

THE EFFECTS OF GENDER, ACADEMIC CONCERNS, AND SOCIAL SUPPORT ON  
STRESS FOR INTERNATIONAL STUDENTS

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In Partial Fulfillment

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Doctor of Philosophy

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by

EUN-JUN BANG

Dr. Kim Anderson, Dissertation Supervisor

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

THE EFFECTS OF GENDER, ACADEMIC CONCERNS, AND SOCIAL  
SUPPORT ON STRESS AMONG INTERNATIONAL STUDENTS

presented by Eun-Jun Bang,

a candidate for the degree of doctor of philosophy,

and hereby certify that, in their opinion, it is worthy of acceptance.

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Professor Kim Anderson

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Professor Michael J. Kelly

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Professor John Hodges

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Professor Duane Rudy

This dissertation is dedicated to my loving mother, Jae-Soon Jung, who always taught me to be honest and sincere and who kept me in her prayers at every moment, and to my devoted wife, Su-mi Park, who encouraged and inspired me and made me believe that I could do this.

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	ii
LIST OF ILLUSTRATIONS .....	viii
ABSTRACT .....	ix

### Chapter

1. INTRODUCTION AND RATIONAL FOR STUDY .....	1
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#### The Literature of Factors Contributing to International Students' Stress

Length of Stay

Language and Academic Concerns

Country of Origin

Cultural and Educational Differences

Loss of Social Support

Gender

Statement of Problem

Significance of Study

Research Questions and Hypotheses

Definition of Terms

2. REVIEW OF THEORITICAL FRAMEWORKS .....	17
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#### The Literature of Theoretical Frameworks

Response based Model of Stress

Stimulus based Model of Stress

Transactional Model of Stress

Theory of Gender Roles

Gender Role Expectation in a Global Context

Synopsis of Common Stress Factors for International Students

3. RESEARCH DESIGN.....	40
Variable	
Dependent Variable	
Independent Variables	
Sample	
Instrument	
Procedures and Analysis	
4. FINDINGS .....	51
Demographic Characteristic of the Participants	
Potential Control Variables	
Correlations among Variables	
Associations between Gender and Stress	
Gender and Stress Factors as Predictors of Perceived Stress	
Interactions with Social Support, Gender, and Academic Concerns to Predict Perceived Stress	
5. DISCUSSION.....	69
Discussion of Preliminary Analysis	
Detailed Discussion of Hypotheses	
Hypothesis 1	
Hypothesis 2	
Hypothesis 3	
Implications	
Implications for Social Work Practice	
Implications for Educational and Academic Settings	

Limitations	
Directions for Future Research	
REFERENCES .....	89
APPENDIX	
A. INFORMED CONSENT .....	106
B. SURVEY.....	108
C. SOCIAL PROVISION SCALE .....	110
D. PERCIEVED STRESS SCALE.....	112
VITA .....	114

## LIST OF ILLUSTRATIONS

Figures	Page
1. Theoretical Framework I.....	22
2. Theoretical Framework II.....	22
3. Theoretical Framework III.....	29
4. Theoretical Framework IV.....	29
5. Three Way Interaction V.....	59
6. Three Way Interaction VI.....	61
7. Three Way Interaction VII.....	63
8. Three Way Interaction VIII.....	65

Table	Page
1. Demographic Characteristics of the Participants.....	52
2. Correlations among Variables.....	55
3. Three Way Interaction on Overall Social Support.....	57
4. Three Way Interaction on Reassurance of Worth.....	60
5. Three Way Interaction on Social Integration.....	62
6. Three Way Interaction on Guidance.....	64
7. Three Way Interaction on Attachment.....	66
8. Three Way Interaction Reliable Alliance.....	67
9. Three Way Interaction Opportunity of Nurturance.....	68

# THE EFFECTS OF GENDER, ACADEMIC CONCERNS, AND SOCIAL SUPPORT ON STRESS AMONG INTERNATIONAL STUDENTS

Eun-Jun Bang

Dr. Kim Anderson, Dissertation Supervisor

## ABSTRACT

Thousands of international students come to the United States every year and from the moment they arrive they experience stress from multiple directions. This study focuses on gender differences in stress levels for international students and different types of social support as moderators of that stress. Survey data from a Midwestern university is reviewed regarding general adjustment issues experienced by international students (N = 169). Descriptive statistical and multiple regression analyses are used to test hypotheses. Additionally, gender role theory and a transactional model of stress serve as a framework to approach and understand the issues. The findings reveal that gender, academic concerns, language concerns, and length of stay in the United States are all significant predictors of stress. Furthermore, academic stress is significantly associated with gender and social support. The reassurance of worth, guidance, and social integration subscales of the Social Provision Scale (SPS) as well as the overall sum of the SPS are associated significantly with academic stress for male and female international students independently and differently. Males with academic stress and females without academic stress experience the most benefits from social support whereas females with academic stress experienced no benefit from social support as indicated by the SPS. The results of this study indicate that there are broad implications for individuals who interact with international students on a personal, professional and academic level.

## Chapter I

### *Introduction*

International students go through adjustment concerns similar to American students in order to adapt to their new environment at college. However, at the same time, they also have to adjust to cultural issues and additional stressors (e.g., English as a second language and cultural differences) to reach their academic goals in the United States (Ladd & Ruby, 1999; Lee, 1997; Lin & Yi, 1997; Mori, 2000; Olivas & Li, 2006; Wan, 2001). Unlike American students, international students deal with the difficulty of transitioning to another country (Chen, 1999). A number of empirical studies indicate that living in a country other than one's home country can bring about stress (Hashim, 2003) due to issues such as adjustment to a new language (Chen, 1999), a new culture (Hashim, 2003), and a new education system (Alazzi & Chiodo, 2006) which can negatively impact their mental health (Mori, 2000). In addition, international students face communication and isolation issues as they fear their unknown new environment upon arrival to the United States (Pederson, 1991).

Research shows that failure to adjust to new environments can lead to physical and mental health problems for international students (Pedersen, 1995). The difficulties that international students face can be perceived as harm, threat, or challenge because of their inability to access resources like external help from peers, in order to adjust to their new and challenging situations (Chen, 1999). According to Lazarus's (1993) transactional model of stress, harm is defined as "psychological damage that has already been done to an individual", threat is "one's anticipation of harm that has not yet taken place, but may be imminent", and challenge refers to the "difficult demands that one would feel confident about overcoming by effectively mobilizing and deploying coping resources" (Chen, 1999, p. 50).

A number of research studies identify international students' stressors and different adjustment problems; however, gender differences are often neglected. To better understand how stress affects international students, two theoretical frameworks are used for this study. The main theory to explain international students' stress levels is the transactional model of stress proposed by Lazarus and Folkman (1984) to identify differences in how international students respond to and adjust to stress as well as gender differences in coping methods. As a secondary explanation, gender role theory is used to explain gender differences in stress levels and perceptions of social support as a moderating factor among international students. The theoretical frame work for this study is described in further detail in Chapter 2.

### Factors Contributing to International Students' Stress

To fully understand international students' stress levels, a literature review is needed to investigate factors and variables causing international students' adjustment difficulties. This literature review provides in-depth information about significant predictors of stress among international students.

#### *Length of Stay*

According to Wei et al. (2007), there are several confounding factors affecting an international student's stress levels. One such factor is the student's length of stay in the United States. In 1955, Lysgaard conducted a study to examine cultural adjustment issues for Norwegian Fulbright scholars based on their length of stay in the United States (as cited by Ward et al., 1998). According to his study, scholars who resided in the United States for 6 - 12 months had less stress than scholars who had been in the United States for less than 6 months or more than 18 months. Lysgaard states that the cultural adjustment process in the beginning of a scholar's journey seems to be very easy because of their excitement to be in a new place. However, after a while, students

discover that the adjustment process is not as easy as they thought and thus begin to experience loneliness and stress. After a longer amount of time in the United States, the student begins to adjust to one's new place and acculturate, allowing for more confidence and energy and less stress (as cited by Ward et al, 1998).

In a similar study, Oberg proposes a model of adaptation phases (Oberg, 1960). He explains the first stage as the "honeymoon period" which includes excitement and fascination with being in a new culture. This stage is followed by a stress period in which the student realizes that the life they have is very different than the one they had before causing stress in the adjustment process. The final stage, which is the recovery stage, comes with the realization that the student must adapt to the differences in order to survive (Marx, 2001). As exemplified by this study, an international student's perceived success in terms of adjustment outcomes can be evidenced by length of stay in the United States (Klinerberg & Hull, 1979; Oberg, 1960).

Shi and Brown (2000) conducted a study with 112 Taiwanese international students to predict their acculturation levels by using demographic variables such as age, gender and length of residency in the United States. They found that length of time within the U.S. was a significant predictor of acculturation level ( $F(2, 104)=11.67, p < .0001$ ). In their findings, students who stayed in the United States for a longer amount of time showed more acculturation and thus experienced less stress. However, in contrast to Shi and Brown's (2000) findings, Wei et al., (2007) found that international students who experience high maladaptive perfectionism (i.e., the need to excel in all of their work) actually experience more stress the longer they remain in the United States. The stress from maladaptive perfectionism, as well as the belief that international students who have remained in the United States for longer lengths of stay should perform better in academic settings, can lead to depression.

### *Language and Academic Concerns*

Another common stressor for international students is English language proficiency (Duru & Poyrazli, 2007; Reynolds & Constantine, 2007). International students often face language difficulties which can create stress, anxiety and other associated negative psychological impacts (Barratt & Huba, 1994; Chen, 1999; Hayes & Lin, 1994; Stoyhoff, 1997; Yeh & Inose, 2003). The negative effects of language difficulties seem to connect directly with academic concerns or problems. In academic settings, international students deal with written and verbal language difficulties thus making daily educational interactions stressful and potentially threatening (Hashim, 2003; Olivas & Li, 2006; Poyrazli & Grahame, 2007; Reynolds & Constantine, 2007). For example, Pan, Wong, Joubert and Wan (2007) compared the predictive effect of acculturative stressors among Chinese international students in Australia and Hong Kong. They found that language ability was significantly correlated with academic performance ( $r_A=0.55$ ,  $p=0.000$ ;  $r_{HK}=0.44$ ,  $p=0.00$ ), social interaction ( $r_A=0.68$ ,  $p=0.000$ ;  $r_{HK}=0.61$ ,  $p=0.00$ ), and cultural difference ( $r_A=0.68$ ,  $p=0.000$ ;  $r_{HK}=0.61$ ,  $p=0.00$ ). This study's findings highlight how "language deficiency not only influences the academic work of international students but also affects their social life and how well they understand or integrate into the host culture" (p.745).

Poor language skills limit international students' social and educational interactions with American students (Alazzi & Chiodo, 2006; Hayes & Lin, 1994). This can create social isolation and loneliness (Alazzi & Choido, 2006). Moreover, Chen (1999) argues that poor language skills not only limit interactions with other people, possibly leading international students to feel isolated, but can also create self-doubt and a lack of confidence in finishing their goals in the new environment. Students who are proficient in English are more capable of reaching out to professors and other students for help in academic settings. Consequently, students who face language barriers

may not be able to seek out academic support and, thus, may not be able to succeed in their academic goals.

Academic concerns are related to and influence international students' adjustment to a new environment. Students who are struggling with adjusting to a new educational system can feel lost which can feel harmful and/or threatening to them. On the other hand, international students who perceive themselves to be successful in their academic goals are more likely to feel confident in their adjustment to a new environment (Chen, 1999).

### *Country-of-Origin*

International students' country-of-origin affects their adjustment to new environments. Bonazzo and Wong (2007) highlight how international students who have different racial and cultural backgrounds tend to have higher stress than European international students who have a similar cultural and racial background with American students. Consistent with Bonazzo and Wong's findings, Klomegah (2006) also identifies geographical similarities between country-of-origin and the country in which students are studying plays a large part in adjustment and stress levels of international students. International students from geographic areas that are not similar to their host country have more difficulties adjusting to a new environment compared to those students from a geographically similar area (Klomegah, 2006). For instance, European international students in the United States adjust quicker than students from regions that are significantly less similar. Li and Kaye (1998) also found that European international students seem to have less difficulty adjusting to a new environment than international students from Asia and other developing countries.

Poyrazli and Grahame (2007) suggest that students from a more collectivist culture, such as Asian countries, may experience more stress than students from a more individualistic culture, such as European countries. Yeh and Inose (2003) found that international students from Europe

experience less distress than international students from non-European countries. Yeh and Inose explain how European students face less discrimination and racism because of their racial identity than international students from Asian, African, and Latin/Central American countries. In addition, since many American cultural values are based on White, European norms (Carter, 1991), European international students may have an easier time adjusting and interacting with other people because of similar cultural systems.

### *Cultural and Educational Differences*

Another stressor, culture shock, is defined by the feelings of loss and confusion resulting from contact with an unfamiliar culture and environment and the absence of familiar social and cultural norms (Hashim, 2003). Dillard and Chisolm (1983) address how international students face an immense amount of cultural shock while they are staying in the United States as a student. Contrary to the experiences of American students, international students must adjust to different cultural norms, means of communication, social values, and the United States educational system. Wissman and Furnmn (1987) suggest that culture shock is the result of an uncontrollable situation such as not understanding and predicting the behavior of others. As Hayes & Lin (1994) describe, these cultural issues lead to a lack of interaction between American and international students creating social isolation and a sense of social loss among international students (as cited by Chen, 1999). Social isolation, therefore, is related to increased stress among international students (Chen, 1999).

Several researchers have shown that different educational systems may affect stress (Day & Hajj, 1986). Classroom involvement often includes role expectations that are quite different from international students' academic experiences in their home country which can negatively impact their academic performance (Wan, Chapman & Biggs, 1992). For instance, international students'

learning styles from Asian regions include a dominant teacher status, an unquestioning attitude, and passive classroom interactions which are quite different from Western countries where teaching styles are proactive and often involve questioning, criticizing, arguing, debating and persuading (Atkinson & Ramanathan, 1995; Ferris & Tagg, 1996; Johnson, 1988; Saville-Troike, 1984). Some cultures require students to be quite passive; the teacher is an absolute authority who cannot be challenged (Alazzi & Chiodo, 2006). For this reason, students in these cultures might follow an authority figure, showing respect in their passivity as opposed to arguing or debating with their teachers. As a result of this passive behavior, faculty members in the United States might perceive international students as immature, inactive, or socially dysfunctional if they do not participate in class the way that American students do. In addition, different participation skills that are emphasized in Western countries like oral presentations, study skills, and test taking skills may not be emphasized in Asian countries leading to a discrepancy of skills for some international students in the United States (White, Brown, & Suddick, 1983). Meleis (1982) describes the differences between American and Arab educational systems in regard to elective courses. American students often have opportunities to take any elective courses they may want to take. However, students from Arab countries are accustomed to structured educational systems in which there are no opportunities to make decisions regarding their class schedule (Meleis, 1982).

### *Loss of Social Support*

Social support is a significant factor contributing to the emotional well-being of international students (Hayes & Lin, 1994; Mallinckrodt & Leong, 1992; Pedersen, 1991; Sandhu, 1995). Since they are away from their home country, many international students do not get appropriate social support which can affect their self-esteem, sense of belonging, and emotional state (Mallinckrodt & Leong, 1992; Pedersen, 1991). For this reason, many international students

experience feelings of loss which increases a sense of isolation in their new culture (Pedersen, 1994). This feeling of isolation can quickly become an obstacle in accessing social support (Poyrazli & Grahame, 2007). In order to have social support, students must seek out interaction with other people. Because of potential language concerns, international students may not be able to reach out to other students, thus limiting their social interaction and support.

English language proficiency and social support are identified as predictors of international students' success over the years (Poyrazli et al., 2002; Poyrazli et al., 2004). Problems with English language proficiency can lead to anxiety and stress related to lack of social integration. For instance, difficulty in speaking English may bring uncomfortable interpersonal distress in interactions with American students. As a result, these difficult interactions may limit the ability to get peer support which can make international students lack a sense of belonging. The lack of social support in everyday interactions can be damaging to international students' cultural adjustment (Reynolds & Constantine, 2007). Chen, Mallinckrodt, & Mobley (2003) conducted a study on international students to analyze the effects of social attachment. They found that international students who feel a constant connection to their new environment experienced less stressful life events. Their study also found that those international students with a connection to their new environment perceived positive social support from people from their country and American students.

Atri, Sharma, and Cottrell (2007) address the role of social support and acculturation as predictors of mental health among international students. Their findings highlight how social support and a sense of belonging are important predictors of mental health. For instance, an individual with emotional-social support tends to have good mental health. International students who are able to develop relationships with American students as well as fostering positive

relationships with other students from their home country tend to have a more positive experience during their stay in the United States than those who do not (Klomegah, 2006).

Research shows that social support is absolutely critical to an international student's success in a new country; therefore, it is important to determine the ways in which international students cope with a loss of social support and/or maintain social support through their acculturation process (Berry, 1997; Mallinkrodt & Leong, 1992). Other studies also indicate that social support is one of the most influential factors in helping international students overcome a stressful situation (Mallinkrodt & Leong, 1992; Pierce, Sarason, & Sarason, 1996). It is possible; therefore, that social support is a predictor of international students' adjustment to stressors (William-Eustace, 2007).

### *Gender*

Gender is an influential factor of stress on international students. Misra and Castillo (2004) investigated reactions to stressors among 249 American students and 143 international students. They found a significant difference between male and female students' reactions to stress: female students had stronger reactions, generally, to stress than male students did. Also, Beena & Poduval (1992) highlight a significant effect of sex differences on stress levels and that females tend to perceive more stress than males. Li and Kaye (1998) conducted a study with 155 international students in order to investigate international students' concerns and problems relating to stress. Their findings underscore how female international students feel more isolated than male international students. According to Misra et al, (as cited by Hashim & Zhiliang, 2003) females generally have more of a desire to compete, to be noticed and loved, and to seek perfect solutions. These characteristics may lead to higher levels of anxiety and stress for them in comparison to males. Even though school related stress occurs for both males and females, women tend to have more school related stress due to gender role socialization and increased role strain (Mallinckrodt &

Leong, 1992). In other words, women seem to face more stress due to role strain (as a mother, wife, student, etc.) not because of biological differences between males and females, but because of their gender role socialization (Been & Pouval, 1992).

Mallinckrodt and Leong's (1992) indicate women have more stress from role strain because unlike males, females have a more extended role as wife, mother and student. It is not surprising, then, that females experience higher amounts of stress than their male counterparts given the constraints and demands of performing in multiple roles as well as their lack of support and feelings of isolation (Mallinckrodt & Leong, 1992). Besides the stressors of balancing multiple roles, Narsrin (as cited by Hashim, 2003) found additional stressors affecting female international students from non-European countries. These include English language ability, discrimination, and host culture students' ignorance regarding other cultures.

Research indicates that gender role expectations play a major role in the adjustment process (Berry, 1997). For example, female international students from countries in which women are more limited in terms of their personal and professional freedoms than in their host country are more likely to have greater adjustment difficulties (Julius, 1997). Socialization practice within a particular culture influences the process of gender role socialization and, consequently, has made women more vulnerable to mental health problems. According to Talbani and Hasnali (2000), "socialization is a process of regulating behavior and educating children into procedures for social interaction based on core cultural values" (p. 616). This socialization process leads to the development of gendered behaviors and beliefs that contribute to gender differences in terms of mental health (Hitchcock, 2006).

Gender also affects factors that can lead to stress such as language ability and academic performance. Some studies have indicated that women experience more stress and anxiety regarding

language concerns. For example, Pappamihiel (2001) conducted a study on 178 Mexican international middle school students in order to investigate anxiety caused by English language use by using the English Language Anxiety Scale (ELAS). Her findings highlight the fact that female students are more concerned with language difficulties than their male counterparts. This indicates that female students tend to have more stress and anxiety on language issues. Academic concerns are also found to be more stress inducing for females than males. Misra et al., (2000) conducted a study with 249 students in order to compare stress level differences in regard to academic concerns between male and female students. She found that female students showed significantly higher stress than their male counterparts.

On the other hand, there is a social expectation in some cultures that males should perform better than females on certain tasks. For this reason, male international students may experience more stress than their female counterparts. As Liu & Iwamoto (2006) explain, Asian American men have certain social expectations including that they must be in charge and in power on most tasks. In the real world, the social expectations required of Asian American men include unrealistic characteristics, such as being overachievers (Liu & Iwamoto, 2006) which can be impossible to obtain. All of these examples regarding the effects of gender on stress indicate that there might be unique differences in stress regarding language issues and academic concerns among male and female international students.

#### Statement of Problem

Several studies identify the common stressors international students experience; however, these studies focus on general factors such as language barriers (Chen, 1999; Duru & Poyrazli, 2007; Hayes & Lin, 1994; Lin & Yi, 1997), cultural differences (Mallinckrodt & Leong, 1992), and adjustment to a new educational system (Misra & Castill, 2004). Few studies investigate the

particular influence of gender on international students' stress levels and academic-related stress from a gender role theory approach and how these differences in gender affect social support. The studies that do focus on gender present a very general analysis of the problem which warrants deeper explanation of the effects of gender. For this reason, this study investigates the multiple ways in which gender can influence coping strategies and, consequently, stress levels. Further, this study provides a cultural context for gender role expectations that allows for a more complete understanding of the issues of stress affecting international students. Additionally, few studies focus on the effects of social support and its moderation of stress levels based on participants' gender. Consequently, this study aims to investigate the ways that social support may act as a moderating factor for academic stress and how this social support varies in effectiveness based on gender.

#### Significance of Study

International students are the fastest growing population on American college campuses over the last few decades (Lamkin, 2000). According to the *Open Doors Report* (2007), which provides comprehensive information about international students in the United States, enrollment of international students in the United States increased by 3% for a total of 582,984 during the 2006-2007 academic year. As might be expected, this increase in the international student population calls for educators, counselors and social workers to be more culturally competent in order to help this population (Wan, 2001). Fortunately to help these groups, numerous studies have been done on international students' adjustment and other challenging issues in a new environment to help these specific groups (Wei et al., 2007). However, these studies mainly focus on the psychological aspects of the adjustment process. Consequently, this study explores the social aspects of international students' acculturation process from a person-in-environment perspective in order to

highlight and understand the effects of gender and academic concerns on international students' stress levels. Further, this study explores the effects of different social support systems as a moderating factor of academic stress based on gender.

By focusing on gender, this study may help professionals in student affairs to address stressors that may uniquely influence male and female students. In addition, colleges and universities may be able to provide specific programs in order to address and reduce the gendered stressors experienced by international students. With knowledge of the effects of gender role socialization and expectations in international students' countries-of-origin, school counselors may then approach international students with culturally competent knowledge. Understanding the ways in which length of stay can affect stress levels of international students over the course of time allows for helping professionals, including social workers, to develop appropriate and effective plans for long-term stress management to help them succeed in their goals. Additionally, understanding academic concerns for international students helps social workers and educators to address these concerns and provide resources to help alleviate the stress caused by language and academic concerns. By providing information about the effects of social support as a moderating factor of stress, social workers, school counselors, and educational administrators then may provide the right fit of social support-based factors influencing stress such as gender and academic problems. The information found in this study allows helping professionals and school counselors to develop appropriate programs or intervention plans to provide support for international students and guide them while they are staying in the United States. Furthermore, the findings of this study may help colleges and universities to work more effectively with international students and to understand particular stressors and types of social support they need in attempting to deal with general adjustment issues.

## Research Questions

1. Do male and female international students have different levels of stress?
2. If there are differences in perceptions of stress between males and females, are there any interactions between gender and the stress factors (language capacity, academic concerns) affecting international students?
3. How does the interaction between gender and social support (i.e., the Social Provisions Scale) moderate stress caused by academic concerns?

## Research Hypotheses

Based on the transactional model of stress theory and gender role theory within a global context, this study investigates what factors influence stress levels and how those factors interact with gender. In order to examine the proposed research questions of this study, the following hypotheses include:

- *Hypothesis 1:* Gender has a significant influence on stress factors affecting international students. Therefore, female international students will report significantly *higher* stress levels than male international students.
- *Hypothesis 2:* Gender plays an influential role in the interaction between perceived stress of international students and the stress factors most commonly affecting international students.
  - There is a significant interaction between gender and academic concern.
    - Female international students who report higher levels of academic concerns will interact with gender to predict significantly *higher* stress scores.
  - There is a significant interaction between gender and language concern.
    - Female international students who report higher levels of language concerns will interact with gender to predict significantly *higher* stress scores.

- *Hypothesis 3*: Social support, gender, and academic concerns will interact to predict levels of perceived stress for international students.
  - Male international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Reassurance of Worth Subscale.
  - Male international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Opportunity for Nurturance Subscale.
  - Female international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Guidance Subscale.
  - Female international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Social Integration Subscale.
  - Female international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Attachment Subscale.
  - Female international students who report academic concerns will have *lower* levels of stress moderated by high scores on the Reliable Alliance Subscale.

#### Definition of Terms

*Adjustment*: Psychological and emotional effort to maintain normalcy and consistency in the face of changes in one's environment.

*International student*: A student who comes from another country to study in the United States.

*Social Support*: The emotional and physical support received from others. In the context of this study, social support is viewed primarily as a moderator of stress.

*Stress*: Stress is a behavioral, physical, and cognitive outcome occurring when a person perceives an imbalance between a harmful or threatening situation and his/her ability to cope with that situation.

*Gender role:* A culturally constructed idea or expectation of how men and women should act, think, and appear in a given situation.

### Summary

Chapter one focused on general stress factors affecting international students as well as the purpose of this study. Specifically, this chapter highlighted the importance of focusing on gender as a mitigating factor in international students' experiences with stress as well as social provision as a mediating factor of stress. Chapter two includes a literature review of previous research on international students' adjustment issues and introduces a conceptual framework from which to approach these issues.

## Chapter II

### *Literature Review*

International students living in a new country with a different set of cultural values and norms are, consequently, constantly adapting to their new environment (Mori, 2000). This necessary cultural adjustment is often a major source of stress for international students (Chen, 1999). Several empirical studies identify the factors related to international student stressors; however, few have addressed differences by gender. International students face multiple stressors including language barriers, social isolation and integration, culture shock, and academic concerns. These stressors can be and often are experienced differently by men and women (Hashim, 2003).

Most students experience stress when they begin their college career and in the case of students attending a university outside of their home country, stressors may intensify resulting in mental health concerns (McCabe, 2005). For example, high levels of stress, common among international students, can increase psychological symptoms such as depression and anxiety (Chen, 1999). Despite the fact that international students tend to experience more adjustment difficulties and psychological stress than the overall student population does in general, mental health services are significantly underused by this population (Nilsson, Berkel, Flores, & Lucas, 2004).

In order to further investigate these stressors and their outcomes, a review of existing studies on international students' stress (including a transactional stress-based theoretical framework as well as a gender-role based theoretical framework) is necessary. This literature review describes a number of stressors experienced by international students in the United States.

### Theoretical Framework

Two theoretical frameworks are used for this study. As the main theory to explain international students' stress, the transactional theory provides information about the relationship

between international students and their environment which leads to stress. Gender role theory, as a secondary explanation of the gender differences in international students' stress, explains how gender role expectations might cause different stress levels.

### *Models of Stress*

The concept of stress is found in many different research fields such as with the biological and social sciences as it can be both helpful and harmful to people. For example, despite the fact that stress appeals to people as a negative concept, stress is not inherently negative (Selye, 1976). According to Selye (1976), stress reactions can also act as internal motivations and, in fact, a healthy amount of stress can help personal growth and development. Stress is defined and used in unique ways by various disciplines which conceive stress as a dependent variable, an independent variable, or an interaction variable. Because of these differences in understandings of stress, it is necessary to approach stress from a range of models. In this section, three models of stress are selected including: the response-based model of stress, the stimulus-based model of stress, and the transactional model of stress.

### *Response-Based Model of Stress*

The response-based model of stress, originating from the medical field, defines stress as the way an individual responds to stressors – their response pattern, physical and/or psychological response, or negative affect (Cooper, Dewe, & O'Driscoll, 2001). In essence, the response-based model of stress approaches stress as a dependent variable.

Hans Selye, one of the researchers to approach stress from a response-based perspective, saw stress as a “non-specific response of the body to any demands made upon it” (Selye, 1956, p. 27). Selye viewed stress as an individual's response to environmental demands. In order to explain the response-based model of stress and identify individuals' physiological reactions to stress, he

developed the General Adaptation Syndrome (GAS) model. The GAS model includes three stages to the process of stress reaction: alarm, resistance, and exhaustion.

In the alarm phase, the body perceives the situation and activates fight-or-flight as a natural response to a potentially threatening situation. In the resistance phase the body tries to protect itself from a threatening situation by attempting to return to a normal state by adapting to the stressor. The exhaustion stage (sometimes resulting in disease or death) is a result of bodily reactions to stress occurring when the individual perceives the environment to be exceeding internal resources (Cooper, Dewe, & O'Driscoll, 2001).

Although many researchers criticize Selye's theory as lacking in-depth conceptions about stress, the GAS model and the response-based model of stress are crucial in developing a broader definition and understanding of stress from the biological perspective (Cox, 1985). Moreover, the work of Selye and others helps to move the field of stress towards a more comprehensive understanding of stress by creating a base-line understanding of our reactions to stress. Although additional research has been conducted since the introduction of Selye's GAS model of stress, it is still very useful in predicting human psychological illness (Cooper, Dewe, & O'Driscoll, 2001) and has undoubtedly made an important and lasting impact on stress research (Stokes & Kite, 1994).

Generally speaking, the response-based model focuses heavily on individuals' responses while paying little attention to the environment or stimulus causing that response (Rout & Rout, 2002). In response to these criticisms, researchers attempted to develop an alternative way to approach stress which, in contrast to the response-based model, focused on identifying stressful situations and/or stimulus as the focus of research (Cooper, Dewe, & O'Driscoll, 2001). This idea was developed into the stimulus-based model of stress.

### *Stimulus-based Model of Stress*

The stimulus-based approach was a primary focus of stress research during the 1970s and early 1980s (Sutton, Baum, & Johnston, 2004). The main purpose of the stimulus-based model of stress was to identify original sources of stress (Goodell, Wolfe, & Rogers, 1986). This model views environmental conditions such as social atmosphere, working environment, and relationships as stimuli.

Cox (1978) referenced Hooke's Law of Elasticity from the field of engineering and used metal as an example to describe this model. According to Hooke's Law of Elasticity, metal shapes can be changed when a heavy weight is put on the metal. The metal returns to its original shape if the material is not very heavy, if the metal can resist the weight, and if the strain on the metal does not exceed its "elastic limit". However, the metal shape is changed and permanent damage occurs when the heavy material stays continually and exceeds the "elastic limit" of the metal.

Based on these examples, Cox tried to explain the relationship between individuals and their environments. Even though stress may affect an individual, permanent damage does not occur until that stressor pushes an individual past his/her ability to tolerate it. This model, consequently, views stress as an independent variable and is interested in finding what causes human stress rather than how individuals' respond (Cox, 1978).

Yet, individuals have different perceptions and reactions to stress even though individuals may face the same situation in their lives (Cooper, Dewe, & O'Driscoll, 2001). For example, a single situation may cause stress in one individual while, at the same time, cause depression or stimulation in other individuals. Even though this approach helps to identify stressors for an individual, it is not the best method to approach due to the model's limitations of not addressing individual differences (Cox, 1978; Sutton, Baum, & Johnston, 2004). Consequently, a

comprehensive model of stress is necessary to account for the cognitive and psychological relationship between the individual and his/her environment (Cox, 1978; Cooper, Dewe, & O'Driscoll, 2001).

### *Transactional Model of Stress*

Contrary to other theories of stress, the transactional model of stress views the relationship between the person and environment as a reciprocal relationship (Lazarus & Folkman, 1998). In their approach to transactional theory, Lazarus & Folkman (1984) suggest that stress occurs when individuals are not able to find resources to deal with challenging life events. Stress can also occur when a person perceives an imbalance when there are limited internal resources to respond to higher demands (Miller & McCool, 2003).

Lazarus and Folkman (1984) explain stress as a result of cognitive appraisals of new environmental stressors. When individuals are not able to find enough personal resources to deal with these stressors, they perceive them as harmful, threatening, or challenging. Thus, stress is a behavioral, physical, and cognitive outcome occurring when a person perceives an imbalance between their ability to adjust to the demands of new environments and the limited resources available to them to respond to those demands (Aldwin, 1994; Cohen, Evans, Stokols, & Krantz, 1986; Evans & Cohen, 1987; Lazarus, 1966; Lazarus & Folkman, 1984; Lazarus & Launier, 1978). In other words, the stress level of a situation is dependent on an individual's judgment of that situation (Lazarus, 1966). This judgment process consists of two appraisals. The primary appraisal occurs when an individual identifies a situation as harmful, threatening or challenging (see Figure 1 on pg. 22). The secondary appraisal occurs when an individual assesses their available resources and ability to deal with a given situation (Folkman, 1984).

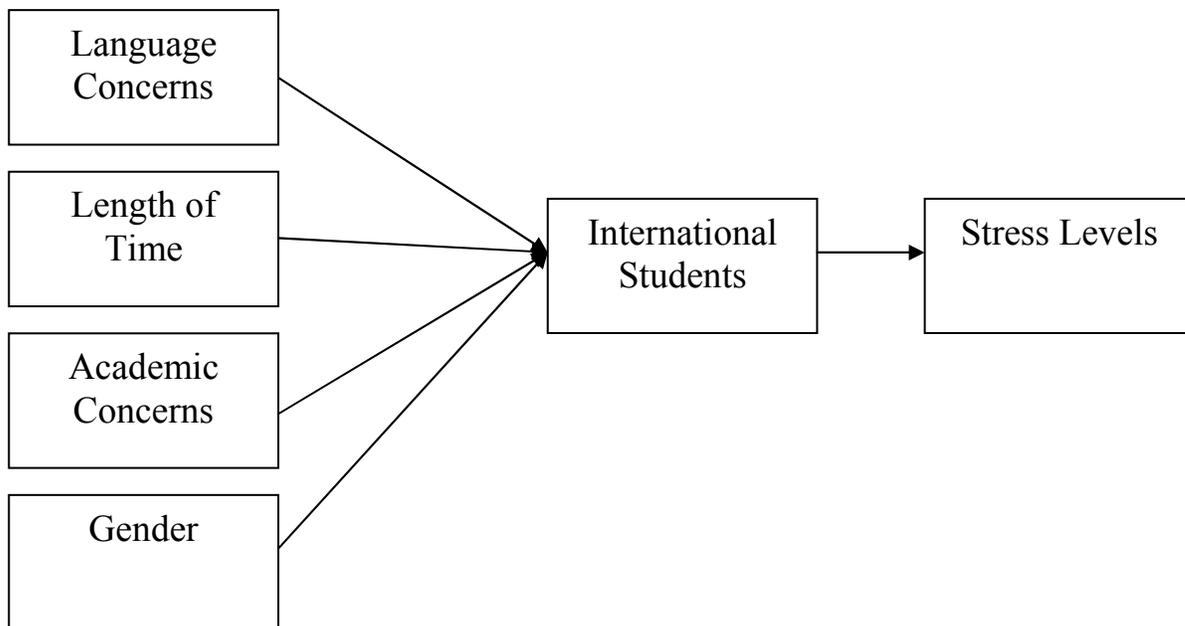


Figure 1. Transactional Model of Stress for International Students

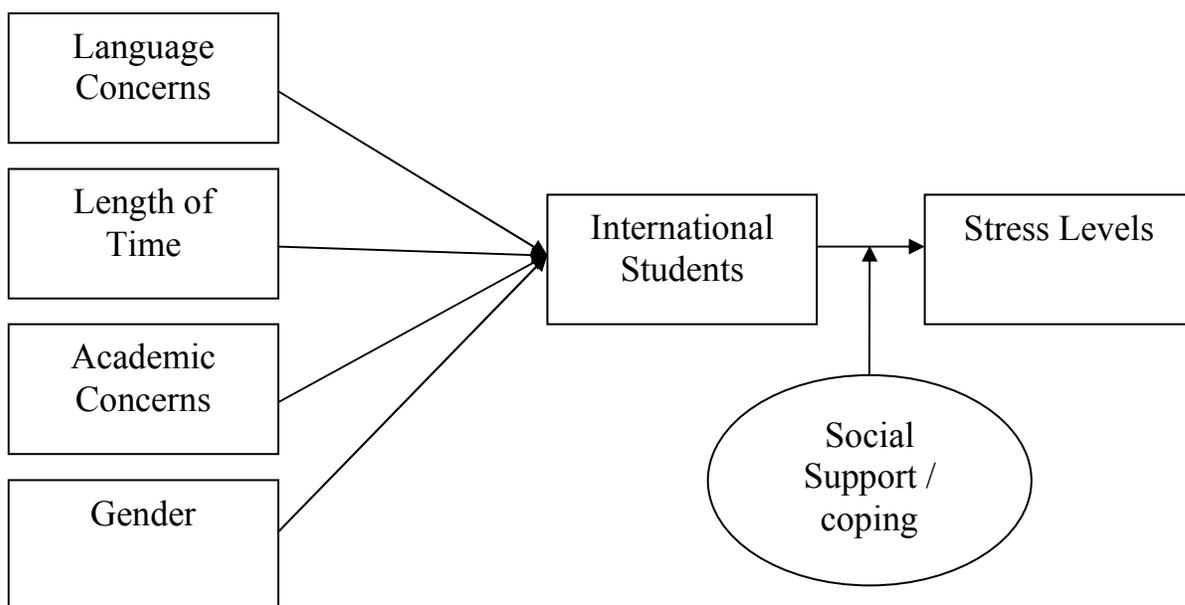


Figure 2. Transactional Model of Stress for International Students with Coping Method

Secondary appraisal is an individual's assessment of available coping methods and their effectiveness in a given situation (see Figure 2). Lazarus and Folkman (1984) describe two coping methods: problem-focused coping and emotion-focused coping. Problem-focused coping is applied when an individual perceives their situation as changeable. This coping style involves cognitive and behavioral efforts to fix the problem at hand. Emotion-focused coping is applied when an individual judges their situation as unchangeable. This coping style involves maintaining and regulating internal responses to a particular stressor. In other words, problem-focused coping can be seen as dealing with the *situation* and emotion-focused coping can be seen as dealing with the *self*. Based on a socialization model, gender role expectations and gender stereotypes may influence men and women's responses to stress and the selection of coping method in managing their stress (Crocker & Graham, 1995). Lazarus and Folkman (1984) found that males tend to use more problem-focused coping methods whereas females tend to use more emotional-focused coping methods. There are two hypotheses as to why men and women tend to have different stress coping methods. The first includes the socialization hypothesis and suggests that men and women are taught that they should react to stressful situations in different ways based on gender role expectations and sex role stereotypes (Ptacek et al., 1992). For example, females are taught to focus on their emotions and to utilize social support from others in order to deal with stressful situations. However, men are taught to put less weight on their emotional experience and to put more emphasis onto taking outward action to deal with stressful situations (Mainero, 1986; Pearlin & Schooler, 1978; Rosario, Shinn, Morch, & Huckabee, 1988).

Yoo (2001) conducted a quantitative study using a MANOVA analysis with 532 (200 females, 332 males) Korean competitive athletes. Yoo's findings highlight how male participants scored higher on problem-focused coping strategies whereas females scored higher on emotion-

focused coping strategies. Yoo explains how the results are consistent with previous literature regarding gender role socialization and coping strategies. This study underscores how men “are perceived as more active, dominant, and willing to take action towards problems, whereas females are perceived as more self-restrained, yielding, and patient with adversity” (Yoo, 2001, p. 301).

Renk and Creasey (2003) conducted a study with 169 young adults using a two-way ANOVA analysis and found similar results. The participants included 92 females and 77 males and were primarily Caucasian, African American, Asian American. Female participants were significantly more likely to utilize emotion-focused coping strategies than male participants. Renk and Creasey (2003) suggest that males are influenced by their gender role expectations in their reluctance to use emotion-focused coping strategies.

Compared to the previous studies mentioned, a third study by Dyson and Renk (2006) found that there were very few differences in coping methods used by males and females of different ethnic backgrounds. Dyson and Renk conducted their study on 74 college freshmen using a MANOVA analysis to examine gender differences in coping strategies. The participants in this study included 23 males and 51 females and were primarily of Caucasian, African American, Asian American and Hispanic American decent. They found no significant differences between males and females reported use of problem-focused and emotion-focused coping methods. Dyson and Renk (2006) suggest that the results may be due to changing gender role expectations leading for more similar roles between men and women.

The second hypothesis as to why men and women utilize different coping methods is structural (i.e., situational). According to Lazarus and Folkman (1980) and Billings and Moos (1981), the coping methods used by men and women are based on the stressful situations themselves. The gender aspect comes into play in that men may find themselves in situations that

call for a problem-focused coping mechanism and women may not (Ptacek et al., 1992). Ptacek et al. (1992) suggests that neither gender role socialization nor the structural factors of a stressful situation happen separate from one another; both are at play in any stressful situation. In other words, various coping methods are not utilized solely because of a gender difference, but also because of the nature of the stressful situation itself (Ptacek, et al., 1992).

Because of the specific and unique situations of international students, it is crucial to understand not only an individual's response to stress or the environment causing that stress, but the reciprocal relationship between an individual and his/her environment. Lazarus and Folkman (1984) describe stress as a constantly changing state and as a complex process including appraisals of stress and coping strategies. Further, because men and women experience stress differently based on gender role expectations, it is important to determine their different coping methods to effectively help international students adjust to a new culture. For these reasons, the transactional model of stress is the best model to explain and analyze the stress and stressors of international students in the United States as well as to provide information to help them manage their stress. This model allows researchers to define individual differences in perceptions of stress and of environmental issues as well as the gender difference in coping methods. The transactional model accounts for the changing state of being an international student. The transactional model of stress also helps to define the relationship between international students and their new environment and the creation of stress within this context. For example, this model gives insight as to how international students change their perception of stressors based on their length of stay in the United States.

From the perspective of the transactional model of stress, there are several tangible stressors that affect international students on a regular basis. Stress factors commonly affecting international students include: length of stay, language/academic concerns, country-of-origin, cultural and

educational differences. When international students go to a new country, they often perceive the environment to be threatening, harmful, and/or challenging (Chen, 1999). Further, they may experience language concerns that can translate into difficulties in the classroom, daily life, and social interactions (Chen, 1999; Yeh & Inose, 2003). International students may perceive their new environments and experiences differently depending on their country-of-origin and may have difficulties acculturating to the United States depending on the similarities between their home culture and the new one (Bonazzo & Wong, 2007). Analyzing and discussing these stressors through the vantage point of the transactional model of stress helps researchers to determine exactly what stressors are, how they come about, and how international students can cope with these particular stressors.

### Theory of Gender Roles

To further explain the gender differences in stress levels and perceptions of different types of social support, gender role theory is used to provide in-depth information regarding male and female international students' experiences with stress.

#### *Gender Role Theory*

Gender role theory may explain how men and women perceive their stress differently. Gender roles are shared cultural expectations that are applied to individuals based entirely on their perceived gender. Gender, which is a socially constructed understanding of masculinity and femininity, is distinguished from sex, which is a biological trait (Tresemer, 1975). According to gender role theory, through the process of socialization, individuals learn different behaviors, attitudes, and values for men and women. Families, schools, and peer groups teach individuals ways of interacting based on gender role expectations (Gustafson, 1998). Gender role theory suggests that individuals internalize these culturally constructed gender roles due to social pressures to conform

to a gender role schema consistent with the gender presentation (Kidder, 2002). This theory goes on to suggest that people tend to and are expected to fulfill these gender role expectations within society (Eagly, Karau, & Makhijani, 1995). These socially constructed ideas and behaviors create a gender role schema which men and women are expected to follow.

Gender role theory describes traditional assumptions about gender roles and expected behaviors for men and women in their given social context. Gender role theory explains that women are expected to be emotionally expressive, in tune with their own and others' feelings, have changing emotional states (Shihadeh, 1991), and be dependent, nurturing, kind, and submissive (Worrell & Remer, 1992). This tendency to be more emotionally intense can be attributed to the prescribed gender role expectations (Grossman & Wood, 1993). Men, on the other hand, are described as being aggressive, action-oriented, and ambitious (Kidder, 2002). Men and women tend to play different roles in domestic and work forces. Men are expected to be a main provider for the family, whereas women are expected to act as the caregiver for the family (Foely, Kidder, & Powell, 2002; Eagly, 1987).

Helgeson (1994) explains that women care and provide beneficial social support for others. At the same time, because of this gender role expectation, women can experience increased stress as a result of providing support for others before themselves. Ahnlund and Frodi (1996) examined gender and depression among people in the Swedish health care system. They found that men experience depression when their ego and/or self-esteem are threatened. On the other hand, women experience depression when their social support network is threatened (Ahnlund & Frodi, 1996). Whitely (1984) explains that women feel extreme stress often resulting in depression due to issues of social isolation. Ogle, Maier-Katkin, and Bernac (1995) found that men externalize their depression as anger whereas women may internalize and process their depression as guilt and hurt

(Ogle, Maier-Katkin, & Bernarc 1995). Further, women who perform traditional gender roles may experience depression and anxiety (Ogle, Maier-Katkin, & Bernarc 1995) due to their focus on others and the tendency to take on others' stress (Helgeson 1994).

This theory provides a framework for understanding gender differences in stress levels among international students. For example, Ngo & Tsang (1998) explain that men and women can have varying responses to and perceptions of the same situation (Ragins, Townsend, & Mattis, 1988). Harris (2004) suggests that women seem to have more difficulties adjusting to a new working environment. There are a myriad of ways that gender can affect individuals' experiences and, thus, gender role theory is useful in explaining how male and female international students' social roles and behaviors might affect or cause increased stress levels.

According to the aforementioned literature, men and women perceive and are perceived by the world differently. Women tend to seek more outside help and to be more socially oriented in their relationships and coping methods (Hasim, 2003). International students have their own culturally defined perception of gender roles and expectations which may be different than those of their host country. Because of the effects that these gender roles and expectations may have on an individual's experiences within the world, gender is viewed as a potential stressor for international students. Further, an individual's stress in relation to loss of social support as well as the types of social support that are effective with an individual may be highly influenced by gender role expectations. For these reasons, it is important to view these stressors through the lens of gender role theory because males and females have different perceptions of stress (Berry, 1997); analyzing these stressors through gender role theory helps researchers to understand how cultural gender role expectations affect international students' thoughts, perceptions, and relationships with others.

As a socially constructed element of identity, it is important to analyze the differences regarding gender role expectations among the country-of-origin represented in this study sample. Providing gender role theory in a global context helps to develop a deeper understanding of the unique cultural bases for gender role expectations that may influence stress levels for male and female international students staying in the United States as well as their perceptions of the social support they might need based on gender (see Figures 3 and 4 on pg. 29).

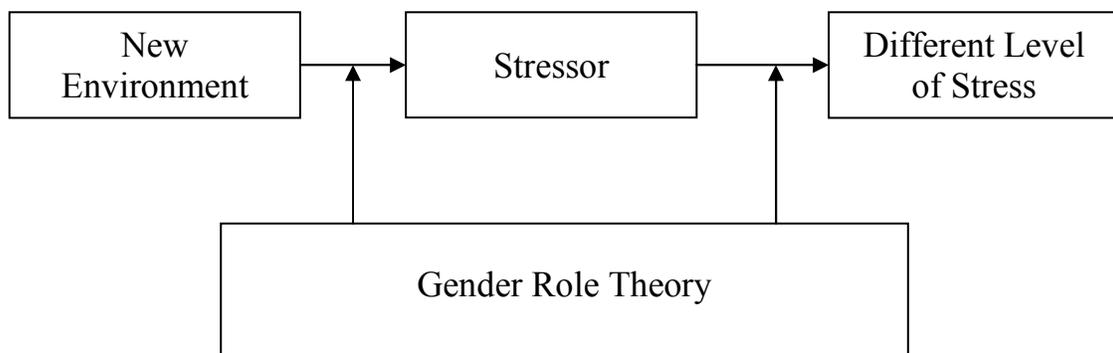


Figure 3. Influence of Gender Role Theory on Stress

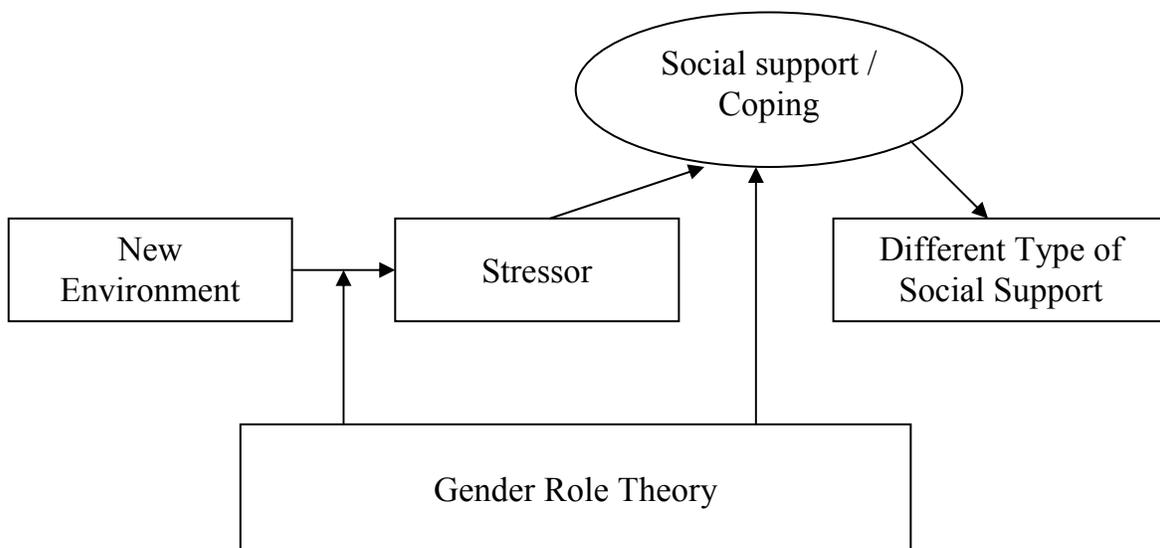


Figure 4. Influence of Gender Role Theory on Stress (with Coping Method)

## Gender Role Expectations in a Global Context

Socialization plays a large role in shaping individuals' identities, especially in terms of gender role development and expectations. This process of socialization regulates behaviors of societal members and maintains power differentials between men and women (Tang & Tang, 2001). Gender role expectations are created within the context of particular cultures (Honig, 1990). For this reason, it is important to investigate the different gender role expectations found in an array of societies in order to explain the possible influence of gender on international students' stress levels.

### *Recurring Theme of Patriarchy*

Patriarchy is a recurring theme found in many countries around the globe. Certainly there are exceptions in which there is equal power or matriarchal power divisions, but by and large countries have a strong history of patriarchal rule and are currently influenced by that historical power differential (Moghadam, 2004). Patriarchy is defined by Moghadam (2004) as a familial and societal system in which males are heads of household and have authority over everyone else in terms of property, residence, and lineage. The overall effect of patriarchy is that society, generally, is male-centered with males making many of the decisions and experiencing many of the benefits and opportunities available within that culture.

The "belt of classic patriarchy" found in North Africa, the Middle East, and South and East Asia (Caldwell, 1982; Kandiyoti, 1988) encourages males to be dominant and limits the opportunities for females to be fully integrated into activities outside the home. However, variations of patriarchy not necessarily termed "classic" are found in many societies around the world. For example, in Western European countries, a historical shift from pre-capitalist to industrialist society has led to greater movement towards equality between males and females with women experiencing more rights and opportunities than in other places (Man, 1986). Although Western European

countries still find their roots in patriarchal systems and, to some degree, still experience patriarchy within their culture today, patriarchy in Western Europe is different than that found in the “belt of classic patriarchy” (Moghadam, 2004).

#### *Gender Role Expectations in Africa*

Patriarchal culture is found in many African societies (as cited by Ibeanu, 2001) allowing males to have more power than females. Traditional gender role expectations call for males to be breadwinners and for females to be providers of all family needs. For example, Martineau (1997) describes the ways in which some parts of South African society limit females opportunities for education through the use of cultural norms and gender role expectations. In many African societies, parents’ expectations of daughters are quite different than their expectations of their sons. Pells (1970) describes how daughters are often taught only domestic duties while sons are taught a trade. The reason behind this is that educating a daughter is seen as worthless as she will eventually be married off, given another name, and another family will receive the benefits of her education. On the other hand, educating a son will pay off as he will carry on the family name and take care of his family. For this reason, investing in the education of a daughter is not a worthwhile investment.

#### *Gender Role Expectations in Asia*

Many traditional gender role expectations in Asian countries are based on the principles of Confucianism (Keum, 2003; Kim, 1998). For example, Korean women are expected to be obedient to their parents before marriage and their husband after they are married (Kim, 1998). As a result, Korean women are expected to follow culturally constructed gender roles throughout their lives. Korean women are expected to be self-sacrificing, discrete, soft-spoken, and submissive. They are especially discouraged from expressing strong emotions and from insisting that their needs are a priority (Kim, 1998). Compared to Korean women, Korean men are expected to be breadwinners

and decision-makers for all major events in the family which allows men to have more freedom and opportunity to make something of their lives in the larger society (Park & Bernstein, 2008).

Similar to Korean culture, women in China are expected to be nurturing, passive, and traditionally feminine (Tang & Tang, 2001). However, in addition to these traits which Chinese women share with Korean women, Chinese women are also asked to balance diverse traits and behaviors. Bepko and Krestan (1990) explain that Chinese women are expected to be “both competitive and nurturing, compliant and assertive, and to appear in control without any signs of vulnerability, while still demonstrating the traditionally feminine trait of emotionality” (p. 182). As an example of this divided gender role schema, Chinese women who achieve success experience two different societal reactions to that stress. The first reaction views these women as “achievement-oriented, rational, decisive, and competent”. The other reaction views these women as “selfish, aggressive, and lacking in nurturance” (p. 182). This double-sided reaction to Chinese women’s success leads to a lack of social participation or movement towards their career goals due to the possibility of a harmful, guilt-inducing reaction to their success.

#### *Gender Role Expectations in Europe*

Gender role expectations in Europe are similar to those found in many Western countries, such as the United States. However, even within Europe, there is a significant amount of variation in the way that individuals from different countries perceive gender stereotypes and expectations as well as men and women’s experiences within those countries. For example, in countries like Germany and around central Europe, which are more conservative welfare states, the traditional system of males as breadwinners and females as caretakers persists (Duncan, 1994). In other countries, such as Britain, a neo-liberal state regime approach is found. In these instances, the state offers women the “choice” of working or motherhood, but then provides no support in the form of

child care and maternity leave. A few other countries such as Sweden, France, and Finland, utilize a Scandinavian model which uses high levels of public child care, parental leave, and an equally beneficial tax system for men and women (Hernes, 1988). For these reasons, women in these countries may be able to pursue a career and motherhood at the same time, allowing them to be in an equal position to males. However, despite the official existence of gender equality in many European countries, the reality is often one of female subordination to males.

#### *Gender Role Expectations in Latin/Central America*

Gender roles in Latin/Central America for men and women are very different. Males are expected to adhere to a *machismo* role in which they are hyper-masculine and resist anything that may be construed as feminine (DeSouza & Hutz, 1995). On the other hand, females are expected to emulate the Virgin Mary: submissive, caring, dependent, and dedicated entirely to their families and homes (Flake & Forste, 2006). Because women's roles are defined in terms of their relations to others, primarily as wives and mothers, Latina women are often denied their individuality in the name of gender role expectations (Flake & Forste, 2006).

Traditional gender roles in Latin/Central American societies dictate that culture be male centered and focused on male authority and superiority over women. Women's placement in society as inferior to men also allows for men's position in society to be maintained. Latin/Central American women are often relegated to the role of mother, and are asked to sacrifice themselves for the good of the family (Chassen-López, 1997).

For example, in Brazilian society, traditional gender roles and assumptions about men and women are based on historical patriarchy influenced by Portuguese colonization. The current gender roles based on this history dictate that men have fundamental authority and greater freedom in society than do women, who are viewed as submissive to men (DeSoua & Hutz, 1995). Based on

these Latin/Central American gender role expectations, students from these countries studying in the United States may have increased role strain due to the sometimes vast difference between their culture's gender role expectations and the gender role expectations in the United States which can lead to elevated stress levels.

### *Gender Role Expectations in the Middle East*

In traditional Middle Eastern societies, males have more opportunities for education and participation in public life than do females. For this reason, females are limited in their access to general education and technical/trade education is non-existent (Schvaneveldt, Kerpelam & Schvaneveldt, 2005). Particularly in the Middle Eastern region, Islamic faith plays a large role in maintaining a restrictive attitude towards women (Damji & Lee, 1993). The Qur'an conveys the message that men and women are equal in the eyes of Allah. However, many who claim to follow the Islamic faith continue to treat women differently and more restrictively than men (Damji & Lee, 1993). Baffoun (1982) confirms this idea noting that the inequality between Muslim men and women does not come inherently from the Islamic faith, but from "sexual and economic inequality – polygamy, unequal inheritance rights and male monopoly of the production of commodities" (p. 228).

Damji and Lee (1993) conducted a study on gender role identities and perceptions of Muslim men and women. They proposed two hypotheses: the Muslim gender equality hypothesis and the traditional Muslim hypothesis. The Muslim gender equality hypothesis, which was in line with Qur'an teachings, predicted that men and women would show no significant differences in terms of gender role identity and perception. On the other hand, the traditional Muslim hypothesis predicted that men would score higher on a masculinity scale and that women would score higher on a femininity scale. The study found that females scored higher on a femininity scale than males

did, which supported the traditional Muslim hypothesis. The study also found, however, that there was no significant difference between men and women's scores on the masculinity scale, supporting the Muslim gender equality hypothesis. Overall, the results are inconclusive; suggesting that perhaps, in some areas of the Muslim world, there is less of an influence of patriarchal culture and gender inequality.

Yet, some research shows a different picture than Damji and Lee's study arguing that the influence of Islam is pervasive and encourages traditional gender role expectations (Schvaneveldt, Kerpelam & Schvaneveldt, 2005). For instance, youth who identify more strongly with Islamic beliefs are more likely to hold traditional gender role beliefs, such as women as care providers and men as breadwinners, than youth who do not identify as strongly with Islamic beliefs (Schvaneveldt, Kerpelam & Schvaneveldt, 2005). Traditional gender role beliefs dictate that men should be involved in earning money, politics, economics, religion, and running the home. On the other hand, women are relegated to the roles of daughter, wife, and mother (Kulik & Rayyan, 2003). Unfortunately, the traditional gender inequality found in Middle Eastern societies are longstanding and, even over the course of a century, has changed very slowly (Schvaneveldt, Kerpelam & Schvaneveldt, 2005).

Gender role theory is crucial to understanding how men and women perceive the world differently. Broadening gender role theory beyond a Western perspective is also important in order to explain cross-cultural differences between individuals' perceptions of new environments through the lenses of their own gender role socializations. If there are significant differences in the experiences of male and female international students, gender role theory may be used to explain why these differences might exist. Placing gender in a global context allows for a deeper understanding among people from different parts of the world to explain any significant results. One

obstacle for many international students is balancing their home culture with their new environment. It is important to understand an individual's culturally constructed views of gender roles, both in the context of their home culture as well as their experiences in the United States. Gender role theory allows researchers to determine if and how gender plays into international students' experiences with stress in the United States. As helping professionals, it is important to understand stress and gender based on an individual's cultural background and within the context of their history and experiences in order to help them succeed in achieving their goals.

#### *Synopsis of Common Stress Factors for International Students*

Stress can cause many psychological and physical distresses and it affects people differently (Hasim, 2003). Gender differences in stress between men and women is one example. Beena and Poduval (1992) indicate that there is a significant effect of gender on stress levels among international students in which females tend to have more stress than males. Even though school-related stress occurs for both males and females, women tend to have more school-related stress due to gender role socialization and increased role strain because they may be balancing roles as mother, wife, and student (Mallinckrodt & Leong, 1992). In other words, women face more stress due to role strain not because of biological differences between males and females, but because of their gender role socialization (Beena & Poduval, 1992).

Gender does not only affect stress levels of international students. It also affects factors that can lead to stress, such as language ability. Research shows that females tend to have more anxiety on language issues than their male counterparts (Pappamihiel, 2001). On the other hand, there is a social expectation in some cultures that males should perform better than females on certain tasks (Liu & Iwamoto, 2006), potentially including language performance. Consequently, male

international students may experience more stress around language and academic issues than their female counterparts.

Language issues are not the only factor that males and females experience differently. In many cultures, males are expected to out-perform females on tasks, especially in terms of academic performance. Furthermore, males are often also expected to be the breadwinner of a family. Male international students, then, may face balancing cultural expectations of academic success in order to take care of a family and to be successful while also maintaining their academic performance above their female counterparts. This balancing act may lead to males experiencing more stress in regards to academic issues than female international students.

This study pays particular attention to the impact of academic-related stress. International students' primary reason for being in the United States is to pursue academic goals. For this reason, it is not surprising that academic concerns are a primary stress factor for international students. According to previous research, academic concerns can be more persistent, far-reaching, and problematic than social or personal problems (Hull, 1978). The stress from academic concerns can negatively affect their physical and emotional well-being and can also change an individual's perception of their experiences in the host country as well as the host country itself (Kilneberg & Hull, 1979).

Another factor that affects the stress levels of international students is length of stay. Researchers have indicated that the longer an international student stays in the United States, the lower their stress levels may be (Wei, et al., 2007) due to language proficiency and acculturation (Shi & Brown, 2000). However, there is also evidence that international students who remain in the United States longer have higher levels of stress due to maladaptive perfectionism and competition with other international students (Wei, et al., 2007).

Language proficiency is another top stressor among international students (Duru & Poyrazli, 2007; Reynolds & Constantine, 2007). Researchers indicate that individuals with better language skills have lower levels of stress (Chen, 1999) because of their ability to develop interpersonal communication and academic skills as well as having an easier time with acculturation issues (Pan, Wong, Joubert & Wan, 2007). As mentioned before, language skills do not only have an effect on an individual's academic performance and interpersonal skills, but in relation to these effects, can also increase isolation and affect their sense of belonging, generally affecting their mental health (Barratt & Huba, 1994; Chen, 1999; Hayes & Lin, 1994; Stoyhoff, 1997; Yeh & Inose, 2003).

Looking deeper into the particular effects of gender, language concerns, and academic concerns on stress is absolutely crucial to creating a comfortable community environment in which international students can achieve their academic goals. It is important to fully understand these issues in order to provide effective social support to reduce academic and language-related stress. Additionally, this information is needed in order to help international students identify and manage their stress. Student affairs professionals must be aware of the unique stressors experienced by international students in order to provide support and services more effectively (Oling, 1991). The success of international students requires not only the efforts of international students, but also that of educators, counselors, social workers and administrators in the United States.

### *Summary*

This review of the literature provides a general description of adjustment issues among international students. Several important factors affecting adjustment issues and stress levels for international students are drawn from the research. The analysis of current literature focused primarily on the transactional model of stress and gender role theory. The transactional model of stress explains how new environments can produce stress factors and impact how individuals

appraise and cope with their stress. A discussion of gender role theory placed within the context of various areas of the world brought to light the ways in which gender is both a stress factor and an influence on coping strategies. These two theories help to develop an understanding of how perceptions of stress and means of social support affect and influence international students differently based on gender. Although there are several studies on international students' adaptation to new environments, there is still a need for additional studies regarding the specific effects of gender and gender role expectations on international students' perceptions of stress and the effectiveness of social support systems through the use of globally positioned gender role theory.

## Chapter III

### *Methodology*

The main focus of this study is to determine gender differences in perceptions of stress among international students. As a secondary focus, this study seeks to determine if there are interactions between gender, other variables (i.e., English proficiency, academic concerns, and social support), and their relationships with stress. This chapter includes the research design, methodology, and analysis, including statistical procedures to study the varying effects of gender, language capacity, academic concerns, and social support on international students' perceptions of stress.

#### *Research Design and Methodology*

The data for this research project was collected from an on-line survey at the University of Missouri-Columbia (MU) and it represents feedback on general adjustment issues experienced by international students. The data was collected by another MU School of Social Work Ph.D. student to find out more about adjustment and social support of current international students at MU. This project was supported by the International Center and the MU School of Social Work. The data for this dissertation is part of a survey that collected demographic information, responses from the Social Provisions Scale (Cutrona, & Russell, 1987) and responses from the Perceived Stress Scale (Cohen, Kamark, & Mermelstein, 1983) to gauge the mental health of international students. Data was collected from students during the 2003-2004 academic year. The project was approved by the University of Missouri-Columbia Institutional Review Board (IRB).

#### *Research Design*

A descriptive analysis for this study determined the existence of difference regarding stress among male and female international students. In order to test the relationships between the

variables, Pearson correlations were used. A multiple regression analysis was used to predict stress factors among international students as well as to look at any interactions between gender, academic concerns, language concerns, and social support. Following this analysis, using a casual-comparative approach, an ANOVA, an independent t-test and a univariate analysis were carried out in order to find any significantly different effects on stress between the variables.

### *Variables*

#### Dependent Variable

The dependent variable in this study is international students' stress. In order to measure *international students' stress*, participants were asked to take the Perceived Stress Scale (PSS) test. The PSS is a subjective evaluation of an individual's perception of the stressfulness of a particular situation and can be used as a means to examine perceived stress in general (Cohen, Kamarck, & Mermelstein, 1983). "Psychological stress involves interpretation of the meaning of an event and the interpretation of the adequacy of coping resources. In short, the psychological perspective on stress assumes that stress arises totally out of persons' perceptions (whether accurate or inaccurate) of their relationship to their environment" (Cohen, Kessler, & Gordon, 1997, p.121). An individual's score on the PSS has been found to be a good indicator of their perceived level of stress (Kuiper, Olonger & Lyones, 1986).

#### Independent Variables

The independent variables in this study used to explain perceptions of stress among international students are: (a) gender, (b) academic concerns, (c) language concerns, (d) length of stay, and (e) social support. These factors were identified in the literature as being significant factors of stress (Bonazzo & Wong, 2007; Chen, 1998; Hasim, 2003; Park, 2004). These factors were selected as predictors of stress among international students based on this previous literature.

### *Gender*

In order to measure the different gendered perceptions of stress among international students, gender was analyzed as an independent variable and coded on a dichotomy scale. Male and female international students were examined for interaction with social support to predict stress levels; males and females were coded differently. When female international students were analyzed for interactions with the social support scale, females were coded "0" and males were coded "1". When male international students were analyzed in the same way, males were coded "1" and females were coded "0".

### *Academic Concerns*

Academic concerns are a central stress factor experienced by international students. In fact, academic concerns are often one of the most stressful factors affecting international students and are more constant than social and/or personal issues. For many international students, academic concerns become not only the primary focus of their lives, but sometimes the only focus of their lives in order to achieve their goals in the United States (Wan, Champman, & Biggs, 1992). To measure whether international students experienced academic concerns, students were asked to report whether they had any academic concerns since coming to the United States, which warranted a dichotomous scale response (yes = 0, no = 1).

### *Language Concerns*

An influential factor for international students' adjustment is English proficiency. Although research indicates how English proficiency is a major stress factor for international students and efforts have been made to address the issue, English proficiency is still a top concern for international students in the United States (Chen, 1998; Duru & Poyrazli, 2007). Language concerns

were coded on a dichotomy scale (yes = 0, no = 1) to measure whether international students experienced any issues surrounding their English proficiency.

### *Length of Stay*

According to Oberg (1960), length of stay is a good indicator of international students' adjustment outcomes. In order to measure how length of stay affects stress levels, it was coded for this study as: 1 to 5 months = 1, 6 to 9 months = 2, 1 to 2 years = 3, 3 to 4 years = 4, 5 to 6 years = 5, more than 6 years = 6. Participants were asked about the length of stay in an open-ended format; the researcher coded the participants' length of stay rounding to the nearest category.

### *Social Support*

A final independent variable predicting stress is the Social Provisions Scale. In order to find out whether international students get support or not, the students were asked to take the Social Provisions Scale (Weiss, 1973) test. The SPS allows for a more in-depth analysis of the interactions between social provisions and specific indicators of stress. The Social Provision Scale includes subscales of: social integration, attachment, guidance, opportunity for nurturance, reliable alliance, and reassurance of worth. These subscales are used as a dependent variable in relation to gender and measure the relationship between social support and stress. In addition to analyzing the individual sub-scales, the study also utilized sum scores of all the scales.

### *Sample*

The survey targeted only international students and was anonymous to allow students to feel comfortable in expressing personal issues that mattered to them. Self-selective sampling was used through an online survey. A survey request e-mail was sent to all international students to solicit responses from them. Out of 1,300 international students at the University of Missouri-Columbia, 309 responded (23% response rate). Forty records contained no or missing information and 169

finished the social provision and stress measures that was part of the survey. Because the purpose of this study is to compare the stress levels of international students based on gender, only the 169 completed records were used. There were slightly more female respondents (55.8 percent) in the sample (n = 169). Twenty seven percent (n=46) of participants were undergraduate, 28% (n=47) were Master's students, 38% (n=65) were Doctoral students, 2% (n=4) were Professional students and 3% (n=7) either did not respond or marked "other". The mean age for the sample was 27.79 (SD 6.17) years. Sixty-four percent of the students reported being single and about 36 % reported have one or more family members with them at the university. Seventeen percent of the students had problems expressing themselves in English and 14 % had a problem reading the lecture notes.

### *Instruments*

#### *Demographic Questionnaire*

A demographic questionnaire was used to find information such as gender, age, country-of-origin, marital status, religious affiliation, and length of stay in the United States. This section also asked students to highlight any concerns and problems they may have encountered since coming to the university that were not explicitly mentioned in the survey questions.

#### *Perceived Stress Scale*

The *Perceived Stress Scale* (PSS) is a widely used 10-item Likert scale that is used as a measurement of an individual's perception of stress in his/her life. The PSS measures stress in an individual's life as opposed to specific life events that might cause stress (Cohen, Kamarck, & Mermelstein, 1983). Items on the test are designed to measure how unpredictable, uncontrollable, and overloaded participants' lives could be as well as to gauge their current levels of stress. Since the questionnaire was designed to be used in the general population, the PSS can be applied to any

sub-population group. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way. Questions include: "In the last month, how often have you felt that you were unable to control the important things in your life?" The items were developed out of current stress theory to provide content validity. The PSS has been tested for internal consistency and found to be reliable: coefficient alpha ranges from .84 to .86. For this sample, alpha for the Perceived Stress Scale was found to be reliable at .85. This scale has been tested and found to be significantly correlated with life events, depressive and physical symptoms, utilization of health service, social anxiety, smoking-reduction maintenance, and lower life satisfaction (Cohen et al., 1983; Sheets, Gorenflo, & Forney, 1993). The scale also was found to be a significant measurement to test all different age groups (Cohen, Kessler, & Gordon, 1995). In order to score the PSS, responses are reversed (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) for the four positively stated items (items 4, 5, 7, & 8) and then all scale items are summed. Scores may range from 0 to 40 with higher scores indicating a higher degree of perceived stress (Cohen, et al., 1983).

The feedback in this section allowed students to provide information they felt was important and had not been asked in the survey. These open responses were one of the most informative resources regarding what the international students were going through at the university. Many international students commented on the lack of secure friendships such as, "I think social isolation is an important thing to deal with for international students. If we seek help from people with same nationality, it keeps us from having more time with American people and from adjusting to the American cultures quickly. But having a closer relationship with American people is very difficult, especially in the first-second years of study, because of language and cultural issues. I do not have any solutions, but I do see those issues' difficulties." Other students commented on the learning

environment, "if MU wants to be more international, it would need to train teachers on multiculturalism so the academic and cultural baggage of international students could be visible. Life and school are not opposite pairs. MU should support moms as students" or the support offered through the University for international students, "I don't understand the role the international center is playing. The publicity is low and I don't think they have many programs for the international students. Personally, I haven't felt the need to go there except when I had to pick up a document. But I would love to participate fully if they make provisions for activities to attract international students. Maybe they do have programs but like I said, the publicity is low. If they can organize more interesting programs, then, we can come out to participate and get to know other international students as well."

#### *Social Provisions Scale*

The Social Provisions Scale is a 24-item Likert scale that was designed to measure the provisions of social relationships. The Social Provisions Scale predicts an individual's relationships with other people as sources of stress or lack of stress. Questions on the Social Provisions Scale ask about participants' perceptions of their social support network. For each question, participants report how strongly they agree or disagree with a given statement. Statements include: "I have a relationship where my competence and skills are recognized." The six provisions (Weiss, 1973, 1974) include:

- Guidance (advice or information) – assesses students' perceptions that they are receiving trustworthy and authoritative advice (e.g., "I have a trustworthy person to turn to if I have problems.");

- Reliable alliance (assurance that others can be counted on in times of stress) – assesses whether students felt they can count on others for assistance under any circumstances (e.g., "There are people I know will help me if I really need it.");
- Attachment (emotional closeness) – assesses the student's sense of safety and security (e.g., "I have close relationships that make me feel good.");
- Social integration (a sense of belonging to a group of friends) – addresses the perception of shared common interests and concerns (e.g., "I am with a group of people who think the same way I do about things.");
- Opportunity for nurturance (providing assistance to others) – assesses how the student's relationships are responsible for the well-being of another (e.g., "There are people who count on me to help them."); and,
- Reassurance of worth (recognition of one's competence) – which recognizes student's competence and value (e.g., "There are people who admire my talents and abilities.").

The Social Provisions Scale utilizes Weiss's (1974) description of provisions (guidance, reliable alliance, reassurance of worth, attachment, social integration, and opportunity for nurturance) in order to determine an individual's social resources for coping with stress. Research conducted by Cutrona, Russell, and Rose (1984) found that test-retest reliability coefficients range from .37 to .66. For this sample, alpha for the Social Provisions Scale was found to be significantly reliable at .84. This instrument has been used to predict post-partum depression among first time mothers lending to its predictive validity. Studies found that women without reliable alliance, reassurance of worth, social integration, and guidance were more likely to experience post-partum depression (Cutrona, 1984).

Cutrona and Russell (1987) indicate that these subscales can be further separated into two categories. First, "aid-related social support" includes reliable alliance, attachment, guidance, and social integration. The theme of these four scales is the sense of belonging and feelings of caring for one another. The other two subscales, falling into the category of "appreciation-related social support", include opportunity for nurturance and reassurance of worth. These two subscales are related to feelings of importance and competence. Taking into consideration the various aspects of gender that influence social support and help seeking behaviors among international students, this study analyzes how each of these subscales and sub-categories are experienced by gender.

In order to score the SPS, responses are reversed for the negatively stated items (indicated below by an "R") and a total score is given by adding all the items together. Subscale scores may be computed by summing items as follows:

- Attachment: Items 2R, 11, 17, and 21R
- Social Integration: Items 5, 8, 14R, and 22R
- Reassurance of Worth: 6R, 9R, 13, and 20
- Reliable Alliance: Items 1, 10R, 18R, and 23
- Guidance: Items 3R, 12, 16, and 19R
- Opportunity for Nurturance: 4, 7, 15R, and 24R

Scores on the individual subscales may range from 0 to 16 and sum scores may range from 0 to 96 with higher scores indicated a greater degree of perceived social support (Cutrona, 1984).

#### *Data Cleaning*

The original data set included 309 people; however, only 169 people completed the entire survey. For this reason, 140 respondents' data was eliminated when analysis was performed.

Additionally, general data collection errors resulted in parts of the Social Provision Scale Subscale not being added correctly for 2 participants. These errors were corrected before the analysis.

### *Procedures and Analysis*

All the analyses in this study were conducted using SPSS 16. Descriptive statistics were used to provide demographic information and to describe the sample used. Prior to the main analyses, preliminary analyses were done in order to find the most relevant stress factors among international students. The primary analyses of this study were done in order to measure how gender interacts with stress factors (academic concerns, language concerns) and how moderating factors (social support) might influence that stress. This analysis was done under the assumption that all variables are normally distributed and that there are differences between the variables. When the regression tests were conducted for interaction terms, all independent variables were centered in order to interpret the lower terms (Aiken & West, 1991). A multivariate regression model was used to predict respondents' scores on the Perceived Stress Scale.

### *Preliminary Analyses*

In order to find the relationships between variables, a Pearson's movement correlation was used. An independent samples t-test was used to compare the differences between international students with academic concerns and those without in order to predict perceptions of stress. A one-way ANOVA was computed to determine if there were any significant relationships between country-of-origin and stress as well as length of stay and stress.

### *Hypothesis 1*

An independent samples t-test was used to compare the differences between male and female international students' perception of stress. It was hypothesized that female international students would score higher on stress than their male counterparts.

### *Hypothesis 2*

A univariate analysis was used in order to discover if there were any interactions between gender and stress factors (academic concerns, language concerns) which predicted stress scores. It was hypothesized that academic concerns and language concerns would interact significantly with gender to predict scores on the Perceived Stress Scale.

### *Hypothesis 3*

A multiple regression analysis was employed to test the hypothesis that social support would interact significantly with gender and academic concerns as a moderating factor to predict stress scores. All variables were entered methodologically. The main effects were entered in the following order: language concerns, length of stay, and academic concerns followed by the moderating variable, social support and finally, the three-way interaction terms (gender X academic concern X social support). It was hypothesized that female international students would experience lower levels of academic stress when they receive social support.

## Chapter IV

### *Results*

#### *Descriptive Statistics and Preliminary Analyses*

##### *Descriptive Statistics*

Detailed demographic characteristics of the participants in this study are found in Table 1 titled, “Characteristics of MU International Students”. There were slightly more female (56%) than male (44%) participants. Participants ranged in age from 18 to 47 with the mean age being 27 years old. Participants in this study represented several major world regions: Africa (5.2%), Asia (42.4%), Europe (17.4%), Middle East (5.2%), Latin America (4.7%), North America (7%), Oceania (2.3%), and Sub-Continent/India (14%).

These statistics are in line with the general demographic information about MU international students provided by the University of Missouri. According to the 2006-2007 Fast Facts on MU International Students Report, there were 1,336 international students on the MU campus. There were slightly more males (56%, n=748) than females (44%, n=588) enrolled in graduate or undergraduate courses. The top three countries represented in the international student population at MU were: China (24%), India (15%), and Korea (14%). These numbers are similar to the top three countries-of-origin of participants in the sample used for this study: China (15%), India (12%) and Korea (6%).

Table 1. Characteristics of MU International Students ( $n=169$ )

Characteristics	Number (%)
<b>Gender</b>	
Male	72 (42.6%)
Female	96 (56.8%)
<b>Marital Status</b>	
Single	108 (63.9%)
Married	49 (29%)
Couple	7 (4.1%)
Divorced	2 (1.2%)
<b>Region of the World</b>	
Africa	7 (4.1%)
Asia	73 (43.2%)
Indian Sub Continent	23 (13.6%)
Europe	30 (17.8%)
Middle East	9 (5.3%)
Latin America	8 (4.8%)
North American	12 (7.1%)
Ocean	4 (2.4%)
<b>Leading Countries of Origin in the Sample</b>	
China	26 (15.4%)
India	19 (11.2%)
South Korea	12 (7.1%)
Taiwan	9 (5.3%)
Thailand	8 (4.7%)
Romania	

*Potential control variables*

Prior to testing the main hypotheses, I examined a number of potential control variables. These variables included: gender, academic concerns, language concerns, length of stay, and country-of-origin. For each variable, simple correlations with stress were conducted. The variables

tested were all found to be significantly correlated with stress except length of stay and country of origin.

Length of stay was tested to see if it was a stress factor affecting international students' adjustment. In order to determine if length of stay would correlate with stress levels, a one-way ANOVA was conducted. It was found that length of stay has an effect on stress levels [ $F(6,165) = 3.47, p < .01$ ]. This analysis revealed that the lowest mean stress level was found in individuals who had been in the United States 1 – 5 months ( $m = 11.88$ ). Individuals who reported being in the United States for more than 5 months had stress levels that generally fluctuated: 6 – 9 months ( $m = 19.12$ ), 1 – 2 years ( $m = 18.48$ ), 3 – 4 years ( $m = 16.83$ ), 5 – 6 years ( $m = 20.39$ ), longer than 6 years ( $m = 17.63$ ). Interestingly, the highest levels of stress were found in individuals who had been in the United States between 5 and 6 years and this was followed by a drop off in reported stress levels by individuals who had been in the United States longer than 6 years.

Along with length of stay, language concerns are also one of the major factors of stress for international students. To find out if there was any relationship between language concerns and stress levels, as consistent with previous literature, an independent t-test was computed. The analysis found that language concerns were significantly correlated with stress levels [ $r(172) = .277, p < .000$ ] and were a significant factor of stress [ $t(170) = -3.75, p < .001$ ]. The test revealed that international students who have language problems ( $m=20.00, sd=.59$ ) report significantly higher levels of stress than students who do not ( $m=16.77, sd=5.80$ ). These findings suggest that international students who have language problems seem to experience higher adjustment stress than international student who do not report language problems.

An ANOVA was conducted to determine whether country-of-origin predicted levels of stress. This ANOVA was not significant. [ $F(7,161) = .653, p = .711$ ]. Many studies have reported

that international students in the United States from European and European Origin countries (e.g., Australia, Canada) have less stress than other regions of the world, because the host culture and the culture of origin are so similar (Yeh & Inose, 2003). In order to measure this idea, a dummy variable was made to indicate “European” versus “non-European” and a one-way ANOVA was conducted. This analysis was also non-significant.

#### *Country-of-origin as a potential moderating variable*

I also tested whether country-of-origin interacted with the variables used to predict stress in the main hypotheses. This was done in two ways: I used the dummy variable that indicated “European” versus “non-European.” I also created a dummy variable that indicated whether participants belonged to a culture described as individualist versus collectivist (as per the classifications provided by Oyserman et al., 2002). In all analyses, the interaction terms were not significant. Thus, the dummy variables were not used in the main analyses.

#### *Simple correlations*

Simple bivariate correlations between all variables are presented in Table 2. According to Table 2 (see pg. 62), stress was significantly negatively correlated with the scores from the Social Provisions Scale [ $r(172) = -.155, p < .05$ ]. The hypothesis was supported that when international students score high on social support, they perceive their adjustment with high level of stress. Stress was also positively correlated with gender [ $r(171) = .246, p < .001$ ] and language concerns [ $r(172) = .277, p < .000$ ]. Academic concerns were positively correlated with stress [ $r(172) = .304, p < .000$ ] and gender [ $r(171) = .165, p < .05$ ] which explains that these variables are important factors of adjustment issues for international students. Length of stay was negatively correlated with language concerns [ $r(170) = -.173, p < .05$ ]. Length of time is an important issue for adjusting to a

new language; however, length of stay was not correlated with stress [ $r(170) = .048, p = .535$ ].

Language concerns were positively correlated with gender [ $r(171) = .265, p < .000$ ].

Table 2. Mean, Standard Deviations and Bivariate Correlations Among Variables

Variables	Mean	S.D.	Social Provision	Gender	Academic problem	Language problem	Time in US
Stress	17.91	5.60	-.155*	.256**	.304**	.277**	.048
Social Provision	73.25	15.25	-	.126	-.129	-.071	.075
Gender	.56	.498	-	-	.165*	.265**	-.083
Academic Problems	.24	.427	-	-	-	.327**	.040
Language Problems	.35	.480	-	-	-	-	-.173*
Time in US	6.58	4.28					

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

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

#### *Hypothesis 1: Associations between Gender and Stress*

An independent samples t-test was executed to examine the mean difference between males and females. The test revealed that female international students ( $m = 19.17, sd = 5.23$ ) report significantly higher levels of stress on average than their male counterparts ( $m = 16.40, sd = 5.68$ ), [ $t(169) = -3.3, p < .001$ ]. These findings suggest that female international students seem to experience higher adjustment stress than male international students.

#### *Hypothesis 2: Gender and Stress Factors as Predictors of Perceived Stress*

##### *Gender and Academic Concerns*

A univariate analysis indicated that there were significant differences in stress related to academic concerns in regard to gender. Female international students reported significantly higher scores ( $m = 20.15, sd = .58$ ) than male international students ( $m = 16.57, sd = .82$ ) on the Perceived Stress Scale ( $F = 12.83, p < .000$ ). In terms of academic concerns, the results showed that international students with academic concerns ( $m = 19.74, sd = .89$ ) reported significantly higher

scores than those without ( $m = 16.98, sd = .46$ ) on the Perceived Stress Scale ( $F = 7.61, p < .000$ ).

This test revealed that there was a significant interaction between gender and academic concerns to predict stress levels ( $F = 5.03, p < .05$ ). Female international students with academic concerns ( $m = 22.65, sd = .96$ ) scored significantly higher than male international students with academic concerns ( $m = 16.83, sd = .65$ ) on the Perceived Stress Scale ( $F = 5.03, p < .05$ ). These findings suggest that female international students have more academic-related stress than their male counterparts which supports hypothesis 2.

#### *Gender and Language Concerns*

A univariate analysis showed that there were significant differences in regard to stress related to language concerns, but that there was no significant interaction between language-related stress and gender. International students who reported language concerns ( $m = 19.45, sd = .510$ ) scored significantly higher than international students who did not report language concerns ( $m = 16.89, sd = .78$ ) on the Perceived Stress Scale ( $F = 7.62, p < .05$ ). Females also scored higher than males on the Perceived Stress Scale as indicated previously. However, there was no significant interaction between gender and language concerns to predict stress scores among international students ( $F = .021, p = .886$ ) which is inconsistent with the hypothesis that there would be an interaction between gender and language concerns.

#### *Hypothesis 3: Interactions with Social Support, Gender, and Academic Concerns to Predict Perceived Stress*

##### *Overall Social Support*

The three-way interaction analysis showed that there was a significant interaction between gender, academic concerns and social support. The main effects of gender and social support were significant factors while the main effect of academic concern was not (see Table 3 on pg. 65).

Consistent with the hypothesis that international students' academic concerns may be influenced by gender, the interaction between gender and academic concerns was significant [ $\beta = .198, t(169) = 2.610, p < .01$ ]. However, this analysis did not find a significant interaction between academic concerns and social support or between gender and social support (see Table 3). Finally, consistent with the hypothesis that international students' perceived social support would interact with academic concerns and gender, this study found that there is a highly significant interaction between gender, academic concerns and social support [ $\beta = .248, t(169) = 2.774, p < .01$ ]. The results of the three way interactions terms of the moderating effect of social support are presented in Table 3. These results suggest that social support is an important factor in reducing academic related stress in regard to gender.

Table 3. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Social Support)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	2.041*	.175	2.269	.025
Time in US	.327*	.160	2.256	.025
Gender	3.024***	-.269	3.604	.000
Academic	1.327	.102	1.288	.200
Social Support	-.111***	-.303	-3.407	.001
Gnd X Acdmc	5.412**	.198	2.610	.010
Gnd X SoSupport	-.027	-.039	-.426	.671
Academic X SoSupport	-.036	-.036	-.428	.669
Gnd X Acdmc X SoSupport	.494**	.248	2.774	.006
Adj. R-square	.210			
F-value	5.988			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern, SoSupport=Social Support

$p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

In order to distinguish between male and female international students' social support and how social support might impact students' academic concerns differently based on gender, a regression test was completed (see Figure 5 on pg.66). A simple slope revealed that female international students without academic concerns and with higher scores on the Social Provisions Scale experienced a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.455, t(169) = -2.893, p < .01$ ]. For female international students who did report academic problems, there was no significant interaction. This suggests that female students who do not have academic concerns that social support can act as a moderating factor for stress while female students with academic concerns do not experience social support as a moderating factor for stress. For male international students without academic problems, there was no significant effect of social support on moderating stress. Male international students who did report academic concerns and with higher scores on the Social Provisions Scale experienced a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.912, t(169) = -2.262, p < .05$ ]. These results reveal that social support can aid male international students who do have academic concerns with their stress whereas social support does not serve as a moderating factor for male international students who do not report academic concerns.

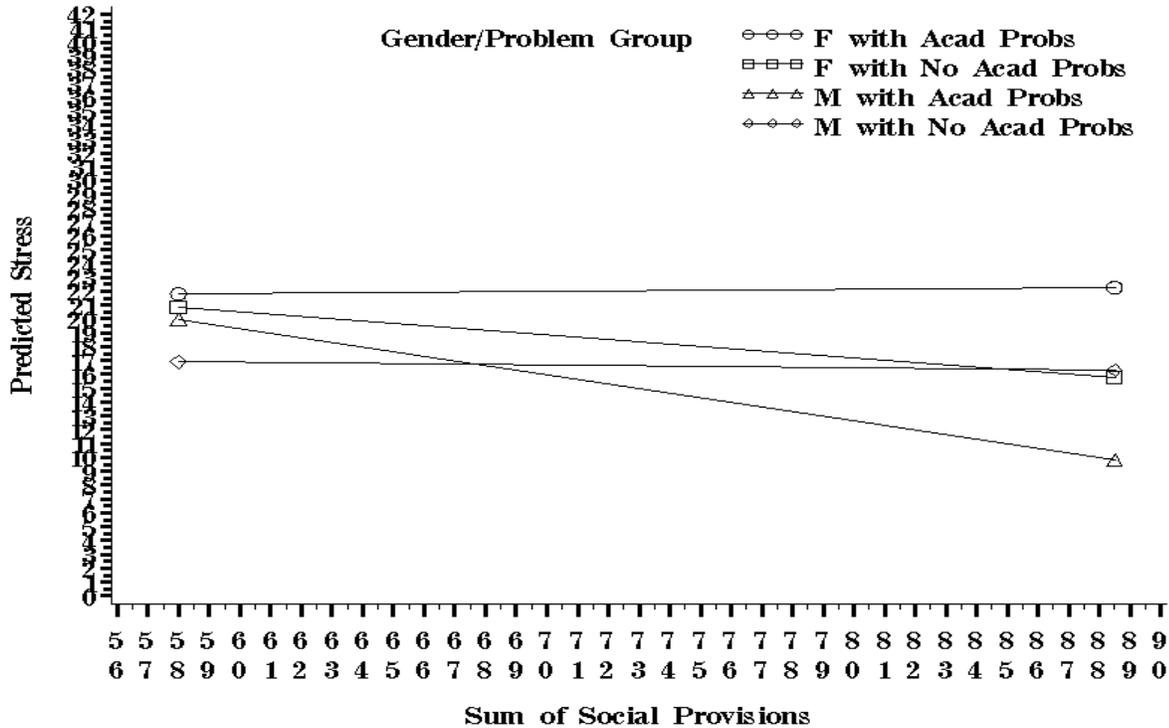


Figure 5. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Sum of Social Provisions Scale)

*Gender and Reassurance of Worth*

The three-way interaction analysis showed that there was a significant interaction between gender, academic concerns and reassurance of worth. The main effects of gender and language issues were highly significant factors, the main effect of length of stay was marginally significant, and the main effect of academic concerns was not significant (see Table 4 on pg. 68). Consistent with the hypothesis that international students' academic concerns may be influenced by gender, the interaction between gender and academic concerns was significant [ $\beta = .263, t(169) = 3.356, p < .01$ ]. This analysis showed a marginally significant interaction between gender and reassurance of worth while there was no significant interaction between academic concerns and reassurance of worth. Finally, consistent with the hypothesis that international students' reassurance of worth would be associated with academic concerns in regards to gender, this study found that there was a highly

significant interaction between gender, academic concerns and reassurance of worth ( $\beta = -.310$ ,  $t(164) = -4.269$ ,  $p < .000$ ). The results of the three way interactions in terms of the moderating effect of reassurance of worth are presented in Table 4. These results suggest that reassurance of worth is one of the main social support factors in reducing stress for international students.

Table 4. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Reassurance of Worth)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	1.540	.132	1.726	.086
Time in US	.298*	.147	2.100	.037
Gender	2.886***	.254	3.475	.001
Academic	1.410**	.107	1.305	.194
Reassurance	-.808***	-.310	-4.269	.000
Gnd X Acdmc	7.315***	.263	3.356	.001
Gnd X Reas	.734	.139	1.928	.056
Acdmc X Reas	-.013	-.002	-.027	.978
Gnd X Acdmc X Reas	2.361*	.182	2.292	.023
Adj. R-square	.255			
F-value	7.249			
N	164			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern, Reas (Reassurance) = Reassurance of Worth

$p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

To measure the difference between male and female international students' reassurance of worth and how reassurance of worth might impact students' academic concerns differently based on gender, a regression analysis was completed (see Figure 6 on pg. 69). A simple slope revealed that, for female international students without academic concerns and with higher scores on reassurance of worth, there was a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.281$ ,  $t(164) = -2.693$ ,  $p < .01$ ]. However, for female international students with academic problems,

the interaction between academic problems, reassurance of worth and gender was not significant. For male international students without academic concerns and with higher scores on reassurance of worth, there was a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.345, t(164) = -2.944, p < .01$ ]. An important finding of this analysis was that reassurance of worth also impacted male international students with academic problems [ $\beta = -.858, t(164) = 2.818, p < .01$ ]. In other words, reassurance of worth moderated and/or reduced stress for male international students whether or not they had academic problems.

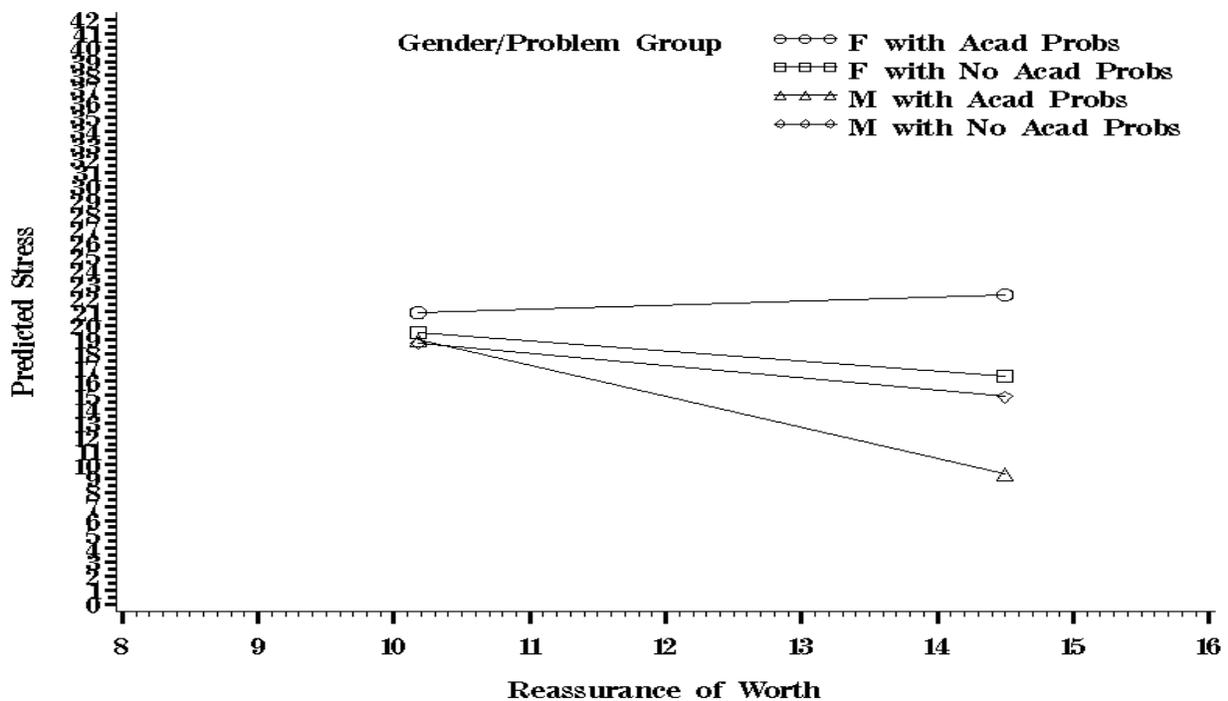


Figure 6. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Reassurance of Worth)

#### *Gender and Social Integration*

The three-way interaction analysis showed that there was a significant interaction between gender, academic concerns and social integration. The main effects of gender, language issues, and social integration were highly significant factors and the main effects of length of stay and academic concerns were marginally significant (see Table 5). The interaction between gender and academic

concerns for international students was significant [ $\beta = .158, t(169) = 2.17, p < .05$ ]. There were no significant interactions between gender and social integration or academic concerns and social integration. Finally, consistent with the hypothesis that international students' social integration would be associated with academic concerns in regards to gender, this study found that there was a highly significant interaction between gender, academic concerns and social integration ( $\beta = .228, t(169) = 2.63, p < .01$ ). The results of the three way interactions terms of the moderating effect of social integration are presented in Table 5. These results suggest that social integration is one of the one of the main social support factors in reducing stress for international students.

Table 5. Three-way Interaction Regression Analysis (Gender X Academic Support X Social Integration)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	2.169*	.186	2.414	.017
Time in US	.286	.140	1.965	.051
Gender	2.561**	.827	3.097	.002
Academic	1.834	.140	1.848	.066
Social Int	-.580**	-.269	-3.113	.002
Gnd X Acdmc	4.325*	.158	2.177	.031
Gnd X Social Int	-.029	-.007	-.079	.937
Academic X Social Int	-.444	-.080	-.950	.344
Gnd X Acdmc X Social_Int	2.604**	.228	2.632	.009
Adj. R-square	.199			
F-value	5.665			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern, Social Int= Social Integration

$p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

In order to discover the difference between male and female international students' social integration and how social integration might impact students' academic concerns differently based on gender, a regression analysis was completed (see Figure 7 on pg. 72). A simple slope revealed

that, for female international students without academic concerns and with higher scores on reassurance of worth, there was a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.353, t(169) = -2.28, p < .05$ ]. However, for female international students with academic concerns, the interaction between academic problems, social integration and gender was not significant. For male international students without academic concerns and with higher scores on social integration, there was no significant interaction. However, for male international students with academic concerns, there was a significant negative interaction [ $\beta = -.933, t(169) = -2.46, p < .05$ ]. In other words, social integration moderated and/or reduced stress for female international students without academic concerns and for male international students with academic concerns.

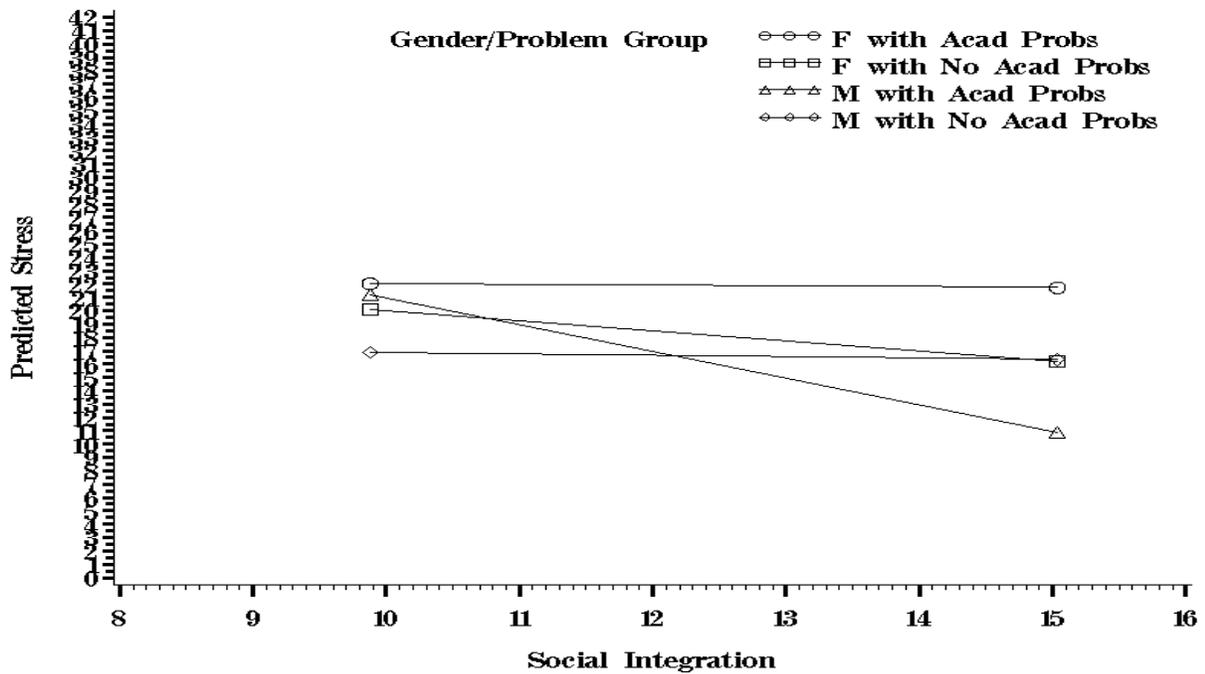


Figure 7. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Social Integration)

### *Gender and Guidance*

The three-way interaction analysis showed that there was a significant interaction between gender, academic concerns and guidance. The main effects of gender, language issues, length of stay, and guidance were significant factors while the main effect of academic concerns was not

significant (see Table 6 on pg. 73). Consistent with the hypothesis that international students' academic concerns may be influenced by gender, the interaction between gender and academic concerns was significant [ $\beta = .230, t(169) = 3.06, p < .01$ ]. This analysis showed a marginally significant interaction between academic concerns and guidance [ $\beta = -.160, t(169) = -1.73, p < .08$ ] while there was no significant interaction between gender and guidance. Finally, consistent with the hypothesis that international students' guidance would be associated with academic concerns in regards to gender, this study found that there was a highly significant interaction between gender, academic concerns and guidance ( $\beta = .35, t(169) = 3.63, p < .000$ ). The results of the three way interactions terms of the moderating effect of guidance are presented in Table 6. These results suggest that guidance is one of the one of the main social support factors in reducing stress for international students.

Table 6. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Guidance)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	1.777*	.153	1.998	.047
Time in US	.291*	.143	2.027	.044
Gender	3.123***	.278	3.724	.000
Academic	1.195	.092	1.182	.239
Guidance	-.548***	-.323	-3.388	.001
Gnd X Acdmc	6.304**	.230	3.063	.003
Gnd X Guid	.294	.090	.921	.359
Acdmc X Guid	-.750	-.160	-1.731	.085
Gnd X Acdmc X Guid	3.339***	.351	3.627	.000
Adj. R-square	.210			
F-value	6.329			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US, Gnd= Gender, Acdmc (Academic) =Academic concern, Guid = Guidance

$p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

To distinguish between male and female international students' guidance and how guidance might act as a moderating variable for students' academic concerns differently based on gender; a regression analysis was completed (see Figure 8 on pg. 74). A simple slope revealed that, for female international students without academic concerns and with higher scores on guidance, there was a significant negative interaction with scores on the Perceived Stress Scale [ $\beta = -.348, t(169) = -2.08, p < .05$ ]. However, for female international students with academic problems, the interaction between academic problems, guidance, and gender was not significant. For male international students without academic concerns and with higher scores on guidance, there was no significant interaction between gender, academic concerns, and guidance. This analysis found that guidance was significantly negatively associated with male international students who reported academic problems [ $\beta = -1.59, t(160) = -3.40, p < .001$ ]. This result suggests that guidance can moderate and/or reduce stress for male international students with academic concerns and for female international without academic concerns.

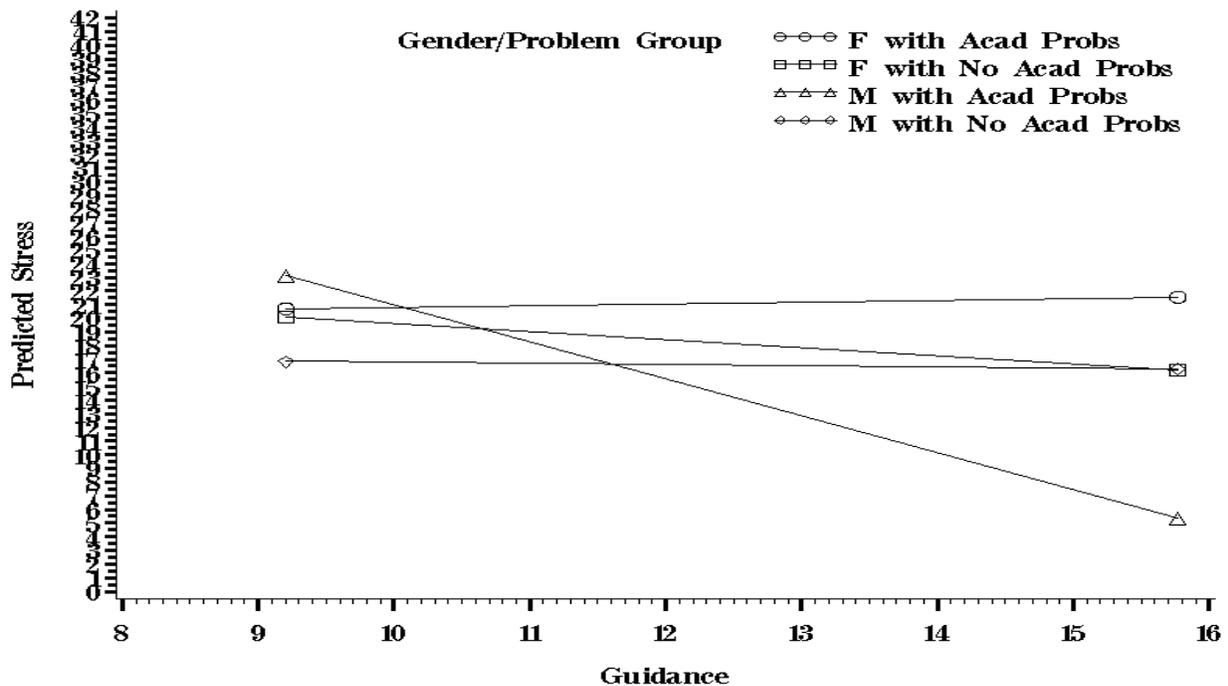


Figure 8. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Guidance)

Three other subscales of the Social Provision Scale, Attachment, Reliable Alliance, and Opportunity for Nurturance, were not found to significantly interact with gender and academic concern to predict perceived stress among international students. Tables 7 - 9 present the data collected from these subscales.

A three-way interaction regression analysis showed that attachment did not significantly interact with gender and academic concerns to predict perceived stress [ $\beta = 1.099, t(169) = 1.199, p < .232$ ]. For attachment this study found that time in the US, gender and attachment were main effects of stress and that there was a significant two-way interaction between gender and academic concerns to predict stress scores. However, the results show that there were no three-way interactions between gender, academic concerns, and attachment.

Table 7. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Attachment)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	1.611	.138	1.770	.079
Time in US	.315*	.154	2.132	.035
Gender	2.860***	.254	3.286	.001
Academic	1.815	.139	1.716	.088
Attachment	-.401**	-.236	-2.561	.011
Gnd X Acdmc	4.683*	.171	2.618	.032
Gnd X Attachment	-.231	-.071	-.757	.450
Academic X Attachment	-.042	-.009	-.099	.921
Gnd X Acdmc X Attachment	1.099	.119	1.199	.232
Adj. R-square	.223			
F-value	5.088			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern  
 $p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

A three-way interaction regression analysis showed that reliable alliance did not significantly interact with gender and academic concerns to predict perceived stress [ $\beta = .785$ ,  $t(169) = .736$ ,  $p < .463$ ]. For reliable alliance, this study found that gender was a main effect of stress and that there was a significant two-way interaction between gender and academic concerns to predict stress scores. However, inconsistent with the hypothesis, there was no three way interaction between gender, academic concerns, and reliable alliance.

Table 8. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Reliable Alliance)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	1.730	.149	1.855	.065
Time in US	.261	.128	1.754	.081
Gender	2.340**	.208	2.764	.006
Academic	2.279	.175	2.272	.024
Reliable Alliance	-.147	-.080	-.876	.382
Gnd X Acdmc	4.289*	.157	2.117	.036
Gnd X Reliable	-.316	-.088	-.929	.354
Academic X Reliable	.160	.030	.320	.749
Gnd X Acdmc X Reliable	.785	.071	.736	.463
Adj. R-square	.202			
F-value	4.496			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern, Reliable=Reliable Alliance

$p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

A three-way interaction regression analysis showed that opportunity for nurturance did not significantly interact with gender and academic concerns to predict perceived stress [ $\beta = .843$ ,  $t(169) = 1.456$ ,  $p < .147$ ]. For opportunity for nurturance this study found that language, time in the US, gender, and opportunity for nurturance were main effects of stress but that there were no three-

way interactions between these variables. However, there was a two-way interaction between gender and academic concerns.

Table 9. Three-way Interaction Regression Analysis (Gender X Academic Concerns X Opportunity for Nurturance)

	International Students			
	B	$\beta$	<i>t</i>	<i>p</i>
Language	2.262*	.194	2.445	.016
Time in US	.321*	.157	2.167	.032
Gender	2.294**	.204	2.772	.006
Academic	1.923	.147	1.902	.059
Opportunity	-.291*	-.176	-2.396	.018
Gnd X Acdmc	4.885*	.178	2.407	.017
Gnd X Opportunity	-.103	-.032	-.436	.664
Academic X Opportunity	.039	.010	.139	.890
Gnd X Acdmc X Opportunity	.843	.107	1.456	.147
Adj. R-square	.220			
F-value	5.026			
N	169			
Model significant	.000			

Note: Language = Language Concern, Time in US= Length of Stay in US Gnd= Gender, Acdmc (Academic) =Academic concern, Opportunity= Opportunity of Nurturance

p<.05\*, p<.01\*\*, p<.001\*\*\*

## Chapter V

### *Discussion*

The aim of this chapter is to describe the results of this study and to discuss the implications and conclusions drawn from those results. The results of the research questions are explained from the perspective of the transactional model of stress and gender role theory, the theoretical frameworks for this study. The limitations of this study and implications for future research are also discussed.

#### *Preliminary Analysis*

In order to discover what particular stress factors were affecting participants in this study sample, a preliminary analysis was conducted. This analysis found that length of stay, language proficiency, and academic concerns were significant factors of stress among international students. Country-of-origin was not found to be a significant stress factor.

#### *Length of Stay*

Consistent with findings from previous studies, length of stay was a significant factor of stress among international students. According to Oberg (1960), international students who stayed in the United States longer had lower stress than international students who had just arrived in the United States. As Lazarus and Folkman (1984) explain, stress is not a permanent stage but rather is a changeable stage. Many factors can influence changing levels of stress, including how long an individual has been dealing with a particular stressful situation. In the case of stress experienced by international students, the stress that is experienced may be changed based on their duration of stay in the United States. Interestingly, international students who had been in the United States for 5 months or less had the lowest amount of stress which could indicate excitement at being in a new place and at the prospects for their future. International students who had been in

the United States between 6 months and 6 years reported the highest levels of stress. Perhaps, during this time period international students are especially immersed in the acculturation process and experience language and success concerns in the United States. This is particularly interesting because much research has indicated that the longer international students remain in the United States, the lower their perceived stress will be (Shi & Brown, 2000; Oberg, 1960; Klinerberg & Hull, 1979). However, this study's findings seem to be more supportive of the idea of maladaptive perfectionism proposed by Wei et al. (2007). Wei found that international students who remain in the United States longer may experience more stress due to the pressure to perform better in academic settings and on daily life tasks.

These findings suggest that there is a need to offer support that is individually tailored to an international student's length of stay in the United States as the particular issues they may be facing are, in part, uniquely relative to how long they have been in the country. For example, in line with Wei's theory regarding maladaptive perfectionism, international students who are in the United States for some time may experience stress and anxiety tied to performing more than international students who have been in the United States for a short time. These students may also experience stress because of the position that they are in looking for a job and/or finishing up school as opposed to newer international students who may only be concerned with succeeding in their first year of school.

#### *Language Proficiency*

Consistent with previous findings, this study also found that international students who report having difficulties communicating or experience language barriers report higher levels of perceived stress. Based on transactional model of stress (Lazarus & Folkman, 1984), international students assess their experiences in the process of adjusting to a new country. These experiences

may be appraised as stressful due to limited capability and resources to cope with their new environments. In terms of stress appraisal, language concerns can be challenging, harmful and/or threatening to international students' daily lives. They may experience language concerns that can translate into difficulties in the classroom and social interactions (Chen, 1999; Yeh & Inose, 2003 ). These findings support Pedersen's (1991) work which highlights, especially for international students whose first language is not English, that language capabilities can create intense stress in students' daily life. Because the language in the United States is likely to be different than the primary language spoken in their home country, international students also deal with language concerns in their social interactions and daily life. Over the last decade, researchers have consistently indicated that English proficiency is central to international students' success in the United States (Chu, 1922; Peterson & Neumeier, 1948; Beals & Humphrey, 1957). Recent studies on language issues discovered the same results: language issues are still a significant predictor of stress for international students. Although language issues for international students have been studied for almost an entire decade, English proficiency remains as a central issue affecting international students today. This seems to suggest that, in the face of much established research, there is a need for still more research on effective educational and adjustment programs regarding language issues.

#### *Academic Concerns*

This study found that academic concerns are a significant factor of stress for international students. Previous research has shown that academic concerns are one of the primary issues affecting international students studying in the United States (Wan, Chapman, & Biggs, 1992). This study found that there is a significant relationship between stress and academic concerns for international students.

One possible explanation for this draws on the transactional model of stress proposed by Lazarus and Folkman (1984). This model of stress explains that stress develops as individuals perceive a lack in internal resources to deal with a particular situation (Holroyd & Lazarus, 1982). Because international students may come from a different educational system in their home country, they must adjust to a new educational culture in United States. While international students are adjusting to their new educational system, it may not be easy to find resources to deal or cope with this particularly stressful situation. As a result, the stress from adjustment to a new educational system can bring about confusion and frustration for students which may lead to an unsuccessful academic experience.

Another possible explanation of this is the higher expectation of academic performance that international students may exhibit. Students may feel as though they need to perform better in order to feel more confident in living in their new environment (Chen, 1998). If students perform at what is perceived to be a lower level, they may experience stress and anxiety as a result.

A final possible explanation of this is family pressure. For some international students, academic success is not an individual issue, but rather a family issue (Lee, 1984). Some international students may experience pressure from their families that they are not only working to succeed for themselves, but also for the honor and well-being of their family and friends. As a result, a circumstance is created in which harmful and threatening stress results from pressure to succeed. This finding suggests that universities may need to develop programming in order to specifically help international students with their achievement of academic goals.

### *Country-of-Origin*

Another predictor of stress is country-of-origin. Bonazzo and Wong (2007) found that European international students tend to have less stress than international students from other

countries who may have different racial and cultural backgrounds than the United States. Klomegah (2006) described how cultural similarities can play a major role in the adjustment process. In his study, international students from geographic areas similar to the United States had less stress than students from areas that were less similar to the United States.

Inconsistent with previous findings that country-of-origin was a significant stress factor for international students, this study found that country-of-origin was not a predictor of stress. This lack of significance may be a statistical artifact due to small cell sizes for some countries/regions of the world. While Asian, Indian, and European students were reasonably well represented in the sample, most other regions had less representation (Bang, Muriuki, & Hodges, 2008).

When an ANOVA test was run comparing European students and non-European students, as a larger group, there still were no significant differences between the two groups on the Perceived Stress Scale. However, on a comparison of the two groups on the Social Provisions Scale, there was a significant difference in which European students had a higher score on the SPS than non-European students. This result was consistent with previous research from Bonazzo and Wong (2007) who found that European international students have more perceived social support than non-European international students. This finding appears to support the previous held theory that due to cultural and racial similarities, international students from European countries may have an easier time seeking out social resources and acculturating socially to United States culture than international students from non-European countries.

#### *Hypothesis 1: Differences in Stress Levels Based on Gender*

The primary focus of this study was to determine if there were any stress differences between male and female international students. The results found that females scored higher on the Perceived Stress Scale which supports the hypothesis that there are gender differences in stress

levels among international students. This finding is consistent with research that found that female international students were more likely to have higher levels of stress than their male counterparts (Hashim, 2003; Misra, et al., 2000; Mallinckrodt & Leong, 1992). From this, we can infer that there must be specific gendered reasons for why women experience more stress. But why do these gender differences exist?

According to gender role theory, individuals learn their attitudes and behaviors from the socialization process within their own unique cultures. This learning process happens through an individual's family, peers, and social network and encourages them to follow socially prescribed regulations (Gustafson, 1998). Socialization plays a large role in formulating individuals' identities, especially in terms of gender role development and expectations. Although international students are spending time in the United States in order to achieve their goals, they may still bring with them their own cultural and gender role expectations based on their socialization in their home country. Depending on which home country an international student is from, they may have very specific gender role expectations for themselves and those around them, leading to different experiences within United States culture, and thus, with stress. For example, females coming from countries with a traditionally male-centered culture may experience new found freedoms and opportunities while studying in the United States. As Tang & Tang (2001) discuss, Chinese women are supposed to be nurturing and passive within Chinese culture. In the United States, female Chinese international students may find themselves working even harder than their male counterparts to succeed in the education system in order to secure opportunities that are not afforded to them in their home country. Not only could this potentially change the way that these women experience United States culture, but it could also lead to increased amounts of stress.

Another possible explanation of the differences between male and females' experiences with stress is the potential interaction between gender and balancing public versus private lives. For instance, there may be different gender roles and expectations outside of the home (public) in comparison to inside the home (private) (Dosen, 1997). The existence of gendered systems (patriarchy, for example) within the home and outside of the home surely has an effect on male and female international students. For international students in particular, there is a need to mitigate the public versus the private because of the sometimes vast cultural differences. Females may experience more of a balancing act between their experiences outside of the home in which they may be more acculturated and negotiate a potentially contradictory culture to their own and their experiences inside the home in which they may retain more of their native culture.

*Hypothesis 2: The Effects of Gender on Language and Academic Concerns*

*Academic Concerns*

Further, this study revealed an interaction between academic concerns and gender as a predictor of stress scores. Female international students who reported more academic concerns also reported higher levels of stress than their male counterparts which supports the study's hypothesis. According to Missra and Castillo (2004), women may have more of a tendency to compete with their peers, leading to higher levels of stress and anxiety than males. This study's findings suggest that female international students may have more pressure to succeed academically both from within themselves and from external competition. Also, while some female international students may experience a wide range of opportunities in their home country, some have a much more limited experience. Because of this, some female international students may value academic success more in a new country as a means to expand their opportunities to live outside of prescribed social boundaries and to work in many different fields.

### *Language Concerns*

Some research indicates that women may experience more stress and anxiety around language concerns (Pappamihiel, 2001) whereas other findings have indicated that men have more stress due to social expectations (Liu & Iwamoto, 2006). Interestingly, gender did not prove to be a significant influence on international students' language concerns as a predictor of stress scores; although, gender and language concerns were separately significant factors of stress. One reason for this finding is that international students, regardless of gender, must have proficient English skills in order to adjust to a new environment. Another potential reason for the lack of significant gender differences on language issues is that expectations for work, academic, and social experiences have begun to equalize between males and females, leading both genders to have similar concerns in terms of language adjustment.

### *Hypothesis 3: Relationship between Gender and Social Provisions Scale and Subscales*

Consistent with previous findings (Lee & Robbins, 2000), overall social support was a significant moderator/coping method for stress and was associated with gender and academic concerns. Furthermore, overall social support was significantly associated with other control variables (length of stay and language concern) as a predictor of stress. This finding suggests that having a positive social identity is one of the main factors for international students' adjustment to a new environment serving as both a moderator for stress and as a coping mechanism to deal with that stress. The results indicated that social support is an important factor for international students' adjustment to a new country serving as a moderator for academic related stress in regards to gender.

The significant influence of social support overall can be understood, in part, in relation to the transactional model of stress. Lazarus and Folkman characterize the primary appraisal as "the judgment that an encounter is irrelevant, benign-positive, or stressful" (1984, p.53). Adjusting to a

new culture requires overcoming several challenges including language concerns, academic concerns, and cultural differences. After assessing their situations, individuals strive to find a coping method to overcome that situation (Folkman, 1982). International students then may seek out coping methods, such as social support, to deal with the stressful situation. Lazarus and Folkman describe this stage as secondary appraisal which is an individual's assessment of available coping methods and their effectiveness in a given situation. In other words, this stage is "an explicit attempt by an individual to deal with stressful conditions either by changing the situation or by dealing with his or her distress" (Baum & Paulus, 1987, p. 563).

This study hypothesized that the subscales of the Social Provision Scale would moderate the association between gender and academic stress. The results showed that reliable alliance, attachment, and opportunity for nurturance were not significant factors of stress reduction in regard to gender and academic concerns. However, guidance, reassurance of worth, and social integration did reduce academic related stress in regards to gender.

Inconsistent with previous studies, this study found that reliable alliance, attachment, and opportunity for nurturance were not significantly related to academic stress and gender. For instance, Lyyra & Heikkinen (2006) showed that these particular scales are significant factors of psychological well-being. A possible explanation of this finding is tied to students' cultural customs in their home countries as compared to social-cultural customs in the United States. Some international students are from interpersonal countries which value interactions between people and harmony between groups. In their adjustment to United States culture, they may adopt a more independent-focused nature in their interpersonal interactions. In these instances, it is possible that being busy although normally not considered a valid reason for avoiding social support in

interpersonally-focused cultures, could be a suitable reason for not utilizing and/or creating social interactions while studying in the United States.

A further explanation of why reliable alliance and attachment were found to be not significant is in relation to international students' time in the United States. Many international students only reside in the United States for the length of their educational endeavors which can increase the likelihood that solid interpersonal relationships may not be created and/or maintained. As a result, it may be hard to find someone who could be identified as a safe, secure friend who can be relied on when social support is needed. More research is needed to investigate whether these subscales (reliable alliance, attachment, and opportunity for nurturance) could be moderators for stress for other populations or at other institutions.

Guidance, the feeling of receiving trustworthy advice and support from others, is one of the subscales from the Social Provision Scale that was found to be negatively correlated with perceived stress. This finding indicates that the more individuals feel as though they have a dependable support system, the less stress they report experiencing. International students, coming from home countries around the world to stay in the United States, find themselves without their family and primary peer group in an environment that is sometimes entirely unfamiliar. Being in this position can lead international students to feel lost and without a sense of security or the sense of calm that comes with having trustworthy support from friends, family, and peers (Yang & Clum, 1995). These thoughts can, undoubtedly, lead to increased feelings of stress and anxiety. Further, the way that guidance interacts with gender is especially interesting. Female international students may find themselves with more opportunities in terms of academic and career goals than they had previously in their home country. According to gender role theory, there are several countries that limit women's participation in society and their chances to move forward with careers

outside of the home (Damji & Lee, 1993; Martineau, 1997). For this reason, female international students may find themselves experiencing more stress than they are accustomed to in the face of available opportunities. Dealing with these new stressors, for female and male international students alike, requires a support system that many international students may find themselves lacking while studying in a country different than their home country.

Social integration was also found to be a moderator of academic-related stress and gender. Consistent with Atri et al., (2007), this study revealed that a sense of belonging with a group of people is an important predictor of mental health for international students. The opportunity to feel as though one belongs to a group, especially for international students who have been removed from their home country and placed in a new environment, is important because this sense of belonging lends itself to feeling welcome, included, and supported, all of which can help to lessen stress. As Cummins (1988) mentions, feelings of social integration are important not only in lessening stress, but also as indicators of international students' general well-being.

Social integration may pose a particular problem in the sense that international students attempting to fit into a social group in the United States might face additional challenges relating to different lifestyles and culturally unique family and gender role demands (Quimby & O'Brien, 2004). Social connections are often made with a sense of similarity and belonging to a certain group; lacking many of these basic similarities with students from the United States can be a unique challenge for international students. A lack of social integration can also lead to the overwhelming sense of social isolation. Not only can this social isolation be damaging to international students' cultural adjustment, it also may be damaging to students' daily lives and mental functioning. Social isolation can lead to mental and emotional health issues, including depression and anxiety (Whitely, 1984). Social integration, thus, may help to reduce these problems.

This study found that reassurance of worth (another subscale) was significantly associated with stress. This result is consistent with Cutrona and Russell (1987), who found having one's skills, knowledge, and competence acknowledged can help to increase self-esteem and maintain mental well being. For international students, the sense of having worth in a new environment is important and tied closely to a sense of belonging. When a student feels that he/she is perceived to be a worthy contributor to a class, a project, or a conversation, there is a sense that he/she has worth and are able to help other people with their knowledge. On the other hand, when an assumption is made that an international student does not have anything to contribute to a particular interaction, there is a sense of invisibility and social isolation.

Often these assumptions about the worth of an international student are made based upon that student's language capabilities, despite the fact that this may not be a good indicator of a person's actual ability to contribute. Because of the different environments, academic settings, relationships, and cultural customs, international students who experience an immense amount of success in their home country may find a lack of worth in the United States which can increase their stress levels. Sud and Malik (1999) mention that reassurance of worth can significantly reduce stress levels in the simplest ways: for a peer or colleague to acknowledge an individual's skills or accomplishments can lead to an increased sense of worth and decreased perceived stress levels. Reassurance of worth, as found in this study, may increase international students' self-esteem which can, in turn, help to reduce their stress while studying in the United States.

The final hypothesis was designed to investigate the ways that male and female international students differ on the types of social support they find to be effective in regard to their reported academic concerns. Lazarus & Folkman (1984) describe two coping methods: problem-focused coping and emotion-focused coping. Problem-focused coping is applied when an individual

perceives their situation as changeable. Emotion-focused coping, on the other hand, is applied when an individual judges their situation as unchangeable. Research has shown that males tend to utilize problem-focused coping methods significantly more than females whereas females tend to utilize emotion-focused coping methods more than males (Lazarus & Folkman, 1984). While this is a potential explanation for the ways in which social support may affect male and female international students differently, specific coping methods were not compared in regards to gender and, therefore, this lies outside of the scope of this paper.

When this study attempted to compare males and females with and without academic concerns, it was found that there were some consistent correlations between gender, academic concerns and specific subscales of the Social Provisions Scale. Generally, this study found that females with academic concerns and males without academic concerns did not benefit from social support. However, females without academic concerns and males with academic concerns did benefit from various social support subscales as well as social support overall.

Specifically, this study found that females who reported having no academic concerns benefited significantly from reassurance of worth, social integration, and guidance as well as the sum of the social support scale. On the other hand, males who reported having no academic concerns did not benefit from social integration, guidance or the sum of the social support scale. Interestingly, these males did benefit from reassurance of worth. Males who reported academic concerns benefited significantly from reassurance of worth, social integration, and guidance, as well as the sum of the social support scale. Even more interesting was the finding that female students with academic concerns did not benefit significantly from any of the Social Provisions subscales.

One possible explanation of these results is that male international students who report academic concerns are putting forth a significantly higher amount of effort into their academics than

male international students who did not report academic concerns. Because these male international students with academic concerns are potentially more diligent in their academics, they may seek more social validation in the forms of guidance, reassurance of worth, social integration as well as social support overall. Males who reported having no academic concerns may experience issues of pride and intense self-reliance such that they may refuse to accept or acknowledge the fact that they may have academic concerns or that they may utilize social support. Social norms of masculinity, present in many cultures, may lead to underreporting of academic concerns for male international students. For example, in some Asian cultures, masculinity is strongly tied to concepts of emotional self-control and shame-avoidance, especially in regard to seeking out help (Liu & Iwamoto, 2006). These cultural expectations may make men feel as though they are somehow less masculine if they admit that they have problems, including academic concerns.

Another potential explanation for these results is the concept of "saving face". Many international students are not studying in the United States for solely their own personal gain, but for their whole families. If a student does not succeed in their academic goals, they may be perceived as bringing shame to their entire family (Ang & Huan, 2006). It could be cultural customs such as this that encourage males to underreport the problems that they are having, especially in regard to academic concerns.

In terms of the results for female international students, the findings may be explained by their vast array of personal responsibilities in regard to the amount of time they have to pursue social support. Female international students who report having academic concerns may find that they are stretched too thin between succeeding academically (leading to their reports of academic problems) and all of their other individual and familial responsibilities to spend time seeking and/or benefiting from guidance, reassurance of worth, social integration, or social support generally. The

lack of this social support could potentially lead to feelings of depression, anxiety, and extreme stress (Whitley, 1984). Female international students who do not have academic concerns may benefit more greatly from social support simply because they have more time to pursue interpersonal relationships that tend to result in receiving guidance, reassurance of worth, social integration and social support overall.

One unique result was that, for reassurance of worth, both males who did report academic concerns as well as those who did not report academic concerns benefited from reassurance of worth. This may be tied to gender expectations in general of males to seek outward validation of themselves, their competencies, and their successes.

These findings are particularly interesting and warrant further research to discover the potential reasons for these differences. Specifically, work should be done to discover the issues facing female international students who report academic problems as it appears that social support is not a moderating factor for their stress levels. At the same time, there should be interventions to continue working to reduce stress for those international students who do benefit from social support as a moderating factor of stress.

### Implications

The purpose of this study was to investigate stress factors among international students and how social support moderates this stress. The findings help bring a better understanding to the particular stressors that are faced by international students, and how those students perceive and moderate their stress. The implications of this study are broad and encompass many fields of social services. It is important to note that although half of the sample population for this study was of Asian heritage, the results are not limited to the experiences of Asian international students. The

implications indicated by this study are relevant to all international students, including those from European, African, and Latin countries.

### *Implications for Social Work Practice*

As the United States becomes more and more diverse, it is necessary for social workers to be culturally competent in order to provide resources for and work with people from different ethnic backgrounds. A social worker's perceived understanding of a student's cultural background can have a great effect on that student's experience within the educational system (Ronnau, 1994). Therefore, it may be important for schools of social work to offer training to their educators and staff so that they may be better able to serve international student populations. Prior to creating an intervention program, it is important that staff and faculty are equipped with the knowledge necessary to foster an understanding and helping atmosphere for international students. Further, this education should be offered to social work students, as the social workers and educators of the future, so they, too, will be well-equipped to support individuals from different ethnic and cultural backgrounds.

This study found that social support is a very important factor in reducing stress for international students. One translation of this finding into practice is the development of intervention programs, specifically in the form of peer support programs. Previous research has shown that peer support programs have affected students in a positive way, helping students to improve and maintain their sense of well-being (Dillon & Swinbourne, 2007). Further, Westwood and Barker (1990) found that participation in peer groups increased international students' academic achievement and lowered their drop-out rates. With the importance of understanding diverse cultural backgrounds in mind, it is important to develop a program specifically designed to create a peer group for international students. As Dillon and Swinbourne (2007) discuss, peer support

groups have existed for some time, but tend to focus on surface issues affecting participants. There is a need for more far-reaching peer support groups that will tackle deeper issues affecting international students and include community members who are interested in learning about other cultures and helping international students adjust to United States culture.

Further, peer programs should take into consideration the varying effects of gender on an individual's perception of social support. As Lee and Robbins (2000) describe, females may benefit more from social support which carries with it a sense of consistent availability. On the other hand, males tend to benefit more from social support which focuses on reassurance of their self-worth and competency as recognized by others. This gender difference in the types of social support needed for males and females is consistent with the findings of this study and previous studies and should be a primary consideration of intervention programs and peer group development.

International students should be encouraged to participate in these intervention programs as soon as they arrive in the United States. As mentioned earlier in this study, the time when international students report the highest level of well-being and the lowest sense of stress is immediately after they have arrived in the United States, probably as a reflection of the excitement of being in a new environment. If these students are able to participate in a rewarding peer support program, there is a chance that students would be more able to maintain this heightened sense of well-being longer into their stay in the United States. Further, it would encourage them to be more open from the beginning about the stress they are experiencing in their lives, thus allowing them more of an outlet to discuss these stressors as well as seek professional help more immediately if needed.

### *Implications for Educational and Academic Settings*

One purpose of this study was to address the issues faced by international students and assist educators and administrators in understanding these unique issues. Educators can help international students by learning about their home culture, different gender role expectations, varying stress factors, and culture shock by applying this knowledge to the educational approach taken for international students. Having an understanding of how international students learn, interact, and react to the learning process, especially in regard to gender, allows teachers to create a learning environment that is supportive of international students' learning styles. As a result, culturally competent educators and school administrators will be able to bridge the gap between students' home countries and educational and life customs in the United States.

By providing appropriate orientation in terms of adjustment to a new culture, schools can create a comfortable and safe environment for international students. Schools can consider creating a mentorship program between international students who have been in the United States for a longer period of time and those who have just arrived. International students who have recently arrived in the United States would benefit from these programs as they would learn quickly from someone who has already experienced similar issues. It is important for international students to be able to access programming that is culturally relative to their home country. Cross-cultural programming with United States-born citizens would be helpful for international students to be able to learn about United States culture and to share their own unique customs and cultures with other students. When university administrators begin to understand the experiences of international students, they will be more able to create and enact policy and programming that will lead to successful outcomes for international students.

The results of this study indicate that international students, specifically males, can benefit from outside acknowledgement of their skills and accomplishments. For this reason, it is important to consider offering continued support for international students throughout their academic career. One of the best ways to do this is to offer leadership opportunities for international students who are succeeding in their academic goals. For example, allowing international students to offer activities and classes to their American peers would not only benefit international students by validating their academic successes, but would also provide American students with the opportunity to learn about different cultures from their peers.

#### Limitations

There were a few limitations worth mentioning in this study. First, the sample response rate was somewhat low (23%). Second, the data was gathered via an on-line survey meaning it was self-reported. Because of this, the data may be susceptible to response bias in regard to social desirability. However, the sample was drawn from all international students at this institution and was anonymous, thus increasing chances that responses would not be biased toward favorable responses to the University nor the University's International Student Center. Third, the data was collected at one mid-size Midwestern university and thus, results may differ in other institutions. Fourth, some countries were not equally represented based on gender or as representational of their presence on campus. Finally, this study focused only on academic related stress for international students so the results and implications cannot be generalized to other stressors that international students may experience while studying in the United States.

#### *Directions for future research*

Follow-up research in this area should address what kind of support international students use to cope with academic related stress as well as other types of stress. Techniques, programs, and

tools that will increase the ability of all international students to seek help, to acculturate to their degree of comfort, and to succeed in Midwestern American Universities can be developed with further thoughtfully designed research. Qualitative studies exploring some of this study's findings in more detail might benefit the design of these future programs. Future studies might also consider using a mixed-method approach in order to provide more in-depth information of international students' stress utilizing both statistical results and interview or focus group information. Since participants represented international students at various levels of education, future research could address issues faced by international students in specific levels of educational work as this study does not differentiate between how much schooling students had completed. Also, future studies might benefit from taking a longitudinal approach to international students' stressors.

Just as society changes over the decades in the United States, so do international students' experiences within it. In order to adequately address the issues faced by international students today and to be prepared for the issues of the future, new inquiries should take into account previous research as well as the growing importance of global change.

### *Conclusion*

This study indicates that there is a significant difference in the experiences of international students based on gender. Because of this, it is important for educators, counselors, and administrators to take into consideration the various culturally relative gender role expectations for male and female international students while they are staying in the United States. If gender is not taken into consideration, there is only a partial understanding of the particular issues at hand and how to address those issues or provide appropriate resolutions.

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APPENDIX A

University of Missouri International Student Survey

Informed Consent

## **Informed Consent**

Dear fellow students

My name is Andrew Muriuki. I am a doctoral student at MU School of Social Work currently doing a research project with the International Center to find out more about the current international students at MU.

### **Purpose of Research**

To study the role of social support and level of stress on MU international students

Through this study we hope to gain an understanding of some of the problems that international students face in adjusting to a new environment and how these problems are experienced and perceived.

### **Procedures**

This study is open to all international students in F-1 and J-1 status that are over 18 years of age. As a participant in this study, you will be expected to finish about 50 questions which will take no longer than 15 minutes to fill out. The contents of this questionnaire will include problems that most college student will face, what you think of these problems and how you perceived them. A questionnaire has been attached to this file. You will be expected to fill it out and mail this file back to the principal investigator electronically.

### **Risks**

Previous similar studies with these types of questions have shown to have little or no evidence of distress on subjects while filling out questionnaire. Participation in this study is voluntary and you have the right to refuse to participate. You have the right to terminate your participation at any time. If you refuse or withdraw from participation, your student status, benefits, or rights from offices of the University of Missouri will not be affected nor will any benefits, rights or support from the International Center be affected.

### **Confidentiality**

The results of this study will be kept confidential. The information that you provide will be completely private. The information that you provide will only be used for scientific purposes. Participant name and ID will not be required in order to finish this survey. This may include presentation of the results at a scientific meeting, publication in professional books, or any other purpose that the University of Missouri-Columbia, School of Social Work and International Center deems proper in the interest of education, knowledge or research.

### **Benefits**

It is hoped that this study will help us understand how to assess some of the problems that students face in a college environment and how these problems are perceived. You may not directly or personally benefit from the information but a better understanding of the issues facing international students will aid others. If you wish, you will be provided a brief summary of this study once it is completed. In case of any questions, you are welcome to contact the principal investigator of the study.

### **Subject's Permission**

I have read and understood the above description of the study. I hereby acknowledge the above and give my voluntary consent for this study. I further understand that if I participate, I may withdraw at any point during the study without penalty. I understand that if I should have any questions regarding this research and its conduct, I should contact any of the people named below.

We greatly appreciate your time and assistance in this project

**Researcher:** Andrew Muriuki, Phone: (573)882-9506 Email: ammrh2@mizzou.edu

**Faculty Advisor:** Dr Michael Kelly Phone: (573)882-0922

**International Center Advisor:** David Currey, Phone: (573)882-5510

Or you may contact the University of Missouri Campus IRB at 573-882-9585, Project number 1046139

APPENDIX B

University of Missouri International Student Survey

Please select the response that best describes you:

1. What is your gender a) Female b) Male
2. How old are you? \_\_\_\_\_
3. Country of Origin: \_\_\_\_\_ (Corigin)
4. You are currently a citizen of which country? \_\_\_\_\_ (Citizen)
5. What is your marital status?
  - a) Single/never been married (Mstatus\_1)
  - b) Married (Mstatus\_2)
  - c) Coupled/committed (Mstatus\_3)
  - d) Divorced or legally separated (Mstatus\_4)
  - e) Divorced but remarried (Mstatus\_5)
  - f) Widowed (spouse passed away) (Mstatus\_6)
6. How many members of your family are currently living with you? \_\_\_\_\_ (family#)
7. How many of them currently living with you, are extended family? \_\_\_\_\_ (not children or spouse) (family\_ext)
8. Religious affiliation: \_\_\_\_\_ (religion)
9. What is the level of your of involvement/commitment to your religion/spirituality:
  - a) Regular, serious, and devout (spirit\_1)
  - b) Participate only on holy days (spirit\_2)
  - c) Not involved (spirit\_3)
10. Were you more actively involved while in
  - a) home country (spirit\_home) b) US (spirit\_us) c) Does not apply. (spirit\_not)
11. How long have you been in the US: \_\_\_\_\_ (time\_us)
12. How long have you been at MU: (time\_mu)
13. Please check in the list below issues which have concerned you during the last semester/during you time at MU/during the last year?
  - a) Academic concerns (issue\_1)
  - b) Career decision (issue\_2)
  - c) Family issues (issue\_3)
  - d) Cultural adjustment issues (issue\_4)
  - e) Personal/emotional issues (issue\_5)
  - f) Relationship issues (issue\_6)
  - g) Job performance (issue\_7)
  - h) Financial issues (issue\_8)
  - i) English Language concerns (issue\_9)
  - j) Other \_\_\_\_\_ (issue\_10)
  - k) None (issue\_11)
14. What is your current GPA at MU (if this is your first semester, please anticipate what your grades will be): \_\_\_\_\_ (GPA)
15. What is your current academic status:
  - a) Undergraduate
    - a. freshman (u1)
    - b. sophomore (u2)
    - c. junior (u3)
    - d. senior (u4)
    - e. Non-degree (u\_ng)
  - b) Graduate Master's
    - a. first year (m1)
    - b. second year (m2)
    - c. third year (m3)
    - d. Non-degree (m\_ng)
  - c) Graduate Educational Specialist (ges)
  - d) Graduate Doctoral student
16. What is your major area of study: \_\_\_\_\_
17. I feel comfortable expressing myself in English A) Yes B)No (eng\_y, eng\_no)
18. I have problems understanding lecture notes and textbooks A) Yes B) No (lect\_y, lect\_n)
19. Have you experienced any of the potential problems since arriving in the US:
  - a) physical (exp\_1)
  - b) social (relationship with others) (exp\_2)
  - c) familial (exp\_3)
  - d) marital (exp\_4)
  - e) financial (exp\_5)
  - f) legal (exp\_6)
  - g) cultural isolation (exp\_7)
  - h) language (exp\_7)
  - i) academic (exp\_8)
  - j) emotional (exp\_9)
  - k) other \_\_\_\_\_(exp\_10)
  - l) None (exp\_11)
20. How many friends would you say you have at MU?
  - a) That are Americans \_\_\_\_ (friend\_am)
  - b) From Same nationality \_\_\_\_ (friend\_sn)
  - c) From other another nationality \_\_ (friend\_an)
  - d) None of the above (friend\_none)
21. Have you visited the international center? A) Yes B) No (inty, intn)
22. Please indicate the number of times you visit to International Center in one semester. \_\_\_\_
23. What type of services were you in need of at the time? A) Advising (intsev1) b) document request (intsev2) C) travel signature (intsev3) D) Counseling (intsev4) E) other (intsev6)
24. How would you rate the help did you received?
  - a) Excellent (ratesev1)
  - b) Very Good (ratesev2)
  - c) Good (ratesev3)
  - d) Average (ratesev4)
  - e) Poor (ratesev5)
  - f) Very Poor (ratesev6)
  - g) I have not visited the international center (ratesev7)
  - h) None (ratesev8)
25. Was the center helpful with your concerns? 5 Very Helpful 4 helpful 3 neutral 2 Not helpful 1 Not at all Helpful (help5, help4, help3, help2, help1)
26. Other then the International Center, please name one other source of help that you frequently use while at MU. \_\_\_\_\_ ( Otherhelp)
27. Do you use this other source instead of the International Center? A) Yes B) No (inth\_y, inth\_n)
28. Please highlight one issue you could not find help at MU \_\_\_\_\_

## APPENDIX C

### Social Provision Scale

Social Provisions Scale

In answering the next set of questions think about your current **relationships with friends, family members, co-workers, community members**, and so on. To what extent do you agree that each statement describes your current relationships with other people? Use the following scale to give your opinion.

	strongly disagree	disagree	agree	strongly agree
	1	2	3	4
1. There are people I can depend on to help me if I really need it.				
2. I feel that I do not have close personal relationships with other people.				
3. There is no one I can turn to for guidance in times of stress.				
4. There are people who depend on me for help.				
5. There are people who enjoy the same social activities I do.				
6. Other people do not view me as competent.				
7. I feel personally responsible for the well-being of another person.				
8. I feel part of a group of people who share my attitudes and beliefs.				
9. I do not think other people respect my skills and abilities.				
10. If something went wrong, no one would come to my assistance.				
11. I have close relationships that provide me with a sense of emotional security and well-being.				
12. There is someone I could talk to about important decisions in my life.				
13. I have relationships where my competence and skills are recognized.				
14. There is no one who shares my interests and concerns.				
15. There is no one who really relies on me for their well-being.				
16. There is a trustworthy person I could turn to for advice if I were having problems.				
17. I feel a strong emotional bond with at least one other person.				
18. There is no one I can depend on for aid if I really need it.				
19. There is no one with whom I feel comfortable talking about problems.				
20. There are people who admire my talents and abilities.				
21. I lack a feeling of intimacy with another person.				
22. There is no one who likes to do the things I do.				
23. There are people I can count on in an emergency.				
24. No one needs me to care for them.				

APPENDIX D

Perceived Stress Scale

Stress Level

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The next set of questions ask you about your feelings and thoughts during the last month. In each case, indicate how often you have felt or thought a certain way. Please use the following scale

**In the past month...**

	Never	Almost Never	Sometimes	Fairly Often	Very Often
	1	2	3	4	5
1. How often have you been upset because of something that happened unexpectedly?					
2. How often have you felt you were unable to control the important things in your life?					
3. How often have you felt nervous and "stressed"?					
4. How often have you felt confident about your ability to handle your personal problems?					
5. How often have you felt that things were going your way?					
6. How often have you found that you could not cope with all the things that you had to do?					
7. How often have you been able to control irritations in your life?					
8. How often have you felt that you were on top of things?					
9. How often have you been angered because of things that were outside of your control?					
10. How often have you felt difficulties were piling up so high that you could not overcome them?					

Please indicate any other concerns that may not be addressed by this questionnaire.

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Thank you very much for taking the time to finish this survey. This research may lead to a better understanding of the international students at MU.

## VITA

Eun-Jun Bang was born in Seoul, Korea and came to the United States to study in 1995. He has a B.S. in Sports Medicine (2000) and an M.S. in Family Studies (2002) from the University of Tennessee – Martin, an M.S.W. (2005) from the George Warren Brown School of Social Work at Washington University in St. Louis, and a Ph.D. in Social Work (2009) from the University of Missouri – Columbia.

Bang's research interests include: stress and how individuals respond differently to stress based on their cultural backgrounds and gender role expectations; individual methods used to cope with adjustment to a new environment; and development of intervention plans to facilitate this process of adjustment. Generally, Bang is interested in multicultural issues addressed within the context of international social work.