies (Lin & Yi, 1997; Mitchell et al., 2007; Parr et al., 1992; Poyrazli et al., 2004) have found that the majority of international students experience stress resulting from daily life issues (e.g., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and the subsequent psychological distress (e.g., depression). Instead of seeking for professional psychological help, they seem to rely on their perceived social support to deal with their stress from daily life issues and their level of depression (Dao et al., 2007; Mallinckrodt & Leong, 1992; Misra et al., 2003). Previous studies have examined stress, psychological distress, and social support on all international students or international students from a specific geographic region, but a dearth of studies were found targeting on East Asian international students from China, South Korea, Taiwan, and Japan, which share similar cultural values and backgrounds.

The purpose of this study was first to examine the relationship between stress that is caused from five daily issues and the level of depression among East Asian international students. Second, this study investigated whether perceived social support has moderation effects on the relation between stress resulting from five daily life issues and the level of depression. Third, the study explored if perceived social support from a specific source moderates the effect of stress resulting from a specific daily life issue on
the level of depression. For example, that support from new friends in the United States has the moderation effect on the relation between stress causing from interpersonal relationships and the level of depression was probed.

This study has significance for higher education and the counseling profession because results of this study contribute to the literature on East Asian international students’ adjustment in the United States and call for empirical research on this growing population and on issues they may encounter in their daily life. Additionally, findings of this study help equip staffs, faculties, and professional counselors/therapists working in institutions of American higher education with knowledge on daily life issues, social support, and psychological well-being of East Asian international students. Understanding East Asian international students’ issues and needs assists professionals in higher education and the counseling profession in preparing appropriate and useful information, designing preventive projects and workshops, and providing a supportive environment and effective services to best serve this growing population during their stay in the United States.
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

There are more than two and a half million students studying abroad and the estimated number of international students in the world is predicted to be seven million by 2020 (Altbach et al., 2009). Among the growing population, the majority of international students study in North America and Western Europe (Altbach et al., 2009). The most popular destinations of international students are the United States and the United Kingdom in 2006 and 2007 (OECD, 2010; Verbik & Lasanowski, 2007) and the population of international students in the United States is the largest in the world (McMurtrie et al., 2001; Paige, 1990). The number of international students in the United States higher education has increased dramatically since 1948 in spite of the small drop in 1971-1972, 2003-2004, 2004-2005, and 2005-2006 enrollments (Institute of International Education, 2011). The definition of international students varies based on different education system in each country (Verbik & Lasanowski, 2007). In the United States, international students are individuals who temporary live in the United States for the purpose of getting post-secondary education and who are not citizens, immigrants, or refugees of the United States (Paige, 1990; Verbik & Lasanowski, 2007).

Chen (1999) noted that living and studying in the United States may be a significant life transition for international students. Most international students experience intercultural adjustment difficulties, such as getting accustomed to a different language and adjusting to a new environment, like immigrants and refugees do. The status of, however, this rapidly growing population is different from that of most
acculturating individuals such as immigrants or refugees in the United States (Poyrazli et al., 2004). For example, international students might need to preserve their cultural identity or keep their social customs in mind in order to prepare their life in their home countries after their graduation.

Mitchell and her colleagues (2007) reported that the diversity within the international student population should be taken into account. For example, Tracey, Leong, and Glidden (1986) found that there was a significant different way to present their problems among Asian American groups. Therefore, researchers (Fritz, Chin, & DenMarinis, 2008; Pedersen, 1991) suggested that international students often cannot be treated as a homogenous group because of their different cultural backgrounds and values, such as Western culture versus Eastern culture and individualism versus collectivism. Many previous studies (Misra & Castillo, 2004; Yang & Clum, 1994; Yeh & Inose, 2003; Zhang & Dixon, 2003), however, have focused on the population of international students and Asian international students. Also, some of previous studies (Lee, Koeske, & Sales, 2004; Toyokawa & Toyokawa, 2002; Wei et al., 2007; Ying, 2003) attempted to understand needs and issues of international students from China, South Korea, Taiwan, and Japan separately. There is limited literature, however, using East Asian international students from China, South Korea, Taiwan, and Japan, which comprised more than 38% of international students in the 2010-2011 academic year (Institute of International Education, 2011), as the target population.

These four East Asian countries share similar culture and values. They were historically under Chinese cultural influence, such as using Hanzi (i.e., Chinese characters), practicing Confucianism (i.e., a Chinese ethical and philosophical system),
eating rice as their staple foodstuff, drinking tea, and having similar architecture.

Moreover, the reason to focus on East Asian international students from these four countries and exclude other East Asian international students in the study is because of the small number of students coming from other East Asian countries (e.g., Mongolia and North Korea) and the colonization of the country by Western countries (e.g., Hong Kong and Macau).

The majority of research participants was from Asian countries, especially China, South Korea, Taiwan, and Japan, in many previous studies researching on international students (Constantine, Okazaki, & Utsey, 2004; Mitchell et al., 2007; Poyrazli et al., 2004; Sumer, Poyrazli, & Grahame, 2008). Therefore, studies on all international students, on Asian international students, and on international students from a specific country will be included in this literature review section in order to increase our knowledge about East Asian international students from the four countries when a dearth of literature about this population is available.

The purpose of this literature review is to understand daily life issues that cause stress, social support, and psychological well-being of international students, particularly East Asian international students from China, South Korea, Taiwan, and Japan. Background of international students in the United States, including enrollment trends, fields of study, academic level, primary sources of funding, and leading institutions and states are presented first. Stress-coping theory and stress-buffering model are addressed as theoretical foundations for this study.

Previous studies related to issues of international students in the United States, including five daily life issues resulting in stress, depression, underutilization of
professional psychological help, and social support are discussed. Five daily life issues that may result in stress include: (a) acculturation, (b) second language, (c) academic performance, (d) interpersonal relationships, and (e) financial concerns in this study. Previous studies have shown that stress from these five daily life issues are interrelated, for example, acculturative stress may be reduced when the international student is more proficient in English (Poyrazli et al., 2004). Likewise, language difficulties may hinder international students from building interpersonal relationships with others (Dao et al., 2007) and impact on their academic performance (Lin & Yi, 1997). Moreover, confounding demographic variables such as length of stay in the United States, gender, and age are included, followed by the proposed model and research questions.

**Background of International Students in the United States**

**Enrollment Trends**

There were 25,464 international students who enrolled in American colleges and universities in the 1948-1949 academic year and the number of international students increased to 723,277 in the 2010-2011 academic year (Institute of International Education, 2011). These international students in the 1948-1949 and in the 2010-2011 academic year constituted about 1% and more than 4% of United States total higher education enrollment respectively (Institute of International Education, 2011).

Asian students comprised more than 63% of all international student enrollments, followed by students from Europe (12%), Latin America (9%), Middle East (6%), Africa (5%), North America (4%), and Oceania and Stateless (1%) (Institute of International Education, 2011). Seven of the top 10 leading countries of origin for these international students in the United States were Asian countries and the other three countries were
Canada, Mexico, and Turkey in the 2010-2011 academic year and more than 38% of these international students were from four of East Asian countries, China, South Korea, Taiwan, and Japan, which were consistently the four of the top seven leading countries in the past decade (Institute of International Education, 2011).

**Fields of Study**

Researchers (Jung, Hecht, & Wadsworth, 2007; Wadsworth, Hecht, & Jung, 2008) contended that most international students pursue advanced education outside their own country because they think that they can receive better education and get more professional experiences that are beneficial to their future careers. In addition, international students believe that there is more business or hard sciences related opportunities in the job market and they can make more money in these fields, so they are more likely to major in business or hard sciences among the variety of study fields in the United States. The study of Leong (1991) showed that Asian Americans are more likely to get a degree in quantitative fields than White Americans because they believe that they can secure a stable job, earn special status and prestige, and make more money after graduation. This belief is reflected from the data reported in *Open Doors* (Institute of International Education, 2011) that international students who came to the United States to study in the field of business and management comprised 22% of the total enrollment, followed by engineering (19%), physical and life sciences (9%), math and computer science (9%), social sciences (9%), arts (5%), health professions (5%), education (2%), humanities (2%), agriculture (1%), and others (18%, including other fields of study, intensive English language, and undeclared).
Academic Level

There were 291,439 (40%) international students who were working on their associate’s or bachelor’s degree, 296,574 (41%) international students enrolled in graduate school, and 135,264 (19%) international students were in the non-degree programs or in their period of Optional Practical Training (OPT) (Institute of International Education, 2011). Optional Practical Training is temporary employment that allows international students to gain practical experience in the field of their study for up to a total of 12 months. The number of international students from China in undergraduate programs, graduate schools, and the non-degree programs or in their period of Optional Practical Training was 56,976, 76,830, and 23,752 respectively (Institute of International Education, 2011). There were 37,944 undergraduate international students, 22,486 graduate international students, and 12,921 international students who were in the non-degree programs or in their period of Optional Practical Training came from South Korea; 5,994 undergraduate international students, 13,269 graduate international students, and 5,555 international students who were in the non-degree programs or in their period of Optional Practical Training were from Taiwan; 10,544 undergraduate international students, 4,650 graduate international students, and 6,096 international students who were in the non-degree programs or in their period of Optional Practical Training came from Japan (Institute of International Education, 2011).

In order to show the distribution of the target population by their academic level in the current study, the academic level of East Asian international students enrolling in American colleges and universities in the 2010-2011 academic year was presented in Table 1.
Table 1

*East Asian International Students’ Academic Level in the 2010-2011 Academic Year*

<table>
<thead>
<tr>
<th>Academic Level</th>
<th>Country of Origin</th>
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<tbody>
<tr>
<td></td>
<td>All</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>291,439</td>
</tr>
<tr>
<td>Graduate</td>
<td>296,574</td>
</tr>
<tr>
<td>Non-degree and OPT</td>
<td>135,264</td>
</tr>
<tr>
<td>Total</td>
<td>723,277</td>
</tr>
</tbody>
</table>

*Note.* * = The target population in the current study.

**Primary Sources of Funding**

International students’ primary funding sources are from personal and family funds (63%), U.S. college or university (23%), home government and home university (6%), current employment (5%), U.S. and foreign private sponsor (2%), U.S. government (1%), and other sources (1%) (Institute of International Education, 2011). More than 60% of international students received funding from themselves and their family in the past decade (Institute of International Education, 2011).

**Leading Institutions and States**

The 25 leading institutions, including nine of 12 Big Ten schools (i.e., University of Illinois - Urbana-Champaign, Purdue University - Main Campus, Ohio State University - Main Campus, University of Michigan - Ann Arbor, Michigan State University, Indiana University - Bloomington, Penn State University - University Park, University of Minnesota - Twin Cities, and University of Wisconsin - Madison), hosted
18% of the international students in the 2010-2011 academic year (Institute of International Education, 2011). The top 10 U.S. states, hosting more than 60% of international students, were California (14%), New York (11%), Texas (9%), Massachusetts (5%), Illinois (5%), Florida (4%), Pennsylvania (4%), Michigan (4%), Ohio (3%), and Indiana (3%) in the 2009-2010 academic year (Institute of International Education, 2011).

Theoretical Foundations

Stress-Coping Theory and Stress-Buffering Model

According to Lazarus and Folkman (1984), the definition of stress emphasized the relationship between the individual and the environment, which takes into account the personal characteristics and the environmental nature. Stress is an active process involving ongoing change instead of a static situation because stress is a person-environment relationship (Lazarus, 1993). Also, Lazarus (1990) described stress as a multivariate process including inputs (e.g., objective life issues and daily encounters), outputs (e.g., the individual’s subjective reaction to conditions of living), and the mediating activities of appraisal and coping. In their theory of stress, Lazarus and Folkman put emphasis on cognitive appraisal and suggested that how the individual perceives an environmental event determines if stress occurs. Lazarus (1993) defined three kinds of stress: (a) harm, (b) threat, and (c) challenge. Harm is psychological damage that had been done to the individual, such as loss of a loved person; threat refers to the anticipation of harm that has not happened but may be impending; challenge is difficult demands that the individual feels confident of overcoming by effectively using his or her coping resources (Lazarus, 1993). Similarly, Chen (1999) pointed out that how
an individual differentiates harm, threat, and challenge depends on his or her appraisal of life situations.

Lazarus and Folkman (1984) pointed out that stress resulting from life events that is perceived as undesirable may have negative effects on individuals’ well-being. Likewise, Anderson (2004) noted that stress resulting from life events may damage individuals’ psychological and physical well-being. Lazarus and Folkman, however, suggested that coping is a way to respond to environmental demands to prevent individuals from negative effects. Cohen and Wills (1985) indicated that individuals may reappraise life events that result in stress and lead to psychological distress if they perceive resources and support from others. Additionally, Lazarus and Folkman depicted that individuals experience psychological distress when they encounter harm, a threat, or a challenge that may tax or exceed their resources and support and endanger their well-being. Similarly, Garber and Seligman (1980) noted that when individuals appraised the environmental event as a situation that they do not have enough resources and support to deal with, they may feel helpless. In addition, Wills and Langner (1980) pointed out that individuals are more likely to experience psychological distress when they deal with accumulated stress resulting from different life events that requires resources and support to cope. Cohen (1992) mentioned the term of stress-buffering, meaning that social resources and support may alleviate the negative consequences from stress resulting from life events. Cohen proposed three types of social support: social networks (i.e., the existence of social relationships), perceived social support (i.e., the perception of getting resources and support from social relationships), and supportive behaviors (i.e., the receipt of behavioral aid from social relationships). Cohen and Wills reviewed studies on
the relations among stress, social support, and well-being and they found that social support is a stress-buffering when individuals perceive available support from others. In addition, Cohen and Wills contended that specific resources and support should match with stress resulting from specific life events in order to best alleviate stress.

Stress-coping theory and stress-buffering model are important to this study because they correspond with the theoretical concept of this study. International students may encounter different issues (e.g., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) in their daily life upon and after their arrival at the new environment. These daily life issues may cause stress and stress may come along with psychological distress. Some international students, however, may see these daily life issues as sources of stress that they are unable to deal with and some people may treat them as manageable challenge. Additionally, an individual may consider one issue as stress that may come along with psychological distress at one time, but may perceive the same issue as challenge that they can handle at another time. Individuals treat the objective daily life issues as manageable challenge and react functionally and healthily because they perceive social support and resources that they can rely on. Therefore, international students’ perceived social support is assumed to be a moderator between their stress resulting from the five daily life issues and their level of depression in this study. In addition, this study assumes that perceived social support from a specific source best alleviates the effect of stress resulting from a specific daily life issue on the level of depression.
Issues of International Students in the United States

Chen (1999) noted that international students may perceive many threats and challenges because they encounter the unknown in daily life and concern about the uncertainty in the future. As soon as international students arrive in the United States, they encounter challenges including losing their established and culturally appropriate support, balancing their original cultural identity, which is impacted by their native cultures, and the new cultural identity, which is impacted by American culture (Pedersen, 1991; Poyrazli et al., 2004), adapting American culture, isolating from family, maintaining good academic performance, building relationships with faculties, and finding a job (Parr et al., 1992). Moreover, researchers (Chen, 1999; Hayes & Lin, 1994) declared that language barriers, unfamiliarity with the host culture, differences in lifestyle, and maladjustment to the new physical environment might be appraised as threats or challenges among international students. Similarly, the study of Wilton and Constantine (2003) on 190 Asian and Latin international students found that using a new language and living in an unfamiliar cultural environment are more likely to be challenges for this population. In addition, the cultural and lifestyle differences impact on international students’ adjustment and cross-cultural interpersonal relationships (Pedersen, 1991; Ying, 2002; Ying & Liese, 1990). Likewise, Lin and Yi (1997) pointed out that the process of acculturation and adjustment can lead international students to experience significant problems and conflicts interpersonally and intrapersonally. When international students have difficulties in adjusting the new cultural environment and building their new social support, they seem to have trouble coping with their life stress and psychological distress (Yeh & Inose, 2003).
Entering into and adapting to new educational and social environments is a challenge for most American and international students in American institutions of higher education (Misra et al., 2003). The study of Leong and Sedlacek (1986), however, found that international students are more likely to experience adjustment problems than American students. Moreover, two studies conducted by Ebbin and Blankenship in 1986 and 1988 supported that international college students have more intense stress than their American counterparts. International students may confront not only problems that American students have, but also issues that acculturating individuals (e.g., immigrants or refugees) encounter and difficulties that are unique to them (Lin & Yi, 1997). Other than adjusting to new educational system like most American students do, most international students, Asian international students in particular, need to deal with other difficulties, for example, adapting and adjusting to different cultural values, interpersonal communication ways, interpersonal relationships, financial challenges, teaching styles, and languages (Inman, Ladany, Constantine, & Morano, 2001; Misra et al., 2003; Mori, 2000; Pedersen, 1991; Poyrazli et al., 2004; Wilton & Constantine, 2003; Yang & Clum, 1994). In addition, Lin and Yi (1997) asserted that acculturating individuals confront daily issues including cultural shock, finding the balance between adopting new culture and maintaining their own cultural identities, racial discrimination, language difficulties, dietary habits, financial support, miscommunication and misunderstanding, loneliness, and subsequent psychological distress and physical illness that are the same issues that most international students encounter. Moreover, international students may deal with reverse culture shock when they finish their temporary stay overseas and return to their home country (Gaw, 2000; Leung, 2007).
Similarly, Mitchell and her colleagues (2007) collected data from 218 international students and 222 U.S. students who sought counseling at a large public university counseling center and compared these two groups. Of the 218 international students, 67% were from Asian countries. They reported that U.S. students are more likely to report concerns regarding drug or alcohol use, problems with romantic partners, and concerns about sexual behavior, whereas international students are more likely to report cultural concerns, grief issues, loneliness, having problems with professors, concerns about learning disabilities, test anxiety, concerns about choosing a major, and concerns about job performance. Likewise, Aubrey (1991) suggested that international students encounter stressors related to the academic and educational environment and the sociocultural and personal aspect. Similarly, researchers (Lin & Yi, 1997; Mitchell et al., 2007; Poyrazli et al., 2004) have found that issues international students may need to deal with in their daily life include acculturation, second language, academic performance, interpersonal relationships, and financial concerns. Additionally, international students who perceive more and severer problems regarding language, culture, academic performance, and living are less likely to have successful adjustment (Ying & Liese, 1994).

**Daily Life Issues**

**Acculturation.** According to Berry (2005), acculturation is the process that individuals from a cultural group interact, exchange, conflict, and negotiate culturally and psychologically with other different cultures and members from those cultural groups. Organista, Organista, and Kurasaki (2003) described acculturation as the process of adjusting to life changes, for example, adjusting to a new language, different life styles,
and different ways of socializing, in a new cultural context. Also, acculturation usually comes along with acculturative stress (Berry, 2005; Poyrazli et al., 2004). Researchers (Berry, 2003; Berry, Kim, Minde, & Mok, 1987) described acculturative stress as the reaction to overwhelming challenges and difficulties which result from interacting with the dominant culture among acculturating people. Moreover, acculturative stress impacts on individuals’ mental health (Berry & Kim, 1988; Schmitz, 1992) and self-esteem (Phinney, Chavira, & Williamson, 1992).

International students were more likely to deal with cultural concerns than their U.S. counterparts (Mitchell et al., 2007) because American culture and life style may be opposite to international students’ original culture and personal life style (Furnham & Alibhai, 1985). Moreover, Pedersen (1991) pointed out that the larger the gap between the home culture and the host culture exists, the more stress and challenges international students may experience. Similarly, Schram and Lauver (1988) investigated 226 international students and discovered that international students from Europe countries and from non-Europe countries experience different acculturation and satisfaction when they study in the United States. Findings of Yeh and Inose’s study (2003) showed that international students from non-White culture such as Asian, African, and Latin American international students may experience significant cross-cultural differences upon their arrival in the United States. On the contrary, results of Nilsson and her colleagues’ study (2004) confirmed that international students from English speaking and Westernized countries are more likely to better adjust in the United States than those from other countries.
Asian and Eastern cultures emphasize harmony, humbleness, respect for and deference to authorities, interdependence, and collectivism, whereas American and Western cultures values assertiveness, autoism, independence, and individualism (Lin & Yi, 1997; Poyrazli et al., 2004; Triandis, McCusker, & Hui, 1990). Researchers (Mallinckrodt & Leong, 1992; Yeh & Inose, 2003) provided evidence to support that international students from countries that value interdependence over independence particularly have more difficulties in the United States. In addition, researchers (Markus & Kitayama, 1991; Poyrazli et al., 2004) suggested that cultural values are one of the variables that have an impact on the difference in levels of acculturative stress between Asian international students and European international students. They also indicated that European international students experience less acculturative stress and are more likely to adapt to the new but familiar American cultures and societies smoothly than their Asian counterparts because of the similarity of cultural background and values. Other than shared cultural values, Yeh and Inose (2003) found that European international students have similar racial and ethnic background with American individuals; therefore European international students are less likely to experience racism and discrimination and more likely to integrate into American society than Asian international students. This corresponds with Ward’s viewpoint (1996) about acculturation that acculturating individuals fit in more easily to the dominant society when their original culture is close to the host culture.

Dealing with acculturation changes for a long time, an individual’s ability to handle daily life issues in the new environment may be developed (Berry, 2003) and the development of the ability is related to cultural knowledge, degree of contact, and
intergroup attitudes (Ward, 1996). Similarly, Berry (1985) stated that international students who are more acculturated seem to experience less stress. The study of Ying and Liese (1994) supported that international students are more likely to adjust better if they have knowledge of American culture and academic system and are familiar with resources, such as support system and financial resources, before their arrival in the United States. Additionally, Ying (2002) found that being familiar with American culture helps international students feel confident to socialize with Americans. Likewise, Organista and her colleagues (2003) suggested that there is a relationship between acculturation and mental health and researchers (Berry & Kim, 1988; Berry et al., 1987) have contended that the relationship is influenced by factors, such as how well an acculturating individual interact with the host culture and how much difference between the individual’s original culture and the host culture.

**Second language.** Many international students in the United States use English as their second language and none of East Asian international students’ native language is English in the current study. The study of Poyrazli and her colleagues (2004) revealed that Asian international students had lower scores than their European counterparts when they rated their own English proficiency. Moreover, Sodowsky and Plake (1992) found that Asian international students use English less than their European and African counterparts do. Chen (1999) stated that language ability is a basic but crucial requirement for international students to deal with in their daily routines, academic activities, and social interactions. Researchers (Hayes & Lin, 1994; Wilton & Constantine, 2003) indicated that it may be a challenge for many international students to use a new language and live in an unfamiliar cultural environment. Chen mentioned that
international students’ evaluation and perception of their English proficiency may influence their appraisal of their ability to cope with harm, threat, and challenge they encounter. Researchers (Hayes & Lin, 1994; Pedersen, 1991) have pointed out that there is a positive relationship between the English competence and their ability to adjust. Similarly, the results of the study of Ying and Liese (1994) supported that international students who reported their confidence and competence in English are more likely to have successful adjustment in the United States.

Researchers (Barratt & Huba, 1994; Chen, 1999; Kao & Gansneder, 1995; Hayes & Lin, 1994; Lin & Yi, 1997; Pedersen, 1991; Wilton & Constantine, 2003; Yeh & Inose, 2003) pointed out that fluent English ability helps international students perform well academically, feel confident of interacting with individuals in the host country in the daily life, and manage their mental health issues. Lin and Yi suggested that language difficulties, such as adjusting to accents of the instructors, understanding class lectures and test constructions, spending more time on their assignments, and lacking abundant vocabulary to express their knowledge and thoughts, is a challenge for many international students. The challenge may impact on international students’ academic performance and cause academic stress subsequently.

The study of Yeh and Inose (2003) showed that self-reported English fluency was one of predictors of acculturative stress for international students. They sampled 359 international students and found that the higher level international students perceive their English fluency, the more comfortable they use English, and the more frequent they communicate in English, the less acculturative stress they experience. Similarly, Poyrazli and her colleagues (2004) found that English proficiency was one of the variables that
consistently contribute to the variance in acculturative stress among 141 international students. They suggested that acculturative stress may reduce if the international student is more proficient in English. In addition, Constantine and her colleagues (2004) studied the correlation between acculturative stress and depression among 320 international students from Asian, African, and Latin international students and they found that international students who were fluent in English had lower levels of acculturative stress and were less likely to be at risk of depression. Likewise, the results of Dao et al.’s study (2007) supported that acculturative stress had a positive relationship with depression; however, the strength of this relationship could be lessened by English proficiency among international students from Taiwan.

Dao et al. (2007) confirmed that language difficulties may hinder international students from socializing with others and reduce their opportunities to develop their social and language skills. Moreover, Ying (2002) sampled 155 graduate international students from Taiwan to examine their formation of intercultural relationships. It was found that international students who are fluent in English are more likely to build relationships with Americans. Additionally, the study of Yeh & Inose (2003) found that English fluency was significantly associated with social support, including social network and social support satisfaction, and interpersonal closeness among Asian and European international students. Similarly, Sumer and her colleagues (2008) in their work on international students indicated that individuals with more social support were better fluent in English.

**Academic performance.** The goal of education, the role of the teacher, and the characteristics of students in the United States are different from those in Asian countries
The goal of education in the United States is to develop students’ logical, analytic, and critical thinking abilities and to encourage their individualism (Ramanathan & Atkinson, 1999). Students in the United States are educated to express their thoughts and be creative, whereas Asian students are taught to respect authority, keep group harmony, and obey the cultural tradition (Kubota, 2001).

Moreover, an interactive teaching approach is used in the United States to encourage discussion and opinions exchange, whereas a didactic teaching approach is used in Asia to transit knowledge to students (Kubota, 2001). Socratic discourses, teachers leading students to truth and students learning by asking questions, are universal in Western classrooms; in contrast, Confucian discourses, teachers delivering the knowledge of ancients to students and students learning by giving the set and right answers, are common in Chinese classrooms (Scollon, 1999). In terms of characteristics of students, American students are more likely to be independent, creative, direct, and assertive and learn by questioning, whereas Asian students tend to be interdependent, passive, indirect, and unassertive and learn by memorizing (Kubota, 2001). Lin and Yi (1997) described different educational system is one of challenges that many international students encounter, such as taking time and effort to adjust to different teaching styles.

International students often come to the United States to attend colleges and universities with the belief that the educational system in the United States can offer them better education and more professional experiences that are beneficial to future careers (Jung et al., 2007; Wadsworth et al., 2008). With the belief, they are concerned about not performing well academically and have more academic stress. Additionally, Pedersen
(1991) addressed that most Chinese international students are successful in academic performance in their home countries, and expect that they will have similar excellent achievement when they come to the United States. Because of different language, however, new culture, and new environment, they may encounter academic difficulties and experience subsequent academic stress (Wei et al., 2007). The studies of Mitchell and her colleagues (2007) and Nilsson and her colleagues (2004) indicated that academic and/or career related concerns, including academic and/or job performance, major and/or career decision-making, distraction, learning ability, study habits, time management, test anxiety, and relationships with professors, was one of frequent presenting issues among international students at the university counseling center. Chen (1999) concluded three stressors related to education, including performance expectations, system adjustment, and test-taking anxiety.

In the studies of Mitchell and her colleagues (2007) and Ying (2003), they found that there was no significant difference in the actual academic performance (i.e., GPA) between international and American college students; however, international college students are more likely to report and to be diagnosed with an academic problem than their American counterparts. Similarly, the results of Zhao et al.’s study (2005) indicated that international first-year students perceived more academic challenge than their American counterparts. Mitchell and her colleagues ascertained that the discrepancy between international students’ actual academic performance and their academic concerns is a result of international students’ anxiety from the demands of studying in a foreign country. Moreover, one of Mitchell and her colleagues’ research goals was to examine differences among international students by region and they found that
European international students were more likely to get better grades than Asian and North American students. Also, Asian international students were more likely to report concerns about a learning disability than European and U.S. students (Mitchell et al., 2007).

**Interpersonal relationships.** Lin and Yi (1997) stated that being away from established support system and rebuilding new support system in the new environment filled with unfamiliar customs and culture may lead to social isolation among international students. Many researchers (Dillard & Chisolm, 1983; Mori, 2000; Owie, 1982; Schram & Lauver, 1988) have contended that international students are more likely to feel isolated and lonely. Asian and Eastern cultural values, however, emphasize interdependence and collectivism; therefore, interpersonal relationships are significant to most Asian international students during their stay in the United States. Similarly, the study of Furnham and Alibhai (1985) supported that interpersonal relationships help international students deal with their stress.

The study of Nilsson and her colleagues (2004) found that issues related interpersonal relationships, such as building and maintaining friendships, was one of common presenting issues for international students at the university counseling center. Also, long school hours may prevent international students from maintaining their relationships with their significant others and building new relationships with other people (Lin & Yi, 1997). In the study of Zhao et al. (2005), they collected data from 317 colleges and universities and found that both freshmen and senior international students spent more time on academic work than their American counterparts. Moreover, first-
year undergraduate international students reported spending less time on their social life and relaxation than American freshmen.

International students are more interested in making friends with individuals from their own country or other international students than with people from the host country (Furnham & Alibhai, 1985) because international student often have difficulties in building relationships with members of the host culture (Jung et al., 2007). Researchers (Furnham & Alibhai; 1985; Poyrazli et al., 2004; Ying & Liese, 1994), however, found that building effective interpersonal relationships with Americans helps international students have better adjustment during their stay in the United States. Moreover, networking with Americans helps international students learn social skills in American culture and provides them opportunities to practice English and exchange cultural values with Americans (Lin & Yi, 1997). Similarly, Poyrazli and her colleagues suggested that international students learning new social skills to interact with Americans may moderate their acculturative stress.

Researchers (Lin & Yi, 1997; Ying & Liese, 1994) pointed out that socializing solely with conationals might help international students feel connected and maintain their cultural identity at the beginning of their arrival in the United States; however, it impedes their friendship with Americans, knowledge of the host culture, and practice of English which impact on their psychological well-being in a long-term manner. In the study of Poyrazli and her colleagues (2004), they found that international students who mainly interacted with non-Americans were more likely to experience more acculturative stress and to perceive less social support than their counterparts who primarily interacted with Americans or who equally socialized with both Americans and non-Americans.
Likewise, in the study of Sumer and her colleagues (2008), they found that international students who primarily socialized with American students reported higher English proficiency than international students mainly interacting with non-American students.

Financial concerns. Financial concerns are another source of stress for most college students, international students in particular. Cost of going to colleges and universities may include, but are not limited to, tuition, living expenses, and loss of stable and secure income. People, despite race or ethnicity, in the United States may go to community colleges to pursue their tertiary education first and then decide if they continue getting a four-year degree based on their family’s socioeconomic status (Altbach et al., 2009). Also, Trusty (2002) pointed out that individuals with lower socioeconomic status have limited financial and social resources using on tertiary education. Chen (1999) pointed out that financial concern is a practical issue that most international students have in their daily life and may cause stress for international students in their adjustment to the new environment.

The report of Institute of International Education (2011) indicted that majority of international students received funding from themselves and their family. Their coming, however, to the United States may indicate that their loss of stable and secure income. The transition from being a person with sufficient and stable income in the home country to being a full-time student with insecure financial resources in the host country may become a threat (Chen, 1999). Moreover, international students are required to enroll in school as full-time students to maintain their legal status in the United States (Lin & Yi, 1997). Holding student visas prohibits most international students from working off campus (Mitchell et al., 2007) or from working more than 20 hours on campus. In
addition, international students have limited or no access to welfare benefits, loans, and scholarships to support their out of state tuition (Lin & Yi; 1997). In order to manage their difficult financial situation, international students may need to reduce and control their living expenses, find a job on campus to support themselves, or withdraw from their academic programs and return home (Chen, 1999). Additionally, Chen asserted that any unexpected changes in the financial resources of international students can become a threat in their living and educational pursuit and sequentially result in stress.

**Depression**

During the process of adapting to a new culture, many international students experience adjustment problems, such as communication difficulties, academic concerns, problems in daily life tasks, interpersonal relationship concerns, financial problems, and identity confusion (Adelegan & Parks, 1985; Hayes & Lin, 1994; Mallinckrodt & Leong, 1992; Mori, 2000; Pedersen, 1991). Wilton and Constantine (2003) asserted that these cultural adjustment problems and stressors may cause psychological symptoms, such as depression, anxiety, and social isolation. Similarly, Chen (1999) stated that international students who encounter sociocultural, environmental, and physiological changes may confront psychological distress such as depression. Likewise, Lin and Yi (1997) contended that living in a new and unfamiliar environment may cause depression, anxiety, and confusion. In addition, researchers (Mitchell et al., 2007; Chen, 1999; Parr et al., 1992) asserted that being away from significant others and losing connection with established support systems and familiar cultural environment may cause international students loneliness and grief. In Nilsson and her colleagues’ study (2004) on international student’s utilization of university counseling services, they found that the most frequent
presenting issue of international students who use counseling services was emotional concern such as feeling depressed and unhappy.

Misra and her colleagues (2003) found that stress resulting from daily life issues, including acculturation, second language, academic performance, interpersonal relationships, and financial concerns, lead to physiological, behavioral, cognitive, and emotional reactions among international students. Moreover, researchers (Lin & Yi, 1997; Mallinckrodt & Leong, 1992) pointed out that international students, Asian international students in particular, often show their psychological distress through psychosomatic complaints, such as headache, stomach ache, sleep disturbances, and eating problems, and/or other complaints including lack of motivation, laziness, loss of interest and desire to do things, unstable emotions, distraction, low self-esteem, and need of academic help. They asserted that international students tend to seek medical help and/or academic/career related services. Previous studies (Constantine et al., 2004; Lee et al., 2004; Sandhu & Asrabadi, 1998; Yang & Clum, 1994) indicated that acculturative stress was significantly and positively related to depression among Asian international students. Wilton and Constantine (2003) reported that acculturative stress is positively related to psychological distress among Asian international students. Likewise, Wei and her colleagues’ study (2007) on adjustment among 189 international students from China and Taiwan showed that acculturative stress was strongly correlated with depression. In the study of Mitchell and her colleagues (2007), they found that Asian international students feel more stressful than European international students and American students. Similarly, Dao et al. (2007) assessed the relationship between acculturation level and psychological...
distress among 112 international students from Taiwan and found that low acculturated international students from Taiwan were more likely to present depressive symptoms.

In addition, international students experiencing difficulties in adjusting American culture and being proficient in English language have more trouble in their academic performance and display more psychological symptoms of anxiety and depression (Misra et al., 2003). Moreover, Dao et al. (2007) found that international students from Taiwan who reported feeling less comfortable and confident of their English ability are at risk of depressive feelings. Similarly, results of Sumer and her colleagues’ study (2008) showed that international students with higher levels of English proficiency reported lower levels of depression. Lin and Yi (1997) pointed out that the fear of not being successful and performing well may lead to anxiety and depression among international students. Likewise, in Sumer and her colleagues’ study, they found that grades were negatively correlated with depression among international students. Additionally, results of Constantine and her colleagues’ study (2004) showed that international students who have difficulties in interacting with Americans may experience psychological and social distress.

International students may become isolated, depressed, stressful, confused, and uncertain about being in the new environment (Hayes & Lin, 1994). Furthermore, this added stress may result in further isolation from others and, consequently, inaccessibility of resources (Misra et al., 2003). In fact, international students come to the United States with limited resources and this situation makes them encounter more difficulties in adjustment than other groups of people in the United States (Misra et al., 2003; Poyrazli et al., 2004). Results of Mitchell and her colleagues’ study (2007)
confirmed that international students had less prior counseling experience, made more crisis appointments, had more suicidal ideation, had more harassment experience, and had been hospitalized for psychological issues more than their American counterparts did.

**Underutilization of Professional Psychological Help**

Researchers (Mori, 2000; Nilsson et al., 2004; Pedersen, 1991) pointed out that international students are more likely to experience stress during their transition to the new environment and their stay in the United States than American students; however, international students tend to not seek professional psychological help. The study of Nilsson and her colleagues (2004) conducted a comparison between American students and international students on the utilization rates of university counseling and they reported that international students are less likely to utilize mental health services. Researchers (Leong & Sedlacek, 1986; Mitchell et al., 2007) investigated help sources and counseling services utilization and they found that international students are more hesitant to refer themselves to counseling services when they need help than their American counterparts. Moreover, Mitchell and her colleagues indicated that international students are more likely to be referred to the counseling services by faculties, staffs, and friends than their American counterparts.

Previous studies (Leong & Sedlacek, 1986; Mallinckrodt & Leong, 1992; Mitchell et al., 2007; Miville & Constantine, 2007; Mori, 2000; Nilsson et al., 2004; Pedersen, 1991; Zhang & Dixon, 2003) found that international students, Asian international students in particular, underutilize counseling services than their American peers because of their unawareness of the availability of psychological services, their unfamiliarity with American counseling services, their perception of stigma associated
with mental health services, their concern about their language barriers, their belief that helping professionals do not understand their issues because of different cultures and values, and the inclination to use their social support system. Language barriers are particularly an important issue for people whose native language is not English (e.g., Asian international students) when they seek mental health services in the United States and their counselors/therapists are most likely to be able to speak in English only.

Results of Mitchell and her colleagues’ study (2007) showed that international students were more likely to have loneliness and grief concerns and difficulties in expressing their feelings than American students. Similarly, Lin and Yi (1997) asserted that the influence of Asian cultures on individuals from Asian countries make them be unwilling to share their personal emotions and feelings, be disinclined to express their opinions to others, and feel uncomfortable to be assertive. Additionally, Miville and Constantine (2007) were interested in the relationships among Asian American college women’s adherence to Asian cultural values, their perception of stigma associated with counseling, and their willingness to seek counseling. In Miville and Constantine’s study, 201 Asian American college women enrolled in a large Northeastern state university responded. All of these respondents were Korean-, Chinese-, Japanese-, Taiwanese-, and Vietnamese-Americans and Asian Indian Americans. Miville and Constantine examined the results of the Asian Values Scale-Revised, the Stigma Scale for Receiving Psychological Help, and the Intentions to Seek Counseling Inventory and found that Asian values had a significant and positive relationship with perceived stigma associated with receiving counseling. They also found that there was a significant and negative relationship between Asian values and intentions to seek counseling and there was a
significant and negative relationship between perceived stigma associated with obtaining counseling and intentions to seek counseling.

Results of Lippincott and Mierzwa’s study (1995) showed significant differences between Asian and American cultures on inclination for seeking counseling services. Hayes and Lin (1994) pointed out that as a result of a variety of concerns related to counseling services utilization, international college students often seek help and support from informal resources, such as family members and significant others, rather than going to counseling centers for psychological help. Furthermore, Tracey and his colleagues (1986) collected data from 3,050 students who were clients at the student development center at the University of Hawaii and categorized all presenting problems into two major types of problems (i.e., personal and academic/vocational problems) to examine the relationship between problem variables (personal or academic/vocational) and ethnicity (both white Americans vs. Asian Americans and among all Asian Americans themselves), as moderated by clients’ sex and previous counseling experience. The findings of Tracey and his colleagues’ study showed that white Americans were more likely to admit their personal problems and to underendorse their academic/vocational concerns, especially if they had previous counseling experience, whereas Asian Americans were more likely to admit academic/vocational problems and underendorse their emotional and interpersonal concerns, but the probability would be reduced if they had previous counseling experience. Even if international students do seek for professional psychological help, they tend to drop out after the initial intake session or have premature termination. For example, the study of Nilsson and her
colleagues (2004) found that 38% of the international students dropped out after the intake session.

**Social Support**

International students who leave their established and familiar support system in their home country and move to the United States may feel lost (Pedersen, 1991; Sandhu, 1995), lonely (Chen, 1999; Schram & Lauver, 1988), and confused about their already established identities (Pedersen, 1991; Yeh & Inose, 2003). Markus and Kitayama (1991) contended that most Asian international students are eager to build their new social support after being away from their established support system and upon their arrival in the United States because of the cultural inheritance of interdependence and collectivism. Previous studies found that international students who lack support from their family, their academic program, international and/or American peers are at a high risk of encountering cultural adjustment and psychological stresses (e.g., less confidence, more anxiety, and reduced social supports; Hayes & Lin, 1994; Mallinckrodt & Leong, 1992). Similarly, Pedersen (1991) stated that international students who do not have enough and adequate support may experience different levels of anxiety. On the contrary, results of previous studies (Al-Sharideh & Goe, 1998; Boyer & Sedlacek, 1988; Schram & Lauver, 1988) indicated that international students who have strong social support systems are more likely to adjust to the new host culture and environment easily.

Poyrazli and her colleagues (2004) indicated that social support contributed to the variance in acculturative stress of international students. Moreover, results of their study showed that Asian international students perceived higher levels of social support were more likely to experience lower levels of acculturative stress. Similarly, the study of Yeh
and Inose (2003) supported that international students’ acculturative stress seemed to be predicted by the social network and the social support satisfaction. In addition, Mallinckrodt and Leong (1992) found that establishing friendships with other American peers is a beneficial social support system that international students may rely on to cope with their acculturative stress. Likewise, results of Poyrazli and her colleagues’ study confirmed that international students spending most of their time with Americans have the most perceived social support and the least acculturative stress than those who socialize with both Americans and other international students and those who mainly interact with non-Americans.

Furthermore, Misra and her colleagues (2003) reported that international students perceived higher level of social support were more likely to report less stress that is resulted from daily life issues and fewer reactions to stressors. Additionally, the study of Sumer and her colleagues (2008) confirmed that social support significantly predicted depression among international students. Also, results of Sumer and her colleagues’ study showed that international students with more social support are more likely to be active socially and willing to interact with other people, which prevent them from feeling depressed. Likewise, Dao et al. (2007) examined the relationship between social support and psychological distress among 112 international students from Taiwan. Results of their study showed that international students from Taiwan who perceived having enough satisfied social support are less likely to experience depression. In addition, Mallinckrodt and Leong (1992) found that social support had direct and moderate effects on stress symptoms among international students. Moreover, results of their study showed that social support from the academic program, including financial aid, staff's help, and
flexible and diverse curriculum, and from family were significantly related to lower levels of stress symptoms such as depression, anxiety, and physical complaints.

The study of Misra and her colleagues (2003) found that international students perceived effective social support from direct family members (e.g., parents and siblings), new friends in the United States, and members of their own culture (i.e., family and friends in their home country and other conationalists in the United States). Additionally, results of Mallinckrodt and Leong’s study (1992) showed that social support from family and the academic program (e.g., faculties and other students) seemed to help graduate international students reduce stress that was resulted from life issues, depression, physical complaints, and anxiety. Moreover, Mallinckrodt and his colleague suggested that social support from the academic program is significant for international students’ well-being. They also pointed out that support from faculties, such as good relationships between students and faculties, faculties’ interest in the professional development of students, and students’ perceived good quality instruction, seemed to prevent graduate international students from depression that was caused from stress in daily life. Similarly, Zhao et al. (2005) found that first-year undergraduate international students are more likely to interact with faculties than their American counterparts.

**Confounding Demographic Variables**

**Length of Stay in the United States**

In the study of Poyrazli and her colleagues (2004), they found no significant relationship between the length of stay in the United States and social support, English proficiency, and acculturative stress among international students. Parr et al. (1992), however, investigated concerns and feelings of 163 international students and their results
showed that international students feel more confident and positive of their new life in the United States in their first year and the levels of confidence reduce in their second year, but as time goes on their confidence and positive feelings increase. In addition, international students who spent more time in the United States may have more coping skills and established social support than those who recently move into the United States (Wilton & Constantine, 2003). Moreover, results of Sumer and her colleagues’ study (2008) showed that the longer length of stay in the United States, the higher levels of socialization with Americans for international students. Similarly, the study of Yeh and Inose (2003) supported that length of stay in the United States are positively related to the perceived sense of social connectedness of international students, particularly among Asian international students.

Wilton and Constantine (2003) studied length of residence and psychological distress among 190 Asian and Latin American international college students. They reported that the longer period of time of residence in the United States, the less acculturative stress and psychological distress Asian and Latin American international college students experienced. Likewise, results of Zheng and Berry’s study (1991) confirmed that individuals, particularly those who have short stay in the new culture, experience greater acculturative stress are more likely to have psychological distress. On the contrary, Wei and her colleagues (2007) found that length of stay in the United States had no direct relationship with both acculturative stress and depression among 189 international students from China and Taiwan; but they suggested that there was a significant association between acculturative stress and depression for those who have a short stay in the United States. Similarly, Constantine and her colleagues (2004)
examined the relationship between acculturative stress and depression among 320 Asian, African, and Latin American international students and found that acculturative stress is related to depressive symptoms among international students who have short length of residence in the United States.

**Gender**

Researchers (Constantine et al., 2004; Dao et al., 2007; Mitchell et al., 2007) found that woman international students are more likely to need help on building social support and report lower levels of English fluency than their man counterparts. Additionally, Misra and her colleagues (2003) found that woman international students had higher behavioral, emotional, and physiological reactions to stress that is resulted from the daily life issues than their man counterparts. Also, women were more likely to report depression, anxiety, and relationship concerns (Mallinckrodt & Leong, 1992), whereas men were more likely to present health problems (Dao et al., 2007; Mitchell et al., 2007). Furthermore, the study of Mallinckrodt and Leong (1992) found the gender difference on source of social support. Results of their study showed that support from faculty members seemed to be more beneficial for man international students, whereas support from the cohort and the department was more helpful for woman international students. On the contrary, researchers (Misra et al., 2003; Poyrazli et al., 2004; Sumer et al., 2008; Yeh & Inose, 2003) found no significant difference in English proficiency, the perception of social support, stress from daily life issues (e.g., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and depression by gender among international students.
Age

International students are more likely to be older than U.S. students (Misra & Castillo, 2004; Mitchell et al., 2007). In the study of Sumer and her colleagues (2008), they found that younger international students were more likely to report fluency in English than their older counterparts. On the contrary, studies (Poyrazli et al., 2004; Yeh & Inose, 2003) did not support age as a significant predictor of acculturative stress and English proficiency.

The Proposed Model and Research Questions

Researchers (Lin & Yi, 1997; Mitchell et al., 2007; Poyrazli et al., 2004) found that international students, East Asian international students in particular, are more likely to experience stress resulting from daily life issues such as acculturation, second language, academic performance, interpersonal relationships, and financial concerns. The literature (Misra et al., 2003; Wilton & Constantine, 2003) has supported the effect of stress on psychological issues. Likewise, results of previous studies (Constantine et al., 2004; Dao et al., 2007; Mitchell et al., 2007; Sumer et al., 2008; Wei et al., 2007; Yeh & Inose, 2003) have shown that stress resulting from the daily life issues is related to mental health issues (e.g., depression and anxiety). Previous studies (Dao et al., 2007; Hayes & Lin, 1994; Mallinckrodt & Leong, 1992; Misra et al., 2003; Pedersen, 1991; Sumer et al., 2008), however, have suggested that social support may help international students reduce their stress resulting from daily life issues, maintain their psychological well-being, and have better adjustment in the United States. Based on results of previous studies on stress, depression, and social support, this study intends to explore whether the relation between stress resulting from daily life issues and the level of depression are
stronger for East Asian international students who perceive less social support than for East Asian international students who perceive more social support. A model is proposed (see Figure 1). The relationship between stress that is caused from five daily issues and the level of depression among East Asian international students will be examined in this study. In turn, this study will investigate whether perceived social support moderate the strength of the relation between stress resulting from five daily life issues and the level of depression. Additionally, the researcher will explore if perceived social support from a specific source moderate the effect of stress resulting from a specific daily life issue on the level of depression. For example, that support from new friends in the United States has the moderation effect on the relation between stress causing from interpersonal relationships and the level of depression will be probed.

This current study is to answer two major research questions.

**Research Question 1**

To what extent does general social support (total scores) moderate the effects of general stress which results from five daily life issues (total scores) on the level of depression while controlling for demographic variables?

**Research Question 2**

To what extent does a specific source of social supports (i.e., social support from family and old friends, new friends in the United States, and the university and the college) moderate the effects of stress which results from a specific daily life issue (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) on the level of depression while controlling for demographic variables?
Figure 1. Model of the impact of social support on the relation between stress from 5 daily life issues and depression.
CHAPTER 3

METHODOLOGY

This chapter presents the methodology of this study. The research design, participants, instruments, variables, data collection procedures, and data analyses are addressed.

Research Design

The main purpose of this study was to examine whether social support plays a moderator role between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students. Social support was hypothesized to moderate the relation between stress caused by five daily life issues that China, South Korea, Taiwan, and Japan international students experience in the United States and their level of depression. The results of this study would either support or disconfirm the extent to which social supports moderate the effects of stress from five daily life issues on the level of depression, the model (see Figure 1), and stress-coping theory and stress-buffering model addressed in Chapter Two. In addition, the secondary purpose of this study was to investigate mediation effects (i.e., shared effects) between the predictor variable (i.e., stress from daily life issues) and the moderator variable (i.e., social support).

This study was a correlational research which is a quantitative research approach. A correlational research is to determine whether relationships exist between two or more variables. For example, this study examined whether a positive relationship exists between stress resulting from daily life issues and psychological distress. Tabachnick and
Fidell (2007) suggested using the formula, $N \geq 50 + 8m$ (where $m$ is equal to the number of predictor variables), to calculate an appropriate sample size for testing multiple correlation. The researcher used this formula but treated $m$ as the number of all variables in this study (i.e., five subscales of the predictor variable, three subscales of the moderator variable, the outcome variable, and demographic variables with stronger correlations with the predictor variable and/or the moderator variable and the outcome variable) in order to get an appropriate and sufficient sample size for this study.

**Participants**

There were 723,277 international students who enrolled in American colleges and universities in the 2010-2011 academic year and these international students constituted almost 4% of United States total higher education enrollment according to *Open Doors* (Institute of International Education, 2011), an annual statistical report. In addition, seven of the top ten leading countries of origin for these international students in the United States were Asian countries in the 2010-2011 academic year. Of the 723,277 international students, more than 38% were from four of East Asian countries, China, South Korea, Taiwan, and Japan.

Many previous studies (Mallinckrodt & Leong, 1992; Misra et al., 2003; Mitchell et al., 2007; Poyrazli et al., 2004; Sumer et al., 2008; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008; Zhang & Dixon, 2003) have focused on the population of international students or Asian international students, but there is limited literature used East Asian international students, which comprised more than 38% of international students in the 2010-2011 academic year (Institute of International Education, 2011), as the target population. In this study, the target population was limited to all East Asian international
students from China, South Korea, Taiwan, and Japan, who share similar cultural background and values. Other countries of East Asia were excluded from this study because of the small number of international students coming from these East Asian countries (e.g., Mongolia and North Korea) and because of the long-term colonization of these East Asian countries by Western countries (e.g., Hong Kong and Macau).

The potential participants in this study were all China, South Korea, Taiwan, and Japan international students who currently enroll in the Big Ten institutions in the United States. The reason to choose the Big Ten institutions as the participant pool for this study was that these institutions have similarities: (1) they are research universities with very high research activity; (2) they are four-year or above level universities; and (3) they hold a large international student population. The qualified East Asian international student participants were those who are not U.S. citizens/residents, who are holding F-1 visa (i.e., student visa), and who are currently living in the United States in order to earn their undergraduate and/or graduate degree. International students, who do not identify themselves as China, South Korea, Taiwan, or Japan international students, who are holding other types of visa (e.g., J-1), who are in their period of Optional Practical Training (OPT), and who enroll in non-degree programs (e.g., Intensive English Programs), were excluded from this study.

The minimum number of participants for the study was 130 using the formula: 
\[ N \geq 50 + 8m, \]
where \( m \) is equal to 10 (the sum of five subscales of the predictor variable, three subscales of the moderator variable, one outcome variable, and one demographic variable) in this study. After data were screened and missing data were addressed, the final number of participants was 135. Table 2 shows means, standard deviations,
skewness, kurtosis, and ranges for the three continuous demographic variables in this study. Table 3 outlines the frequencies information of the categorical demographic variables for this sample population. Overall, the mean age was 24.71 years old (SD = 4.72). The entire age range was 18 to 38. Women represented 63% (n = 85) and men made up 37% (n = 50). The majority of participants (91.1%; n = 123) reported being single and the rest of the participants were married (8.9%; n = 12). Participants from China comprised 43.7% (n = 59), South Korea represented 11.1% (n = 15), Taiwan made up 42.2% (n = 57), and Japan accounted for 3% (n = 4) of the sample. In addition, the mean length of stay in the United States was 37.79 months (SD = 28.68). The range of length of stay in the United States was 1 to 132. The mean of self-reported English fluency was 9.04 (SD = 1.89). The entire self-reported English fluency range was 3 to 12.

Table 2

Descriptive Statistics for the Sample Population

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>135</td>
<td>20</td>
<td>24.71</td>
<td>4.72</td>
<td>.57</td>
<td>-.36</td>
</tr>
<tr>
<td>Length of Stay (M)</td>
<td>135</td>
<td>131</td>
<td>37.79</td>
<td>28.68</td>
<td>.95</td>
<td>.76</td>
</tr>
<tr>
<td>English Fluency</td>
<td>135</td>
<td>9</td>
<td>9.04</td>
<td>1.89</td>
<td>-.36</td>
<td>-.11</td>
</tr>
</tbody>
</table>
Table 3

Frequencies Information for the Sample Population

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Men</td>
<td>50</td>
<td>37.0</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>85</td>
<td>63.0</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>123</td>
<td>91.1</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>12</td>
<td>8.9</td>
</tr>
<tr>
<td>Degree Sought</td>
<td>Doctorate</td>
<td>55</td>
<td>40.7</td>
</tr>
<tr>
<td></td>
<td>Master’s Degree</td>
<td>29</td>
<td>21.5</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s Degree</td>
<td>51</td>
<td>37.8</td>
</tr>
<tr>
<td>Major</td>
<td>Engineering</td>
<td>24</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>Physical and Life Sciences</td>
<td>22</td>
<td>16.3</td>
</tr>
<tr>
<td></td>
<td>Math and Computer Science</td>
<td>22</td>
<td>16.3</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>17</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td>Social Sciences</td>
<td>16</td>
<td>11.9</td>
</tr>
<tr>
<td></td>
<td>Business and Management</td>
<td>9</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Humanities</td>
<td>9</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Law and Undeclared</td>
<td>7</td>
<td>5.2</td>
</tr>
<tr>
<td></td>
<td>Agriculture</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td>3</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Health Professions</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Country of Origin</td>
<td>China</td>
<td>59</td>
<td>43.7</td>
</tr>
<tr>
<td></td>
<td>South Korea</td>
<td>15</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>Taiwan</td>
<td>57</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td>Japan</td>
<td>4</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Participants reported working on their doctorate accounted for 40.7% (n = 55), master’s degree represented 21.5% (n = 29), and bachelor’s degree made up 37.8% (n = 51). Participants reported studying in the field of engineering accounted for 17.8% (n =
physical and life sciences represented 16.3% (n = 22), math and computer science made up 16.3% (n = 22), education accounted for 12.6% (n = 17), and social sciences represented 11.9% (n = 16). Business and management (6.7%; n = 9), humanities (6.7%; n = 9), law and undeclared (5.2%; n = 7), agriculture (3%; n = 4), arts (2.2%; n = 3), health professions (1.5%, n = 2) comprised the rest of the sample.

Instruments

Demographic Questionnaire

The demographic questionnaire (see appendix E) was designed by the researcher. All participants were asked to provide their background information, including age, gender, marital status, academic level, major, length of stay in the United States, country of origin, visa types, the location of the institution the participant enrolled in, and self-reported English fluency. The reason to include country of origin and visa types was to eliminate unqualified participants. Also, to collect data of locations of institutions of all participants enrolled in was to understand whether collected data from the sample represent data of the target population.

Participants’ self-reported English fluency was assessed by a combined score from three questions that were used in previous studies (Constantine et al., 2004; Dao et al., 2007; Yeh & Inose, 2003). Also, Barratt and Huba (1994) and Cross (1995) documented that this method of assessing English fluency is effective. The three questions, which are rated on a 4-point, Likert-type scale, are: “What is your present level of English fluency?”; “How comfortable are you communicating in English?”; and “How often do you communicate in English?” The possible range of scores for the combined score of the three questions is 3 to 12 and higher scores represent better self-reported
English fluency. Cronbach’s alpha for these three questions was .84 (Constantine et al., 2004), .81 (Dao et al., 2007), and .78 (Yeh & Inose, 2003). Cronbach’s alpha for the three questions in the current study was .76.

Other than questions related to background information, the Brief Social Desirability Scale (BSDS; Haghight, 2007) was used to quickly detect if participants intend to only provide socially acceptable responses. The Brief Social Desirability Scale includes four questions with two possible responses: Yes or No. The four questions are: “Would you smile at people every time you meet them?”; “Do you always practise what you preach to people?”; “If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be?”; and “Would you ever lie to people?” The possible range of scores for the BSDS is 0 to 4 and higher scores represent higher tendency towards social desirability. Cronbach’s alpha for the four questions was .06. Construct validity with the Stigmatization Questionnaire produced Spearman rho of -.372 at .01 (Haghight, 2007). Cronbach’s alpha for the four questions in the current study was .24.

Stress from Daily Life Issues

Index of Life Stress (ILS; Yang, & Clum, 1995). Respondents’ stress resulting from daily life issues was measured by a self-report questionnaire, the Index of Life Stress (see appendix F). The ILS was originally designed for measuring the levels of stressful life events experienced by Asian international students. The ILS scale is a 31-item, 4-point ranging from 0 (never) to 3 (often), Likert-type scale, asking how often respondents feel about each item statement. It was used to measure stress of life events for Asian international students in five aspects: (1) concern about finances and desire to
stay in the United States (e.g., “my financial situation makes my life here very hard”); (2) language difficulties (e.g., “my English embarrasses me when I talk to people”); (3) interpersonal stress, such as “people treat me badly just because I am a foreigner”; (4) stress from cultural adjustment and desire to return to one’s own country (e.g., “Americans’ way of being too direct is uncomfortable to me”); and (5) academic pressure (e.g., “I am not doing as well as I want to in school”). The possible range of scores for the ILS is 0 to 93 and higher scores represent higher levels of stress resulting from daily life issues.

In the original norm group of 101 Asian international student participants, it was found that the test-retest reliability with a 1-month interval for the ILS was .87 (n = 20) and the internal consistency estimate (KR-20) was .86 (n = 101). Internal consistency estimates (KR-20) for each of the five factors are .80, .79, .82, .70, and .75, respectively. Regarding the validity, the concurrent validity of the ILS was assessed by correlating the ILS scores with the corresponding scores on the Life Experiences Survey, \( \gamma (100) = -0.46, p < .0001 \). Moreover, factor analysis for construct validity indicated the five factors loadings accounting for 52.21% of the variance. Table 4 shows the reliability of the ILS and its five subscales for the current study.
Table 4

Reliability for the ILS and Its Five Subscales in the Current Study

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS Total</td>
<td>.89</td>
</tr>
<tr>
<td>Acculturation</td>
<td>.70</td>
</tr>
<tr>
<td>Second Language</td>
<td>.81</td>
</tr>
<tr>
<td>Academic Performance</td>
<td>.69</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>.86</td>
</tr>
<tr>
<td>Financial Concerns</td>
<td>.75</td>
</tr>
</tbody>
</table>

Social Support

Index of Social Support (ISS; Yang, & Clum, 1995). Respondents’ social support was measured by a self-report questionnaire, the Index of Social Support (see appendix G). The ISS was originally designed for measuring the levels of social support among Asian international students. The ISS scale is a 40-item, 4-point ranging from 0 (never) to 3 (often), Likert-type scale, asking how often respondents feel about each item statement. It was used to measure the quality and quantity of contact for Asian international students in eight aspects: (1) contact with direct family (e.g., parents and siblings), such as “I trust my family”; (2) secondary families (e.g., extended family members), such as “my secondary families (uncles, aunts, etc.) are available when I need them”; (3) old friends in the home country (e.g., “I am satisfied with my old friends in my home country”); (4) new friends in the United States (e.g., “I have contact with my new friends in the U.S.A.”); (5) religious places (e.g., churches), such as “my church (or any
religious place) here means a lot to me”; (6) student organizations (e.g., “the student organizations on campus are available when I need them”); (7) international student center on campus (e.g., “the international student center on campus means a lot to me”); and (8) local community, such as “I participate in community activities here”. The possible range of scores for the ISS is 0 to 120 and higher scores represent higher levels of perceived social support.

In the original norm group of 101 Asian international student participants, it was found that the test-retest reliability with a 1-month interval for the ISS was .81 (n = 20) and the internal consistency estimate (KR-20) was .81 (n = 100). Regarding the validity, the concurrent validity of the ISS was assessed by correlating the ISS scores with the corresponding scores on the UCLA Loneliness Scale, \( \gamma (100) = -.39, p < .0001 \). Moreover, factor analysis of the ISS showed that 36 of 40 items loaded on 4 factors: (1) general contact with one’s own culture (contact with old friends in home countries, secondary family, and the international center on campus); (2) contact with local community and student organizations; (3) contact with new friends in the United States and direct family; and (4) contact with religious places (e.g., churches). Internal consistency estimates (KR-20) for each of the four factors are .90, .87, .83, and .86, respectively. Factor analysis for construct validity indicated the four factors loadings accounting for 51.91% of the variance. Table 5 shows the reliability of the ISS and its three subscales for the current study.
Table 5

Reliability for the ISS and Its Three Subscales in the Current Study

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISS Total</td>
<td>.95</td>
</tr>
<tr>
<td>Family and Old Friends</td>
<td>.89</td>
</tr>
<tr>
<td>New Friends in the U.S.</td>
<td>.90</td>
</tr>
<tr>
<td>The University and the College</td>
<td>.93</td>
</tr>
</tbody>
</table>

Depression

Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).

Respondents’ psychological distress, the level of depression, was measured by a self-report questionnaire, the CES-D (see Appendix H). The CES-D is a 20-item, 4-point ranging from 0 (rarely or none of the time; less than 1 day) to 3 (most or all of the time; 5-7 days), Likert-type scale that was designed to measure current levels of depressive symptoms for the general population. The 20 items measure symptoms associated with depression experienced in the past seven days. Sample items are “I felt depressed”, “my sleep was restless”, and “I felt that people dislike me”. Scores for items 4, 8, 12, and 16 are reversed before summing all items to yield a total score. The possible range of scores for the CES-D is 0 to 60 and higher scores represent higher levels of depressive symptoms. Scores of 16 or higher on the CES-D are considered a risk for clinically significant depression (Mulrow et al., 1995). The CES-D includes six scales reflecting major dimensions of depression: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and
sleep disturbance. Moreover, the CES-D requires the literacy of the third grade to the fifth grade reading level (Mulrow et al., 1995).

The CES-D is a reliable measure for assessing the number, types, and duration of depressive symptoms among different racial, gender, and age population. Internal consistency of the CES-D was high. In the original study, Cronbach’s alpha was .85 in the general population and was .90 in the patient sample. Also, the reliability coefficient was .91 for African, Asian and Latin American international college students (Constantine et al., 2004), .86 for Asian international students (Wei et al., 2008), .87 for college students from Taiwan (Wang, Slaney, & Rice, 2007), .92 for graduate international students from Taiwan (Dao et al., 2007), and .89 for international students from China and Taiwan (Wei et al., 2007). Split-half reliability was ranging from .77 to .92. Test-retest reliability over 2-8 weeks showed moderate correlations (r = .51-.67). Cronbach’s alpha for the CES-D was .91 in the current study.

Concurrent validity by clinical and self-report criteria and substantial evidence of construct validity were reported (Radloff, 1977). A positive association with scores on the Discrepancy subscale for college students from Taiwan (Wang et al., 2007) and a positive relationship with levels of self-concealment and acculturative stress and a negative association with levels of social self-efficacy for African, Asian, and Latin American international college students (Constantine et al., 2004) were found as evidence for the construct validity of the CES-D.
Variables

Stress from Daily Life Issues

Stress caused by five daily life issues was a predictor variable measured by the Index of Life Stress (ILS). The total score of all the 31 items represented the level of stressful daily life issues experienced by the respondent. Higher scores represented higher levels of stress resulting from five daily life issues. The total score of the ILS was used for general stress in the first research question. In addition, the score of each subscale represented the respondent’s level of stress from different daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns).

Social Support

Social support was a moderator variable measured by the Index of Social Support (ISS). The total score of all the 40 items represented the respondent’s perception of their social support. Higher scores corresponded to higher levels of perceived social support. The total score of the ISS was used for general social support in the first research question. In addition, the score of each subscale represented the respondent’s perceived social support from different source (i.e., family and old friends, new friends in the United States, and the university and the college).

Depression

The level of depression was an outcome variable measured by the Center for Epidemiologic Studies Depression Scale (CES-D). The total score of all the 20 items represented the respondent’s symptoms associated with depression experienced in the past seven days. Higher scores stood for higher levels of depressive symptoms.
Demographic Variables

Age. Age was a self-reported interval/ratio variable. Participants typed their age on item 1 of the demographic questionnaire. Participants who are younger than 18 years old or who are older than 65 years old were excluded from the study. If participants typed their age below 18 or more than 65, they were informed that they are not qualified to participate in this study.

Gender. Gender was a self-reported nominal variable. Participants selected one answer from “male”, “female”, or “transgender” on item 2 of the demographic questionnaire.

Marital Status. Marital status was a self-reported nominal variable. Participants selected one answer from “single”, “married”, or “others” on item 3 of the demographic questionnaire. Also, participants were asked to specify their marital status if they selected “others”.

Degree Sought. Degree sought was a self-reported nominal variable. Participants selected one answer from “Bachelor degree”, “Master’s degree”, “Doctorate”, or “others” on item 4 of the demographic questionnaire. Also, participants were asked to specify their degree sought if they selected “others”. Participants who are in the non-degree programs were treated as unqualified participants.

Major. Major was a self-reported nominal variable. Participants typed their major on item 5 of the demographic questionnaire.

Length of Stay in the United States. Length of stay in the United States was a self-reported interval/ratio variable. Participants typed the numbers of years and months of their stay in the United States on item 6 of the demographic questionnaire.
**Country of Origin.** Country of origin was a nominal variable. Participants selected one answer from “China”, “Hong Kong”, “Japan”, “Macau”, “South Korea”, “Taiwan”, or “others” on item 7 of the demographic questionnaire. Also, participants were asked to specify their country of origin if they selected “others”. This variable was used to eliminate unqualified participants.

**Visa Type.** Visa type was a nominal variable. Participants selected one answer from “F-1 students”, “F-1 Optional Practical Training (OPT)”, or “others” on item 8 of the demographic questionnaire. Also, participants were asked to specify their visa type if they selected “others”. This variable was used to eliminate unqualified participants.

**The Location of the Institution.** The location of the institution where the participant is currently enrolled was a nominal variable. The participant selected the State where his/her institution is located on item 9 of the demographic questionnaire. This variable was to understand whether collected data from the sample represented data of the target population.

**Self-reported English Fluency.** Self-reported English fluency was measured by three questions. Participants selected one answer from 1 (*very low*) to 4 (*very high*) on item 10, from 1 (*very uncomfortable*) to 4 (*very comfortable*) on item 11, and from 1 (*very rarely*) to 4 (*very frequently*) on item 12 of the demographic questionnaire. The total score of all the three items represented the participant’s self-reported English fluency. Higher scores corresponded to better self-reported English fluency.

**Data Collection Procedures**

Institutional Review Board approval was obtained for all procedures from the Office for Research Protections at the researcher’s university before the collection of any
data. This study intended to understand stress resulting from five daily life issues, social support, and psychological well-being of all China, South Korea, Taiwan, and Japan international students who currently enroll in the Big Ten institutions in the United States. The researcher contacted the director of International Student Center (ISC) and informed the director of ISC the purpose of the study and the web link to the study. The researcher asked the ISC director to send out the recruiting email, which describes the purpose of this study, anonymity, confidentiality, and procedures for this study, to those international students who are from China, South Korea, Taiwan, and Japan. There was, however, only one ISC director who helped to send out the recruiting email once. Therefore, the researcher contacted all student associations representing these four countries on campus such as Chinese students and scholars association, Korean undergraduate student association, Taiwanese student association, and Japanese friendship association. These student associations also received the recruiting email and were asked for help to send it to all of their members. Additionally, the researcher posted the recruiting email on these student associations’ Facebook wall in order to increase the participation rate. Not every student association, however, had an email account and/or a Facebook account to be reached.

As soon as international students from China, South Korea, Taiwan and Japan who are willing to participate in this study went to the website of this study, the informed consent form with information about the purpose of this study, anonymity, confidentiality, the approximate time of completing the survey, and their right to stop their participation anytime was shown first on the screen. Also, participants were informed that their participation is voluntary and they could be entered in prize drawings after completing
the survey as the compensation for their participation. There was a “continue” button at the end of the informed consent form. After participants clicked the “continue” button, which means they are informed and they agree to participate in this study, they were directed to the first questionnaire.

Participants completed four questionnaires: Demographic Questionnaire, Index of Life Stress, Index of Social Support, and Center for Epidemiologic Studies Depression Scale. Permission of using the ILS and the ISS was secured from Bin Yang and George Clum, the designers of the ILS and the ISS. Because the Test of English as a Foreign Language (TOEFL) is one of the admission requirements for most international students at higher education institutions in the United States, the researcher assumed that potential participants have the capacity to complete these four questionnaires in English. The Demographic Questionnaire was the first questionnaire to be completed. The other three questionnaires were shown on the screen in a random order to control for order effects. When participants completed one questionnaire and clicked the “continue” button, they were directed to the next questionnaire until they finished all questionnaires.

When they completed the last instrument and clicked the “finish” button, the screen showed a message to thank for their participation and to let them know that they can contact the researcher if they would like to know the results of this study. Also, they were asked to provide their email if they would like to be entered in prize drawings and they were informed that their email is not linked to their responses. The researcher closed the survey website when data collection was done and started to input all data into Statistical Package for Social Science (SPSS) dataset and to analyze all data.
Data Analyses

Tabachnick and Fidell (2007) pointed out that screening data before conducting the main analysis is essential. Therefore, screening procedures were taken first after the data were downloaded. Additionally, steps for main analyses were conducted.

Screening Procedures

Data were downloaded to SPSS 21.0 from the survey website. First, the researcher matched consecutive responses on key demographic characteristics such as age, gender, degree sought, and country of origin in order to minimize the effects of repeat responders and found no duplicate cases. There were 11 unqualified participants because of their country of origin (e.g., Thailand) and/or visa type (e.g., OPT and U.S. citizens/residents) and their responses were eliminated. In addition, participants with the BSDS total score greater than three (i.e., all socially desirable answers) were excluded. The reason of setting three as the cut-off score was that the BSDS might not include culturally sensitive and neutral questions. For example, participants were more likely to answer “Yes” for the first question on the BSDS, “Would you smile at people every time you meet them?” because they are under the influence of Chinese culture and Confucianism that value and emphasize the importance of politeness. Moreover, no previous studies on international students’ adjustment reporting issues related to social desirability were found. Therefore, three was the cut-off score instead of two in this study. After the BSDS total scores were calculated, there were 13 participants with the BSDS total score of four and their responses were deleted.

Participants had the right to choose to not answer specific questions in this study. Therefore, participants who completed the survey partially (i.e., participants selected “I
choose to not answer this question” for more than 40% of questions on anyone and/or all of the three instruments) were excluded and all of their responses were removed from the data analyses. After SPSS Missing Value Analysis (MVA) was performed, there were 10 participants who responded to more than 40% questions with the answer “I choose to not answer this question” on one or more instruments. Therefore, responses of these 10 participants were removed. On the contrary, participants who responded to more than 60% of all questions for each and/or all instrument were kept and their responses of “I choose to not answer this question” were treated as missing data.

Additionally, the researcher recoded variables with reverse codes (i.e., items of 4, 8, 12, and 16 of the CES-D) and calculated the total score for the ILS and each of its five subscales, the ISS and each of its three subscales, and the CES-D. Dummy coding was used for categorical variables. SPSS Exploratory Data Analysis including percentiles and histograms was performed and outlier labeling rules were applied to detect outliers. Hoaglin and Iglewicz (1987) suggested using the formulas, Q3 + 2.2(Q3 - Q1) and Q1 - 2.2(Q3 - Q1), to better detect outliers. The case with the value which is larger than the number from the first formula or less than the number from the second formula are outliers. No cases were determined as outliers from the current data. The researcher used univariate descriptive statistics such as means, standard deviations, and ranges to confirm accurate data as Tabachnick and Fidell (2007) suggested.

**Main Analyses**

After data were screened and the three assumptions for multivariate procedures were tested, the main analyses were conducted. This study used hierarchical multiple regression to investigate the effects of social supports on the relation between stress
caused by daily life issues and the level of depression among China, South Korea, Taiwan, and Japan international students. The process of hierarchical multiple regression evaluated variability in the outcome variables as different predictor variables were added. According to Frazier, Tix, and Barron (2004), steps of analyzing the data to examine moderation effects include predictor and moderator variables transformation, product terms formation, and the equation structure. Likewise, Cohen, Cohen, West, and Aiken (2003) and Jaccard, Turrisi, and Wan (1990) recommended centering all predictors and then forming the product term before entering them into the regression analysis with interactions. The researcher transformed all variables using T scores first and produced the product term of stress from daily life issues and social support.

Demographic variables with stronger correlations with the predictor variable and/or the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15) were entered into the first model. Therefore, self-reported English fluency was entered into the first model. The predictor (i.e., stress resulting from daily life issues), the moderator (i.e., social support), and the product term (i.e., stress resulting from daily life issues × social support) were entered into the second, the third, and the fourth model. When a significant interaction was found, Aiken and West (1991) suggested choosing three values of moderator variable to generate three simple regression lines to explore the meaning of the interaction. Cohen and his colleagues (2003) recommended that using the mean of the moderator variable, one standard deviation above the mean of the moderator variable, and one standard deviation below the mean of the moderator variable. When the significant interaction was
not found, the researcher examined the existence of shared effects between the predictor variable and the moderator variable.

In addition to examining the moderation effects of social supports on the relation between stress caused by five daily life issues and the level of depression, the moderation effect of social support from a specific source on the relation between stress from a specific daily life issue and the level of depression was investigated. Five combinations of stress from a specific daily life issue and social support from a specific source were selected to be examined for the moderation effect: (1) stress from acculturation × social support from the university and the college; (2) stress from second language × social support from new friends in the United States; (3) stress from academic performance × social support from the university and the college; (4) stress from interpersonal relationships × social support from new friends in the United States; and (5) stress from financial concerns × social support from family and old friends.

The reason to examine stress from acculturation × social support from the university and the college was because international students who are more acculturated and familiar with the host culture and resources are more likely to adjust better (Berry, 1985; Ying & Liese, 1994; Ward, 1996). Therefore, the researcher would like to explore if the university and the college provide social support (e.g., giving information about American culture, financial resources, and advisory system) to international students before, upon, and/or after their arrival in the United States that moderate the effects of stress from acculturation on the level of depression. Similarly, the reason to investigate stress from second language × social support from new friends in the United States was because English fluency and competence are positively related to international students’
ability to adjust (Barratt & Huba, 1994; Hayes & Lin, 1994; Wilton & Constantine, 2003). Therefore, the researcher would like to examine if new friends in the United States provide social support (e.g., being patient and friendly with international students when making social conversations and encouraging international students to involve conversations) to international students that moderate the effects of stress from second language on the level of depression. In addition, the reason to explore stress from academic performance × social support from the university and the college was because international students are more likely to perceive academic challenge, report academic concerns, and experience subsequent academic stress which might lead to psychological distress (Mitchell et al., 2007; Wei et al., 2007; Zhao et al., 2005). Therefore, the researcher would like to understand if the university and the college provide social support (e.g., forming study groups and providing advisory relationships) to international students that moderate the effects of stress from academic performance on the level of depression. Likewise, the reason to investigate stress from interpersonal relationships × social support from new friends in the United States was because one of common issues for international students is building interpersonal relationships with new friends, with Americans in particular, in the United States and this issue often relates to successful adjustment (Furnham & Alibhai, 1985; Nilsson et al., 2004; Poyrazli et al., 2004). Therefore, the researcher would like to analyze if new friends in the United States provide social support (e.g., building friendly relationships and being open to people with different cultural background) to international students that moderate the effects of stress from interpersonal relationships on the level of depression. Additionally, the reason to explore stress from financial concerns × social support from family and old friends was
because international students are more likely to experience financial difficulties which might impact on their adjustment to the new environment (Chen, 1999; Lin & Yi, 1997). Therefore, the researcher would like to understand if family and old friends provide social support (e.g., providing financial support and information) to international students that moderate the effects of stress from financial concerns on the level of depression.
CHAPTER 4

RESULTS

This chapter presents the findings of this study. How missing data were handled is addressed, followed by the univariate analysis, bivariate analysis, and the results of the hierarchical multiple regression for the two research questions in this study.

Missing Data

Participants had the right to choose to not answer specific questions in this study. Participants who responded to more than 60% of all questions for each and/or all instrument were kept and their responses of “I choose to not answer this question” were treated as missing data. Sterner (2011) recommended determining the type of missing data (i.e., missing completely at random; MCAR, missing at random; MAR, or missing not at random; MNAR) before remediation of missing data is performed. Sterner also indicated that the SPSS Missing Value Analysis (MVA) Expectation Maximization (EM; Little’s MCAR test) can be used for confirming MCAR data. When the significance value of the chi-square test is greater than .05, the data are considered MCAR. Little’s MCAR test was conducted and the results of Little’s MCAR test, $\chi^2 = 5039.96, p > .05$, confirmed that the data in this study were MCAR.

Sterner (2011) suggested choosing a remediation method after the type of missing data is confirmed. Schafer and Graham (2002) pointed out the advantages of imputing missing values are to reduce problems that are resulted from a small sample size such as power and generalizability and to keep a full dataset for a complete analysis. Additionally, Tabachnick and Fidell (2007) indicated that mean imputation is a remediation method that generates more conservative estimate of the missing values that represent the whole
study. Mean imputation is calculating the mean of all available data of the variable for the missing values of the variable (Little & Rubin, 2002; Vriens & Melton, 2002). Therefore, mean imputation was used to remediate missing data in this study.

**Univariate Analysis**

**Testing Three Assumptions**

The data were tested to make sure that the three assumptions for multivariate procedures: normality, linearity, and homoscedasticity, are met. Tabachnick and Fidell (2007) suggested using skewness, kurtosis, frequency histograms, and/or expected normal probability plots to verify the assumption of normality statistically and/or graphically. The values of skewness and kurtosis of all variables in this study were between negative one and positive one. When the skewness statistic divided by the standard error of skewness was less than or equal to the absolute value of two, normality assumption was met. On the contrary, when the skewness statistic divided by the standard error of skewness was greater than the absolute value of two, normality transformation was applied. Likewise, frequency histograms with a normal curve and expected normal probability plots were produced.

The predictor variable and its three subscales (i.e., acculturation, second language, and financial concerns) and two subscales of the moderator variable (i.e., support from new friends in the U.S. and support from colleges and universities) were normally distributed. Two subscales of the predictor (i.e., academic performance and interpersonal relationships), the moderator variable and its subscale of support from family and old friends, and the outcome variable did not appear to meet the normal assumption. Tabachnick and Fidell (2007) indicated that taking the square root of the variable with
positively skewed distribution to get a normally or near normally distributed variable. Likewise, the researcher used the second power for variables with negatively skewed distribution to get a normal distribution. Transformation for the variable of stress from academic performance, however, did not succeed. It went from negatively skewed distribution to positively skewed distribution after the second power transformation was applied. It might be because it was not highly negatively skewed, so the variable was kept in its original form. Otherwise transformations for other variables that appear not to meet normality assumption were successful.

Linearity assumption is evaluated through bivariate scatterplots or residuals plots and homoscedasticity assumption is assessed by bivariate scatterplots (Tabachnick & Fidell, 2007). Additionally, Tabachnick and Fidell indicated that variables are homoscedastic when normal assumption is met. The researcher produced bivariate scatterplots and residuals plots and found no variables with curvilinear relationships and/or heteroscedasticity. Multicollinearity was examined by calculating bivariate correlations. Tabachnick and Fidell suggested if variables are highly correlated (i.e., a correlation is equal to and greater than the absolute value of .90), one of the two variables should be deleted. No highly correlated variables existed in the data, so no variables were deleted.

Table 6 shows means, standard deviations, skewness, kurtosis, and ranges for the predictor variable and its five subscales, the moderator variable and its three subscales, and the outcome variable in this study.
Table 6

*Descriptive Statistics for All Variables in the Current Study*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS (The Predictor Variable)</td>
<td>70</td>
<td>33.95</td>
<td>13.31</td>
<td>.07</td>
<td>-.02</td>
</tr>
<tr>
<td>ILS: Acculturation</td>
<td>17</td>
<td>7.85</td>
<td>4.17</td>
<td>.29</td>
<td>-.42</td>
</tr>
<tr>
<td>ILS: Second Language</td>
<td>15</td>
<td>6.06</td>
<td>3.44</td>
<td>.33</td>
<td>-.37</td>
</tr>
<tr>
<td>ILS: Academic Performance</td>
<td>14</td>
<td>7.81</td>
<td>3.24</td>
<td>-.45</td>
<td>-.31</td>
</tr>
<tr>
<td>ILS: Interpersonal Relationships</td>
<td>16</td>
<td>4.36</td>
<td>3.46</td>
<td>.79</td>
<td>.37</td>
</tr>
<tr>
<td>ILS: Financial Concerns</td>
<td>18</td>
<td>7.87</td>
<td>4.14</td>
<td>.36</td>
<td>-.58</td>
</tr>
<tr>
<td>ISS (The Moderator Variable)</td>
<td>100.17</td>
<td>79.00</td>
<td>20.09</td>
<td>-.47</td>
<td>.38</td>
</tr>
<tr>
<td>ISS: Family and Old Friends</td>
<td>33</td>
<td>34.58</td>
<td>7.59</td>
<td>-.68</td>
<td>-.16</td>
</tr>
<tr>
<td>ISS: New Friends in the U.S.</td>
<td>43</td>
<td>26.18</td>
<td>8.82</td>
<td>-.15</td>
<td>.02</td>
</tr>
<tr>
<td>ISS: The University and the College</td>
<td>30</td>
<td>18.24</td>
<td>7.22</td>
<td>-.35</td>
<td>-.33</td>
</tr>
<tr>
<td>CES-D (The Outcome Variable)</td>
<td>56</td>
<td>17.81</td>
<td>10.58</td>
<td>.84</td>
<td>.82</td>
</tr>
</tbody>
</table>

**Bivariate Analysis**

Bivariate correlations were calculated for demographic variables, the predictor variable and its five subscales, the moderator variable and its three subscales, and the outcome variable. Table 7 indicates the correlation matrix for the variables in the study, including demographic variables, the predictor variable, the moderator variable, and the outcome variable. In addition, Table 8 shows the correlation matrix for the outcome variable, five subscales of the predictor variable, and three subscales of the moderator variable.
The correlation coefficients between demographic variables (i.e., age, gender, marital status, length of stay in the United States, and self-reported English fluency) and the predictor variable, the moderator variable, and the outcome variable were examined. Demographic variables with stronger correlations (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15) with the predictor variable and/or the moderator variable and the outcome variable were kept for the main analyses. Therefore, self-reported English fluency was entered into the first model in the hierarchical multiple regression analyses for the two research questions.

Table 7

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>-.07</td>
<td>.36**</td>
<td>.42**</td>
<td>-.03</td>
<td>.10</td>
<td>-.16</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td>.02</td>
<td>.02</td>
<td>.08</td>
<td>.06</td>
<td>-.04</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Marital Status</td>
<td>.15</td>
<td>.04</td>
<td>-.02</td>
<td>.08</td>
<td>-.19*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Length of Stay in the U.S.</td>
<td>.30**</td>
<td>.08</td>
<td>.03</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. English Fluency</td>
<td>-.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. ILS Total</td>
<td></td>
<td>.17*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. ISS Total</td>
<td></td>
<td></td>
<td>-.31**</td>
<td>.57**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. CES-D Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.38**</td>
<td></td>
</tr>
</tbody>
</table>

* = Correlation is significant at the .05 level. ** = Correlation is significant at the .01 level.
Table 8

**Correlation Matrix of Predictor, Moderator, and Outcome Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CES-D Total</td>
<td>.40**</td>
<td>.48**</td>
<td>.52**</td>
<td>.30**</td>
<td>.37**</td>
<td>-.35**</td>
<td>-.34**</td>
<td>-.24**</td>
<td></td>
</tr>
<tr>
<td>2. ILS: Acculturation</td>
<td></td>
<td>.32**</td>
<td>.35**</td>
<td>.60**</td>
<td>.39**</td>
<td>-.18**</td>
<td>-.20**</td>
<td>-.18**</td>
<td></td>
</tr>
<tr>
<td>3. ILS: Second Language</td>
<td></td>
<td></td>
<td>.50**</td>
<td>.30**</td>
<td>.30**</td>
<td>-.23**</td>
<td>-.15</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>4. ILS: Academic Performance</td>
<td></td>
<td></td>
<td></td>
<td>.37**</td>
<td>.51**</td>
<td>-.14</td>
<td>-.23**</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>5. ILS: Interpersonal Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.40**</td>
<td>-.16</td>
<td>-.21**</td>
<td>-.27**</td>
<td></td>
</tr>
<tr>
<td>6. ILS: Financial Concerns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.11</td>
<td>-.18**</td>
<td>-.27**</td>
<td></td>
</tr>
<tr>
<td>7. ISS: Family and Old Friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.62**</td>
<td>.45**</td>
<td></td>
</tr>
<tr>
<td>8. ISS: New Friends in the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.65**</td>
<td></td>
</tr>
<tr>
<td>9. ISS: The College and the University</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. * = Correlation is significant at the .05 level. ** = Correlation is significant at the .01 level.

**Correlations between Predictor and Outcome Variables**

In examining correlations between predictor and outcome variables, the predictor variable (i.e., stress from five daily life issues) and its five subscales (i.e., stress from acculturation, second language, academic performance, interpersonal relationships, and financial concerns) were all significantly and positively correlated with the outcome variable (i.e., the level of depression). The correlation between the predictor variable and the outcome variable was .57 ($p < .01$), which indicated a moderate to good relationship according to Fink (1995). Similarly, stress from academic performance had a moderate to good relationship with the outcome variable ($r = .52, p < .01$). Additionally, correlations between stress from acculturation, second language, interpersonal relationships, and financial concerns and the outcome variable were between .30 and .48 ($p < .01$), which
indicated fair degree of relationships. Fink mentioned that the absolute value of a correlation between .26 and .50 is considered fairly high in some social sciences.

**Correlations between Moderator and Outcome Variables**

In examining correlations between moderator and outcome variables, the moderator variable (i.e., social support) and its three subscales (i.e., support from family and old friends, new friends in the United States, and the university and the college) were all significantly and negatively correlated with the outcome variable (i.e., the level of depression). The correlation between the moderator variable and the outcome variable was -.38 ($p < .01$), which indicated a fair degree of relationship according to Fink (1995). Similarly, correlations between support from family and old friends and new friends in the United States and the outcome variable were -.35 ($p < .01$) and -.34 ($p < .01$), which indicated fair degree of relationships. In addition, support from the university and the college had a little or no relationship with the outcome variable ($r = -.24, p < .01$).

**Correlations between Predictor and Moderator Variables**

In examining correlations between predictor and moderator variables, there was a significant and negative relationship ($r = -.31, p < .01$) between the predictor variable (i.e., stress from five daily life issues) and the moderator variable (i.e., social support), which was a fair degree of relationship according to Fink (1995). Moreover, each of the five subscales of the predictor variable had a significant and negative relationship with at least one of the three subscales of the moderator variable. For example, the correlation between stress from acculturation and support from the university and the college was -.18 ($p < .05$) and the correlation between stress from interpersonal relationships and support from new friends in the United States was -.21 ($p < .05$). The highest correlations
between subscales of predictor and moderator variables were between stress from interpersonal relationships and support from the university and the college ($r = -.27, p < .01$) and between stress from financial concerns and support from the university and the college ($r = -.27, p < .01$), which were fair degree of relationships.

**Hierarchical Multiple Regression**

**Research Question 1**

To what extent does general social support (total scores) moderate the effects of general stress which results from five daily life issues (total scores) on the level of depression while controlling for demographic variables?

Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. The second model included stress from five daily life issues (i.e., the total score of the ILS). The third model contained social support (i.e., the total score of the ISS). The product of stress from five daily life issues and social support (i.e., the total score of the ILS × the total score of the ISS) was entered into the fourth model. Table 9 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.
Table 9

Hierarchical Regression Predicting the Level of Depression (ILS × ISS)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
</tr>
<tr>
<td>English fluency</td>
<td>-.237</td>
<td>.006</td>
<td>-.160</td>
<td>.026</td>
<td>-.132</td>
<td>.060</td>
<td>-.120</td>
<td>.092</td>
</tr>
<tr>
<td>ILS Total</td>
<td>.545</td>
<td>.000</td>
<td>.485</td>
<td>.000</td>
<td>.873</td>
<td>.015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISS Total</td>
<td></td>
<td></td>
<td>-.210</td>
<td>.004</td>
<td>.172</td>
<td>.624</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILS Total × ISS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.461</td>
<td>.267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>.056</td>
<td></td>
<td>.347</td>
<td></td>
<td>.386</td>
<td></td>
<td>.392</td>
<td></td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>.049</td>
<td></td>
<td>.337</td>
<td></td>
<td>.372</td>
<td></td>
<td>.373</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>.006</td>
<td></td>
<td>.000</td>
<td></td>
<td>.000</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

All of the hierarchical regression models were found to be significant (Model 1, \( p < .01 \); Model 2, \( p < .01 \); Model 3, \( p < .01 \); Model 4, \( p < .01 \)). The results suggested that participants who scored higher on the ILS (i.e., stress from five daily life issues) scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on the ILS had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on the ISS (i.e., social support) scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on the ISS had higher score on the CES-D. The product of stress from five daily life issues and social support (i.e., the total score of the ILS × the total score of the ISS), however, was found
to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 37.2% of variance was explained by stress from five daily life issues and social support while controlling for self-reported English fluency. Also, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this study were reliable. In examining shared effects between the predictor variable (i.e., stress from five daily life issues) and the moderator variable (i.e., social support), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 ($\beta = .545$) to Model 3 ($\beta = .485$).

**Research Question 2**

To what extent does a specific source of social supports (i.e., social support from family and old friends, new friends in the United States, and the university and the college) moderate the effects of stress which results from a specific daily life issue (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) on the level of depression while controlling for demographic variables?

Five combinations of subscales of stress from five daily life issues and subscales of social support were examined for the moderation effect: (1) stress from acculturation × social support from the university and the college; (2) stress from second language × social support from new friends in the United States; (3) stress from academic performance × social support from the university and the college; (4) stress from interpersonal relationships × social support from new friends in the United States; and (5) stress from financial concerns × social support from family and old friends.
Stress from acculturation × social support from the university and the college.

Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. Stress from acculturation was entered into the second model. Social support from the university and the college was entered into the third model. The product of stress from acculturation and social support from the university and the college was entered into the fourth model. Table 10 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.

All of the hierarchical regression models were found to be significant (Model 1, $p < .01$; Model 2, $p < .01$; Model 3, $p < .01$; Model 4, $p < .01$). The results suggested that participants who scored higher on stress from acculturation scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on stress from acculturation had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on social support from the university and the college scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on social support from the university and the college had higher score on the CES-D. The product of stress from acculturation and social support from the university and the college, however, was found to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 21.3% of variance was
explained by stress from acculturation and social support from the university and the college while controlling for self-reported English fluency. In addition, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this study were reliable. In examining shared effects between the predictor variable (i.e., stress from acculturation) and the moderator variable (i.e., social support from the university and the college), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 ($\beta = .386$) to Model 3 ($\beta = .358$).

Table 10

Hierarchical Regression Predicting the Level of Depression (Acculturation × School)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$p$</td>
<td>$\beta$</td>
<td>$p$</td>
</tr>
<tr>
<td>English fluency</td>
<td>-.237</td>
<td>.006</td>
<td>-.219</td>
<td>.006</td>
</tr>
<tr>
<td>ILS: Acculturation</td>
<td>.386</td>
<td>.000</td>
<td>.358</td>
<td>.000</td>
</tr>
<tr>
<td>ISS: School*</td>
<td>-.164</td>
<td>.038</td>
<td>-.604</td>
<td>.121</td>
</tr>
<tr>
<td>ILS: Acculturation × ISS: School*</td>
<td>.587</td>
<td>.248</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.056</td>
<td>.205</td>
<td>.231</td>
<td>.239</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.049</td>
<td>.193</td>
<td>.213</td>
<td>.215</td>
</tr>
<tr>
<td>$p$</td>
<td>.006</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. * ISS: School = ISS: The University and the College
Stress from second language × social support from new friends in the United States. Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. Stress from second language was entered into the second model. Social support from new friends in the United States was entered into the third model. The product of stress from second language and social support from new friends in the United States was entered into the fourth model. Table 11 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.

All of the hierarchical regression models were found to be significant (Model 1, $p < .01$; Model 2, $p < .01$; Model 3, $p < .01$; Model 4, $p < .01$). The results suggested that participants who scored higher on stress from second language scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on stress from second language had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on social support from new friends in the United States scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on social support from new friends in the United States had higher score on the CES-D. The product of stress from second language and social support from new friends in the United States, however, was found to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 28.2% of
variance was explained by stress from second language and social support from new friends in the United States while controlling for self-reported English fluency. Additionally, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this study were reliable. In examining shared effects between the predictor variable (i.e., stress from second language) and the moderator variable (i.e., social support from new friends in the United States), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 ($\beta = .462$) to Model 3 ($\beta = .435$).
Table 11

*Hierarchical Regression Predicting the Level of Depression (Second Language × New Friends)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
</tr>
<tr>
<td>English fluency</td>
<td>-.237</td>
<td>.006</td>
<td>-.033</td>
<td>.696</td>
</tr>
<tr>
<td>ILS: Second Language</td>
<td>.462</td>
<td>.000</td>
<td>.435</td>
<td>.000</td>
</tr>
<tr>
<td>ISS: New Friends</td>
<td>-</td>
<td></td>
<td>-268</td>
<td>.000</td>
</tr>
<tr>
<td>ILS: Second Language × ISS: New Friends</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.056</td>
<td>.228</td>
<td>.298</td>
<td>.305</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.049</td>
<td>.217</td>
<td>.282</td>
<td>.283</td>
</tr>
<tr>
<td>p</td>
<td>.006</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. *ISS: New Friends = ISS: New Friends in the U.S.*

Stress from academic performance × social support from the university and the college. Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. Stress from academic performance was entered into the second model. Social support from the university and the college was entered into the third model. The product of stress from academic
performance and social support from the university and the college was entered into the fourth model. Table 12 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.

Table 12

Hierarchical Regression Predicting the Level of Depression (Academic Performance × School)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>English fluency</td>
<td>-.237 .006</td>
<td>-.157 .036</td>
<td>-.147 .046</td>
<td>-.155 .039</td>
</tr>
<tr>
<td>ILS: Academic Performance</td>
<td>.494 .000</td>
<td>.474 .000</td>
<td>.243 .520</td>
<td></td>
</tr>
<tr>
<td>ISS: School*</td>
<td></td>
<td>-.172 .020</td>
<td>-.400 .285</td>
<td></td>
</tr>
<tr>
<td>ILS: Academic Performance ×</td>
<td></td>
<td></td>
<td>.306 .534</td>
<td></td>
</tr>
<tr>
<td>ISS: School*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.056 .294</td>
<td>.323 .323</td>
<td>.325 .325</td>
<td></td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.049 .283</td>
<td>.307 .307</td>
<td>.304 .304</td>
<td></td>
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<tr>
<td>$p$</td>
<td>.006 .000</td>
<td>.000 .000</td>
<td>.000 .000</td>
<td></td>
</tr>
</tbody>
</table>

Note. * ISS: School = ISS: The University and the College

All of the hierarchical regression models were found to be significant (Model 1, $p < .01$; Model 2, $p < .01$; Model 3, $p < .01$; Model 4, $p < .01$). The results suggested that
participants who scored higher on stress from academic performance scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on stress from academic performance had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on social support from the university and the college scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on social support from the university and the college had higher score on the CES-D. The product of stress from academic performance and social support from the university and the college, however, was found to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 30.7% of variance was explained by stress from academic performance and social support from the university and the college while controlling for self-reported English fluency. In addition, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this study were reliable. In examining shared effects between the predictor variable (i.e., stress from academic performance) and the moderator variable (i.e., social support from the university and the college), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 ($\beta = .494$) to Model 3 ($\beta = .474$).

**Stress from interpersonal relationships $\times$ social support from new friends in the United States.** Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. The second model included
stress from interpersonal relationships. The third model contained social support from new friends in the United States. The product of stress from interpersonal relationships and social support from new friends in the United States was entered into the fourth model. Table 13 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.

All of the hierarchical regression models were found to be significant (Model 1, $p < .01$; Model 2, $p < .01$; Model 3, $p < .01$; Model 4, $p < .01$). The results suggested that participants who scored higher on stress from interpersonal relationships scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on stress from interpersonal relationships had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on social support from new friends in the United States scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on social support from new friends in the United States had higher score on the CES-D. The product of stress from interpersonal relationships and social support from new friends in the United States, however, was found to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 18.6% of variance was explained by stress from interpersonal relationships and social support from new friends in the United States while controlling for self-reported English fluency. Furthermore, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this study were reliable. In examining shared effects between the predictor variable (i.e., stress from interpersonal
relationships) and the moderator variable (i.e., social support from new friends in the United States), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 ($\beta = .300$) to Model 3 ($\beta = .246$).

Table 13

*Hierarchical Regression Predicting the Level of Depression (Interpersonal Relationships $\times$ New Friends)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$p$</td>
<td>$\beta$</td>
<td>$p$</td>
</tr>
<tr>
<td>English fluency</td>
<td>-.237</td>
<td>.006</td>
<td>-.236</td>
<td>.004</td>
</tr>
<tr>
<td>ILS: Interpersonal Relationships</td>
<td>.300</td>
<td>.000</td>
<td>.246</td>
<td>.003</td>
</tr>
<tr>
<td>ISS: New Friends $^*$</td>
<td></td>
<td></td>
<td>-.251</td>
<td>.002</td>
</tr>
<tr>
<td>ILS: Interpersonal Relationships $\times$ ISS: New Friends $^*$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.056</td>
<td>.146</td>
<td>.204</td>
<td>.218</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.049</td>
<td>.133</td>
<td>.186</td>
<td>.193</td>
</tr>
<tr>
<td>$p$</td>
<td>.006</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Note.* $^*$ ISS: New Friends = ISS: New Friends in the U.S.

**Stress from financial concerns $\times$ social support from family and old friends.**

Self-reported English fluency was the only one demographic variable that had stronger correlations with the moderator variable and the outcome variable (i.e., Pearson’s
correlation coefficient was greater than the absolute value of .15), so it was entered into the first model of the hierarchical regression. The second model included stress from financial concerns. The third model contained social support from family and old friends. The product of stress from financial concerns and social support from family and old friends was entered into the fourth model. Table 14 shows the standardized beta coefficients and the significance level of the demographic variable, the predictor variable, the moderator variable, and the product term and the $R^2$ and the adjusted $R^2$ values of each model when it was entered into the hierarchical regression with the level of depression as the outcome variable.

All of the hierarchical regression models were found to be significant (Model 1, $p < .01$; Model 2, $p < .01$; Model 3, $p < .01$; Model 4, $p < .01$). The results suggested that participants who scored higher on stress from financial concerns scored higher on the CES-D (i.e., the level of depression). Likewise, participants who had lower score on stress from financial concerns had lower score on the CES-D. Additionally, the results indicated that participants who scored higher on social support from family and old friends scored lower on the CES-D (i.e., the level of depression). Also, participants who had lower score on social support from family and old friends had higher score on the CES-D. The product of stress from financial concerns and social support from family and old friends, however, was found to be non-significant, which signified that there was no moderation effect. The adjusted $R^2$ of Model 3 indicated that 25.8% of variance was explained by stress from financial concerns and social support from family and old friends while controlling for self-reported English fluency. Moreover, adjusted $R^2$ was slightly smaller than $R^2$ in the regression analysis and this supported that the data in this
study were reliable. In examining shared effects between the predictor variable (i.e., stress from financial concerns) and the moderator variable (i.e., social support from family and old friends), no significant shared effect was found because the standardized beta coefficient of the predictor variable did not drop significantly from Model 2 (β = .390) to Model 3 (β = .357).

Table 14

Hierarchical Regression Predicting the Level of Depression (Financial Concerns × Old Support)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
<td>β</td>
<td>p</td>
</tr>
<tr>
<td>English fluency</td>
<td>-.237</td>
<td>.006</td>
<td>-.270</td>
<td>.001</td>
<td>-.215</td>
<td>.006</td>
<td>-.192</td>
<td>.013</td>
</tr>
<tr>
<td>ILS: Financial Concerns</td>
<td>.390</td>
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<td>ISS: Old Support</td>
<td>-.267</td>
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Note. *ISS: Old Support = ISS: Family and Old Friends
CHAPTER 5
DISCUSSION

This chapter presents a discussion on the findings provided in Chapter Four. Two research questions, predictor and moderator variables, and demographic variables are presented with a discussion on the significant findings, possible reasons for why significant moderation effects were not found, and how the findings relate to previous empirical and theoretical research. Implications of the results are presented, followed by limitations, strengths of the study, recommendations for future research, and a conclusion.

Discussion

The main purpose of this study was to examine whether social support plays a moderator role between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students in the United States. Social support was hypothesized to moderate the relation between stress caused by five daily life issues that China, South Korea, Taiwan, and Japan international students experience in the United States and their level of depression. Additionally, the secondary purpose of this study was to investigate mediation effects (i.e., shared effects) between the predictor variable (i.e., stress from daily life issues) and the moderator variable (i.e., social support). Social support was handled as a moderator variable and was measured by the ISS. Stress resulting from five daily life issues was treated as predictor variables and was measured by the ILS. The level of depression was considered as the outcome variable and was represented by the score of the CES-D.
Participants in this study were 135 international students in the United States originally coming from China, South Korea, Taiwan, and Japan. All of the participants currently enroll in two of the Big Ten institutions, which are research universities with very high research activity, are four-year or above level universities, and hold a large international student population. In addition, all participants in this study were not U.S. citizens/residents, were holding F-1 visa (i.e., student visa), and were currently living in the United States for their undergraduate and/or graduate degree.

**Research Question 1**

To what extent does general social support (total scores) moderate the effects of general stress which results from five daily life issues (total scores) on the level of depression while controlling for demographic variables?

Cohen (1992) pointed out that social support is a buffer because social resources and support may alleviate the negative consequences from stress resulting from life events. Likewise, Cohen and Wills (1985) found that social support is a stress-buffering when individuals perceive available support from others. Additionally, Mallinckrodt and Leong (1992) found that social support has direct and moderate effects on stress symptoms among international students. The results of the current study, however, did not support that general social support moderates the effects of general stress from five daily life issues on the level of depression while controlling for demographic variables.

Although no significant moderation effect was found in the current study, direct effects were found between the level of depression and stress from daily life issues and between the level of depression and social support. The findings confirmed that stress from five daily life issues is significantly and positively correlated with the level of
depression and social support is significantly and negatively related to the level of depression. The higher level of stress from daily life issues the international students has, the higher level of depression he/she experiences. Similarly, the higher level of social support the international student perceives, the lower level of depression he/she experiences. Cohen (1988) suggested that .25 is a large effect for $R^2$ for social sciences and the results showed that 37.2% of variance in the level of depression is explained by stress from five daily life issues and social support while controlling for self-reported English fluency. Also, adjusted $R^2$ (adjusted $R^2 = .372$) was slightly smaller than $R^2$ ($R^2 = .386$) in the regression analysis and this supported that the data in this study were reliable.

The findings of this study were consistent with what Lazarus and Folkman (1984) and Anderson (2004) pointed out that stress resulting from life events may have negative effects on individuals’ well-being. In addition, researchers (Constantine et al., 2004; Dao et al., 2007; Misra et al., 2003; Mitchell et al., 2007; Sumer et al., 2008; Wei et al., 2007; Wilton & Constantine, 2003; Yeh & Inose, 2003) asserted that stress from daily life issues is related to psychological well-being among international students. Likewise, previous studies (Al-Sharideh & Goe, 1998; Boyer & Sedlacek, 1988; Hayes & Lin, 1994; Schram & Lauver, 1988) found that international students who lack social support are at a high risk of encountering cultural adjustment and psychological stresses. Moreover, researchers (Dao et al., 2007; Mallinckrodt & Leong, 1992; Sumer et al., 2008) confirmed that social support significantly predicts depression among international students.
Research Question 2

To what extent does a specific source of social supports (i.e., social support from family and old friends, new friends in the United States, and the university and the college) moderate the effects of stress which results from a specific daily life issue (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) on the level of depression while controlling for demographic variables?

Cohen and Wills (1985) contended that specific resources and support should match with stress resulting from specific life events in order to best alleviate stress. This study examined five specific daily life issues that cause stress and its matched sources of social support. The findings of this study, however, did not support that a specific source of social support moderates the effects of stress which results from a specific daily life issue on the level of depression while controlling for demographic variables. Although no significant moderation effects were found in the current study, the results confirmed that stress from a specific daily life issue is significantly and positively correlated with the level of depression and a specific source of social support is significantly and negatively related to the level of depression. The higher level of stress from a specific daily life issue the international students has, the higher level of depression he/she experiences. Similarly, the higher level of social support from a specific source the international student perceives, the lower level of depression he/she experiences.

Stress from acculturation × social support from the university and the college.

The results found that social support from the university and the college does not moderate the effects of stress from acculturation on the level of depression while
controlling for demographic variables. Although no significant moderation effect was found in the current study, the results confirmed that stress from acculturation is significantly and positively correlated with the level of depression and social support from the university and the college is significantly and negatively related to the level of depression. International students who report higher level of stress from acculturation experience higher level of depression. Similarly, international students who perceive higher level of social support from the university and the college report lower level of depression. Cohen (1988) suggested that .09 is a medium effect for $R^2$ for social sciences and the results showed that 21.3% of variance in the level of depression is explained by stress from acculturation and social support from the university and the college while controlling for self-reported English fluency. In addition, adjusted $R^2$ (adjusted $R^2 = .213$) was slightly smaller than $R^2$ ($R^2 = .231$) in the regression analysis and this supported that the data in this study were reliable. The findings were consistent with previous studies (Berry & Kim, 1988; Organista et al., 2003; Schmitz, 1992) that there is a relationship between acculturative stress and mental health. Similarly, researchers (Constantine et al., 2004; Dao et al., 2007; Lee et al., 2004; Misra et al., 2003; Sandhu & Asrabadi, 1998; Wei et al., 2007; Wilton & Constantine, 2003; Yang & Clum, 1994) supported that acculturative stress had a positive relationship with depression.

**Stress from second language × social support from new friends in the United States.** The results showed that social support from new friends in the United States does not moderate the effects of stress from second language on the level of depression while controlling for demographic variables. Although no significant moderation effect was found in the current study, the results confirmed that stress from second language is
significantly and positively correlated with the level of depression and social support from new friends in the United States is significantly and negatively related to the level of depression. International students who report higher level of stress from second language experience higher level of depression. Similarly, international students who perceive higher level of social support from new friends in the United States report lower level of depression. Cohen (1988) suggested that .25 is a large effect for $R^2$ for social sciences and the results showed that 28.2% of variance in the level of depression is explained by stress from second language and social support from new friends in the United States while controlling for self-reported English fluency. Additionally, adjusted $R^2$ (adjusted $R^2 = .282$) was slightly smaller than $R^2$ ($R^2 = .298$) in the regression analysis and this supported that the data in this study were reliable. The result was similar to what previous studies (Hayes & Lin, 1994; Wilton & Constantine, 2003) found that international students who are more fluent in English have better adjustment.

**Stress from academic performance × social support from the university and the college.** The results found that social support from the university and the college does not moderate the effects of stress from academic performance on the level of depression while controlling for demographic variables. Although no significant moderation effect was found, the results confirmed that stress from academic performance is significantly and positively correlated with the level of depression and social support from the university and the college is significantly and negatively related to the level of depression. International students who report higher level of stress from academic performance are more likely to experience higher level of depression. Additionally, international students who perceive more social support from the university and the college are less likely to
report higher level of depression. Cohen (1988) suggested that .25 is a large effect for $R^2$ for social sciences and the results showed that 30.7% of variance in the level of depression is explained by stress from academic performance and social support from the university and the college while controlling for self-reported English fluency. In addition, adjusted $R^2$ (adjusted $R^2 = .307$) was slightly smaller than $R^2$ ($R^2 = .323$) in the regression analysis and this supported that the data in this study were reliable. The result was similar to what previous researchers (Mitchell et al., 2007; Wei et al., 2007; Zhao et al., 2005) contended that international students who experience more academic challenge and stress are more likely to deal with psychological distress.

**Stress from interpersonal relationships $\times$ social support from new friends in the United States.** The results showed that social support from new friends in the United States does not moderate the effects of stress from interpersonal relationships on the level of depression while controlling for demographic variables. Although no significant moderation effect was found, the results confirmed that stress from interpersonal relationships is significantly and positively correlated with the level of depression and social support from new friends in the United States is significantly and negatively related to the level of depression. The higher level of stress from interpersonal relationships the international student reports and the lower level of social support from new friends in the United States the international student perceives, the higher level of depression he/she experiences. Cohen (1988) suggested that .09 is a medium effect for $R^2$ for social sciences and the results showed that 18.6% of variance in the level of depression is explained by stress from interpersonal relationships and social support from new friends in the United States while controlling for self-reported English fluency.
Furthermore, adjusted $R^2$ (adjusted $R^2 = .186$) was slightly smaller than $R^2$ ($R^2 = .204$) in the regression analysis and this supported that the data in this study were reliable. The result was similar to results of previous studies (Nilsson et al., 2004; Poyrazli et al., 2004) that issue of building interpersonal relationships is related to successful adjustment for international students.

**Stress from financial concerns × social support from family and old friends.**

The results found that social support from family and old friends does not moderate the effects of stress from financial concerns on the level of depression while controlling for demographic variables. Although no significant moderation effect was found, the results confirmed that stress from financial concerns is significantly and positively correlated with the level of depression and social support from family and old friends is significantly and negatively related to the level of depression. International students who report higher level of stress from financial concerns are more likely to experience higher level of depression. Similarly, international students who perceive less social support from family and old friends are more likely to experience higher level of depression. Cohen (1988) suggested that .25 is a large effect for $R^2$ for social sciences and the results showed that 25.8% of variance in the level of depression is explained by stress from financial concerns and social support from family and old friends while controlling for self-reported English fluency. Moreover, adjusted $R^2$ (adjusted $R^2 = .258$) was slightly smaller than $R^2$ ($R^2 = .275$) in the regression analysis and this supported that the data in this study were reliable. The finding was similar to what Chen (1999) stated that financial concern is a practical issue that most international students have in their daily life and may cause stress for international students in their adjustment to the new environment.
That the results of this study did not support the moderation effects of social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students in the United States might be due to the limited sample size of the study. Even though the final number of participants (i.e., \( n = 135 \)) was slightly more than the appropriate sample size (i.e., \( n = 130 \)) that was calculated by the formula Tabachnick and Fidell (2007) suggested for testing multiple correlation, the limited sample size of this study might impact on finding the moderation effects of social support on the relation between stress resulting from five daily life issues and psychological distress among East Asian international students in the United States. Also, the limited sample size might cause the non-significant moderation effect of a specific source of social support on the relation between stress which results from a specific daily life issue and the level of depression among East Asian international students in the United States.

Moreover, because of the difficulty in reaching most target population, this study had the majority of participants from China and Taiwan but a small number of participants from South Korea and Japan. This issue might impact on finding the significant moderation effects of social support, both general social support and a specific source of social support, on the relation between stress, both resulting from all five daily life issues and from a specific daily life issue, and the level of depression in this study.

The use of measurement might be one of reasons why no moderation effects were found in this study. Reliability and validity of the three instruments used in this study
were acceptable; however, these instruments were designed at least a decade ago. Some wordings and statements may not be appropriate and/or clear in the present day and this might impact on how participants respond to the item statements.

**Predictor and Moderator Variables**

**Between predictor variables.** Previous studies have shown that stress from the five daily life issues are interrelated and results of the current study confirmed it. The findings of this study showed that stress from each of the five daily life issues is significantly and positively correlated with each other. Results of this study corresponded to what Dao et al. (2007), Ying (2002), and Lin and Yi (1997) found that international students who report higher level of stress from second language have higher level of stress from interpersonal relationships and from academic performance. Additionally, Misra and her colleagues (2003) reported that international students experiencing difficulties in adjusting American culture have more trouble in their academic performance.

**Between predictor and moderator variables.** The findings of this study showed that perceived social support is significantly and negatively related to stress from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns). International students who perceived higher level of social support are less likely to experience stress from acculturation, second language, academic performance, interpersonal relationships, and financial concerns. These findings were consistent with results of previous studies (Poyrazli et al., 2004; Misra et al., 2003; Yeh & Inose, 2003) that perceived social support is correlated with stress from daily life issues, such as acculturation, among international students.
Demographic Variables

Age. Sumer and her colleagues (2008) suggested that age is related to English fluency. They found that younger international students are more likely to be fluent in English than their older counterparts. Other studies (Poyrazli et al., 2004; Yeh & Inose, 2003), however, did not support age as a significant predictor of English proficiency and acculturative stress. Likewise, the results of the current study did not confirm that age is related to English fluency or stress from acculturation. Results, however, showed that younger international students report shorter length of stay in the United States, less stress from interpersonal relationships, and more social support from the university and the college than their older counterparts.

Gender. Results of this study did not support the gender difference on age, length of stay in the United States, English fluency, stress from daily life issues, social support, and the level of depression. Similarly, previous studies (Misra et al., 2003; Poyrazli et al., 2004; Sumer et al., 2008; Yeh & Inose, 2003) found that there is no significant difference in English proficiency, stress from daily life issues (e.g., acculturation, second language, academic performance, interpersonal relationships, and financial concerns), the perception of social support, and depression by gender among international students.

Fields of study. The majority of international students in the current study reported their major in hard sciences or business. This indicated that fields of study of this sample are similar to those of the target population. There were, however, more graduate students and less undergraduate students in the current study than in the whole target population. This discrepancy for academic level might be because the researcher
successfully reached more graduate international student associations via email and Facebook during the recruiting process.

**Length of stay in the United States.** Previous studies (Poyrazli et al., 2004; Wei et al., 2007) found no significant direct relationship between the length of stay in the United States and English proficiency, stress from acculturation, social support, and depression among international students. Other researchers (Wilton & Constantine, 2003; Yeh & Inose, 2003; Zheng & Berry, 1991), however, suggested that length of stay in the United States impacts on stress, social support, and/or psychological well-being among international students. The findings of this study showed that the length of stay in the United States is significantly and positively correlated with English fluency and stress from interpersonal relationships and from financial concerns. International students who stay in the United States for their study longer are more likely to be fluent in English and report higher level of stress from interpersonal relationships and from financial concerns.

**English fluency.** Previous studies (Poyrazli et al., 2004; Sodowsky & Plake, 1992) have found that Asian international students score lower on their English proficiency than their European counterparts do and use English less than their European and African counterparts do. In the current study, no comparison between East Asian international students and European and/or African international students was conducted; therefore, it was not clear whether East Asian international students in this study scored their English fluency lower and use English less than their European and/or African counterparts do. Results of this study, however, showed that East Asian international students report high scores on their present English fluency, feel comfortable communicating in English, and frequently communicate in English.
**English fluency and stress from acculturation.** No significant relationship was found between English fluency and stress from acculturation in this study. The finding did not support results of previous studies (Constantine et al., 2004; Poyrazli et al., 2004; Yeh & Inose, 2003) that English proficiency is negatively correlated with stress from acculturation.

**English fluency and stress from academic performance.** International students experiencing difficulties in English language had more trouble in their academic performance (Misra et al., 2003). Results of the current study, however, did not confirm it and found that there is no significant relationship between English fluency and stress from academic performance.

**English fluency and social support.** The current study confirmed that international students who report higher scores on their English fluency have higher levels of social support. This finding supported results of Yeh & Inose’s study (2003) and Sumer and her colleagues’ study (2008) that English fluency is significantly associated with social support.

**English fluency and the level of depression.** Results of this study found that self-reported English fluency is significantly and negatively correlated with the level of depression. The higher scores international students report for their English fluency, the lower level of depression they experience. This finding was consistent with results of previous studies (Constantine et al., 2004; Dao et al., 2007; Hayes & Lin, 1994; Misra et al., 2003; Pedersen, 1991; Sumer et al., 2008; Ying & Liese, 1994) that there is a positive relationship between the English competence and their successful adjustment and well-being in the United States.
Implications for Professionals

In spite of no significant moderation effect of general social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) and no significant moderation effect of a specific social support on the relation between stress resulting from a specific daily life issue and the level of depression, the findings of this study indicated that both stress from daily life issues and social support have direct effects on the level of depression among East Asian international students. Therefore, being knowledgeable about how to help international students lessen their stress from acculturation, second language, academic performance, interpersonal relationships, and financial concerns and how to assist this population in maintaining their established social support and building new social support is important to professionals (e.g., staffs, faculties, and counselors/therapists) working in institutions of higher education in the United States.

Berry (1985) stated that international students who are more acculturated are less likely to experience stress. Similarly, Ying (2002) found that being familiar with American culture helps international students feel confident to socialize with Americans. The study of Ying and Liese (1994) supported that international students are more likely to adjust better if they have knowledge of American culture and academic system and are familiar with resources, such as support system and financial resources, before their arrival in the United States. Therefore, in order to reduce international students’ stress and assist them in having successful adjustment in the United States, American colleges and universities (e.g., International Student Center, Residence Life, Counseling and
Psychology Services, and academic departments) can provide information, such as American culture, American educational system, schedule of courses, residence life, student associations, scholarships and financial aid, and available resources and services on campus, to international students before their arrival in the United States, so they can be more familiar with American culture and American life style and prepare their own life in the United States ahead of time. For example, when International Student Center staffs send a letter to greet new international students, they can attach web links that introduce American culture, significant American holidays and customs, major religions, clothing style, educational system, socializing style, and so on to the letter. Additionally, Residence Life staffs can send a brochure with introduction of American and/or local food, housing style, transportation, and entertainment and with updated information about where international students can go locally to get and/or access these basic needs. Moreover, counseling and psychology professionals can send a greeting email with introduction of themselves and their services to upcoming international students. In addition, department head can send an email to welcome new international students, remind them of required courses for the first year students, and inform them about available scholarships and financial resources.

Other than providing information to international students before their arrival, American colleges and universities (e.g., International Student Center, Residence Life, Counseling and Psychology Services, Career Services, and Office of Student Aid) need to keep on spreading updated information to international students through university announcements, bulletined posters, and emails after their arrival. The representative of these offices in American colleges and universities should show up at the mandatory
orientation for new international students to introduce their services and locations, so international students know what information and/or help they can get from where when they need.

Because it is important to help international students reduce stress from acculturation, second language, and interpersonal relationships and build new social support, American colleges and universities need to create a culturally sensitive campus and encourage American students and international students to be open to different cultural backgrounds and exchange their cultural values. In order to do so, American colleges and universities (e.g., Student Union, Residence Life, and the Office of Fraternity and Sorority Life) can design groups and/or activities for both American and international students to be aware of their own cultural values and to learn different cultural values, to exchange their language, cultural values, and life experiences, to build interpersonal relationships and friendships with people who have different cultural backgrounds.

Similarly, American colleges and universities (e.g., International Student Center, Global Programs, Residence Life, and Counseling and Psychology Services) can collaborate with the community (e.g., churches, libraries, and local stores) to build an international student-friendly environment and culturally sensitive community through activities and/or fairs, such as Bible study groups at churches, conversation partner programs at churches and/or local libraries, and international fairs in the community. For example, American colleges and universities collaborate with the community to have international fairs and invite all members in the college and the university and in the community to participate. At the international fair, student associations/organizations
representing different countries demonstrate their culture and traditional customs and/or run different activities representing their country. The community, local organizations, and local stores demonstrate their mission, beliefs, and services. Therefore, everyone in the college and the university and in the community has the chance to learn different culture. With more opportunities to interact with individuals with different cultural background, international students and residents of the community are more likely to feel comfortable to be with people with different background, to build relationships/friendships, and/or to exchange language and cultural values.

Moreover, American colleges and universities (e.g., Counseling and Psychology Services, Teaching Institute, and International Student Center) can hold workshops for faculties and staffs to be culturally sensitive, to prepare them to teach students with different learning styles, to be familiar with ways of working with students with different cultural backgrounds, and to educate them when and where to refer international students who may be at risk of getting appropriate help. Likewise, medical professionals and academic/career advisors need to be aware of their patients’ and students’ presenting problems and decide if the referral is needed.

According to previous studies (Leong & Sedlacek, 1986; Mitchell et al., 2007; Nilsson et al., 2004; Zhang & Dixon, 2003), international students, Asian international students in particular, have concerns about utilizing professional psychological help. Because international students are more likely to be unaware of the availability of psychological services, be unfamiliar with American counseling services, and have the perception of stigma associated with mental health services, counseling and psychology professionals can introduce themselves, their services, workshops, and support groups at
the mandatory orientation for new international students in order to help international students be aware of their existence, understand what American counseling services are, know what kind of services counseling and psychology professionals provide, and try to remove stigma related to mental health services. Additionally, because of language barriers and cultural difference, Asian international students might doubt whether counseling and psychology professionals, who are most likely to be unilingual individuals and/or under influence of American and Western cultures, are able to understand their concerns and empathize their situations. Therefore, counseling and psychology professionals should be culturally sensitive and develop their cultural self-awareness. They need to be aware of cultural differences and respect their clients’ cultural values, avoid using abstruse vocabulary or slang, and educate their clients that counseling and psychology professionals are here to work with them to deal with issues, concerns, and difficulties. In addition, international students incline to rely on their social support system when they experience issues and difficulties. Counseling and psychology professionals can design outreach programs on campus to be more assessable to international students and/or run groups for international students (e.g., support groups, social skill groups, and major/career exploration groups) to help this growing population build their new social support systems in the new environment in the United States.

**Limitations**

There were several limitations in this study. First, this study targeted international students who are originally from four of East Asian countries (i.e., China, South Korea, Taiwan, and Japan); therefore, results of this study may not be generalized to international students from other countries. In addition, only one ISC director helped to
send out the recruiting email once and not every student association had an email account and/or a Facebook account to be reached, so the researcher did not successfully reach the whole target population during recruiting process. Because of the difficulty in reaching most target population, this study had the majority of valid responses from international students from China and Taiwan but a small number of responses from international students from South Korea and Japan, the findings may be generalized to international students from these two countries in particular.

Second, this study used self-reported instruments. Participants might provide answers that they think the researcher prefers and/or the majority of people accept instead of based on their true beliefs and feelings. Also, voluntary participants who took part in this study went to the online survey website to complete one questionnaire and three instruments. Results from these voluntary participants might not be generalized to non-volunteers.

Third, even though the three instruments (i.e., the Index of Life Stress, the Index of Social Support, and the Center for Epidemiologic Studies Depression Scale) used in this study have acceptable reliability and validity and were used in previous studies, they were created at least a decade ago and some wordings and statements may not be appropriate and/or clear in the present day. This might impact on how respondents interpret the questions and how they provide their answers.

Fourth, the timing of data collection may impact on participants’ stress and the level of depression. Target population was contacted at the beginning of the semester; therefore, their stress and their level of depression may be different from that at the middle of the semester and/or the end of the semester.
**Strengths of the Study**

Although this study did not find the moderation effect of social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students in the United States, this study confirmed that the more stress resulting from five daily life issues international students encounter, the higher level of depression they experience. Similarly, this study supported that the less social support international students perceive, the higher level of depression they experience. Findings of this study assist staffs, faculties, and professional counselors/therapists working in institutions of American higher education being familiar with daily life issues, social support, psychological well-being, and needs of East Asian international students. In addition, results of this study help professionals in higher education and the counseling profession design preventive programs and workshops, build a supportive environment, and provide effective services for this rapidly growing population.

**Recommendations**

**Research Design**

The current study was a correlational research which is a quantitative research approach and it supported that there are direct relationships between the level of depression and stress from daily life issues and between the level of depression and social support. It is known that there are significant relationships between stress from daily life and the level of depression and between social support and the level of depression; however, it is not clear on how international students interpret their stress, perceive their
social support, and experience their level of depression. This is because participants completed the three instruments (i.e., the Index of Life Stress, the Index of Social Support, and the Center for Epidemiologic Studies Depression Scale) by selecting a point from 0 to 3 for each statement. Respondents, however, may not interpret the score in the same way. For example, some respondents may worry about their academic performance every day one week before their midterms and final exams and feel that they rarely experience stress from academic performance. Under the same circumstances, some respondents may feel that they sometimes or often experience stress from academic performance. In order to get more accurate and full understanding of international students’ perceived stress, social support, and the level of depression, future researchers may consider use the qualitative research approach, such as case study and interview, to further understand issues of this growing population.

**Instruments**

This study used self-reported instruments to assess international students’ stress, social support, and the level of depression. In order to reduce response bias, the researcher used the BSDS to detect if participants intend to only provide socially acceptable responses. The BSDS, however, might not include culturally sensitive and neutral questions, so it may not be the best social desirability scale for East Asian international students. Therefore, future researchers may choose other social desirability scales that are cultural sensitive when their target population is East Asian international students. Additionally, one of limitations in this study is the use of the three instruments (i.e., the Index of Life Stress, the Index of Social Support, and the Center for Epidemiologic Studies Depression Scale). Even though all of them have acceptable
reliability and validity and were used in previous studies, they were created at least a decade ago and some wordings and statements may not be appropriate and/or clear in the present day. This might impact on how respondents interpret the questions and how they provide their answers. Therefore, future researchers may choose other updated instruments that also design for international students, East Asian in particular, when they conduct research on this rapidly growing population.

**Recruiting Process**

Because of the difficulty in reaching all target population during the recruiting process, future researchers may consider focusing on an institution or institutions where they can recruit participants and contact the International Student Center director and/or international students associations in person in order to get their help. Moreover, future researchers may consider using paper-and-pencil instruments rather than the online survey to increase the response rate. According to the researcher’s experience, international students were more likely to participate in the study when the researcher invited them to take part in the study in person. In addition, compensation for participation is another way to encourage participation and increase response rate.

**Analyses**

The current study examined moderation effects of social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students. The findings showed that there are direct effects between stress from daily life issues and the level of depression and between social
support and the level of depression, but no moderation effect is found. This study, however, did not examine if there are any moderation effects of social support on the relation between stress from five daily life issues and the level of depression by different demographics groups, for example, age, gender, and degree sought. Future researchers may examine if moderation effects exist in different demographics groups.

**Conclusion**

The results of this study showed that there is no moderation effect of social support on the relation between stress resulting from five daily life issues (i.e., acculturation, second language, academic performance, interpersonal relationships, and financial concerns) and psychological distress (i.e., the level of depression) among China, South Korea, Taiwan, and Japan international students. Additionally, no moderation effects of social support from a specific source on the relation between stress from a specific daily life issue and the level of depression were found. Even though the findings of this study were not consistent with stress-coping theory and stress-buffering model, this study did support the significant and positive relationship between stress resulting from five daily life issues and the level of depression and the significant and negative relationship between perceived social support and the level of depression among East Asian international students in the United States.

A dearth of literature was found targeting East Asian international students from the four countries (i.e., China, South Korea, Taiwan, and Japan) which share similar culture and values and from which more than 38% international students studying in the United States in the 2010-2011 academic year originally come. Therefore, it is hoped that this study will call more attention of counselor educators and researchers to conducting
research on this rapidly growing population. With more research on this population, the professionals (e.g., staffs, faculties, and counselors/therapists) working in institutions of higher education in the United States would learn more about issues and needs of this population and provide better and appropriate assistance and services to them.
References


Appendix A

Approval Letter: Penn State Office for Research Protections

Date: April 19, 2012

From: The Office for Research Protections - FWA#: FWA00001534
      Stephanie L. Krout, Compliance Coordinator

To: Hong-Ning Fang

Re: Determination of Exemption

IRB Protocol ID: 39730
Follow-up Date: April 18, 2017
Title of Protocol: The impact of social support on the relation between stress from daily life issues and depression among East Asian international students in the United States

The Office for Research Protections (ORP) has received and reviewed the above referenced eSubmission application. It has been determined that your research is exempt from IRB initial and ongoing review, as currently described in the application. You may begin your research.

**COMMENT:** (i) Participants are to be informed of the following during the recruitment process: the investigator is a Penn State researcher, and the study is being conducted for research purposes. (ii) Participants are to be informed of the following basic ethical principles of human participant research during the consent process: the investigator is a Penn State researcher, the study is being conducted for research purposes, a description of the procedures will be provided as to what the participant will do as part of the study, participation is voluntary, participants may end their participation at any time, participants may choose to not answer specific questions.

The category within the federal regulations under which your research is exempt is:

**45 CFR 46.101(b)(2):** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects’ responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, or reputation.

Given that the IRB is not involved in the initial and ongoing review of this research, it is the investigator’s responsibility to review **IRB Policy III “Exempt Review Process and Determination”** which outlines:

- What it means to be exempt and how determinations are made
- What changes to the research protocol are and are not required to be reported to the ORP
- Ongoing actions post-exemption determination including addressing problems and complaints, reporting closed research to the ORP and research audits
- What occurs at the time of follow-up
Appendix B

Email Permission to Use the ILS and the ISS

4/20/12

FW: Request your permission to use measurements, ILS & ISS

HONG-NING FANG <hzf105@psu.edu>
To: hzf105@psu.edu

---------- Forwarded Message ----------
From: George Clum <gclum@vt.edu>
Date: Mon, Nov 29, 2010 06:05 PM
Subject: Re: Request your permission to use measurements, ILS & ISS
To: HONG-NING FANG <hzf105@psu.edu>

Hong-Ning,

you have my permission to use the ILS and ISS in your research.

Much success in your endeavors.

George Clum

At 05:04 PM 11/29/2010, you wrote:

>Hi Dr. Clum,
>
>My name is Hong-Ning Fang, a doctor candidate in Counselor Education
>at Penn State University. I am writing this email to request your
>permission to use the two measurements, Index of Life Stress
>(ILS)
>and Index of Social Support (ISS), that you and Dr. Bin Yang
>designed in 1994 in my dissertation.
>
>My dissertation is to understand if social support can moderate East Asian international students' psychological distress which results from their adjustment stress. When I did the literature review, I read your and Dr. Bin Yang's articles about life stress and social support in an Asian student population and learned about these two measurements. I believe these two measurements are good measurements for my study on learning adjustment stress and social support of East Asian international students in the U.S. because of the original norm group, psychometrics, and the culture sensitive items of these two measurements.
>
>I really hope that I can use these two measurements in my dissertation on East Asian international students' adjustment in the U.S. Please let me know if I can get your permission to use ILS and ISS in my research. If you need more information about my research or if you have any questions, please feel free to contact me at

https://webmail.psu.edu/webmail/blank1e.html#hzf105@psu.edu. I deeply appreciate your help and time and I am looking forward to hearing from you. Thank you very much.
>
>Best wishes,
Hi Hong-Ning,

Thank you for your inquiry and your interest in using the measurements. Unfortunately, after so many years and so many moves, I no longer have the copy of my thesis/dissertation. Have you tried to search at the VA Tech library archive? You should be able to find it there. Also, over the years, some other people also contacted me for the same permission. I assume they were able to find the original measurements.

Sorry that I cannot help you further. You do have my permission to use them for sure.

Good luck!

Bin

From: Hong-Ning Fang [mailto:hzf105@psu.edu]
Sent: Wednesday, January 18, 2012 7:19 AM
To: Bin Yang
Subject: Request for your help (Referred by Dr. Clum)

[Quoted text hidden]
Appendix C

Recruiting Email

Hello! My name is Hong-Ning Fang. I am a doctoral candidate in Counselor Education at Penn State University. I am also an East Asian international student. I am currently conducting research that explores East Asian international students’ adjustment in the United States. I am looking for participants for a research study. If you fit the following criteria, please consider participating in this study:

1. You must be international students from China, Japan, South Korea, or Taiwan who are holding F-1 student visa and working on a degree in the United States.
2. You must be currently enrolled in one of the Big Ten institutions.

*** If you know someone who fits the criteria, please send this email to them! Thank you. ***

If you agree to participate, you will respond to questionnaires that will take approximately 15-25 minutes to complete. Your participation in this study is completely voluntary and you have the right to stop your participation and withdraw from the study at any time without any penalties or consequences. Your participation in this study is anonymous and your responses are confidential, therefore you will not be linked to any publications or presentations from this study. In addition, you will be entered in prize drawings to win one of $25 Amazon gift cards after completing this survey.

If you are interested in participating, please click on the link below:

http://php.scripts.psu.edu/hzf105/Consent.html

This study is for research purposes. If you have any questions or comments about this research, please contact me, Hong-Ning Fang (hzf105@psu.edu), or my advisor, Dr. Jerry Trusty (jgt3@psu.edu).

Thank you very much for your help,

Hong-Ning Fang
Appendix D

Implied Informed Consent Form for Social Science Research

The Pennsylvania State University

Title of Project: The impact of social support on the relation between stress from daily life issues and well-being among East Asian international students in the United States.

Principle Investigator: Hong-Ning Fang  (hzf105@psu.edu)
Advisor: Dr. Jerry Trusty  (jgt3@psu.edu)

1. Purpose of the Study: The purpose of this study is to investigate the impact of social support on the relationship between stress resulting from daily life issues and well-being among East Asian international students in the United States.

2. Procedures: As a participant, you will be asked to complete a demographic questionnaire and three instruments about your experiences in the United States. It may take you approximately 15-25 minutes to complete this survey. Your responses will be kept anonymous.

3. Anonymity/Confidentiality: Your participation in this study is anonymous. Your responses are confidential. The collected data will be used for statistical analysis and no participant will be identified from the pooled data. This study is conducted for research purpose. The information collected from this study may be used in the future research and publications; however, no personally identifiable information will be revealed.

4. Voluntary Participation: Your participation in this study is voluntary, so you can decide whether you would like to take this survey or not. Also, you have the right to stop your participation and withdraw from the study at any time and/or any place without any penalties or consequences. In addition, you may choose to not answer specific questions by clicking “I choose to not answer this question.”

5. Compensation/Cost/Benefits: After completing this survey, you will be entered in prize drawings to win one of $25 Amazon gift cards. Taking part in this study will not cost you any money. Additionally, your responses will help contribute to the field of counseling and higher education and the area of East Asian international students’ adjustment in the United States.

6. Risks: There are no known risks or discomfort associated with participation in this study.

7. Right to Ask Questions: If you have any questions or comments about this research, please contact Hong-Ning Fang at hzf105@psu.edu. Questions or concerns about research participants’ rights may be directed to the Office for Research Protections at Penn State University.

Please click the “continue” button to start to take this survey. By clicking the “continue” button indicates that you have read the informed consent, understand the informed consent and this study, and agree to participate in this study.
Appendix E
Demographic Questionnaire

Please type in or click the answer to which is applicable.

1. Age: _____
2. Gender: Male _____ Female _____ Transgender _____
3. Marital status: Single _____ Married _____ Others _____ (Please specify)
4. Which degree are you working on?
   Bachelor degree _____ Master’s degree _____
   Doctorate _____ Others _____ (Please specify)
5. Major: _____ (Please specify)
6. Length of stay in the United States: _____ year(s) _____ month(s)
7. Country/region of origin: China _____ Hong Kong _____ Japan _____
   Macau _____ South Korea _____
   Taiwan _____ Others __________ (Please specify)
8. Visa type: F-1 Students ______ F-1 Optional Practical Training (OPT) ______
   Others ______ (Please specify)
9. The location of the institution where you are currently enrolled: _____ (Name of the state)
10. From 1 to 4 (1 = very low; 4 = very high), what is your present level of English fluency? _____
11. From 1 to 4 (1 = very uncomfortable; 4 = very comfortable), how comfortable are you communicating in English? _____
12. From 1 to 4 (1 = very rarely; 4 = very frequently), how often do you communicate in English? _____
13. Would you smile at people every time you meet them? Yes _____ No _____
14. Do you always practise what you preach to people? Yes _____ No _____
15. If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be? Yes _____ No _____
16. Would you ever lie to people? Yes _____ No _____
Appendix F

Index of Life Stress

Please indicate how often you feel the way described in each of the following statement. Click one number, which most closely represents your own personal experience living in the U.S., for each statement.

0 = never; 1 = rarely; 2 = sometimes; 3 = often

1. My English embarrasses me when I talk to people.
2. I don't like the religions in the U.S.A.
3. I worry about my academic performance.
4. I worry about my future career in my own country.
5. I can feel racial discrimination toward me from other students.
6. I'm not doing as good as I want to in school.
7. My English makes it hard for me to read articles, books, etc.
8. It's hard for me to develop opposite-sex relationships here.
9. I don't like the ways people treat each other here.
10. I don't like American food.
11. People treat me badly just because I am a foreigner.
12. I owe money to others.
13. I think that people are very selfish here.
14. I don't like the things people do for their entertainment here.
15. I can feel racial discrimination toward me in stores.
16. I worry about whether I will have my future career in the U.S.A.
17. Americans' way of being too direct is uncomfortable to me.
18. I study very hard in order not to disappoint my family.
19. I can feel racial discrimination toward me from professors.
20. I can't express myself well in English.
21. It would be the biggest shame for me if I fail in school.
22. I worry about my financial situation.
23. I don't like American music.
24. I can feel racial discrimination toward me in restaurants.
25. My financial situation influences my academic study.
26. I worry about my future: will I return to my home country or stay in the U.S.A.
27. I haven't become used to enjoying the American holidays.
28. I don't want to return to my home country, but I may have to do so.
29. My English makes it hard for me to understand lectures.
30. I want to go back to my home country in the future, but I may not be able to do so.
31. My financial situation makes my life here very hard.
Appendix G

Index of Social Support

Please indicate how much you feel or how often you act the way described in each of the following statement. Click one number, which most closely represents your own personal experience living in the U.S., for each statement.

\(0 = \text{never}; 1 = \text{rarely}; 2 = \text{sometimes}; 3 = \text{often}\)

1. I have contact with my family.
2. My new friends in the U.S.A. are available when I need them.
3. I have contact with my old friends in my home country.
4. Community activities here mean a lot to me.
5. I am satisfied with student organizations on campus.
6. I trust my family.
7. I have contact with my secondary families (uncles, aunts, etc.).
8. I trust my new friends in the U.S.A.
9. I trust my secondary families (uncles, aunts, etc.).
10. I trust the international student center on campus.
11. My family means a lot to me.
12. I trust my church (or any religious place) here.
13. My secondary families (uncles, aunts, etc.) are available when I need them.
14. I am satisfied with my old friends in my home country.
15. I am satisfied with my family.
16. I have contact with the international student center on campus.
17. My old friends in my home country are available when I need them.
18. I have contact with student organizations on campus.
19. My family is available when I need it.
20. I participate in community activities here.
21. I am satisfied with my new friends in the U.S.A.
22. I trust my old friends in my home country.
23. I have contact with my church (or any religious place) here.
24. My secondary families (uncles, aunts, etc.) mean a lot to me.
25. I trust the people I meet in community activities.
26. My new friends in the U.S.A. mean a lot to me.
27. My church (or any religious place) here means a lot to me.
28. I am satisfied with the international student center on campus.
29. I am satisfied with my secondary families (uncles, aunts, etc.).
30. I am satisfied with my church (or any religious place) here.
31. I have contact with my new friends in the U.S.A.
32. The student organizations on campus are available when I need them.
33. My church (or any religious place) here is available when I need it.
34. People I meet in community activities are available when I need them.
35. Student organizations on campus mean a lot to me.
36. The international student center on campus is available when I need it.
37. My old friends in my home country mean a lot to me.
38. The international student center on campus means a lot to me.
39. I am satisfied with community activities here.
40. I trust student organizations on campus.
Appendix H

Center for Epidemiologic Studies Depression Scale

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 by clicking one number for each statement.

0 = rarely or none of the time (less than 1 day); 1 = some or a little of the time (1-2 days);
2 = occasionally or a moderate amount of time (3-4 days); 3 = most or all of the time (5-7 days)

During the past week...

1. I was bothered by things that usually don’t bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get "going."
VITA

HONG-NING FANG
hongningfang@gmail.com

EDUCATION
Ph.D., Counselor Education, The Pennsylvania State University, University Park, PA, May 2013
M.S., Counseling, Texas A&M University-Commerce, Commerce, TX, August 2006
B.A., Social Work, National Taipei University, Taipei, Taiwan, June 2003

COUNSELING EXPERIENCE
Career Counselor Graduate Assistant, Career Services, The Pennsylvania State University, University Park, PA, August 2009 – May 2011
Counselor (Counseling Practicum), CEDAR Clinic, The Pennsylvania State University, University Park, PA, September 2007 – December 2007
Counselor, Counseling Center, National Taiwan Ocean University, Keelung, Taiwan, March 2007 – June 2007
Counselor (Counseling Internship), Community Counseling and Psychology Clinic, Texas A&M University-Commerce, Commerce, TX, January 2006 – August 2006
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