FACTORS INFLUENCING ACCULTURATIVE STRESS AMONG INTERNATIONAL STUDENTS IN THE UNITED STATES

by

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B.Sc. (Nursing), University of Dar-Es-Salaam, 1994
M.S., Kansas State University, 2003

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Abstract

The purpose of this study was to determine the factors influencing acculturative stress among international students from the international student perspective. This study explored how acculturative stressors, social support and stress are related. In addition the study examined the significant socio-cultural and demographic predictors of acculturative stress. The Berry's acculturation stress research framework and Bronfenbrenner's ecological perspective were used to guide this study.

Data was collected using an online survey from international students across a cohort of eleven U.S universities. Of the 986 students who took the survey, only complete data from 606 students were included in the current study. Descriptive statistics, univariate and multivariate statistical analyses were employed to summarize and test the proposed hypotheses.

The findings indicated that students who were experiencing increased levels of difficulty with the acculturative stressors were more likely to experience higher levels of stress. In addition international students who reported high levels of collective social support were more likely to display less impact of acculturative stressors on acculturative stress. However, the unique moderating influences of various types of social support (family, friends and important others) on the relationship between acculturative stressor and stress was not supported. The findings on the socio-cultural and demographic predictors of acculturative stress suggested that using the assimilation mode and identifying marital status in the "others" category was indicative of lower stress. Lower income and self identified lower social class prior and during acculturation were predictive of higher acculturative stress levels.

Findings highlight the fundamental role of the international student's social context and its impact on his/her acculturation process and outcomes. The findings have implications for professionals and scholars who work with international students in practice, education and policy. Suggestions for future research are also included.

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Major Professor
Dr. Karen Myers-Bowman

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Dedication

This dissertation is dedicated to my beloved parents: my late father, William Kamugisha, who has always been my shining star, strength and hope, I miss you dad; my beloved mom, Angela, who is my rock especially when it comes to success without despair. The motto you instilled in me that *Education is the Key to Life",* has lived with me forever.

I would have not accomplished my studies without the dedication of my beloved and wonderful family: my husband, Deo and my children Colin and Christopher who have been with me from the first day I said "I do" to my doctoral studies to the days I did not want anything to do with my research, and to the "aha" moments when I enjoyed the breadth of knowledge. I love you guys and I sincerely thank you for being patient!

Prologue

The following poem describes the social and academic life challenges facing international students as they adjust in a foreign country.

The *"Foreign Student"* Poem

For many it is exciting, going for international study.

Family and friends are crying, wishing luck to their buddy.

It may be dark or bright when flying, praying that it won't be achy.

For some it is normal, but for some it is a new adventure.

Food, weather or people may cause some struggle, sometimes one needs a mentor.

Culture differences become a struggle, stereotypes can make some to despair.

You have an accent, where do you come from, is one thing to expect.

Will you stay or go back home, another thing to prospect.

You become puzzled with the SALAAM[1], you wonder if it is a suspect.

As you try to adjust, you may face many more stressors to overcome,

Sometimes you may feel unjust, when bills can be a problem,

You may feel at your lowest, when homesickness becomes the outcome,

Classes may be challenging, participation may become an issue.

It may be your writing and talking, but what is taught sometimes maybe new.

Some professors are kind and caring, but others don't know what to do.

[1] SALAAM means greetings

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In class and outside you are learning, the host may be helpful,

When the host is talking, some wonder why they are not useful,

Co-nationals can become problem solving, you may feel somehow normal.

Family may also be your blessing, you feel safer and hopeful.

To some, adjustment is easier, to others this may be a *big problem*!

You wonder as a scholar, you decide to test if it is *random*.

INTRODUCTION

According to the 2006 Open Door report (IIE: Institute of International Education, 2006), the year 2005/06 marks the seventh year in a row in which the United States has hosted more than half a million international students. This trend of enrollment peaked at 586,323 in 2002/03, followed by declines of 2.4 % and 1.3% in 2003/04 and 2004/05, respectively. These declines have been attributed to the impact of the September 11 terrorist attacks, which led to student visa delays. Despite the declines, the United States is still the leading destination for international students at the post-secondary educational (tertiary) level worldwide (IIE, 2006). As of 2005/06 the international student enrollment at U.S. colleges and universities remained steady at 564,766. It is estimated that the number of international students will continue to increase to about eight million in 2025 (Altbach & Bassett, 2004).

The excitement and expectations of pursuing international study at U.S. colleges and universities are high for the majority of international students. In many cases, the U.S. is seen through an idealistic lens. Students anticipate participating in a much higher quality educational system than that in their own country and they expect to live in comfortable surroundings and circumstances. However, when they arrive in the U.S., these expectations are rarely easily met. The acculturation process involved in adapting to a new culture is a difficult experience for most. It includes changes in language, food, climate, finances, housing, social support, etc.

The difference between the students' original expectations and the reality of their U.S. experience has led to a considerable amount of research devoted to understanding and addressing the socio-cultural and psychological adjustments of international students on U.S. campuses (e.g., Aubrey, 1991; De Verthelyi, 1995; Fouad, 1991; Lin & Yi, 1997; Wehrly, 1986). The majority of the studies on the adjustment and adaptation of international students have utilized the acculturation framework of cross-cultural research. Acculturation refers to the individual process that includes continuous contact between groups or individuals from different cultures, which may result in subsequent changes in cultural patterns of one or both groups (Berry, 2003). Research on the acculturation of international students has demonstrated that they (international students) are at a greater risk of undergoing challenges related to the demands of acculturating to new social and educational environments compared to their U.S counterparts (Abe, Talbot &

Geelhoed, 1998; Mori, 2000; Yeh & Inose, 2003). They have to adapt to stressors related to cultural differences, language and academic styles, separation from home (Mori, 2000; Sandhu, 1995) as well as differences between the host country's political, socio-cultural and economic issues and their home country's (Altbach, 1991).

International students' experiences of these stressors can lead to a kind of stress commonly referred to as "acculturative stress" (Berry, 1997; Berry, Kim, Minde & Mok, 1987). This is the stress reaction in response to the difficulties experienced by international students during the acculturation process (Berry, 1997; Berry et al., 1987). There is considerable literature that has examined factors associated with the level of acculturative stress experienced by international students (e.g., Lee, Koeske, Sales, 2004; Poyrazli, Kavanugh, Baker & Al-Timimi, 2004; Ye, 2006; Yeh & Inose, 2003). However, the majority of these studies have not clearly established models that take into account the relationship between the international student's acculturation outcomes (i.e., acculturative stressor(s) and stress) and their social context (social support) as a unique paradigm of understanding the student's acculturation process.

This study is an attempt to fill this gap in the international student acculturation literature. The theoretical perspectives guiding this current study are the acculturative stress and the ecological models developed by Berry and his associates (1987) and Bronfenbrenner's ecological model (1979), respectively. These frameworks, discussed in detail in Chapter Two, offer an understanding of the international students' acculturation process and how it may be influenced by their social environment. In the current study, Berry and associates (1987) perspective hypothesizes acculturative models within which the international students' acculturative stress can be explored. Bronfenbrenner's (1979) perspective, on the other side, brings into light the importance of international students' ecological environment and its impact on their acculturative stress.

Problem Statement

Although a substantial number of studies have found that international students encounter numerous acculturative challenges that can affect their psychological well-being while living in a foreign country (Leong & Chou, 2002; McKinlay, Pattison, & Gross, 1996; Miller & Harwell, 1983, Oliver, Reed, Katz, & Haugh, 1999; Parker & McEvoy, 1993), very few studies have specifically examined the relationship between acculturative stressors and acculturative stress

among international students. Factors most commonly studied have been the direct effects of socio-cultural and demographic context (such as the length of stay, country of origin, gender, age, and marital status) on acculturative stress (e.g., Berry, Kim, Minde & Mok, 1987) and the relationship between acculturative stress and mental health symptoms (e.g., Chen, Mallinckrodt & Mobley, 2002; Lau, 2006; Lee, Koeske & Sales, 2004).

Furthermore, several studies acknowledge that social support is a crucial social context in adjustment, especially for individuals who are experiencing stressful life changes (Adelman, 1988; Jackson & Warren, 2000; Mallinckrodt & Leong, 1992; Misra, Crist & Burant, 2003; Tanaka, Takai, Kohyama, Furijahara & Minami, 1994). Researchers report various levels of social support not only impact life stressors, but also act as a buffer (moderator) against the impact of acculturative stress on psychological symptoms among international students (e.g., Chen, Mallinckrodt & Mobley, 2002; Lau, 2006; Lee, Koeske & Sales, 2004). However, it is not yet clearly determined as to how social support moderates the relationship between the acculturative stressors and acculturative stress among international students. Specifically, the role of the sources of support (i.e. family, friends and important others) and its influence on the relationship between stressor and stress has not been given due consideration among international students.

Purpose of the Study

The major purpose of this dissertation was to understand the acculturation process of international students by examining the relationships between acculturative stressors, social support and acculturative stress. In addition, specific socio-cultural and demographic predictors of acculturative stress were explored. The central research questions guiding the study were:
(1) How does the level of difficulty with the acculturative stressor(s) for international students relate to their level of acculturative stress?
(2) To what extent does social support influence the relationship between acculturative stressors and acculturative stress for international students?
(3) Which selected socio-cultural and demographic characteristics prior to and during acculturation predict acculturative stress among international students? The following specific questions regarding pertain to these characteristics:

- Does age have any impact on the level of acculturative stress among international students?
- Does gender have any impact on the level of acculturative stress among international students?
- Do single international students display higher acculturative stress than do married students?
- What is the relationship between length of stay in the U.S. and the level of acculturative stress among international students?
- Does the integration mode of acculturation reduce acculturative stress more than assimilation, marginalization and separation among international students?
- Do international students accompanied by their family experience *lower* acculturative stress than do unaccompanied international students?
- Do international students who perceive cultural values of their home country as collectivistic display higher levels of acculturative stress than do students who perceive cultural values as individualist?
- Do international students who perceive the cultural values of the current community in the U.S as collectivistic display higher levels of acculturative stress than do students who perceive the culture as individualistic?
- Does employment prior to acculturation reduce acculturative stress among international students?
- Does increased student monthly income reduce acculturative stress levels among international students?
- Is the perceived lower social class prior to or during acculturation related to higher levels of acculturative stress?
- Does increased number of years trained in English predict lesser level of acculturative stress among international students?

Significance of the Study

In this current investigation, the international student population was regarded as the acculturating group that is temporarily residing in a host nation, the United States. A majority of studies that examine this population's social and psychological well-being acknowledge that

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environmental and psychological difficulties affect the student's adjustment process in the new environment (e.g., Brison & Kottler, 1995; Church, 1982; Leong, 1986; Ryan & Twibell, 2000). However, the majority of these studies have primarily attended to the psychological context than social context of the international students' adjustment process.

Overall, this study brings light to the understanding of international students' acculturative stress from a social integrative model that takes into account the students' psychological and environmental contexts (i.e. the acculturative stressor(s), stress and social support). Special emphasis was given to the role of sources of social support such as family, friends and important others in influencing the students' stressor-stress adjustment process.

With the projected increases in international student enrollment in the U.S., contemporary reliable acculturation indicators such as acculturation stressors, stress, social support and personal characteristics are needed, especially in the implications for international students' well-being and cross cultural competence on U.S campuses. Family scholars and other professionals who work with international students and their families will benefit from this study. For instance, understanding how the individual and social contexts influence international students' acculturation outcomes will enable family practitioners to be actively engaged in the development and evaluation of appropriate programs that are geared towards promoting positive international student adjustment and cross-cultural education. As for future investigations, the study offers family researchers a challenge to further examine international students and their social environment (i.e., family, friends and important others) as a new focus for the field of family sciences.

Furthermore, as universities strive to promote and sustain international cross-cultural education through the eyes of the international students, they also will benefit from this study by acquiring the indicators that could impact potential policy and prevention programs that are geared towards positive international students' adjustment outcomes. Overall, the findings from this study offer a significant contribution to the literature on international students' adjustment, particularly, bringing light to the relationships between the students' experienced acculturation stressor(s), social support and stress.

REVIEW OF THE LITERATURE

International students who decide to pursue studies in a foreign country have to overcome the challenges that are related to their adjustment experiences. These challenges often arise from the differences between their home culture and the dominant host culture as well as other racial and minority groups in a pluralist society (Sodowsky & Plake, 1992). Researchers have demonstrated that international students are more likely to have added stressors that make their adaptation to the college environment more difficult than for the students from the host country (Abe, Talbot & Geelhoed, 1998; Kaczamarek, Matlock, Metra, Ames & Ross, 1994; Yeh & Inose, 2003). These stressors, known as "acculturative stressors," help us understand the international students' acculturative outcomes such as acculturative stress.

The following review includes relevant empirical and conceptual literature drawn from the area of international students' cultural adjustment experiences and the theoretical perspectives guiding the current study. The literature review is organized as follows: (a) overview of international students in the U.S.; (b) theoretical perspectives of acculturative stress; (c) common acculturative stressors among international students; (e) potential contextual predictors of acculturative stress; (f) a summary of the conclusions drawn from the review and finally (g) an overview of the current study and hypotheses.

International Students in the United States

The phenomenon of international students is not new in the United States. It dates back to the passage of the Passenger Act of 1855. It was established with the purpose of providing temporary immigrant status for visitors who want to acquire specific information, and upon their return back home, apply it to their country's development (Burks, 1984; Capen, 1915). Following this movement, the Institute of International Education (IIE) was established in 1919. The major purpose of this Institute was to promote lasting peace through greater understanding between nations (IIE, 2006). In 1948, the Institute further founded the National Association of Foreign Student Advisers (NAFSA), which was then renamed the Association of International Educators in 1990 (NAFSA, 2006). The primary goal of this organization was to promote the professional development of American college and university officials responsible for assisting

and advising the foreign students who came to the U.S after World War II. The association's scope has grown to include admissions personnel, English-language specialists and community volunteers who play an important role in improving international education on college and university campuses (NAFSA, 2006).

Supporters of international education acknowledge that the presence of international students in American colleges and universities is important for foreign policy and diversity issues as well as economic gains (Johnson, 2003; Peterson, Briggs, Dreasher, Homer & Nelson, 1999; Wolanin, 2000). For instance, foreign students have been reported to be a valuable educational asset in American academia because they add diversity in the classroom as well as support teaching and research in programs that have the greatest need, such as the sciences (Coleman, 1997; Johnson; Seigel, 1991; Zimmerman, 1995). As for foreign policy benefits, student exchange programs offer opportunities for successive generations of future worldwide leaders by promoting cross-cultural understanding and peace (Johnson, 2003). This is vital for a country's national security, especially when it comes to establishing allies around the world.

Diversity benefits also have been identified. Social interaction with international students increases the inter-cultural sensitivities and skills of American students (Straffon, 2003) as well as advances their knowledge about other countries (Peterson et al., 1999). In his address in support of international education, Harvard President Neil Rudenstine stated that:

> We really have to sustain our commitment to international students and faculty exchange programs. We need those international students and we need our students to be out there (studying abroad). There is simply no substitute for direct contact with talented people from other countries and cultures. We benefit from international students; they drive research and teaching in new directions that are very fruitful (Cited in Peterson et al., 1999, p. 67).

Moreover, international student enrollment benefits the U.S. economy through their expenditures in tuition and living expenses. According to the Open Doors report, the net contribution to the U.S. economy by foreign students and their families in the year 2004/05 was over $ 13,000,000 (IIE, 2006) (see Table 1).

Table 1. Net Contribution to U.S. Economy by Foreign Students (2004-05)

Contribution source	$ Amount in millions
Tuition and fees	8,997
Living expenses	9,604
TOTAL	18,601
Less US support of 30%	5,733
Dependents' living expenses	421
NET contribution	13,290

Source: IIE (2006)

According to the 2006 Open Door's annual census on international student enrollment in the United States, there have been periods of sharp increases followed by plateaus, like the one from 1954 to 2001 (IIE, 2006). However, the census also uncovered a decline in international student enrollment by 2.4 % in the year 2003-2004, two years post September 11. The major cause for this current trend post 9/11 has been linked to difficulties in obtaining visas, which is linked to current efforts to secure United States' borders (IIE, 2006). Figure 1 below displays the trend of international students' enrollment from 1953/54 to 2005/06.

Figure 1. Total International Student Enrollment Trends
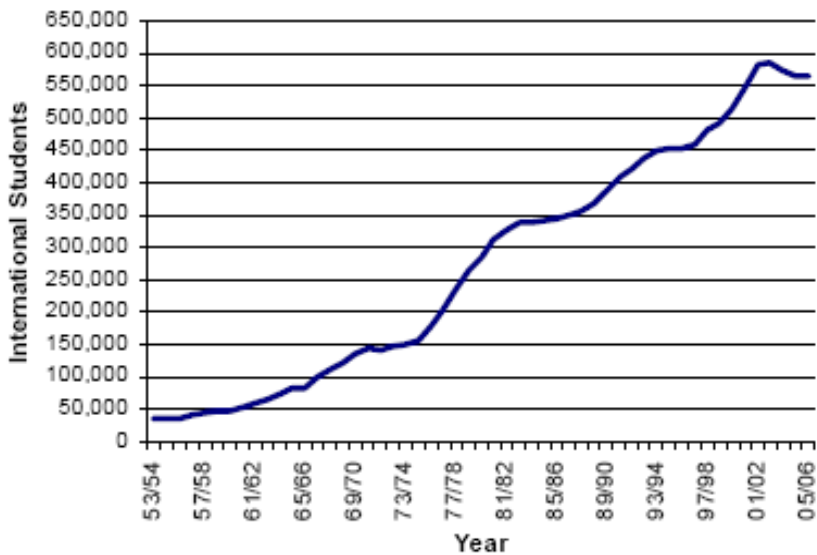
Source: IIE (2006)

In the United States proponents of student exchange programs and international education have voiced their concerns about this enrollment decline and have called for vigorous support for international education. The U.S. government, in particular, has shown persistently an interest in international education post 9/11. For instance, in August 2001, Secretary Colin Powell emphasized the importance of international education and exchange programs in strengthening the relationships between nations (IIE, 2006). In early 2006, the U.S. Departments of State and Education hosted the U.S. University Presidents Summit with the purpose of strengthening and emphasizing the importance of international education on the nation's interest (U.S Department of States, 2006). The summit encouraged colleges and universities to attract foreign students and scholars and also to encourage more U.S. students to study abroad.

Apart from being a diverse cultural group sharing the common experience of studying in a foreign nation and eventually returning to their home countries (Lin & Yi, 1997; Thomas & Athen, 1989), international students make the largest group of sojourning individuals in the United States (IIE, 2006). Table 2 shows the total numbers of international student enrollment and their sojourning categories in the years 2005/06. Therefore, as more efforts are made to recruit international students to study in the United States, it becomes increasingly important to understand the concerns, needs, perceptions and characteristics of this unique population (Peterson, Briggs, Dreasher, Homer & Nelson, 1999).

Table 2. International Student and Scholars Totals 2005/6

Category	Enrollment
International Students	564,766
International Scholars	96,981
Intensive English programs	43,580
TOTAL	705,327

Source: IIE (2006)

Theoretical Frameworks

Theoretical Framework of Acculturation

Meaning of Acculturation

According to Maynard-Reid (2005) the term acculturation reflects a "fuzzy definition" because it has no easily defined concepts. Historically, acculturation research has been pioneered by anthropologists, thereafter followed by sociologists and psychologists. The concept of acculturation was first introduced by a group of anthropologists in the early twentieth century. They defined acculturation as the "phenomenon which results when groups of individuals having different cultures come into continuous firsthand contact with subsequent changes in the original cultural patterns of either or both groups" (Redfield, Linton & Herskovits, 1936, p. 149). Later, in 1954, the Social Science Research Council (SSRC) conducted a systematic investigation to conceptualize a holistic meaning of acculturation. They defined acculturation as the acculturative change that is a consequence of direct cultural transmission between two or more cultural systems, which is influenced by ecological as well as demographic factors. They further differentiated cross-cultural acculturation from the intra-cultural change phenomena. They believed that intra-cultural change, which could occur because of socialization, urbanization, industrialization and secularization, is not considered as part of the acculturation change because it takes place within a given society. However, cross-cultural changes that result from contacts between two distinct cultural groups are considered to be part of acculturation process (SSRC, 1954).

Although these definitions have played a major role in acculturation research, they faced criticism because of their lack of focus on individual acculturation (Graves, 1967). These definitions have specifically been centered around acculturation as a group phenomenon with an emphasis on the groups' cultural change.

As a result, new definitions of acculturation began to emerge, especially within the field of psychology. In 1967 Graves proposed two distinctive levels of acculturation: group and individual. He defined the group level as a collective process in which there is a change in either the native culture or the host culture members or both. The individual level was defined as the psychological acculturation change within the individual as a result of contact with the host

society. Therefore, the participants in the two levels (i.e., group and individual) of acculturation may not necessarily share the same perceptions of the acculturation process (Berry, 1997; Bochner, 1986).

Subsequent researchers categorized psychological acculturation into two dimensions (Berry, 1997; Ward & Kennedy, 1994). One is the psychological dimension that is basically related to the values, ideologies, beliefs and attitudes that define a culture. The other dimension is related to the behavioral aspects which are about how the individual learns and adapts to external aspects of the dominant culture. Characteristics such as language skills, social skills, and the ability to negotiate the socio-cultural aspects of one's environment are important during the acculturation process.

Based on the work by SSRC, Berry (1990) concluded that for the acculturation process to be valuable three key distinctions are needed:

- A continuous and firsthand initial contact or interaction between cultures that will rule out short-term, accidental contact and single cultural practices that are diffused over a long distance;
- Among the people in contact, the outcome must be cultural or psychological that usually, but not necessarily, continues for generations' and
- Considering the first two factors, a distinction between process and state of acculturation must be made. He defined the acculturation process as the dynamic activity during and after contact, while the state of acculturation refers to the relative stability of the actual result of the acculturative process.

Despite such extensive efforts to define acculturation, researchers have not yet reached a consensual definition (Mehta, 1998). It is clear that the construct of acculturation continues to be blurred and, as a result, lacks precise and consistent conceptualization. However, despite these limitations, it could be argued that the construct of acculturation is important in understanding how different acculturating groups such as refugees, immigrants and temporary sojourns (e.g. international students) adapt to a new cultural environment (Berry, 1997; Berry et al., 1987). One important phenomenon that has been at the heart of acculturation research is related to the manifestation of acculturation (or acculturation outcomes), namely acculturative stress. Berry (1997) argued that when greater levels of conflict are experienced, and the experiences are judged to be problematic but controllable and surmountable, then the *acculturative stress*

paradigm is the appropriate conceptualization (p. 19). The description that follows is about the acculturative stress paradigm and how it is related to the acculturation stressor(s) (sources of difficulty) among acculturating groups such as international students.

The Acculturative Stress Model

Berry and his colleagues (1987; 1997) proposed a bidimensional acculturation stress model to understand the acculturation processes and outcomes of specific acculturating individuals and groups. Their theory emphasizes the importance of examining acculturative stress as a manifestation of acculturation when an individual or a group of people comes into contact with another cultural group. According to Berry, Kim, Minde and Mok (1987), the acculturation experiences may sometimes put a significant demand on the individual, leading to what they call "acculturative stress" (Berry, 1997, Berry & Annis, 1974; Berry, 2003). They define "acculturative stress" as a result of collective stressors that occur during the process of acculturation and can result in lowered mental health status of the acculturating individual (Berry et al., 1987). Berry et al. (1987) argued that the relationship between acculturation and stress is sometimes inevitable, and depends on the group of individuals and their characteristics as they enter the acculturation process. The outcome of this process can be enhancement of mental health or its destruction. This conception of acculturation and stress is illustrated in Figure 2.

The model starts (on the left side) with a particular situation that Berry and associates refer to as the "acculturation experience." Examples of the experience are migrant communities, or native settlements, or even sojourners in a foreign country. The individuals participate in and experience changes in acculturation to varying degrees from much to little. The middle section illustrates that, an individual may encounter stressors from varying experiences of acculturation, and for some people acculturative changes may all be in the form of stressors, while others may experience them as benign or as opportunities. The far right side depicts how varying levels of stress may manifest as a result of acculturation experience and stressors.

Figure 2. Berry's Theoretical Conception of Acculturation and Stress

ACCULTURATION EXPERIENCE Much ↕ Little	⟹	STRESSORS Many ↕ Few	⟹	ACCULTURATIVE STRESS High ↕ Low

FACTORS MODERATING THE RELATIONSHIP BETWEEN ACCULTURATION AND STRESS
*Nature of larger society
*Type of acculturating group
*Models of acculturation
*Demographic and social characteristics of the group
*Psychological characteristics of the individual
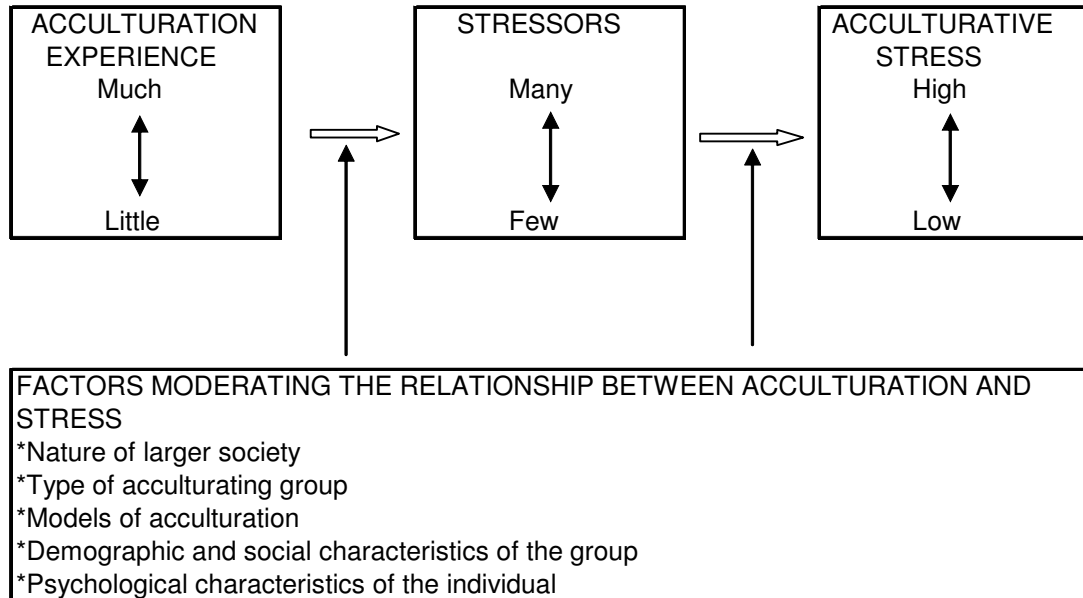
Source: Berry et al. (1987).

Berry et al. (1987) insisted that the relationships between the three major concepts (acculturative experience, stressors and acculturative stress) are "probabilistic" rather than "deterministic," and they also depend on a number of moderating factors. The first factor is the nature of the host or larger society as to whether it has a pluralistic or multicultural ideology or whether it is a society that pressures its people to conform to a single cultural standard. Another variable is related to the nature of the acculturating group. For example, if the groups are sojourners or international students, it is likely that they are temporarily in contact with the host and less likely to have permanent social support, and thus experience more mental health problems than those who are permanently settled and established, such as the immigrants and refugees (Berry et al., 1987).

They describe a third moderating factor as the mode of acculturation used by an individual as he or she adjusts to the new environment. This concept is based primarily on issues that have been identified to influence individuals and groups during acculturation. First, it includes the level to which individuals maintain their identity based on their home culture. Second, it is the contact with and participation in the larger host society. As a result, four different modes of acculturation are proposed: 1) *marginalization* is when the acculturating individual or group chooses to neither maintain his/her culture of origin nor values a relationship

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with the host culture; 2) *separation* describes when an individual maintains his/her culture of origin but does not value relationships with the host culture; 3) *assimilation* occurs when one values the relationship with the other culture but does not maintain his/her culture of origin; 4) *integration* occurs when one maintains her or his culture of origin as well as values relationships with the host culture.

Finally, other factors that can modify the relationship between acculturation and stress include the individual's demographic and socio-psychological characteristics. These include age, gender, length of stay in the host culture, socio-economic status, cognitive style, prior intercultural experiences and contact experiences. Empirically, studies have validated the special association between acculturative stress and several predictive factors (e.g., Berry et al., 1987; Berry, Kim, Power, Young & Bujaki, 1989; Kosic, 2004; Ward & Rana-Deuba, 1999); however, the relationship between acculturative stressors and acculturative stress has not yet been clearly established. In addition the researchers' conceptualization and operationalization of acculturative stress has shown some inconsistencies. For instance, Berry and his associates (1987) have used generic measures of stress to measure acculturative stress, which might not accurately reflect acculturation. Other researchers, primarily those who have used international students as their unit of analysis, have conceptualized acculturative stress based on constructs that reflect the acculturation process such as the Index of Life Stress (ILS) (Yang & Chum, 1995) and the Acculturation Stress Scale for International Students (ASSIS) (Sandhi & Asrabadi, 1994). The conceptualization of acculturative stressors, however, is still limited making it difficult to validate Berry's et al.'s model of the stressor-stress paradigm.

A more recent study that has uniquely examined acculturative stressors used the Migration–Acculturative Stressor Scale (MASS) (Ying, 2005). Ying conceptualized acculturative stressors following Berry et al.'s (1987) categorization of the sources of difficulty of acculturative stress (i.e. the stressors). These included five major categories, namely, the physical environment (e.g., climate, unfamiliar setting and safety), biological factors (e.g., food and diseases), social factors (e.g., homesickness, estrangement, loneliness), cultural factors (e.g., cultural value differences, encounter of racial discrimination), and functional factors (e.g., academic, financial difficulties and transportation problems) (Ying, 2005). The common acculturative stressors among international students are discussed later in the chapter after

describing how the ecological perspective can enhance our understanding of the student's acculturation stress.

An Ecological Perspective of Acculturative Stress

The current study can also be understood from an ecological perspective of human development. Developed by Urie Bronfenbrenner (1979), the ecological perspective emphasizes the relationships between the individual, his or her environment and the evolving interconnections between the two. The concept of examining development-in-context offers the basic foundation of any ecological research. According to the ecological model, development occurs in an environment which is referred to as a complex set of nested structures, each contained within the next. These structures include the micro system, mesosystem, exosystem, macrosystem and chronosystem.

The microsytem. According to Bronfenbrenner, the microsystem is "a pattern of activities, roles and interpersonal relations experienced by the developing person in a given face to face setting with particular physical, social and symbolic features that invite, permit, or inhibit, engagement in sustained, progressively more complex interactions with, and activity in, the immediate environment" (Bronfenbrenner, 1993, p. 15). He refers this system as the proximal level of environment where interpersonal dyads are likely to occur. Examples of the international students' microsystem would include institutions such as the extended and host family, peers/friends, school (e.g. international student center, international student organization, academic department) and neighborhood (religious and community centers) in which the individual lives.

The mesosystem. The mesosystem refers to the interactions between the individuals' social environments (i.e. the microsystems). According to Bronfenbrenner (1993), "A mesosystem comprises the linkages and processes taking place between two or more settings containing the developing person (e.g., the relationship between home and school, school and workplace, etc.). Special attention is focused on the synergistic effects created by the interaction of developmentally instigative or inhibitory features and processes present in each setting", (p. 22). An individuals' development is enhanced when there are positive and strong interactions within and between microsystems. For example, a student's family and friendship microsystems can interact to influence his/her acculturation process.

The exosystem. The system that encompasses the mesosystem is called the exosystem. This refers to the larger community within which the individual lives, that indirectly influences the individual's life and/ or experiences. Examples of exosystems are spouse's department, advisors' departmental and university policies, city by-laws and regulations and the decision-making political and business bodies.

The macrosystem. This system refers to the larger cultural context that influences the developing individual. This system has an indirect influence to the individual: "The macrosystem refers to the consistency observed within a given culture or subculture in the form and content of its constituent micro-, meso-, and exosystems, as well as any belief systems or ideology underlying such consistencies (Bonfenbrenner, 1979, p. 258). It contains the values, ideologies, attitudes, laws, world views and customs of a particular culture or society. For instance, international students' experiences are influenced by the political philosophies, cultural values and beliefs, economic patterns and social conditions in the country of origin and their host country.

The chronosystem. This system refers to the individual developmental changes that are influenced by their life experiences (Bronfenbrenner, 1989). The importance of time in the ecological model is crucial in understanding social concepts. Developmental changes that can influence the students' life experiences may include the birth of a child while studying, child starting schooling, divorce, death of loved ones back home and/or winning scholarships. Other influences may include changes within the students, such as a severe illness and disability.

While the contextual etiological variables have been explored in general in the acculturation literature, little attention has been given to the particular phenomenon of the influence of these variables on the students' experienced acculturative stressors and stress, in particular, social support. Therefore, the major focus of the current study was to examine the role of the students' social support microsystems (family, friends and important others) and how they influence the acculturative stressor-stress paradigm. In addition, the study also determined how individual students' characteristics influence their overall acculturative stress. The sections that follow seek to offer an understanding of the students' social environment and how it influences their acculturation process. I first begin by introducing the common acculturative stressors (i.e. ecological challenges).

Common Sources of Acculturative Stressors among International Students

Although it has been reported that most of the international students eventually adjust well as they study in a foreign country (Church, 1982), studies show that they face multiple stressors related to their acculturation process (Day & Hajj, 1986; Greene, 1998; Pedersen, 1991; Sandhu & Asrabadi, 1994; Sue & Sue, 1999). These stressors sometime result somatic and psychological symptoms such as anxiety, hostility, loss of appetite and poor sleep patterns (Aubrey, 1991; Redmond & Binyi, 1993).

In their pioneering work on the needs and challenges faced by international students in eleven countries, Klineberg and Hull (1979) concluded that language and academic difficulties, loneliness, homesickness, and financial difficulties were the most commonly reported problems. Other adjustment challenges among international students include housing, food, health issues, dating climate and transportation (Arubayi, 1980). The recent terrorism-related issues also may be potential stressors among international students. Below is an overview of some of these major challenges.

Language and Academic Challenges

For most international students, language issues are a major acculturation challenge (Wilton & Constantine, 2003). Yeh and Inose (2003) conducted a study among 372 international students in a large urban university in the United States and concluded that higher frequency use, fluency level and degree to which students felt comfortable speaking English, predicted lower levels of distress. The lack of English language proficiency can have an impact on how the students communicate with other students and professors during lectures (Aubrey, 1991; Chen, 1999; Lewthwaite, 1996). For example, in a qualitative study designed to determine the adjustment problems of international students in New Zealand, students reported feeling tension when attempting to use the appropriate discourse necessary for feeling part of the academic community (Lewthwaite). Another challenge is the student's accent, especially during class discussions and teaching. For example, undergraduate students may blame for their performance on inability to understand the international graduate student's accent (Heikinheimo & Shute, 1986). These pressures are likely to worsen when the people in the host nation lack cross-cultural communication skills such as appreciating differences and exercising patience in understanding people who speak a different language. Studies have shown that the host faculty and students'

recognition of cultural barriers is an important cultural/social need for the international students' positive adjustment (Beykont & Daiute, 2002). Therefore, the strategy of being sensitive and learning how to communicate with international students is helpful toward internationalizing universities and colleges (Peterson, Briggs, Dreasher, Homer & Nelson, 1999). It has to be acknowledged that international students may have as well difficulties with the accent of their instructors and host students.

Other academic stressors are related to the student-supervisor relationship, teaching styles, the process of becoming a teaching assistant and pressure of doing well academically. Lewthwaite (1996) noted that although students acknowledged the hospitality, friendship and guidance from their supervisors, they expressed concerns about how much dependence or deference they should show their academic supervisors, fearing that assertiveness could be misinterpreted as aggression. Students felt that they did not want to approach staff and faculty, particularly if they seemed stressed and very busy. In other instances, students felt that the classroom informalities were disrespectful to the faculty (Lin & Yi, 1998). In some situations, the resentments by host students toward international students' graduate teaching assistant posts may be another additional challenge (Lin & Yi, 1997; Perdesen, 1991). This may occur because of the host students' perceived job threat (Lin & Yi, 1997). Challenges such as these are very confusing to the international student whose primary motive in a foreign country is to gain the best socio-cultural and educational opportunity. In regard to academic studies, stress also may develop with poor academic performance. As a result, international students may always feel pressured to do well (Chen, 1999).

Racial Discrimination and Prejudice

The literature suggests that international students experience the effects of prejudice and discrimination which affect their psychological health and cultural adjustments (e.g., Hayes & Lin, 1994; Mori, 2000; Manyika, 2001; Nebedum-Ezeh, 1997; Sandhu, 1995; Winkelman, 1994; Yoon & Portman, 2004). Studies in various countries (such as Canada, the United States and New Zealand) have noted that international students experience some form of intentional and unintentional racial discrimination (Heikinheimo & Shute, 1986; Pedersen, 1991). For instance, Heikinheimo and Shute (1986) noted that international students reported feelings of being treated less favorably than the host students by faculty and some staff in the campus dining halls.

Greater levels of discrimination and prejudice are likely to occur among international students who are from cultures that are the most different from the host countries such as Africa, Asia and South America citizens visiting the United States (Pedersen, 1991; Sodowsky & Plake, 1992). Feelings among the foreign students of being devalued by the host nation are not uncommon (Lewthwaite, 1996). Discrimination, prejudice and stereotypical remarks can be very stressful, especially for international students who were raised in a racially homogenous society (Constantine, Anderson, Berkel, Caldwell & Utsey, 2005; Phinney & Onmughalu, 1996). As a result of discrimination, students may feel less motivated to interact with others from the host nation, which can lead into isolation/alienation and loneliness (Constantine, et al., 2005; Hayes & Lin, 1994; Klomegah, 2006; Mallinckrodt & Leong, 1992; Mori, 2000; Nebedum-Ezeh, 1997).

Isolation/Alienation

Even for those students interested in the host nation, cross-cultural differences can be a problem with issues such as friendships and relationships. In turn, feelings of isolation and loneliness become more apparent (Arthur, 1998). For example, DuBois (1956) noted that international students were concerned with American students' perceived shallow level of personal relationships with international students. Similar findings were reported among international students in the United Kingdom (U.K.). Bradley (2000) reported that although U.K. students were outwardly friendly, their relationships rarely went past superficial stages, and, as a result, the international students felt lonely, marginalized and isolated. As a result of being isolated and discriminated, most international students turn to their co-nationals (students from the same country) for gaining a sense of belonging.

Feeling lonely also can be difficult during the initial phase of the adjustment process when students are experiencing difficulties in accessing familiar support networks (Pedersen, 1991). This could be severely overwhelming for students who have left their spouses and children overseas (Lewthwaite, 1996). In a study of 187 international students in the U.S., it was noted that although students felt satisfied with their decision to study abroad, about 29% attested to experiencing loneliness, 30% cited frequent homesickness, and 46% "felt they had left a part of themselves at home" (Rajapaska & Dundes, 2002, p. 19).

Homesickness, Perceived Hatred, Guilt and Fear

Homesickness can become a problem as international students try to remember and keep their own cultures while in the host country (Sandhu & Asrabadi, 1994). Other sources of stress are feelings of hatred, fear and guilty consciousness. Hate can result when a student feels that he/she has been rejected by the people of the host nation. Students also may experience fear of the unknown because of insecurities and worries (Sandhu & Asrabadi, 1994). Sometimes, the decision to integrate more with the host nation may lead to guilty feelings as a betrayal to their own culture (Sandu & Asrabadi, 1994) especially with other students who are co-nationals. These factors could increase their level of acculturative stress.

Financial Challenges

One of the biggest acculturation challenges reported by international students is that of finances. Although the majority of the international students pay for their education with personal and family funds (Institute of International Education, 2006), in many cases, these finances are insufficient for the student's program of studies. For those who rely on the limited graduate assistantships, the situation is even worse because these assistantships hardly cover their living expenses including tuition, fees and other basic necessities (Kuo, 2004). Therefore, increases in tuition and fees, lack of scholarships, unanticipated inflation and employment restriction are some of the issues to which international students must adjust during their stay in the host country. These financial issues are potential stressors that may contribute to their levels of acculturative stress.

Terrorism as an Additional Source of Acculturative Stress

It is well known that the main reason for foreign study is to pursue educational goals (Parr, Bradley & Bingi, 1992). However, international students' educational and non-educational outcomes are influenced by socio-cultural and political adjustments arising in a host nation. For instance, the effects of the September 11 attacks opened a new era for the United States by changing the American way of life. The feeling of fear and uncertainty related to major national traumas such as this one are not limited to those who experienced it directly but also are experienced by those who are miles away from the event (e.g., Silver, Holman, McIntosh, Poulin

& Gil-Rivas, 2002; Schuster, Stein, Jaycox, Collins, Marshall, Elliot, Zhou, Kanouse, Morrison & Berry, 2001).

The international student community was among those who were both directly or indirectly affected by the tragedy. They have to deal with the overall experience of the attacks if they were in the U.S. in 2001, the potential future attacks and the impact of the attack on their acculturation experiences as foreign students with student visas. Issues such as racial discrimination and profiling (Kim, 2003; Lane, 2001), fear of going back home for family emergencies or vacation and scrutiny of security clearance and visa regulations (Starobin, 2006) are some of the challenges they have to undergo. Other stressors include increased fees and effects of the Student Exchange and Visitor Information System (SEVIS) tracking system which is a database that keeps track of international students' status in the U.S. (Greenberg, 2002). Therefore, taken together, this visa related problems present the presence of an apparent challenge to acculturation that is related to the backlash of terrorism. To date, no study has examined how the issue of terrorism as a stressor is related to international student acculturative outcomes. This unique stressor is understudied phenomenon among the international student population.

Related studies on the link between indirect exposure to terrorism and terrorism-related outcomes (such as PTSD and terrorism-related anxiety) have been reported elsewhere. For instance, Silver and colleagues conducted a study about future terrorist related anxiety in subjects two and six months following 9/11. They concluded that, six months after 9/11, 35.7% of the sample still had fears of future terrorism and 40% feared harm to their families from terrorism. In a longitudinal design, Liverant, Hofmann and Litz (2004) examined the presence of a stress response after the September 11 terrorist attacks in a sample of indirectly affected college students. These researchers concluded that the majority of the students were severely psychologically impacted initially by the terrorist attacks, however, the levels of anxiety decreased over time. These preliminary findings demonstrate a link between terrorism and future terrorism-related anxiety among groups that were indirectly exposed to the 9/11 attacks. Others have examined the impact of terrorism as a backlash against some subgroups, particularly those from the Middle East and Muslims (Amer, 2005). Therefore, it is also important and timely to determine how international students' perceived terrorism-related outcomes are related to their acculturation process and outcomes.

Re-entry Challenges

The re-entry issue (returning back to the home countries) is another challenge for international students. They face challenges when returning home, especially related to fitting back to their roles (family or employment) or the transferability of their educational and technical expertise (Arthur, 1998; Furukawa, 1997; Pedersen, 1991). Anecdotal experiences reveal that when some students decide to come to the U.S to study, they do so without their employer's support, and thus they are at risk of loosing their current position. However, this re-entry issue has been overlooked by researchers and officials who are interested in the international students' adjustment process (Arthur, 2003).

The Socio-Cultural and Demographic Contextual Predictors of Acculturative Stress among International Students

Existing literature supports the possibility that several factors from one or more of the socio-cultural and demographic contextual factors could emerge as predictors of acculturative stress among international students (Berry, 1997). However, the literature is inconclusive in its results and offers limited documentation of the main or moderating effects of these factors in relation to the acculturative stressor-stress paradigm. The following section offers a baseline on the potential factors prior to or during acculturation that have been reported to predict acculturative stress. These factors include age, length of stay, gender, cultural distance (English language usage and cultural values), model of acculturation and perceived social support, marital, family status and socioeconomic status (Berry, Kim, Minde & Mok, 1987).

Factors Existing Prior to International Study

Age

According to Berry (1997), one's age is an important determinant of how acculturation will proceed. He suggest that the younger the acculturating individual the fewer the problems they will experience during their transition. He continues to argue that adolescence and older youths as opposed to younger children often will experience substantial problems because of their developmental related challenges (e.g. identity). Individuals who begin their acculturating in later life, on the other hand, appear to be at increased risk. However, when it comes to

acculturation literature of international students, the findings on the relationship between age and adjustment have been mixed.

Several studies support the hypothesis that older international students have more difficulties adjusting than younger students (e.g., Dee & Henkin, 1999; Hull, 1978; Poryzali, Arbona, Bullingh & Pisecco, 2001). Part of the reason for this age difference could be that younger students are more likely to be socially involved than older students and thus have an easy transition to American culture (Hull, 1978). Several other studies, however, posit that younger students have the most difficulties because of a lack of maturity and an inability to deal with their new responsibilities (e.g., Church, 1982; Junius, 1997; Msengi, 2003; Pruitt; 1978). Conversely, a number of other studies have consistently suggested that there are no significant differences between age and adjustment difficulties among international students (e.g. Al-Mubarak, 1999; Greene, 1998; Knowles, 2003; Wingfield, 2000). Moreover, few studies that have specifically conceptualized acculturative stress also demonstrate no significant relationship between age and overall stress level (e.g., Ninggal, 1998; Poyrazli, Kavanaugh, Baker & Al-Tamini, 2004; Yeh & Inos, 2003). Thus, it may be useful to further explore the relation between age and acculturative stress from international students across the U.S. to clarify these contradictory findings.

Gender

Gender is another important variable in the acculturation process. However, just like age, findings on the relation between gender and adjustment are mixed. According to Berry and associates (1987), females are more likely to experience greater stress than their male counterparts. This hypothesis of gender differences has also been supported by other studies examining adjustment issues among international students (e.g. Church, 1982, Msengi, 2003; Pruitt, 1978). Researchers have partly attributed this gender difference to cultural nuances such as gender-roles expectations (Berry, 1997). For instance, studies among international students report that female students from countries practicing less freedom than in the U.S. were more likely to experience greater adjustment difficulties (Junius, 1997; Leavell, 2001; Manese, Sedlack & Leong, 1984). Conversely, however, it has also been reported that males face greater problems than females (Cheng, 1999).

In addition to the above gender differences, there has been a substantial amount of evidence suggests that there is no significant gender differences on the overall adjustment

process of international students (e.g., Misra, Crist & Brunant, 2003; Galloway & Jenkins, 2005; Goyol, 2002; Knowels, 2003). This finding also has been supported by researchers who have examined acculturative stress among international students (Al-Mubarak, 1999; Poyrazli, Kavanaugh, Baker & Al-Tamini, 2004; Ninggal, 1998; Yeh & Inos, 2003). In summary, the international student adjustment literature remains inconsistent in regard to gender difference as it pertains to overall adjustment problems. Thus, focused studies are needed to explore the relationship between gender and acculturative stress among international students.

Marital Status

Family and marital status are potential predictive factors in international student adjustment. Being single can be very stressful resulting in isolation and loneliness. At the same time, if a student decides to marry within the new culture, he or she might experience less stress because she/he can depend on his/her spouse support. The same applies to those who have been married prior to acculturation and/or are residing with family. However, for some students being married or residing with family might come with a price when dealing with the changes that come with acculturation.

In the acculturation literature on international students, the findings on the differences between those who are married and those who are not as they pertain to adjustment and adaptation in the host country are mixed. Some studies have found that married international students have fewer adjustment problems than single students (Junius, 1997; McCoy, 1996; Msengi, 2003; Ng, 2001; Perrucci, & Hu, 1995; Salim, 1984), while others find no significant differences between married and single students (e.g. Klineberg & Hull, 1978; Pruitt, 1978). Researchers who have noted adjustment differences conclude that married students are more likely to experience lower levels of anxiety (Ruetrakul,1987) and less loneliness (Hull, 1978; Pruitt, 1978) because they receive support from their spouses. More recently, Poyrazali and Kavanaugh (2006) conducted a study to assess the relation of marital status, ethnicity and academic achievement in relation to the adjustment strains experienced by 141 international graduate students attending five universities in the United States. Their study revealed that marital status and students' level of social adjustment were significantly related, with married students experiencing lower levels of social adjustment strain than single students.

Family Status

Family status on the other hand, has not been given much consideration within the international students' adjustment context (e.g., how those with children differ from those who have no children or are single) as compared to marital status. In trying to address the role of family status on students' adjustment outcomes, Oropeza, Fitzgibbon and Baron (1991) suggested that adjustment problems are more likely to be complicated among students who acculturate with spouse and children. They concluded that the amount of adjustment problems faced by a sojourner is multiplied by the number of family members for whom she /he is responsible. These problems could be explained partly by the lack of social skills on part of the student related to limited amount of time spent with members of the host society (Chapdelaine & Alexitch, 2004). Despite this potential negative outcome regarding acculturation with family, the role of family social support in the adjustment process of international students has been well documented (Amer, 2005; Hayes & Lin, 1994; Hovey & King, 1996; Pedersen, 1991). Thus, given these findings, it is appears that marriage and family are important variables to consider in the study of international student adjustment.

Cultural Distance

"Cultural distance" refers to how dissimilar two cultures are. It is also a predicting factor of how acculturating individuals/groups adapt to a new culture (Berry, 1997). The differences can be attributed to ones' language, religion, climate, food preferences, traditions, or values/ideologies such as collectivism or individualism. Researcher suggest that the greater the differences between the host and country of origin cultures, the greater the stress (Berry et al, 1987; Leavell, 2001; Knowles, 2003; Yeh & Inose, 2003). For instance, as reported earlier in the review, language issues are among the common international student acculturative stressors in the United States and other English speaking countries. Therefore, it is assumed that students who have limited usage English language usage prior to acculturation experience are more likely to experience more adjustment difficulties.

Furthermore, apart from language, the majority of studies have utilized the construct of "geographical region" to determine the cultural distance between the host country and student's country of origin (e.g., Furnham & Bochner, 1982; Lin & Yi, 1997; Wang; 1991; Yang & Clum, 1994; Zhang & Rentz, 1996). These regions, namely Asia, Africa, Central America, South America, Europe, Oceania and North America, are conceptualized in terms of their cultural and

social similarities to the United States. This includes assessing the core cultural value orientation of the region as individualistic or collectivistic. Triandis, Bontempo,Villareal, Asai and Lucca (1988) suggest that this cultural value orientation is the most promising dimension of cultural distance. According Ting-Toomey, (1999),

> … Individualism refers to the broad tendencies of a culture in emphasizing the importance of individual identity over group identity, individual rights over group rights, and individual needs over group needs. Individualism promotes self-efficiency, individual responsibilities and personal autonomy. In contrast, collectivism refers to the broad value tendencies of a culture in emphasizing the "we" identity over "I" identity, group rights over individual rights, and in-group-oriented needs over individual wants and desires. Collectivism promotes relations interdependence, in-group harmony, and in group collaborative spirit. (p. 67).

The individualism - collectivism dimension has implications for students' acculturation during their international study. It has been reported that students who originate from countries with collectivistic values experience difficulties when in contact with societies that emphasize individualist values (Swagler & Ellis, 2003, Zhang & Rentz, 1996). For instance, it has been reported that students from collectivistic societies feel that competition in U.S. educational setting takes away their opportunity to learn and relate (Eland, 2001). In this regard, modesty would be the key values from a collectivistic point of view as opposed to the individualistic value of self promotion (Triandis, et al. 1988).

Factors Arising During Acculturation

Length of Stay

The length of students' stay in a host nation has been linked to acculturation outcomes among sojourning individuals (Klinerberg & Hull, 1979; Oberg, 1960). Oberg (1960) argues that sojourners who stay longer in the host country are potentially adjusting well because they have likely passed through different stages of adjustment as compared to those who are newer to the environment. Researchers have found that the longer the student resides in the U.S., the lower the cultural concerns (Wilton & Constantine, 2003) and acculturation stress levels (Msengi, 2003).

Socio-Economic Status

Although socio-economic status (SES) lacks a clear operational definition in the literature, it is a common multidimensional determinant of adaptation among acculturating individuals. The most common classifications of SES include education, income, occupation and social class. One finding by Coie, Dodge and Coppotelli (1982) among immigrants, concluded that individuals who come from a low SES background experience more stress than those who come from a middle-class and upper SES. In regard to one's education, Berry (1997) describes it as a protective factor against negative adaptation and a correlate of other resources such as income, occupation status and support networks during acculturation. In order for international students to be admitted into U.S universities, they have to either have attained a high school diploma (if undergraduate) and/or a higher degree (if graduate) apart from other admission requirements. For these students, status loss or limited status mobility during their sojourn period is something that they have to anticipate. A study among international students (Boehr, 1983) revealed that although the majority of students do not anticipate a lower status pre-departure to the United States, they felt that their status was lower than that in their home country during their sojourn period. This shift of status has also been reported among immigrants (Aycan & Berry, 1996). It is important to extend these earlier findings to determine how international students'. SES can influence their acculturation outcomes.

Model of Acculturation/Acculturation Strategies

Berry (1987) argued that there are two essential questions that can predict an individual's acculturative strategies: (1) Do they believe it is of value to have relationship with the dominant host culture? (2) Do they believe it is of value to have contact with ones' own ethnic culture? With these questions in mind, Berry proposed a multidimensional matrix to conceptualize individual acculturation strategies. Table 3 below illustrates how one can conceptualize the acculturation strategy.

Table 3. Berry's Bidirectional Model of Acculturation

Values Relationship with Host Cultural Group	Values Maintaining Culture of Origin	
	Yes	No
Yes	Integration	Assimilation
No	Separation	Marginalization

Source: Adapted from Berry (1987)

Berry argued that the strategies may be developed based on whether someone values both the cultural identities, or one culture but not the other, or neither of the two. The following strategies can be employed during acculturation:

- *Marginalization Strategy*- the individual neither maintains one's culture of origin nor values a relationship with the other culture.
- *Separation Strategy* – the individual maintains the culture of origin but does not value relationships within the host culture.
- *Assimilation Strategy*- the individual values the relationship with the other culture but does not maintain the culture of origin.
- *Integration Strategy*- the individual maintains her or his culture of origin as well as values relationships within the host culture.

Research on immigrants' models of acculturation has revealed that integration is associated with lower acculturative stress (Berry et al., 1987; Kosic, 2004). Assimilation, on the other hand, was associated with medium stress, while separation and marginalization were associated with higher levels of acculturative stress. Research on international students has been scarce and contradictory. Berry et al (1987) asserted that sojourning individuals, such as international students, are more likely to choose separation because they believe that they will eventually return home. In another study, international students who chose integration demonstrated higher stress scores than those who choose assimilation and separation (McClelland, 1995).

Social Support

When students decide to pursue studies in a foreign country, they run the risk of losing their familiar social support networks, which may affect their acculturative stresses (Pedersen,

1991; Sandhu, 1995). Social support is a powerful coping resource during cross-cultural transition and may lead to the students' successful adaptations (Berry, 1997; Mallinckrodt & Leong, 1992). Evidence supports its beneficial effects especially during periods of uncertainty by providing both personal affirmation and strategies for coping (Arthur, 2001; Mallinkrodt & Leong, 1992; Nebedum-Ezeh, 1997; Swagler & Ellis, 2003). For instance, Yen and Inose (2003) concluded that international students who were satisfied with their social support networks experienced less acculturative stress than those who were not. In addition, Ye (2006) found that students who were more satisfied with their interpersonal support networks had less perceived discrimination, less perceived hatred and less negative feelings caused by change that those who were not satisfied. Chen, Mallicnkrodt and Mobley (2002), however, concluded that social support among international students did not have any direct beneficial effect on the students' stressful life events such as racism and psychological symptoms of distress.

Moreover, there is a suggestion that perceived social support has a stronger influence on psychological well-being than "enacted" or "actual" social support (Lakey & Dickinson, 1994; Lakey, McCabe, Fisicaro & Drew, 1996; Wethington & Kessler, 1986). For example, Rajapaska and Dunde (2002) found that international students' perceptions of social network but not the number of friends significantly correlated with their adjustment. The benefits of perceived social support as a direct influence and buffer in relation to stressful situations also have been reported elsewhere (Mallinckrodt & Leong, 1992; Pierce, Sarason, & Sarason, 1996). Therefore, it could be argued that perceived social support from different sources (i.e., family, friends and important others) would have an influence on international students' acculturative stress. However, it should be noted that despite the increased awareness that families, friends and important others influence the students' acculturative experiences (Leong & Sedlacek, 1986; Yang & Chum, 1995), few studies have examined the relative importance of these three sources of support concurrently. None of these studies examined these aspects independently.

Family and Friends

Misra, Crist and Burant (2003) concluded that international students perceive their social support to include three kind of support resources such as contact with direct family members (parents and siblings), contact with members of own cultures and contact with new friends in the United States. Family is reported to be an influential social support system in the adjustment of acculturating individuals (Amer, 2005; Hovey & King, 1996). However, among international

students, there are reports that university personnel discourage students to bring families with them to a foreign country because of the belief that family will add to their adjustment problems (Verthelyi, 1995). For instance, it has been reported that for married students, spouses could be an added adjustment stressor (Adelelagn & Parks, 1985). The demands placed on the student by his/her family could be partly be explained by the family members' adjustment to the new environment (De Vertheyi, 1995). In addition to the family stressor, the support seeking behaviors of international students can also impact their utilization of support networks. For instance, some students are reluctant to seek family support from their home countries because they do not want their families to worry about them (Davenport, 2005). Others may be reluctant to do so because their family depends on them for support. As a result they start relying on their co-nationals or other friends for their social interaction and relationships needs (Brein & David, 1971; Eland, 2001). The benefits of social relationships are crucial for the students' adjustment as well as their families (Zimmerman, 1995), especially relationships with friends from the host nation (Adelegan & Park, 1988; Perruci & Hu, 1995). Hosting national friends are essential when it comes to cultural and language adaptation (Heikinheimo & Shute, 1996). Co-national friends on the other hand, are beneficial in providing the sense of belonging (Church, 1982; Heikinheimo & Shute). For some students, however, seeking friends during adjustment distress is sometimes difficult partly because of cultural differences. For example, Oliver, Reed, Katz and Haugh (1999) found that Asian students were less likely to seek support from friends during time of distress as compared to American students.

University Services and International Students Organizations

University services such as counseling centers are always made available for students in need. The growing body of research among international students however, demonstrates that they are reluctant to use counseling services partly because of the cultural differences and lack of cross-cultural counselors (Pedersen, 1991). The social stigma of seeing a psychologist and confidentiality are problems to a majority of the students (Bradley, 2000; Davenport, 2005; House & Pinychon, 1998). Other students do not utilize available campus resources because they feel that the discretionary time available could best used in an effort to produce projects and assignments in proper English (Lewthwaite, 1996). Most importantly, international students' friendship networks have been linked to their less utilization of counseling center support (Davenport, 2005). University official supports such as those offered by international student

centers have been linked to reduced acculturative stress through facilitation of the adjustment process (Althen, 1983; Eland, 2001). International student organizations, commonly operated within these centers, offer many international students the opportunity of seeing people from their own country as a source of help (Hechanova-Alampay, Beehr, Christiansen &Van Horn, 2002).

Academic Supervisors/Faculty

Lewthwaite (1997) noted that students use host families, academic supervisors and mentors as "counselors" when some sort of blockage happens during their acculturation process. Studies on international students have found that perceived social support from faculty predicted satisfaction in their student role and psychological well-being of graduate students (Eland, 2001; Hodgons & Simoni, 1995; Mallinckrodt & Leong, 1992). However, in some cases students still preferred students from their own home country and other international students as their first choice before they went to the faculty (Gillette, 2005). Students felt that it was not appropriate to approach faculty or staff with questions or dilemmas (Gillette, 2005).

Chapter Summary

It is clear from the literature review that international students' concerns and experiences as they relate to their acculturation processes are critical phenomena to examine in contemporary international education. The lack of integrative models that specifically examine the relationship between acculturative stressors, stress and the related moderating factors among international students is an impetus for further exploration. The inconsistencies reported in the review regarding the contextual demographic characteristics also call for more replication studies. Therefore, the Berry and associates' acculturative research perspective (1987) as well as the ecological model provides useful contexts within which the students' acculturative stress can be understood. By measuring the factors influencing acculturative stress among international students, one can develop an understanding of the students' potential challenges and how to responsibly assist them during their stay in a new culture. As a result, students will have the opportunity of experiencing positive academic and social outcomes.

The Current Study

The current study was examines the relationship between acculturative stressors and acculturative stress among international students and the factors influencing this relationship. The Berry's acculturative research framework (1987) offered the basic foundation of the acculturative stress research paradigm. The application of the ecological model emphasized the role of the moderating/mediating factors as conceptualized in Berry and associate's (1987) acculturative stress model. In this study, it is assumed that, as international students pursue education in a foreign country, they come into contact with a new environment, within which they may face a number of challenges that can exert stress. As discussed earlier in this chapter, these challenges, also known as "acculturative stressors" include issues such as academic and language barriers, cultural shock and loneliness. Moreover, it was assumed that the students' socio-cultural and demographic characteristics prior to and during acculturation have an impact on how the students experience stress. Overall, the major assumption for this study was that the family, friends and important others are considered to be unique microsystems within the students' environment that may influence their acculturation process (i.e. the stressor-stress paradigm). With this in mind, it was hypothesized that when the student feels that he or she is being well cared for and trusts his/her immediate environment (i.e. family, friends and important others), especially when faced with the ecological challenges (i.e. stressors), he or she is likely to reduce the impact of difficulties with the stressors on his/her stress levels. Furthermore, other social variables such as the student's characteristics such as the cultural values of a country, socio-economic status, mode of acculturation and gender were hypothesized to impact the student's acculturation outcomes (i.e. acculturative stress). In order to explore these relationships, the following major research questions were examined:

1. How does the level of difficulty of acculturative stressors relate to acculturative stress among international students?

2. To what extent does social-support influence the relationship between acculturative stressors and acculturative stress among international students?

3. Which socio-cultural and demographic factors predict acculturative stress among international students?

First, it was expected that the more one experience difficulties with acculturative stressors the more likely one will experience higher levels of acculturative stress. Specifically,

this study examined acculturative stressors such as academic and language difficulties, homesickness, loneliness, discrimination, cultural adjustments (Yang & Clum, 1995) as well as "terrorism issues" as an additional new stressor. Second, overall social support is expected to moderate the relationship between levels of acculturative stressors and acculturative stress, with family and friends support demonstrating a stronger impact than any other social support. Finally, socio-cultural and demographic factors such as age, gender, marital status, family status, length of stay, perceived cultural values (i.e. language usage and culture values as collectivistic or individualistic), model of acculturation and socio-economic variables pre- and during acculturation (i.e. social class, employment status) would significantly predict acculturative stress. These expectations are summarized in the following study hypotheses:

1. There will be a *positive* relationship between the level of difficulty of the acculturative stressors and the level of acculturative stress.

2. Perceived social support will *moderate* the relationship between acculturative stressors and acculturative stress among international students. This means that international students who report *higher* levels of social support will display *a lesser* impact of acculturative stressors on acculturative stress.

3. Family and friends support will have a *greater* impact on the relationship between the level of acculturative stressors and acculturative stress *than* that from important others.

4. The respondents' socio-cultural and demographic characteristics will significantly predict acculturative stress. The following hypotheses will be tested in regard to this hypothesis:

   • Younger international students are *more likely* to display higher levels of acculturative stress than older international students.

   • Female international students are *more likely* to display higher levels of acculturative stress than male international students.

   • Single international students are *more likely* to display higher acculturative stress than married students.

   • The longer the student has resided in the U.S. the *more likely* he/she will display lower levels of acculturative stress.

   • International students who choose to integrate are *more likely* to display lower levels of acculturative stress than those who choose to assimilate, marginalize, or separate.

- International students accompanied by their spouses or partners and/or children experience *lower* acculturative stress compared to unaccompanied international students.

- Students who perceive their country's home cultural values as collectivistic are *more likely* to display increased of levels acculturative stress than those who perceive their current community in the U.S as individualistic.

- Do students who perceive their country's home cultural values as collectivistic *more likely* to display increased of levels acculturative stress than those who perceive their current community in the U.S as individualistic?

- Students who were employed prior acculturation are *more likely* to display higher levels of stress than those who were students.

- There will be *significant negative* relationship between student's monthly income and acculturative stress.

- The *lower* the perceived social class prior to or during acculturation the *higher* the level of acculturative stress.

- The *fewer* years trained in English before acculturation the *greater* the acculturative stress among international students.

METHODOLOGY

Chapter two revealed that international students' acculturative experiences are influenced by a number of socio-cultural and demographic factors. Therefore, understanding how these factors relate to each other calls for a multifaceted approach beyond simple descriptive statistics. This chapter describes the research methods employed to explore the relationships among the following variables: acculturative stressors, acculturative stress and the related socio-cultural and demographic factors among international students. This chapter includes: (1) research questions, (2) research hypotheses, (3) research design and study site description, (4) population and sample size, (5) data collection procedures, (6) variables and instrumentation, and (7) data analysis strategies.

Research Questions

The following research questions guided the study:

1. How does the level of difficulty of acculturative stressors relate to the level of acculturative stress experienced by international students?
2. To what extent does social-support influence the relationship between acculturative stressors and acculturative stress among international students?
3. Which selected socio-cultural and demographic factors predict acculturative stress among international students?

Research Hypotheses

Drawing from Berry's acculturative research perspective (1987), this study tested potential probabilistic conceptual models of acculturative stress. The research hypotheses tested in regard to the study's research questions are described below:

- *Hypothesis 1:* There is a *positive* relationship between the levels of difficulty of the acculturative stressors and the levels of acculturative stress.
- *Hypothesis 2:* Perceived social support *moderates* the relationship between acculturative stressors and acculturative stress among international students. This means that

international students who report higher levels of social support will display a smaller impact of acculturative stressors on acculturative stress.

- *Hypothesis 3:* Social support from family and friends has a *greater* impact on the relationship between the level of acculturative stressors and acculturative stress than support from important others.

- *Hypothesis 4:* The respondents' socio-cultural and demographic variables (age, gender, length of stay, family status, marital status, employment status prior acculturation, socio-economic status, perceived cultural values and mode of acculturation) *significantly* predict acculturative stress. The following hypotheses will be tested in regard to this hypothesis:

  - Younger international students are *more likely* to display higher levels of acculturative stress than older international students.

  - Female international students are *more likely* to display higher levels of acculturative stress than male international students.

  - Single international students are *more likely* to display higher acculturative stress than married students.

  - The longer the student has resided in the U.S. the *more likely* he/she will display lower levels of acculturative stress.

  - International students who choose to integrate are *more likely* to display lower levels of acculturative stress than those who choose to assimilate, marginalize, or separate.

  - International students accompanied by their spouses or partners and/or children experience *lower* acculturative stress compared to unaccompanied international students.

  - Students who perceive their country's home cultural values as collectivistic are *more likely* to display increased of levels acculturative stress than those who perceive their current community in the U.S as individualistic.

  - Students who were employed prior acculturation are *more likely* to display higher levels of stress than those who were students.

  - There will be *significant negative* relationship between student's monthly income and acculturative stress.

- The *lower* the perceived social class prior to or during acculturation the *higher* the level of acculturative stress.
- The *fewer* years trained in English before acculturation the *greater* the acculturative stress among international students.

Participants

Data were collected through a web-based survey method from a target population of currently enrolled international students from eleven United States universities. The majority of the students came from universities in the Midwest and Northeast regions. The distribution of the students by U.S regions is shown in Figure 3 below.

Figure 3. Distribution of Respondents by U.S. Regions
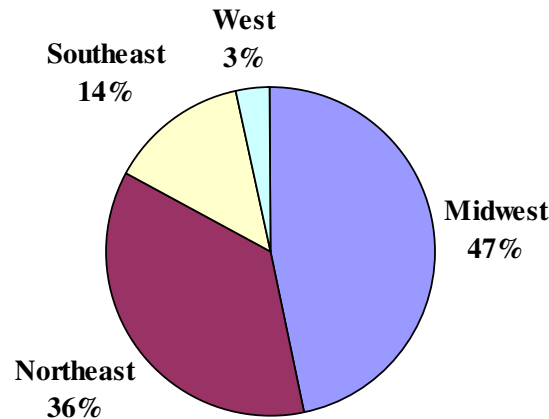
A sample of students holding F-1 or J-1 non-immigrant visas was drawn from this population. The population represented the unique characteristics of students who temporarily sojourn to a foreign country to pursue educational goals. All international students attending these universities were invited to participate. Among 940 students who accessed the survey, only 606 students met study requirements including holding a F1 or J1 visas. Therefore the inclusion rate was about 64.4%. For multivariate statistical applications and interpretation, the rule of 15 participants per predictor was employed to determine the adequate sample size (Meyers, Glenn & Guarino, 2006). Given the 14 (i.e. 8 continuous and 7 categorical variables) independent variables in the current study, the adequate sample size was determined to be 210 (i.e. 14 x 15). However, with the contributions of the z dummy variables created from the categorical variables (i.e. gender ($z = 1$), mode of acculturation ($z = 3$), employment status ($z = 2$), family status ($z =$

3), marital status (z = 2) and social class prior and during acculturation (z = 8), an additional 19 variables were included. Therefore, a sample size of 495 (i.e. (19 +14) x 15) students was needed. The current sample size of 606 students was adequate for the current regression analyses.

The demographics characteristics of the sample are summarized in Tables 4a and 4b for the categorical and continuous level data, respectively. The variables include gender, age, degree attained, family status, marital status, whether the students had children, visa type, employment status prior and during acculturation, social class prior and during acculturation, mode of acculturation, funding type, religion, native language, and income.

The personal and academic characteristics of the sample studied are similar to those found in the recent U.S. international student population as reported by the 2006 Open Door report. Data indicate that the sample consisted of 606 international students with the majority of the students being singles 68 % (n = 412), without children 88.6% (n = 537), males 51.5 % (n = 312), graduate students at the level of PhD 55.8% (n = 338) and holding F1 visas 89.6% (n = 554). In addition, they depend on U.S. college funds (n = 390) and family (n = 195) as their primary sources of funding. According to the 2006 Open Door report, undergraduate students are more likely to report family/personal funds while graduate students report U.S college funds (IIE, 2006). As for the current sample, the data shows that majority of students were graduate doctoral students. Therefore, it is more likely that they depend on graduate assistantships as their primary source of funding. These students are usually subjected to lengthy programs and thus, less likely to depend on parental financial support (Ruby, 2007). In terms of the world regions, this study is similar to that of the recent U.S. international student population with Asia in the leading position.

In terms of age and the length of stay in the U.S, the sample mean age was about 27 years (SD = 5.23), with the majority of the students residing in the U.S for less than a year 23.3% (n =141) and 2 years 17.5 (n = 106) .Overall in terms of employment status, the majority of the students demonstrated that they were students prior to their acculturation 55.4% (n = 336), followed by 42.4% (n = 257) students who reported that they had been employed and 2.0% (n = 12) who were in the "other" category. The majority of the students identified their social status prior acculturation as middle class or higher 81.6% (n = 552). As for their social class during acculturation, most students identified themselves as middle class or lower 88.4% (n = 532). In

terms of the mode of acculturation, a majority of students were described as using the integration mode 77.4 % (n = 469). Cultural value distance was measured by respondents to identify their perceived cultural value in their home country and current U.S. community as either individualistic or collectivistic. The findings demonstrated that a majority of students described the cultural values as collectivist for the former and individualistic for the later, respectively.

Table 4a. Demographic Characteristics of the Sample

Variable	Category	Participants		Total
		N	%	N
Gender	Female	294	48.5	606
	Male	312	51.5	
Degree	Undergrad	105	17.4	605
	Masters	145	24.0	
	PhD	338	55.9	
	Non-degree	13	2.1	
	Other	4	0.7	
Family status	Alone	393	65.0	605
	Family with children	54	8.9	
	Family without children	108	17.8	
	Other	50	8.3	
Religion	Buddhist	46	8.1	567
	Christian	212	37.4	
	Jewish	5	0.9	
	Muslim	75	13.2	
	Other	229	40.4	
Marital status	Married	165	27.3	605
	Single	412	68.1	
	Other	28	4.6	
Have children	Yes	69	11.4	606
	No	537	88.6	
English as a native language	Yes	41	6.8	606
	No	565	92.2	

Table 4a. Demographic Characteristics of the Sample (Continued)

Variable	Category	Participants		Total
		N	%	N
Length of stay	< 1 year	141	23.3	605
	1 year	39	6.4	
	2 years	106	17.5	
	3 years	84	13.9	
	4 years	67	11.1	
	5 years	60	9.9	
	6 years	60	9.9	
	7 years	20	3.3	
	8 years	10	1.7	
	9 years	6	1.0	
	10 years	2	0.3	
	> 10 years	10	1.7	
Funding type	Teaching/research			
	Assistantship	390	64.4	606
	Scholarship	123	20.3	
	Family funds	195	32.2	
	Other	62	10.2	
Visa type	F-1	554	89.6	604
	J-2	63	10.4	

Table 4a. Demographic Characteristics of the Sample (Continued)

Variable	Category	Participants		Total
		N	*%*	N
Mode of acculturation	Integration	469	77.8	603
	Assimilation	75	12.4	
	Separation	25	4.1	
	Marginalization	34	5.6	
Employment status	Employed	257	42.5	605
(prior acculturation)	Student	386	55.5	
	Other	12	2.0	
Social class (prior	Upper class	31	5.1	602
acculturation)	Upper middle class	229	38.0	
	Middle class	292	48.5	
	Lower middle class	43	7.1	
	Lower class	7	1.2	
Social class (during	Upper class	7	1.2	599
acculturation)	Upper middle class	60	10.0	
	Middle class	226	37.7	
	Lower middle class	237	39.6	
	Lower class	69	11.5	

Table 4b. Demographic Characteristics of the Sample (Continued)

Variable	Mean	Standard Deviation	Minimum	Maximum	Total N
Age	27.13 years	5.23 years	17	50	606
Income ($ month)	1126.35	579.88	0	4000	606
Perceived cultural values (Country of Origin)	4.56	1.77	1	7	603
Perceived cultural values (U.S community)	2.64	1.52	1	7	603
Number of years taught in English	7.72	7.54	0	35	600

English language usage was also assessed in terms of how many years the students have been trained in English. The sample's average years of training in English was about 7.72 years with a high variability among the respondents (SD = 7.54). Although not shown in the table, 29.5% (n = 177) of respondents indicated that they have zero years of English usage. This was the single category with the highest number of respondents.

Other sample characteristics included native languages and religion. The majority of the respondents 92.2% (n = 565) reported that English was not their native language. Among these students, the majority of the students identified that their native language(s) from the continent of Asia 63.7% (n = 345), followed by Europe 21.8% (n = 118), North America 10.1% (n = 55) and Africa 4.4% (n = 24). In terms of religion, a majority of the respondents identified their faith as based on the other 37.8% (n = 229) category and Christianity 35% (n = 212) religions.

Data Collection Procedure

Prior to conducting this survey, human subjects' approval was obtained from Kansas State University where this doctoral degree is being completed. Approval also was received at the participating universities so that the participants could be recruited from these schools. The study posed no risk to the international students. Anonymity was assured with no identifiable information included in the surveys. A cover letter was presented on the website which included information on the purpose of the study and the participation consent information (See Appendix A). No compensation was provided to the respondents for their participation.

The participants were required to complete an online survey titled "The international students acculturation experiences survey" (see Appendix B) that assessed their demographic data (questions 1-24) and acculturation experiences. The acculturation experiences were measured by three standardized instruments, namely the International Student Acculturative Stressors Scale (ISASS) (question 25), the Index of Life Stress (modified ILS) (questions 27 - 29), and the Index of Social Support (ISS) (questions 30-32). Based upon the literature review and personal experiences post-September 11, some of the instruments were slightly modified. An open-ended question (question 26) also was included to allow the participants to add any acculturative stressors they might have experienced during their stay in the U.S other than the ones included in the survey. The survey website was made available to the participants for about two months. A follow-up reminder was sent to the students two weeks after the survey was opened and also over the course of data collection as needed.

Variables and Instrumentation

The website survey constructed for this study included measures of the following variables: acculturative stressor, acculturative stress and specific socio-cultural and demographic variables. The following is a description of the conceptual and operational definitions of the variables utilized in this study. In addition, Table 5 shows an overview of how these variables were operationalized.

International Student

Conceptual definition: Anyone who is enrolled in courses at institutions of higher education in the United States who is not a U.S. citizen, an immigrant (permanent resident) or a

refugee. These students may include holders of F (student) Visas, H (temporary worker/trainee) Visas, J (temporary educational exchange-visitor) Visas, and M (vocational training) Visas.

Operational definition: International student who holds an F-1 or J-1 student visa. This group was selected because it represents the largest international student group in the U.S campuses.

Table 5. Operationalization of the Theoretical Constructs

Class of Variable	Specific Variable	Operationalization
Outcome	Acculturative Stress	Index of Life Stress (Yang & Clum, 1995) (modified)
Predictors	Acculturative Stressors	ISASS (new)
	Age	Age in years
	Gender	Female = 1, Male = 2
	Marital Status	Self- reported marital status label (Multiple-choice item)
	Family Status	Self-family status label (Multiple-choice item)
	Length of stay	Length of stay in the U.S. in years
	Perceived Social Support	Index of Social support (ISS) (Yang & Clum, 1995) (modified)
	Income	Monthly Gross Income ($)
	Employment History Prior to Acculturation	Self- reported employment status label (Multiple choices item)
	Social Class Prior and During Acculturation	Self-reported Social Class labels (Multiple choices item)
	Modes of Acculturation	Acculturation Strategies (Berry, 1987)
	Perceived Cultural Values	Self-reported cultural values scale in home country and the U.S community (7- point Likert scale items)
	English Language Usage	Number of Years trained in English Language

Acculturative Stressors

Conceptual definition: They are stressors that are related to the acculturative process of international students. They reflect biological, social, functional, cultural, and physical/environmental (Ying, 2005) and other related stressor such as re-entry issues.

Operational definition: No measurement tool existed to examine acculturative stressors specifically for use with international students from various home cultures. Ying (2005) had developed a scale to measure acculturative stressors for Taiwanese international students in the U.S.; however, this scale was not appropriate for use with international students from other cultures. Therefore, the International Student Acculturative Stressor Scale (ISASS) was developed for this study to measure the students' acculturative stressors. It is measured as a continuous variable. The purpose of this measure is to capture the extent to which each acculturative stressor is a problem to the international student. Responses were given on a 5-point Likert-type scale with 14 items asking participants to rate their degree of difficulty regarding different acculturative stressors. The options ranged from 1 "*Not difficult at all,*" 2 "*Somewhat not difficult,*" 3 "*Somewhat Difficult,*" 4 "*Difficult,*" to 5 "*Very difficult.*" Examples of stressors include the following: academic, language, food, weather, terrorism, and safety. The total scores for the 14 items ranged between 14 and 70. Higher scores indicate higher levels of difficulty with acculturative stressors.

An exploratory factor analysis using a principle component extraction method and varimax rotation of the 14 self-reported acculturative stressor items was conducted. Prior to running the analysis with SPSS, the data was screened by examining descriptive statistics on each item, inter-item correlations, and possible univariate and multivariate assumptions. From this initial assessment, all variables were found to be interval-like, with variable pairs appearing to be bivariate, normally distributed, and cases independent of one another. With a sample of 605 participants, the variable- to- case ratio was deemed adequate. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.81, indicating that the data was suitable for principle component analysis. Similarly, Bartilett's test of sphericity was significant ($p < 0.001$), indicating sufficient correlation between the variables to proceed with the analysis.

Using the Kaiser-Guttman retention criterion of eigenvalues greater than 1.0, a four-factor solution provided a clearest extraction. These four factors are accounted for 52% of the total variance. Table C.1 (see Appendix C) presents the 14 items, their component loadings and

communality estimates. Communalities were low to moderately high with a range of 0.34 to 0.69.

Factor 1 (socio-cultural category, eigenvalue = 3.72) accounted for 26.6 percent of the variance and had three items; factor 2 (physical environment category, eigenvalue = 1.33) accounted for 9.5 percent of the variance and had four items; factor 3 (general academic and future outlook category, eigenvalue = 1.18) accounted for 8.4 percent of the variance and had four items; and factor 4 (safety and transportation category, eigenvalue = 1.07) accounted for 7.7 percent and had three items. Corrected item total correlation ranged from 0.02 to 0.54, and Cronbach coefficient alpha ranged from 0.48 to 0.73 among the four factors indicating moderate subscale reliabilities. The overall scale's Cronbach's alpha was 0.78 which indicates adequately scale reliability.

Acculturative Stress

Conceptual definition: Stress related to new lifestyle adjustment, resulting from an encounter with new cultural paradigms (Berry, 2003). In this case it is the stress originating from acculturative stressors.

Operational definition: A modified version of the Index of Life Stress (ILS) (see Appendix B) developed by Yang and Clum (1995) with the purpose of examining the stressful cultural adjustment of international students with F-1 visas was utilized to measure acculturative stress. The ILS is a 31-item index with subscales consisting of five dimensions namely (a) financial concerns, (b) language difficulty, (c) perceived discrimination, (d) cultural adjustments, and (e) academic pressure. Each item has 4-item point scaling options ranging from 0 (never) to 3 (often) according to how the respondents feel about the statements. For the Yang and Clum study, the internal consistency estimates (Kuder-Richardson [KR]-20) for the five factors were good (0.80 in financial concern, 0.79 in language difficulty, 0.82 in racial discrimination, 0.70 in cultural adjustment, and 0.75 in academic adjustment). Also, their internal consistency and 1-month interval test-retest reliability of the overall scale were 0.81 (n = 20) and 0.86 (n = 101), respectively. A study by Misra et al (2003) also found a coefficient alpha of $\alpha = 0.71$ to 0.88 on the ILS subscales.

In this dissertation study, 11 new items were added on the original scale. These items were developed because they are issues that international students face during their acculturation

process and are not assessed in the original scale. These items are: (1)"I owe money to others/bank/credit card companies," (2) "I worry about not being able to give financial aid to my family in my home country," (3) "I worry about my future career in my home country," (4) "I feel uncomfortable with the weather here," (5)"I worry about getting sick here," (6) "I feel lonely here," (7)"I miss my home country," (8) "I feel worried about future terrorist attacks affecting my life or those of my loved ones," (9) "I feel uncomfortable to fly because of terrorism," (10) "I worry a lot that I might one day become a target victim of terrorism backlash during my stay in the United States," and (11) "I feel sad that I am treated differently because of terrorism." Three items were reworded: (1) "My English embarrasses me when I talk to people" was reworded to "When I speak in English, I feel embarrassed," (2) "People treat me badly just because I am a foreigner was reworded to "People treat me well even though I am a foreigner" and (3) "I think that people are very selfish here was reworded to "I think that people are very generous here." During item screening, four items were deleted from the study analyses. These items were: (1) "I don't want to return to my home country, but I may have to do so," (2) "It's hard for me to develop opposite-sex relationships here," (3) "I want to go back to my home country in the future, but I may not be able to do so," and (4) "I feel sad that I am treated differently because of terrorism."

The final modified ILS scale used for the current study is a 37 item index which was scored on a 4-point Likert scale ranging from 0 "*Never,*" 1 "*Rarely,*" 2 "*Sometimes,*" to 3 "*Often.*" It was measured as a continuous variable. Based on the 37 items, the total scores ranged from 0 to 111. Higher scores indicate higher acculturative stress perceived by the international students.   Exploratory factor analysis for the modified version of the ILS revealed eleven factors. Factor 1 (language difficulty, eigenvalue = 6.02) accounted for 16.28 percent of the variance and had four items; factor 2 (financial difficulties, eigenvalue = 3.23) accounted for 8.72 percent of the variance and had five items; factor 3 (interpersonal stress, eigenvalue = 2.78) accounted for 7.51 percent of the variance and had four items; factor 4 (future outlook, eigenvalue = 2.08) accounted for 5.63 percent and had four items; factor 5 (stress from new culture, eigenvalue = 1.87) accounted for 5.04 percent of the variance and had five items; factor 6 (terrorism related concerns, eigenvalue = 1.64) accounted for 4.44 percent of the variance and had three items; factor 7 (academic disappointment, eigenvalue = 1.41) accounted for 3.81 percent of the variance and had two items, and factor 8 (loneliness, eigenvalue = 1.30) accounted

for 3.52 percent and had three items. Factor 9 (academic pressure, eigenvalue = 1.10) accounted for 2.96 percent of the variance and had three items; factor 10 (generosity concerns from the people, eigenvalue = 1.06) accounted for 2.87 percent of the variance and had two items; factor 11 (weather and the concern on American way of being direct, eigenvalue = 1.00) accounted for 2.71 percent of the variance and had two items. Corrected item total correlation ranged from 0.02 to 0.54, and Cronbach coefficient alpha ranged from 0.27 to 0.87 among the eleven factors indicating moderate subscale reliability. The overall scale's Cronbach's alpha was 0.81 which indicated high scale reliability. Table C.2 (see Appendix C) presents a summary of the ILS items and factor loadings from principle components analysis.

Social Support

Conceptual definition: The sources of interpersonal support such as the family, extended family, friends and important others (Yang & Clum, 1995).

Operational definition: A modified version of the Index Social Support (ISS) (see Appendix C) developed by Yang and Clum (1995) was used as a measure of social support for this study. The original measure by Yang and Clum contained 40 items to assess Asian international students' perceptions of social support. Thirty six of the 40 items were loaded on 4 factors. These factors were: (1) General Contact with one's own culture, (2) Contact with Local Community and student Organizations, (3) Contact with New Friends in the U.S. and Direct Family and (4) Contact with the Religious Places (e.g. churches. The reliability analysis for the original scale yielded a test-retest reliability with 1 month interval of 0.81 (n = 20). The internal consistency estimate (KR-20) was 0.81 (n = 100). The scale used a 4-point Likert scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often) according to how often the respondents "felt" on the described statements.

The current study used a modified version of the ISS. Eight new items that were not assessed in the original scale were added namely:- (1) "My host family means a lot to me," (2) "I trust my host family for support," (3) "I rely on my host family for support," (4) "My host family is available when I need it," (5) "I rely on my advisor/faculty for support," (6) "My advisor/faculty means a lot to me," (7) "I trust my advisor/faculty for support" and (8) "My advisor/faculty is available when I need them." The final modified scale consisted of 44 items.

An exploratory factor analysis for the modified version of the ISS was conducted and revealed nine factors. Factor 1 (language difficulty, eigenvalue = 6.02) accounted for 16.28 percent of the variance and had four items; factor 2 (financial difficulties, eigenvalue = 3.23) accounted for 8.72 percent of the variance and had five items; factor 3 (interpersonal stress, eigenvalue = 2.78) accounted for 7.51 percent of the variance and had four items; factor 4 (future outlook, eigenvalue = 2.08) accounted for 5.63 percent and had four items; factor 5 (stress from new culture, eigenvalue = 1.87) accounted for 5.04 percent of the variance and had five items; factor 6 (terrorism related concerns, eigenvalue = 1.64) accounted for 4.44 percent of the variance and had three items; factor 7 (academic disappointment, eigenvalue = 1.41) accounted for 3.81 percent of the variance and had two items, and factor 8 (loneliness, eigenvalue = 1.30) accounted for 3.52 percent and had three items. Factor 9 (academic pressure, eigenvalue = 1.10) accounted for 2.96 percent of the variance and had three items. Corrected item total correlation ranged from 0.02 to 0.54, and Cronbach coefficient alpha ranged from 0.27 to 0.87 among the nine factors indicating moderate subscale reliability. However, in the present, study, these nine factors were not employed in the analysis.

The modified ISS scale items for this study, were assigned on conceptual grounds to three major subscales that measure the quality and quantity of the contact with: (1) Family support subscale: direct family members, secondary families (extended families in home country and host family in the U.S.); (2) Friends support subscale: friends (which constitutes friends from the student's home country or origin, i.e., co-nationals, friends who are also international students and American friends); (3) Support from important others (i.e., churches or other religious places, the university services/international student center support services, the community and academic advisor/faculty). A new 5-Likert scale was used with the following choices: 0 "*Not applicable,*" 1 "*Never,*" 2 "*Rarely,*" 3 "*Sometimes,*" and 4 "*often.*" The "*Not applicable*" response was added to capture the students' responses if the listed support was not relevant to them (e.g. if they respondents did not have a host family). A composite social support score was obtained by summing up the scores for these three scales. The scores ranged from 0 to 176. Higher scores indicated higher levels of support. The modified ISS was measured as a continuous variable. The Cronbach's reliabilities were 0.83, 0.80 and 0.91 for friends, family and important others subscales, respectively. Overall, the ISS scale for this sample had a Cronbach alpha of 0.90, indicating high scale reliability.

As for these three standardized instruments, a series of descriptive statistics were conducted to examine the sample's level of difficulty of acculturative stressors, level of acculturative stress and level of social support. The sample mean score on the ISASS was M = 34.89 (S.D. = 8.65) with scores ranging from 14 to 60. As for the ILS, the results indicated that the sample had a mean score of 85.29 (S.D. = 12.79) with scores ranging from 39 to 125. The samples' quality and quantity of support ranged between 44 and 176 with a mean of 114.76 (S.D. = 23.39). These means and standard deviations of the instruments as well as their intercorrelations are summarized in Table 6. As can be seen from the table, surprising there was a significant negative relationship between ISASS and ISS, indicating that students who were experiencing high levels of difficulties with the acculturative stressors were more likely to have less support. A positive relationship between ISASS and ILS was also established. As for the individual ISS subscales, the results demonstrate that friends was significantly negatively correlated with ILS and ISASS. Therefore, students who perceived to have higher support from friends were more likely to experience less stress. This was also true for the important others subscale and ISASS. However, surprisingly, students who perceived to have higher support from important others indicated that they were more likely to experience higher levels of stress. No significant correlations were established for the family categories with either ISASS or ILS.

Table 6. Means, Standard Deviations and Intercorrelations for ILS, ISASS, ISS and ISS Subscales

Variable	Mean	S.D.	ISASS	ISS (Overall)	ISS (Family)	ISS (Friends)	ISS (others)
ILS	85.29	12.45	0.50**	0.06	0.04	-0.12**	0.11**
ISASS	34.89	8.53		-0.14**	-0.04	-0.24**	-0.11**
ISS(overall)	114.76	23.02			0.64**	0.52**	0.90**
ISS(Family)	22.23	7.57				0.26**	0.36**
ISS Friend)	33.21	5.81					0.26**
ISS (others)	59.40	16.81					

*p < 0.05; ** p< 0.01

Demographic Variables

The socio-cultural and demographic variables assessed included the following:

Age

Conceptual definition: The chronological age of the respondent.

Operational definition: It was operationalized as a continuous variable in number of years.

Gender

Conceptual definition: The self reported biological sex of the respondent.

Operational definition: It was measured as a categorical variable: (1) female and (2) male.

Cultural Distance

Conceptual definition: How dissimilar the cultures are regarding issues such as culture values, language usage and religion (Berry, 1997).

Operational definition: Two variables were used to measure cultural distance namely:
 (a) the perceived home country and current U.S community cultural values as either individualism or collectivism. These cultural values were measured on a seven point Likert Scale with the following choices 1 "*individualistic"* 2 "*Mostly individualistic*" 3 "*Somewhat individualistic*" 4 "*In between*" 5 "Somewhat *collectivistic*" 6 "*Mostly Collectivistic"* 7 "*Collectivistic.*" The scores ranged from 1 to 7 with higher score indicating collectivistic values and lower scores individualistic values,
 (b) English Language usage. This variable asked respondents to report the number of years they have been trained in English.

Length of Stay

Conceptual definition: The duration of stay in the United States.

Operational definition: This variable was measured as a continuous variable in terms of months lived in the United States.

Models of Acculturation

Conceptual definition: These are the acculturation strategies that are worked out by either the groups or individuals in the dominant or non-dominant situations as they come in contact

with each other (Berry, 1997). These strategies include assimilation, separation, integration and marginalization. For this study, international students are regarded as the non dominant group.

Operational definition: Berry's mode of acculturation was used to determine the international students' mode of acculturation. A 6-point Likert scale with choices: *"strongly agree"* (1) *"somewhat agree"* (2) *"agree"* (3) *"disagree"* (4) *"somewhat disagree"* (5) and *"strongly disagree"* (6) was used to ask students to describe their perception in relation to the following two questions: (1) Is it of value to have contact with the U.S culture during your stay in the United States? (2) Is it of value to have contact with your own ethnic culture during your stay in the United States? The responses to these questions were then recoded into a "yes" or a "no" answer. Those who chose 1, 2, and 3 were indicated as a YES response and those who scored 4, 5 and 6 were considered to indicate a NO response. Those who answered YES on both questions were categorized as integrated; if they answered YES on question1 and NO on question 2, they were categorized as assimilated; if they answered NO on question1 and YES on question 2, they were identified as separated; and if they answered NO on both questions, they were categorized as marginalized. This study tested to see if these four modes of acculturation predict acculturative stress among international students.

Family Status

Conceptual definition: The state of a foreign student residing with family when studying in the United States.

Operational definition: The state of the student being accompanied by his/her family when studying in a foreign country. The respondents were asked to indicate their family status from the following categories: (1) residing alone in the U.S., (2) residing with spouse, (3) residing with spouse and children, (4) residing alone with children, (5) residing with spouse, children, and relatives, (6) residing alone with children and relatives (7) residing alone with relatives, (8) residing with spouse and relatives, and (9) other. The responses were then recoded into four major categories as follows: (1) residing alone, (2) family with children, (3) family without children, and (4) other.

Marital Status

Conceptual definition: The legal status of each individual in relation to the marriage laws or customs of a specific country.

Operational definition: The respondents were asked to indicate their marital status from the following categories: (1) married, (2) single, (3) divorced, (4) widowed, (5) separated, (6) engaged, and (7) other. The responses were then recoded into three major categories namely: (1) married, (2) single, and (3) other.

Socio-Economic Status (SES)

Conceptual definition: A person's position or standing in a society determined by factors such as education, income, job type and social class.

Operational definition: The following variables were used as indicators of SES:
(a) Employment history prior to acculturation: The respondents were asked to indicate their employment status using the following categories: (1) employed (2) self employed (3) unemployed (4) student and (5) other. The categories were then recoded into three major categories as follows: (1) employed, (2) student, and (3) other.

 (b) Perceived social class prior to and during acculturation: These variables were measured as categorical variables with the following choices: (1) upper class, (2) upper middle class, (3) middle class, (4) lower middle class, and (5) lower class.

(c) Income: Monthly gross income in dollars was used to determine this variable. International students were asked to type in the amount of dollars they earn per month.

The intercorrelations between the selected socio-cultural and demographic predictors of acculturative stress was computed and summarized in Table C.3 (see Appendix C). The results demonstrate that correlations between the predictor variables were relatively moderately low. The range of correlations was 0 to 0.51. Among the significant predictors, the range of their correlations was 0.08 to 0.51.The predictors with highest significant correlation was employment status and age ($r = -0.51$, $p < 0.01$). Therefore, with the low correlations coefficients, these findings imply that the predictors may be measuring different things suggesting no collinearity problems.

Data Analysis

The data were collected online through the courtesy of the Kansa State University online survey website. The data were first exported to Microsoft Excel and then to SPSS computer software used for quantitative statistical analyses. Prior to analysis, all variables were screened for possible code and statistical assumption violations as well as missing values and outliers

using SPSS frequencies, explore, plot, and regression procedures. Mean substitution was performed on four continuous variables (income, stressors, stress, and support) whose missing data constituted more than five percent of all cases, which is above the threshold for possible missing values intervention. Other variables with minimum missing values (less than five percent) and randomly scattered throughout the database that did not show alarming potential consequences to the interpretability of the analysis were discovered and eliminated through listwise deletion. All univariate outliers were detected and deleted if considered extreme or unusual. Pairwise linearity among the continuous variables was deemed satisfactory.

To test the study research hypotheses, bivariate (correlational) and multivariate (multiple regressions) statistical methods were used as follows:

Hypothesis 1: a Pearson correlation, *r,* was used to test the hypothesis that higher levels of difficulty of acculturative stressors are related to higher levels of acculturative stress among international students. This statistical measure is appropriate in determining relationships among continuous level data.

Hypothesis 2: To test the model with the moderating effect of social support on the relationship between the level of difficulty of the acculturative stressors and acculturative stress, a series of stepwise multiple regression analyses was run by entering the first order main effects (predictor variable (acculturative stressors) and moderating variable (social support) followed by secondary order interaction terms (acculturative stressors x social support). It was hypothesized that the association between acculturative stressors and acculturative stress is weaker for international students with a high social support and the effect of international students is stronger for those without or with less support.

Hypothesis 3: A series of stepwise regression analyses was employed to test the hypothesis that support from family and friends has a greater impact on the relationship between the level of acculturative stressors and acculturative stress. Separate models for each test of main effects for the predictor variable (acculturative stressors) and moderating variable (family, friends and important others) and their interactions were used.

Hypothesis 4: Stepwise multiple regression analysis was used to determine the relationship between the socio-cultural and demographic predictors and acculturative stress. Six continuous level predictors (age, monthly income, perceived cultural values in home country and current community, number of years taught in English and length of stay in the U.S) and seven

categorical predictors (gender, marital status, family status, models of acculturation, employment history prior acculturation, social status pre- and post-acculturation) were entered in the regression model. All categorical variables were dummy-coded.

It was hypothesized that higher levels of acculturative stress would be significantly predicted by being younger; female; single; residing alone (without family); shorter length of stay; perceived home country's cultural values as collectivist; using other models of acculturation than integration, perceived lower social class prior and during acculturation, reportedly being unemployed prior acculturation and lower monthly income.

The data from the survey's open-ended question were coded and searches for themes were conducted to determine what patterns emerged from these data. Simple descriptive statistics were used to summarize this data (see Appendix D).

RESULTS

The major purpose of this study was to examine the influence of acculturative stressors and socio-cultural and demographic variables on acculturative stress among international graduate students. This chapter presents the research findings from the tests of hypotheses of acculturative stress.

Hypothesis One

Hypothesis 1: There is a positive relationship between the levels of difficulty of the acculturative stressors and the levels of acculturative stress. This means, as the level of difficulty with the acculturative stressors increases, the levels of acculturative stress increases.

Hypothesis one was supported by the data. The Pearson product-moment correlation for the ISASS and the ILS indicated that there is a significant positive relationship between acculturative stressors and stress for this sample (r=0.50, p < 0.01). This suggests that students who experienced higher levels of difficulty on acculturative stressors were more likely to experience higher levels of stress. This finding also reveals that 25% of the variability in the acculturative stress scores can be understood in terms of the variability in the students' acculturative stressor scores for the current sample. It is clear that the remaining 75% constitutes variability resulting from some other sources of influence.

Hypothesis Two

Hypothesis 2: Perceived overall social support moderates the relationship between acculturative stressors and acculturative stress among international students. This means that as social support increases, the lesser the impact of acculturative stressors on acculturative stress.

The results showed that the interaction model of social support against higher levels of difficulty of acculturative stressors on acculturative stress was supported. The results of the continuous-level interaction tests of the moderating model of social support are summarized in Table 7. Unstandardized (B) and standardized beta coefficients (β), standard errors (SEB) and significance levels are presented for the perceived overall social support.

As indicated in model 1 (see Table 7), the main effects of acculturative stressors (β = 0.52, p <.001) and perceived social support (β = 0.14, p <.01) were both significant predictors of acculturative stress. The findings for model 1 indicate that 27% of the variance in the students'

acculturative stress can be explained in terms of their acculturative stressors scores and perceived overall social support.

Table 7. Standardized and Significance Levels for Tests of Main Effect and Moderating Effects of Overall Social Support.

	ILS					
	Model 1			Model 2		
	B	SEB	β	B	SEB	β
<u>Models for all support combined</u>						
Acculturative stressors	0.76	0.05	0.52**	0.53	0.07	0.36**
All support	0.07	0.02	0.14**	--		0.06[a]
All support x acculturative stressors				0.00	0.00	0.19**
R^2	0.27			0.27		

In examining model 2, the results show that the main effect for perceived overall social support was not significant. However, the interaction effect of social support on acculturative stress in model 2 was significant ($\beta = 0.19$, p <.001). This finding suggests that the perceived social support acted like a buffer against higher levels of difficulty of acculturative stressors on acculturative stress for this sample. Surprisingly, the total variation in stress levels explained by the predictive power of model 2 was about the same as that of model 1 (27%). A further examination of the two models, however, reveals that on average the predicted interaction model ($F_{(2, 603)} = 110.59$, $p < 0.001$) works better in reducing stress among international students than the main effect acculturative stress model ($F_{(2, 603)} = 110.53$, $p < 0.001$). The individual contribution of the predictors in model 2 indicate that acculturative stressor and the interaction term contributed more to the model than overall support. When comparing the students' predicted acculturative scores for the models, it is clear that the interaction model lowers acculturative stress levels than the main model by approximately 5.22 scores (6%).

Hypothesis Three

Hypothesis 3: Support from family and friends has a greater impact on the relationship between the level of acculturative stressors and acculturative stress than support from important others.

The results of the continuous-level interaction tests of the moderating models of social support from family, friends and important others are presented in Table 8. Despite the stronger buffering effect of support from family on the relationship between stressors and stress than the effect from important others and friends, these effects did not reach statistical significance. Therefore, the hypothesis was not supported by the data.

Table 8. Standardized and Significance Levels for Tests of Main Effect and Moderating Effects of Support by Support Type

	ILS					
	Model 1			Model 2		
	B	SEB	β	B	SEB	β
Models for family support						
Acculturative stressors	0.73	0.05	0.50**	0.73	0.05	0.50**
Family support			0.06	-	-	0.06 [a]
Family support x acculturative stressor					-	0.07 [a]
R^2	0.25			0.25		
Models for friends support						
Acculturative stressors	0.73	0.05	0.50**	0.73	0.05	0.50**
Friends support			0.00	-	-	0.00 [a]
Friends support x acculturative stressor					-	0.02 [a]
R^2	0.25			0.25		
Models for Others support						
Acculturative stressors	0.76	0.05	0.52**	0.76	0.05	0.52**
Others support	0.12	0.03	0.16**	0.12	0.03	0.16**
Others support x acculturative stressor				-	-	-0.02 [a]
R^2	0.28			0.28		

Note: Column for model 1 shows the test for main effect of the social support networks and acculturative stressors on acculturative stress. Column for Model 2 tests for interaction effects of social support and acculturative stressors on acculturative stress. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

[a] beta in for excluded variables

However, a further examination of the tests for the main effects models with the different social support types (i.e. family, friends and important others) on stress levels, reveals that the support model from important others ($\beta = 0.16$, $p < .001$) was the only significant predictor of higher levels of stress among the students. The direct predictive impacts of family and friends on acculturative stress, however, were not established in the current study. As for the model for important others, the findings indicated that about 28% of the acculturative stress variance can be explained by the students' acculturative stressor score and the support from important others. Therefore, this finding suggests that students who perceived higher levels of support from important others were more likely to report higher levels of stress. This finding should be interpreted with caution because it does not imply a cause and effect phenomenon.

Hypothesis Four

Hypothesis 4: The respondents' socio-cultural and demographic characteristics significantly predict acculturative stress.

To address this hypothesis, standard stepwise multiple regression was conducted with ILS (modified) as the outcome variable and age, gender, marital status, mode of acculturation, length of stay in the U.S, employment status prior to acculturation, cultural distance (perceived country of origin and current U.S community as individualistic or collectivistic, perceived social support, years of English training, family status, monthly income and social class prior and during acculturation as predictor variables. Dummy coded variables were created for all categorical independent variables and were used as predictors of acculturative stress. The dummy variables were coded as follows: gender (female and male), marital status (single, married, other), mode of acculturation (integration, assimilation, separation, marginalization), employment status prior to acculturation (employed, student, other), family status (alone, family with children, family without children, other), and social class prior to and during acculturation (upper class, upper middle class, middle class, lower middle class, lower class). As can be seen in Table 9, weak correlations among the predictor variables and ILS were established.

ILS was significantly correlated with marital status ("other" category) ($r = -.11$, $p < 0.01$), mode of acculturation ($r = -0.18$, $p < 0.01$), cultural value in country of origin ($r = 0.13$, $p < 0.05$), social class during acculturation as "upper middle" ($r = -0.11$, $p < 0.01$), "lower middle" ($r = 0.11$, $p < 0.01$), "lower class" ($r = 0.12$, $p < 0.05$) and also monthly income ($r = -0.10$, $p < 0.05$).

Multiple regression analyses were performed to identify significant predicators of acculturative stress among international students. Multiple R for regression was statistically significant, $F (8, 879) = 10.691$, $p< 0.001$, R^2 adjusted $= 0.09$. The regression results with all the predictors revealed that age, gender, family status, length of stay in the U.S, cultural values in current U.S community, employment status and social class prior acculturation and English language usage (years trained in English) were not significant predictors of acculturative stress. A second regression analysis was conducted which included all the significant correlates of ILS as the only predictors variables. The results of this analysis are summarized in Table 10. The multiple R regression model for the second model was also statistically significant, $F (6, 587) = 10.80$, $p < 0.001$. The variance explained by this model was about 10%. Six of the predictors (assimilation, lower class during acculturation, lower middle class during acculturation, income, culture values of country of origin, other (marital status) contributed significantly to the prediction of ILS ($p < 0.05$ and $p < 0.001$). The results suggest that when controlling for other variables in the model, students who used the assimilation mode of acculturation on average were about 5.9 times less likely to experience acculturative stress than those who choose the integration mode. Although, the marginalization mode indicated that on average students were less likely to experience stress and more likely to do so with separation when compared to integration, these findings were not significant. Therefore, the hypothesis that students who choose to integrate were more likely to display lower levels of acculturative stress than those who assimilate, marginalize or separate was not statistically supported by the data.

As for the marital status predictors, students who identified themselves as "other" category on average were 5.08 less likely to experience acculturative stress than those who were single. Although students who were in the "married" category were also less likely to experience stress than singles, however being married did not significantly predict stress. Thus, these findings did not support the previous prediction that single international students are more likely to experience higher acculturative stress than married students for this sample. In terms of the students' perceived social class, it was predicted that the lower the perceived social class prior to or during acculturation the higher the acculturative stress.

Table 9. Means, Standard Deviations and Inter-Correlations for ILS and the Respondents Socio-cultural and Demographic Predictors

Variable	Mean	SD	ILS
Outcome variable:			
Acculturative stress (ILS)	85.204	12.35	--
Predictor variables			
Sex	1.52	0.50	-0.03
Age	27.13	5.27	0.06
Marital status	1.77	0.52	-0.10*
Marital status (married)	0.68	0.47	-0.02
Marital status (other)	0.05	0.21	-0.11**
Family Status	1.69	1.03	-0.06
Family status (with children)	0.09	0.28	0.02
Family status (without children)	0.18	0.39	0.00
Family status (other)	0.08	0.27	-0.08
Years lived in the U.S.	4.03	2.55	0.01
Modes of acculturation	1.38	0.81	-0.08*
Mode of acculturation (assimilation)	0.12	0.33	-0.18**
Mode of acculturation (separation)	0.04	0.20	0.05
Mode of acculturation (marginalization)	0.06	0.24	-0.03
Cultural value (your country of origin)	4.54	1.78	0.13**
Cultural value (current U.S. community)	2.64	1.52	0.05
Employment status	1.60	0.53	-0.05
Employment status prior acculturation (employed)	0.43	0.50	0.05
Employment status prior acculturation (other)	0.02	0.14	0.00
Social class prior acculturation	2.61	0.74	0.05
Social class prior acculturation (upper class)	0.05	0.22	0.03
Social class prior acculturation (upper middle class)	0.39	0.49	-0.05
Social class prior acculturation (lower middle class)	0.07	0.26	0.06
Social class prior acculturation (lower class)	0.01	0.10	0.00
Social Class during acculturation	3.50	0.87	020**
Social class during acculturation (upper class)	0.01	0.10	-0.03
Social class during acculturation (upper middle)	0.10	0.30	-0.11**
Social class during acculturation (lower middle)	0.40	0.49	0.11**
Social class during acculturation (lower class)	0.11	0.32	0.12*
Years trained in English	7.75	7.53	-0.02
Monthly income	1123.11	585.39	-0.10*

Note: $p < 0.05$*, $p < 0.01$**

    This study partially supported the hypothesis. The results showed that students who reported their social class during acculturation as "lower middle" and "lower class" were on average 4.09 and 6.55 times more likely to experience acculturative stress than those who

identified themselves in the "middle class", respectively. The prediction of acculturative stress by social class prior acculturation was not supported.

In addition, the results supported previous predictions that "students who perceived their home country cultural values as collectivistic are more likely to display increased levels of acculturative stress than those who perceive their current community in the U.S as individualistic" and "there will be significant negative relationship between students' monthly income and acculturative stress".

Table 10. Regression Analysis Summary for Participants' Socio-cultural and Demographic and Variables Predicting ILS

Variable	B	SEB	B
Marital Status			
Single[a]			
Marital status (married)	-	-	-0.04 [d]
Marital status (other)	-5.08	2.35	-0.09*
Modes of Acculturation (Acculturation strategies)			
Mode of acculturation (integration)[b]			
Mode of acculturation (assimilation)	-5.88	1.51	-0.16**
Mode of acculturation (separation)	-	-	0.04 [d]
Mode of acculturation (marginalization)	-	-	-0.05 [d]
Cultural Values			
Cultural value (your country of origin)	-5.08	2.35	-0.09*
Social Class during acculturation			
Social class (middle)[c]	-	-	-
Social class (upper class)	-	-	-.003[d]
Social class (upper middle)	-	-	-0.05 [d]
Social class (lower middle)	2.93	1.18	0.12**
Social class (lower class)	6.55	1.62	0.17**
Monthly income	-0.003	0.001	-0.12*

Note: $R^2 = 0.10$ (N = 578, $p < 0.001$),   *$p < 0.05$, **$p < 0.001$

[a] Single is reference.

[b] Integration is reference.

[c] Middle class is reference.

[d] Beta in for excluded variables

DISCUSSION

The purpose of this dissertation is to understand the acculturation process of international students by examining the relationships among the concepts depicted in Berry's (1987) Acculturative Stress model: acculturative stressors, social support and acculturative stress. In addition, specific socio-cultural and demographic characteristics that were present prior to and during acculturation were identified and their influences on acculturative stress were explored. The aim of this chapter is to discuss the study's findings and draw appropriate implications and conclusions. The discussion focuses on how the acculturative variables are interrelated as proposed in Berry and associates' acculturative research framework as well as on how the ecological environment contributes to the international students' acculturation outcomes.

Relationship between Acculturative Stressor(s) and Stress

This study investigated how acculturative stressors of international students relate to their acculturative stress levels. The results clearly support the hypothesis about the effect of students' perceived difficulty with the stressors on their stress level. Overall, students who reported higher levels of difficulty on acculturative stressors were more likely to exhibit higher levels of stress related to their adjustment in a new culture. This finding is consistent with the prediction that as the acculturating individual evaluates the meaning of his/her acculturation as a source of difficulty, the outcome is likely to induce stress (Berry, 1997).

In addition, when examining the prevalence of acculturative stress among international students, results indicate that all international students are experiencing some form of acculturative stress with the majority of them experiencing relatively high levels. This finding is consistent with other studies that have conceptualized acculturative stress utilizing the Index of Life Stress scale (e.g. Lee, Koeske, & Sales, 2004; Yang & Clum, 1995) as well as those studies using other acculturation stress measurement tools (e.g., Msengi, 2003; Poyrali, Kavanaugh, Baker & Al-Timimi, 2004).

Former studies investigating the experiences of international students utilizing Berry's acculturation model only partially addressed the conceptualization of the stressor component. Instead, they focused on the levels of stress without specifically identifying or measuring the

sources of the stress (what Berry labeled as "acculturative stressors"). A major contribution of the current study is the emphasis put on the role of the stressors themselves. A new measurement tool was created (the Acculturative Stressors Scale) that allowed the opportunity to examine the influence of the stressors on the experience of stress itself. One interesting finding related to the stressors was that the majority of the students perceived their level of difficulty with the stressors as somewhere between "somewhat difficult" and "difficult." This finding implies that most of students who come to the U.S. for international study perceive some of their acculturation experiences as a source of difficulty. This may be partly explained by the high expectations they held regarding their U.S. educational and social experiences prior to international study.

The Relationship between Social Support and Acculturative Stress

Social support plays a major role in the adjustment of individuals who come in contact with a new culture (Hovey, 2000). This important component of the students' microsystem was included in Berry's (1987) model and has been shown to have a significant influence on international students' acculturation experience (e.g., Lee, Koeske & Sales, 2004). Overall, the current study demonstrates that international students had relatively high amounts of social support; with the highest levels of support coming from important others, followed by friends and family. This finding on the prevalence of social support is consistent with previous studies (e.g. Lee, Koeske, & Sales, 2004; Yang & Clum, 1995).

As for the hypothesis that social support moderates the relationship between acculturative stressors and stress, the results suggest that students who reported high social support during acculturation are likely to experience less impact of the experienced difficulty with the stressors on their stress levels. This finding is consistent with the Berry and associates' (1987) acculturation framework proposition that social support serves as a moderator or "buffer" on the degree of relationship between an individual's stressor(s) and stress as well as other buffering stress models (e.g., Mallinckrodt & Leong, 1992; Sam, 2001). As for the individual contributions of the different dimensions of social support (i.e. family, friends or important others) on the relationship between stressor and stress, the results were not conclusive.

However, when exploring the main effects of the three kinds of support, important others support was the only significant predictor of acculturative stress. Students who experienced higher levels of support from important others (i.e. community, religious places, faculty,

international student centers and student organizations) were more likely to experience more stress independently of the perceived levels of difficulty of the stressors. These results support the prior studies that have examined types of support other than family and friends. For instance, it has been reported that international students who experience significant amounts of faculty support are more likely to also experience psychological distress and somatic complaints (Kaczmarek, Matlock, Merta, Ames & Ross, 1994). It is important to remember that this is a correlational finding; therefore, it does not indicate causality. With this in mind, it is possible that in the current sample, students who were seeking support from important others were already experiencing higher levels of stress. This could illustrate that the students coped with the stress by seeking assistance from these important others.

It is well documented that international students lose their shared identity and support from their families and friends as they pursue studies in a foreign country (Hayes & Lin, 1994; Perdersen, 1991). This loss of support forces them to develop new cross-cultural friendships with individuals from the host nation as well as with other international students. However, most of the time this kind of support is also limited because they too are likely to be going through the same life changes. As a result, international students will be more likely to turn to faculty members and counselors, and less likely to turn to friends for support (Leong & Sedlacek, 1986).

This finding suggests that important others, such as religious organizations, faculty, advisors and international student centers, have a significant role to play in the acculturation of international students, especially those who are already experiencing stressful life events. International student centers help with orientation of new students, community events, cultural and academic issues (Scott, 1994). International student organizations and religious organizations offer an opportunity to develop a sense of community for the students (Scott). More studies need to be done to determine how to encourage these microsystem influences on international students' adjustments.

The Relationship between Socio-Cultural and Demographic Variables and Acculturative Stress

When the relationships between the selected socio-cultural and demographic variables and acculturative stress were concurrently explored, findings indicated that several macrosystem level variables were important: perceived cultural values in country of origin as collectivistic

(cultural distance), use of the assimilation mode of acculturation, having a low monthly income and describing one's social-class during acculturation as lower- middle class and lower class. For instance, when examining the predictive role of cultural distance on acculturative stress, the results show that the greater the cultural differences during acculturation, the lower the positive adaptation (Berry, 1997).

Students in the current sample identified their home country's cultural value as relatively collectivistic when compared to the current U.S. community which they identified as individualistic. This notion of individualism-collectivism has been discussed in the acculturation literature to signify the cultural differences between the so called "Western" and "Eastern" cultures. The differences between these value systems include the basic attributes of individual expression (individualistic) and dependence and conformity (collectivistic). Thus, the hypothesis that students from a collectivistic country will experience more significant acculturation problems is supported by the current study findings. For example, in academic settings within collectivistic cultures that emphasize conformity, students are expected to be extremely respectful of their teachers. They expect to remain quiet in class and receive knowledge from the instructor. However, students in the U.S. (an individualistic culture) are expected to participate actively in class discussions and be assertive – even challenge a teacher's ideas. Clearly, these differences in cultural values within the classroom can (and do) cause stress for these students.

This suggests that as long as the majority of the international students who come to study in the U.S. continue to perceive their cultural values as significantly more "collectivistic" than U.S. culture, some kind of stress is inevitable because of the difference in these cultural value orientations. This finding is important especially when designing programs that focus on preventing potential negative stress outcomes such as stress induced morbidity and poor adaptation.

Exploration of the acculturation strategies, descriptively, suggested that the majority of the international students in this sample utilized the integration strategy, followed by assimilation, separation and then marginalization. It was hypothesized that integration would stand out to be the best predictor of lower stress levels than assimilation, separation and marginalization. The hypothesis was based on the earlier literature that the integrationist strategy offers a bicultural base of support in which acculturating individuals have the most protective factors (i.e., two social support systems) (Berry, 1997). Marginalization, on the other hand, offers

the least adaptation while assimilation and separation are intermediate. However, the findings suggest that the assimilation strategy significantly predicted lower acculturative stress levels better than integration. Why this is so, however, is not clear. Berry (1997) has argued that the choice of strategy depends on personal preferences of which strategy is more useful and satisfying according to a given context and time period. Therefore, it is possible that with the current socio-political and cultural changes that reflect how the host nation perceives illegal immigrants in the United States, the traditional "melting pot" or assimilationist phenomenon might also work best for international students' positive adaptation. Individual personality characteristics also could help explain this phenomenon. Persons who are flexible in nature may be more likely to choose the assimilation acculturation strategy. These individuals, because of their flexible personalities, also would be less likely to experience high levels of stress than those who are less flexible and may use another acculturation strategy. Also, the use of the integration strategy may not significantly lower stress levels. This is to be expected because the use of this strategy, especially early in the process of acculturation, includes the challenges of dealing with more than one culture as one defines oneself and interacts with the host culture. In the long run, however, integration would be useful for lowering stress levels because it would assist in adaptation. The outcome of integration (meshing the two cultures) should help produce a positive sense of self and a healthy set of coping strategies for use within the host culture. Future studies should explore the process of the application of the acculturation strategies to more fully understand the relationship between strategy and acculturation stress. Longitudinal data would be especially helpful in examining the process over time.

High socio-economic status (SES) is a protective resource against life stressors (Berry, 1997). In the present study, the findings indicate that perceived lower social-class during adjustment and lower income are significant predictors of higher acculturative stress. In addition, this study also demonstrates that the majority of the students described their place in the economic world before acculturation as a relatively higher status than during acculturation. This is not a new phenomenon in the acculturation literature of other acculturating groups, such as immigrants. For instance, it has been reported that when individuals decide to migrate to a new environment, they forego their resources and experience status loss and limited status mobility (Berry, 1997). These factors are important predictors of economic adaptation (Aycan & Berry, 1996) as well as stress among acculturating individuals. As reflected in the current study,

students who are in the lower social status are more likely to experience high stress. However, this finding should be interpreted with caution. The results might imply that international students, like any other students, are prone to experience stress related to the temporary loss of their economic status, which will eventually change after completing their studies.

As mentioned earlier, having a low income was predictive of higher stress for this sample. This finding is consistent with those of earlier studies that lack of adequate funding is a major source of stress among acculturating individuals (e.g., Hovey, 2000; Padilla, Wagatsuma & Lindholm, 1985). This finding could be explained by the students' immigration limitations. According to the U.S. visa restriction policies, international students are full-time students and are not allowed to work outside their academic institution while in the U.S. This limits their employment opportunities. In addition, international graduate students must report assistantships as the only source of income (which applies to majority of these graduate students); therefore, one also becomes limited for on-campus employment opportunities. Students often need their graduate assistantship stipends not only for paying tuition and fees, but also for their daily activities of living (e.g., food, rent, transportation and emergency funds). As a result, they might experience adjustment difficulties. However, given the average monthly income of about $1200 for this sample and a substantial number of students indicating zero income, this finding should be interpreted with caution. It was not clearly established how students conceptualized income. Maybe some students who indicated no income at all did so because they did not regard a scholarship, family support or any other financial support as income. Future studies should examine the role of these varied sources of income for international students and investigate how these sources impact their academic and socio-cultural adjustments.

Marital status was found to significantly correlate with acculturative stress. However, in terms of predictive power, marital status was not a significant predictor of stress in this study. Therefore, the prediction that international students who were single would display higher levels of stress than the married ones was not statistically supported. However, on a closer look at the influence of the marital status categories, the data indicated that students who were in the "other" category (i.e. students who identified themselves as divorced, separated, widowed, engaged and other) were less likely than those who were single to experience higher stress levels. This is an interesting finding. Why did these individuals in the "other" category report lower levels of stress than those who were single? It may be that they have left behind unsuccessful or

conflictual relationships (e.g., separated, divorced). Or they have more resources and career experience than the single students. This needs to be examined specifically before any implications are drawn. It seems surprising that being married was not significantly related to levels of stress. This may be because marriage can provide both a supportive system as well as serve as a stressor - especially for international students with spouses who are not well integrated or who feel very isolated within U.S. society. Further examination of the role of marital relationship must be explored as it relates to the students' acculturative stress.

Future research could benefit the acculturation literature by identifying additional contributory factors to the variance of acculturative stress such as international student-faculty relationship, student's personality, expectations prior to acculturation and previous international experiences. Moreover, following the inconsistent findings on the relationship between the socio-cultural and demographic characteristics and acculturative stress, future studies may also benefit the international students literature by exploring the influence of these variables on the specific stress attributes (such as discrimination, loneliness, homesickness) to determine if any difference exists. This suggestion stems from some earlier interesting findings. For example, Razavi (1989) found that younger and older international students had similar degrees of difficulty, but voiced separate issues. In some studies, males compared to females were more likely to experience prejudice and fear (Sodowsky & Plake, 1992), perceived hatred (Ye, 2006), estrangement (Klomegah, 2006), greater adjustment issues related to financial responsibility and were less likely to use the English language (Sodowsky & Plake). These findings suggest that students' individual characteristics may be influenced by their situational and personal factors which eventually affect their stress levels.

Other Acculturative Stressors

Results from the open-ended questions supplement information about some of the specific stressors that contribute to our understanding of the adjustment process of international students (see Appendix C). The students' comments revealed six major themes. Apart from economic and relational factors, immigration issues such as visa issues, the social security system and the U.S. tax system, emerged as important acculturative challenges facing international students. In addition, consistent with previous studies (e.g. Lin & Yi, 1997; Mori, 2000), the findings from this study suggest that culturally-related issues such as prejudice,

stereotypes and discrimination are common and thus should not be overlooked when it comes to developing and implementing diversity and multicultural programs targeting international students and their host university and community.

Furthermore, although not all of the international students bring their families during their studies, it is obvious that family-related issues are among the other acculturative challenges. For example, spouses of international students who hold F2 visas also have immigration restrictions and may experience boredom and loneliness (De Vertheryli, 1995). This may negatively impact student adjustment as well. As for those who have children during their acculturation, managing their daily care and personal academics can also be stressful. Future studies should explore the role of the family as a stressor (and also a potential coping strategy) among international students and how it impacts their acculturative outcomes.

Study Strengths

This current study was designed to investigate important links between acculturative factors among international students in the United States. The results of this study indicate that it is crucial to examine the stressor-stress paradigm as part of student acculturation research. The role of the student's ecological environment, in particular social support and how it influences the stressor-stress paradigm was also emphasized. The moderating influences of the family, friends and important others social support on the relationship between stressor and stress was much needed in understanding student outcomes as well as for potential future interventions.

The ISASS is an important contribution of this study because it offers clarification on the conceptualization and operationalization of acculturative stressors. The scale identifies some of the sources of international students' stress and, therefore, makes it feasible to find appropriate preventive stress measures. It also adds to our understanding of the relationship between the stressors and stress as depicted in Berry et al.'s acculturative stress framework. The strong positive correlation between the ISASS and ILS supports the direct relationship represented in the model.

The inclusion of terrorism in the ISASS as a source of stress was found to be an appropriate addition to identifying the students' stressors. While this would not have been considered an important issue in the U.S. before September 11, 2001, since then the attention of

the U.S. government given to "potential threats" of non-American-born individuals residing in the U.S. has had direct effects on international students.

Additionally, from a methodological standpoint, the Index of Life Stress scale (ILS = 0.81), the Index for Social Support scale (ISS = 0.90) and the newly developed International Student Acculturative Stressor Scale (ISASS = 0.78) as used in this study demonstrated adequate reliabilities, which support the credibility of the findings. And the web-based survey design offered an efficient and powerful way to gain insights into students' experienced stressors, stress, social support and socio-demographic characteristics from a large representative sample of international students across the U.S.

Limitations of the Current Study and Suggestions for Future Research

While the current study takes an initial step towards understanding the relationships among stressors, stress, social support and socio-cultural and demographic variables, it has some inherent limitations:

- First, unfortunately the cross-sectional nature of this study prohibits causal inferences about the observed relations among these variables. Future studies would benefit from longitudinal data to explore why and how the variables are interrelated. For instance, the stressor-stress paradigm and its moderating/mediating variables can be tested to determine the long-term effects over time.

- Second, although this study offers a meaningful quantitative research design that facilitates the understanding of the relationships among variables from a statistical standpoint, these approaches fail to provide a richness of students' in-depth views of the issues that qualitative methods would offer. Future studies could benefit from a mixed method approach to capture the interrelationships among the variables under investigation. Adding interviews and focus group discussions involving a cohort of students across the United States could be very useful in aligning the international students' experiences with the statistics.

- Third, while the web-based method was an effective in collecting data for this study, the timing of the study as well as the length of the survey were limiting factors. The post – September 11th environment could have limited student participation and contributed to their reluctance in completing the questionnaire, because students may feel suspicious of

the interest in their experiences. This may be related to the current mistrust of foreign individuals in the U.S. that has resulted from the 9/11 attacks. Anecdotal reports from some participants also suggested that the questionnaire was too long which could discourage students from fully participating. This could have contributed to the high number of uncompleted surveys. Future studies can benefit from this feedback by developing instruments that are time efficient without losing the meaning of the research objectives.

- Lastly, apart from the length of the survey, this study was limited in terms of the information regarding the validity of the ISASS and the modified ILS measures. Research is needed to replicate this study using these measures. In addition, following the students' comments about the scales, it will be important for future researchers to evaluate the current scales and if possible develop new scales that can be used to assess the stressor-stress paradigm. More integrative predictive models should be tested as tools for future intervention and future research directions, in particular, models that capture the interrelationships between the specific individual factors that describe the stressor(s) and stress constructs.

Implications

Findings from this study have broadened our understanding of the acculturation process of international students in the United States. The robustness of the findings indicate that international students experience some stressors that contribute to their level of stress as they adapt to a new academic, social and cultural environment. In addition, they suggest that the students' level of acculturative stress depends heavily on their acculturation status such as social class, mode of acculturation, cultural value differences, income and marital status. These findings have implications for professionals in practice, education, research, theory and policy.

Implication for Practice

From an intervention standpoint, the study findings suggest that professionals who work with international students should be culturally competent and sensitive by becoming familiar with the students' cultural expectations and experiences. By doing so, professionals can be able to develop and implement culturally sensitive programs that not only identify at risk students but also offer a positive academic and social environment that facilitates cross-cultural skills (e.g.,

relational, diversity). For instance, knowledge and skills related to the acquisition of acculturative strategies can be offered. However, it has to incorporate the pros and cons of the chosen strategy. For example, assimilation strategy (which was a significant predictor of lower stress) also should include information about the risks that come with it, such as the possibility of being rejected by the host culture (LaFramboise, Coleman & Gerton, 1993). Moreover, for students who value collectivism, programs that teach them new sets of social and cultural rules as they pertain to their current community can be helpful to their successful adjustment process.

Furthermore, professionals also can design programs that address acculturation issues from a more vigorous preventive and educational approach by incorporating the social context that is a reflection of the international students' lived experiences. Assessing the students' support systems should be helpful before designing and implementing the programs. The role of family, friends and important others in the student's acculturation process should be determined and emphasized. Programs that offer information about the impact of money and time management on the daily lives of international students and their families are also needed when dealing with the economic stressors. In addition, programs that offer support for faculty to help students can also be beneficial in the student's acculturation process.

Implication for Education

The results also could be utilized by educators. As the number of international students in higher education classes increases, professors and host students face the need to examine their assumptions about the teaching and learning process. For instance, it was clear from the current study that holding collectivist values can impact the student's acculturation experience. The experiences that emerge from this kind of cultural value difference can have implications for learning and teaching (Hofstede, 1986). Therefore, it is important for faculty, as well as host students, to be aware of the cross-cultural differences surrounding international students' academic adjustments. The diversity that international students bring into the academic arena should be used as an opportunity for facilitating teaching and learning.

In addition, although family support did not turn out to be a moderating factor in the relationship between acculturative stressors and stress, descriptively, some students found it helpful during their acculturation process. Apart from being a source of support, some family attributes are identified as sources of stress (Yang & Clum, 1995). This information has implication for the family studies curriculum where educators have focused almost exclusive on

the following immigrant families: African American, Asian, European and Hispanic/Latino. The non-immigrant family has not been given due consideration despite their unique acculturation patterns and experiences. Family life educators should make an effort to incorporate the international student and his/her family as part of their multicultural knowledge and skill-building programs.

Implication for Research and Theory

As a matter of future research direction and theory, the results from this study suggest a need to clarify and explain how and under what conditions the social environment influences stress among international students. The application of the acculturative research framework, in particular the stressor-stress paradigm, was a unique contribution of this study. Future empirical investigations should replicate this study to address the stressor-stress paradigm as well as other paradigms with the intention of developing acculturation models that are unique for international students. In addition, the application of the ecological model brought into perspective the role of the international students' social context, which is unique from other acculturating/adjusting individuals. Although the focus of the current study was on the international students' social support micro systems, future research could benefit by utilizing the theory to explore other systems that influence international students' acculturation. For example, the financial, cultural value, relational and social systems as reported by the students (see Appendix C) can be examined as potential ecological variables in determining the international students' acculturation outcomes. Moreover, as demonstrated in the study findings the role of important others in relation to acculturative stress was somehow surprising. Research into how students conceptualize their social support networks and the impact support has on stress over time is something that needs further exploration through both qualitative and quantitative methods.

As far as the acculturative stressor and stress scales are concerned, future research should include continuous efforts to capture the students' conceptualization of the potential sources of stressors with the purpose of validating the current scales as well as developing new time efficient and effective acculturative scales for this population. In addition, researchers could benefit the acculturation literature by examining how specific acculturative stressors are influenced by the socio-demographic characteristics of the students.

Implications for Policy Development and Implementation

Social policy professionals who work with international students can benefit from this study as well. They can use these findings to actively design, advocate, implement or evaluate local or state policies that affect the welfare of international students. For example, professionals can advocate for social and economic policies targeting issues such as fair wages (especially student assistantship stipends), work permits, tuition waivers and scholarships. Issues such as these will help international students to overcome stress related to economic adaptation in the host country. In addition, in order for students to deal with stereotypes and discrimination in the host country, policies related to discrimination or diversity should be communicated to the students at all levels of adjustment: pre, during and post international study. Overall, the major aim should be promoting positive international education outcomes while incorporating the international students' perspectives. Therefore, when scholars urge policymakers to create legislation, they should base their arguments on a thorough understanding of the realities surrounding the lives and concerns of international students as they pursue studies in the United States. Sound policies will not only benefit the students and host institutions as well.

Conclusion

The overaching theoretical frameworks guiding this research emphasize the interrelationships between the international students' environment and their experience of acculturative stress. Previous efforts to examine this acculturation process have focused on how stress is related to well-being or psychopathology. In an effort to extend this literature, the relationship between stressors, stress and social support was assessed. The role of the different social support networks (i.e., family, friends, important others) was a major contribution from this study, especially their impact on the stressor-stress paradigm. The findings suggest that international students acculturative models need to emphasize support from important others as well as family and friends when trying to explain students' adjustment outcomes.

Earlier studies were replicated to determine how the students' socio-cultural and demographic characteristics influence acculturative stress. The findings from this study suggest the need for further exploration of the interrelationship between acculturative support systems, stressors and stress among international students utilizing more vigorous methodological approaches. Family scholars and other professionals can use findings from this study to promote

positive international education through implementing culturally sensitive interventions that begin with sensitivity awareness, education and advocacy for international students in the U.S. The primary goal should be to facilitate positive social and academic outcomes for all international students at different acculturating levels of international study: pre-departure, during and post-departure.

REFERENCES

Abe, J., Talbot, D., & Geelhoed, R. (1998). Effects of a peer program on international student adjustment. *Journal of College Student Adjustment*, *39*(6), 539-547.

Adelman, M. B. (1988). Cross-cultural adjustment: A theoretical perspective on social support. *International Journal of Intercultural Relations*, *12*, 183-204.

Al-Mubarak, A. H. A. (1999). Adjustment problems, coping methods, and choice of helpers of international students attending a large Pennsylvania university. *Dissertation Abstract International*, *61*(01), 4034A, (UMI No. AAT 9957699).

Altbach, P. G. (1991). Impact and adjustment: Foreign students in comparative perspective. *Higher Education*, *21*(3), 305-323.

Altbach, P.G., & Basset, R. M. (2004).The brain trade. *Foreign Policy*, *144*, 30-32.

Althen, G. (1983). *The handbook of foreign student advising*. Yarmouth, ME: Intercultural Press.

Amer, M. M. (2005). Arab American mental health in the post September 11 Era: Acculturation, stress and coping. *Dissertation Abstract International*, *66*(04), 1974B, (UMI No. AAT 3171022).

Arthur, N. (1998). Counseling International students. *Canadian Journal of Counseling*, *31*, 259-274.

Arthur, N. (2001). Using critical incidents to investigate cross-cultural transitions. *International Journal of Intercultural Relations*, *25*, 41-53.

Arthur, N. (2003). Preparing international students for the re-entry transition. *Canadian Journal of Counseling*, *37*(3), 173-185.

Arubayi, E. A. (1980). *A comparative analysis of identified problems as perceived by Nigerian students enrolled in the regents' systems of Kansas*. Unpublished M.A thesis, Kansas State University, Manhattan, KS.

Aubrey, R. (1991). International students on campus: A challenge for counselors, medical providers and clinicians (November). *Smith College Studies in Social work*, *62*, 20-33.

Aycan, Z. & Berry, J. W. (1996). Impact of employment-related experiences on immigrants' wellbeing and adaptation to Canada. *Canadian Journal of Behavioral Science*, *28*, 240-251.

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, *21*, 491-511.

Berry, J. W., Kim, U., Power, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied Psychology: An international review*, *38*(2), 185-206.

Berry, J. W. (1990). Psychology of acculturation: Understanding individuals moving between cultures. In R. Brislin (Ed.), *Applied Cross-Cultural Psychology* (pp. 232-254). Newbury Park, CA: Sage.

Berry, J. W. (1997). Immigration, acculturation and adaptation. *Applied Psychology*, *46*(1), 5-34.

Berry, J. W. (2003). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organista, & G. Marin (Eds.), *Acculturation: Advances in theory, measurement and applied research* (pp. 17-37)*,* Washington, DC: American Psychological Association.

Berry, J. W., & Annis, R. C. (1974). Acculturative stress. *Journal of Cross-Cultural Psychology*, *5*, 382-406.

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, *21*(3), 491-511.

Beykont, Z. F., & Daiute, C. (2002). Inclusiveness in Higher Education Courses: International Student Perspectives. *Equity & Excellence in Education*, *35*(1), 35-42.

Bochner, S. (1986). Coping with unfamiliar cultures. Adjustment or culture learning? *Australian Journal of Psychology*, *38*, 347-358.

Burks, A. W. (Ed) (1984). *The modernizers: Overseas students, foreign employees, and Meiji Japan. Boulder*, CO: Westview Press.

Bradley, G. (2000). Responding effectively to the mental health needs of international students. *Higher Education*, *39*(4), 417-433.

Brein, M., & David, K. H. (1971). Intercultural communication and the adjustment of the sojourner. *Psychological Bulletin*, *76*(3), 215-230.

Brinson, J. A., & Kottler, J. (1995). International students in counseling: Some alternative models. *Journal of College Student Psychotherapy*, *9*(3), 57-70.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Six theories of child development. Annals of Child Development* (Vol, 6, p. 187-249). Greenwich, CT: JAI Press.

Capen, S. P. (1915). *Opportunities for foreign students at colleges and universities in the United States*. Bulletin, U. S. Bureau of Education. Washington, D. C: G.P.O

Chapdelaine, R. F. & Alexitch, L. R. (2004). Social skills difficulty: Model of cultural shock for international graduate students. *Journal of College Student Development*, *45*, 167-184.

Chen, C. P. (1999). Common stressors among international college students: Research and counseling implications. *Journal of College Counseling, 2*(1), 49-65.

Chen, H., Mallinckrodt, B., & Mobley, M. (2002). Attachment patterns of East Asian international students and sources of perceived social support as moderators of the impact of U.S. racism and cultural distress. *Asian Journal of Counseling*, *9*(1 & 2), 27-48.

Cheng, E. H. J. (1999). A study of international students' adjustment problems at the University of South Dakota. *Dissertation Abstract International*, 60(09), 3242A, (UMI No. AAT 9946698).

Church, A. T. (1982). Sojourner adjustment. *Psychological Bulletin*, *91*(3), 540-572.

Coie, J. D. Dodge, K. A. & Coppotelli, H. (1982). Dimensions and types of social stats. A cross-age perspective. *Developmental Psychology*, *18*, 557-571.

Coleman, S. (1997). International students in the classroom: A resource and an opportunity. *International Education, 26*, 52-61.

Constantine, M. G., Anderson, G. M., Berkel, L. A., Caldwell, L., D., & Utsey, S, O. (2005). Examining the cultural adjustments experiences of African international college students: A qualitative analysis. *Journal of Counseling Psychology*, *52*(1), 3-13.

Day, R. C., & Hajj, F, M. (1986). Delivering counseling services to international students: The experience of the Americana university of Beirut. *Journal of Collège Student Personnel*, 27(4), 353-357.

Davenport, K. (2005). An exploration of the sojourn experiences of Thai international students and implications for psychotherapeutic counseling. *Dissertation Abstract International*, 66(03), 3402B, (UMI No AAT 3180982).

Dee, J., R., & Henkin, A, B. (1999). Collaborative learning, communication, and student outcomes in higher education: Assessing verbal interaction. *Journal of Staff, Program and Organizational Development*, *16*(3), 125-134.

De vertheyi, R. F. (1995). International students' spouses: Invisible sojourners in the cultural shock literature. *International Journal of Intercultural Relations*, *19*, 387-411.

Du Bois, C. (1956). *Foreign students and higher education in the United States*. Washington, DC: American Council Education.

Eland, A. J. (2001). Intersection of academics and culture: The academic experience of International graduate students. *Dissertation Abstract International*, *62*(03), 909A, (UMI No. AAT 3010549).

Fouad, N. A. (1991). Training counselors to counsel international students: Are we ready? *Counseling Psychologist*, *19*, 66-71.

Furnham, A., & Bochner, S. (1982). Social difficulty in a foreign culture: An empirical analysis of culture shock. In S. Bochner (Ed.), *Cultures in contact: studies in cross-cultural interaction*, New York: Pergamon Press.

Furukawa, T. (1997). Depressive symptoms among international exchange students, and their predictors. *Acta Psychiatrica Scandinavica*, *96,* 242-246.

Furukawa, T. (1997). Sojourner readjustment: Mental health of international students after one year's foreign sojourn and its psychosocial correlates. *Journal of Nervous and Mental Disease, 185*, 263-268.

Galloway, F. J. & Jenkins, J. R. (2005). The adjustment problems faced by international students in the United States: A comparison of international students and administrative perceptions of two private, religiously affiliated universities. *NASPA Journal*, *42*(2), 175-186.

Gillete, K. (2005). As the world goes to college: International student experiences. Unpublished dissertation. *Dissertation Abstract International*, A 66(12) (UMI No AAT 3199526). Retrieved November, 20, 2006, from Dissertation and Theses Database.

Goyol, A. B. (2002). The adjustment problems of African students at Western Michigan University. *Dissertation Abstract International*, *63*(01), 2466A, (UMI No. AAT 3060706).

Graves, T. (1967). Psychological acculturation in atri-ethnic community. *Southwestern Journal*, *23*, 337-350.

Greenberg, D. S. (2002). New U.S restrictions on foreign students. *The Lancet*, 359, 17-57.

Greene, A. L. (1998). Adjustment problems perceived by Taiwanese, Korean, and Japanese international students at California State University, Fullerton. *Dissertation Abstract International*, *59*(11), 4034A, (UMI No. AAT 9913249).

Hayes, R. L., & Lin, H. (1994). Coming to America: Developing social support systems for international students. *Journal of Multicultural Counseling and Development*, *22*, 7-16.

Hechanova-Alampay, R., Beehr, T., Christiansen, N., & Van Horn, R. (2002). Adjustment and strain among domestic and international student sojourners: A longitudinal study. *School Psychology International*, *23*(4), 458-474.

Heikinheimo, P. S., & Shute, J. C. M. (1986). The adaptation of foreign students: Students' views and institution implications. *Journal of College Student Personnel*, *27*, 399-406.

Hodgons, C. S. & Simoni, J. M. (1995). Graduate student academic and psychological functioning. *Journal of College Students Development*, *36*(3), 244-253.

Hofstede, G. (1986). Cultural differences in teaching and leaning. *International Journal Intercultural Relations*, *10*, 301-320.

House, R. M., & Pinychon, M. (1998). Counseling Thai Americans: An emerging need. *Journal of Multicultural Counseling and Development*, *28*(3), 194-204.

Hovey, J. D. (2000). Psychological predictors of acculturative stress in Mexican Americans. *Journal of Psychology*, *134*, 490-503.

Hovey, J. D. & King, C. A. (1996). Acculturative stress, depression and suicidal ideation among immigrant and second-generation Latino adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *35*(9), 1183-1192.

Hull, W. F. (1978). *Foreign students in the United States of America: Coping behavior within the educational environment*. New York, NY: Praeger.

Institute of International Education (IIE) (2006). *Open Doors 2006 Report: Information and Data Tables*. Retrieved on September, 17, 2007, from http://opendoors.iienetwork.org/

Institute of International Education (IIE) (2006). *Powell to support international education week 2001*. Retrieved on October, 21, 2006 from http://opendoors.iienetwork.org/?p=29409

Jackson, Y., & Warren, J. S. (2000). Appraisal, social support, and life events: Predicting outcome behavior in school-age children. *Child development*, *71*(5), 1441-1457.

Johnson, V. (2003). When we hinder foreign students and scholars, we endanger or national security (April 11). *The Chronicles of Higher Education*, B7-B9.

Junius, D. P. (1997). A study of the problems experienced by international students at Northern Arizona University. *Dissertation Abstract International*, *58*(12), 4509A, (UMI No AAT 9818088).

Kaczamarek, P. G., Matlock, G., Metra, R., Ames, M. H., & Ross, M. (1994). An assessment of international college student adjustment. *International Journal for the Advancement of Counseling*, *17*, 241-247.

Kim, J. (2003). The new campus raids. *Nation*, 276, 20. Retrieved on September, 20, 2006 from Academic Search Elite Database.

Klineberg, O., & Hull, W. F. (1979). *At a Foreign University: An International study of Adaptation and Coping*. New York: Praeger.

Klomegah, R, Y. (2006). Social factors relating to alienation experienced by international students in the United States. *College Student Journal*, *40*(2), 303-315.

Knowles, L. J. (2003). Acculturation disparity: An emic perspective from international students enrolled on two South Florida institutions of higher education. *Dissertation Abstract International*, *64*(09), 3215A, (UMI No AAT 3106374).

Kosic, A. (2004). Acculturation strategies, coping process and acculturative stress. *Scandinavian Journal of Psychology*, *45*, 269-278.

Kuo, Y. (2004). Understanding international graduate student's experiences at Auburn University. *Dissertation Abstract International*, *65*(02), (UMI No. AAT 3124277).

LaFramboise, T., Coleman, H., & Gerton, J. (1993). Psychological impact of biculturalism: Evidence and theory. *Psychological Bulletin*, *114*, 395-412.

Lakey, B., & Dickinson, L. G. (1994). Antecedents of perceived support: Is perceived family environment generalized to new social relationship? *Cognitive Therapy and Research*, *18*(1), 39-53.

Lakey, B., McCabe, K. M., Fisicaro, S. A., & Drew, J. B. (1996). Environmental and personal determinates of support perceptions: Three generalizability studies. *Journal of Personality and Social Psychology*, *70*(6), 1270-1280.

Lane, K. (2001). Colleges, lawmakers try to balance safety and students in visa system. *Community College Week*, 14, 6-8. Retrieved on September, 23, 2006 from the Academic Search Elite Database.

Lau, S, J. (2006). Acculturative stress, collective coping, and psychological well-being of Chinese international students. University of South Carolina, 2006

Leavell, J. P. (2001). Coping skills patterns of international college student. *Dissertation Abstracts International*, *62*(09), 4275B, (UMI No. AAT 3024626)

Lee, J. S., Koeske, G. F., & Sales, E. (2004). Social support buffering of acculturative stress: A study of mental health symptoms among Korean international students. *International Journal of Intercultural Relations*, *28*, 399-414.

Leong, F. T. (1986). Counseling and psychotherapy with Asian Americans: Review of literature, *Journal of counseling Psychology 33*, 196-206.

Leong, F. L. T., & Chou, E. L. (2002). *Counseling international students and sojourners*. In P. B. Pedersen, J. G. Dragus, W. J. Lonner, J. E. Trimble (Eds.), Counseling across cultures (pp.185-207). Thousands Oaks, CA: Sage.

Leong, F. T. L., & Sedlacek, W. (1986). A comparison of international and U.S. students' preferences for help sources. *Journal of College Student Personnel*, *27*, 426-430.

Lewthwaite, M. (1996). A study of international students' perspective on cross-cultural adaptation. *International Journal for the Advancement of Counseling*, *19*(2), 167-185.

Lin, J. G., & Yi, J. K. (1997). Asian International students' adjustment: Issues and program suggestions. *College Student Journal*, *31*(4), 473-479.

Liverant, G. I., Hofmann, S, G. & Litz, B. T. (2004). Coping and anxiety in college students after the September 11th terrorist attack. *Anxiety, Stress, & Coping*, *17*(2), 127-139.

Lysgaard, S. (1955). Adjustment in a foreign society: Norwegian Fulbright grantees visiting the United States. *International Social Science Bulletin*, *7*, 45-51.

Mallinckrodt, B., & Leong, F. T. (1992). International graduate students, stress and social support. *Journal of College Student Development*, *33*, 71-78.

Manese, J. E., Sedlacek, W. E. & Leong, F.T. L. (1984). Needs and perceptions of female and male international students. *Journal of Multicultural Counseling and Development*, *16*(1), 24-29.

Manyika, S. (2001). Negotiating identities: African students in British and American universities. *Dissertation Abstract International*, *62*(01), 97A, (UMI No. AAT 3002182).

Maynard-Reid, N. A. (2005). The relations among acculturation, acculturative stress, and self-efficacy. *Dissertation Abstract International*, *66*(11), (UMI No AAT 3194940).

McCoy, M. A. (1996). A study of the self-problems among Asian the University of Memphis. *Dissertation abstracts International*, *57*(06), 2333A, (UMI No AAT 9633864).

McClelland, A. N. (1995). The acculturation attitudes and acculturative stress of international students. *Dissertation Abstract International*, *34*(03), 1303A, (UMI No. AAT MM02990).

McKinlay, N. J., Pattison, H. M., & Gross, H. (1996). An exploratory investigation of the effects of a cultural orientation program on the psychological well-being of international students. *Higher Education*, *31*(3), 379-395.

Mehta, S. (1998). Relationship between acculturation and mental health for Asian Indian immigrants in the United States. *Genetic, Social and General Psychology Monographs, 124*, 61-78.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation*. SAGE Publications, Thousand Oaks, CA.

Mori, S. (2000). Addressing the mental health concerns of international students. *Journal of Counseling and Development*, *78*(2), 137-143.

Miller, D. F., & Harwell, D. J. (1983). International students at an American university: Health problems and status. *Journal of School Health*, *53*, 45-49.

Misra, R., Crist, M., & Burant, C.J. (2003). Relationships among the life stress, social support, academic stressors, and reactions to stressors of international students in the United States. *International Journal of Stress Management*, *10*(2), 137-157.

Msengi, I. G. (2003). Sources of stress and its impact on health behaviors and academic performance of international students at a comprehensive Midwestern University. *International Journal of Global Health and Health Disparities*, *5* (1), 55-69.

NAFSA Association of International Educators. (2006). *The history of NAFSA: Association of International Educators*. Retrieved on October, 21, 2006 from http://www.nafsa.org/about.sec/history

Ng, L. C. (2001). Loneliness, perceived social support, and coping international students. *Dissertation Abstract International*, *62*(01), 558B, (UMI No. AAT 3002113).

Nebedum_Ezeh, G. C. (1997). An examination of the experiences and coping strategies of African students at predominantly while institution of higher education in the United States. *Dissertation abstracts International*, *53*(06), 2106A, (UMI No. AAT 9737567).

Ninggal, M. T. (1998). The role of ethnicity among international students in adjustment to acculturative stress. *Dissertation Abstract International*, *59*(03), 738A, (UMI No. AAT 9828814).

Oberg, K. (1960) Culture shock: Adjustment to new cultural environments. *Practical Anthropology*, *7*, 177-182.

Oliver, J. M., Reed, C. K. S., Katz, B. M., & Haugh, J. A. (1999). Students' self-reports of help seeking: The impact of psychological problems, stress and demographic variables on utilization of formal and non formal support. *Social Behavior and Personality*, *27*, 109-128.

Oropeza, B. A., C., Fitgibbon, M. & Baron, A. Jr. (1991). Managing mental health crises for foreign college students. *Journal of Counseling and Development*, *69*, 280-284.

Padilla, A. M., Wagatsuma, Y., & Lindholm, K. J. (1985). Acculturation and personality as predictors of stress in Japanese and Japanese-Americans. *The Journal of Social Psychology*, *125*, 295-305.

Parker, B., & McEvoy, G. M. (1993). Initial examination of a model of intercultural adjustment. *International Journal of Intercultural Relations*, *17*, 355-379.

Parr, G., Bradely, L. & Bingi, R. (1992). Concerns and feelings of international students. *Journal of College student Development*, *33*, 20-25.

Pedersen, P. B. (1991). Counseling international students. *Counseling Psychologist*, *19*, 10-58.

Perrucci, R., & Hu, H. (1995). Satisfaction with social and educational experiences among international graduate students. *Research in Higher Education*. *36*(4), 491-508.

Peterson, D. M., Briggs, P. Dreasher, L., Homer, D. D, & Nelson, T. (1999). Contributions of international students and programs to campus diversity. *New Directions for Students Services*, *86*, 67-77.

Pierce, G. R., Sarason, I. G., & Sarason, B. R. (1996). *Handbook of social support and the family*. New York: Plenum Press.

Poyrazli, S., Arbona, C., Bullington, R., & Pisecco, S. (2001). Adjustment issues of Turkish college students studying in the U.S. *College student Journal*, 35, 52-62.

Poyrazli, S. & Kavanaugh, P, R. (2006). Marital status, ethnicity, academic achievement, and adjustment strains: The case of graduate international students. *College Student Journal*, *40*(4), 767-780.

Poyrazli, S., Kavanaugh, P, R., Baker, A., & Al-Timimi, N. (2004). Social support and demographic correlates of acculturative stress in international students. *Journal of College Counseling*, *7*, 73-82.

Phinney, J. S., & Onwughalu, M. (1996). Racial identity and perception of American ideals among African American and African students in the United States. *International Journal of Intercultural Relations*, *20*(2), 127-140.

Pruitt, F. J. (1978). The adaptation of African students to American society. *International Journal of Intercultural Relations*, *2*(1), 90-118.   `

Rajapaska, S., & Dundes, L. (2002). It's a long way home: International student adjustment to living in the United States. *College Student Retention*, *4*(1), 15-28.

Razavi, R. A. (1989). A study of the adjustment problems of international students in Northern Virginia Community College. *Dissertation Abstract International*, 50A, 1676.

Redfield, R., Linton, R., & Herskovits, M. T. (1936). Memorandum for the study of acculturation. *American Anthropologist*, *38*, 149-152.

Redmond, M. V., & Bunyi, J. M. (1993). The relationship of intercultural communication with stress and the handling of stress as reported by international students. *International Journal of Intercultural Relations, 17*(2), 235-254.

Ruby, C. (2007). Coming to the United States: An examination of the factors related to international student's graduate school choice. *Dissertation Abstract International*, *68*(04), (UMI No. AAT 3259708).

Ruetrakul, P. (1997). Parental perceptions of problems and stress in children of Southeast Asian students at the University of Pittsburgh. *Dissertation Abstract International*, *49*(04), 949A, (UMI No. AAT 8807326).

Ryan, M. E., & Twibell, R. S. (2000). Concerns, values, stress, coping, health and educational outcomes of college students who studied abroad. *International Journal of Intercultural Relations*, *24*, 409-435.

Salim, S. B. (1984). Adjustment problems of Malaysian students at Western Michigan University. *Dissertation Abstract International*, *46*(01), 77A, (UMI No. AAT 8505197).

Sam, D. L. (2001). Satisfaction with life among international students: An exploratory study. *Social Indicators Research*, *53*(3), 315-337.

Sandhu, D. S. (1995). An examination of the psychological needs of the international student: Implications for counseling and psychotherapy. *International Journal of Advancement of Counseling*, *17*, 229-239.

Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an acculturative stress scale for international students: Preliminary findings. *Psychological Reports*, *75*, 435-448.

Schuster, M. A., Stein, B. D., Jaycox, L. H., Collins, R. L. Marshall, G. N., Elliot, M. N., Zhou, A. J., Kanouse, D. E., Morrison, J. L., & Berry, S. H. (2001).A national survey of stress reactions after the September 11, 2001 terrorist attacks. *New England Journal of Medicine*, *345*, 1507-1512.

Seigel, C. (1991). Counseling international students: A clinicians' comments. *Counseling Psychologist*, *19*, 72-75.

Silver, R. C., Holman, E. A., McIntosh, D. N., Poulin, M., & Gil-Rivas, V. (2002). Nationwide longitudinal study of psychological responses to September 11. *American Journal of Psychiatry*, *288*, 1235-1244.

Social Science Research Council Summer Seminar. (1954). Acculturation: An exploratory formulation. *American Anthropologist*, *56*, 937-1002.

Sodowsky, G. R., & Plake, B. S. (1992). A study of acculturation differences among international people and suggestions for sensitivity to within-group differences. *Journal of Counseling and Development*, *71*, 53-59.

Starobin, S. S. (2006). International students in transition: Changes in access to U.S. higher education. *New Directions for Students Services*. *114*, 63-71. WN: 061901511007.

Straffon, D. A. (2003). Assessing the intercultural sensitivity of high school students attending an international school. *International Journal of Intercultural Relations*, *27*(4), 487-501.

Sue, D. W., & Sue, D. (1997). Barriers to effective cross-cultural counseling. *Journal of Counseling Psychology*, *24*(5), 420-429.

Swagler, M. A., & Ellis, M. V. (2003). Crossing the distance: Adjustment of Taiwanese graduate students in the United States. *Journal of Counseling Psychology*, *50*, 420-437.

Tanaka, T., Takai, J., Kohyama, T., Furijahara, T., & Minami, H. (1994). Social networks of international students in Japan: Perceived social support and relationship satisfaction. *The Japanese Journal of Experimental Social Psychology*, *33* (3), 213-223.

Thomas, K., & Althen, G. (1989). Counseling foreign students. In P. B. Pedersen, J. G.Draguns, W. J. Lonner, & J. E. Trimble (Eds.), *Counseling across cultures* (3rd ed.), (pp. 205-241). Honlulu: University of Hawaii Press.

Ting-Toomey, S. (1999). *Communicating across cultures*. New York and London: The Guilford Press.

Triandis, H. C., Bontempo, R. Villareal, M. J. Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-in group relationships. *Journal of Personality and Social Psychology*, *54*(2), 323-338.

U. S. Department of State. (2006). U.S Department of State, Rice, Education Secretary to Host International Education summit. http://usinfo.state.gov/scv/Archive/2005/Dec/29-767269.html

Verthelyi, R. F. D. (1995). International student's spouses: Invisible sojourners in the culture shock literature. *International Journal of Intercultural Relations*, *19*, 387-411.

Wang, D. K. S. (1991). Problems of foreign students attending the University of Arkansas and recommended solutions. *Dissertation Abstract International*, *52*(08), 2841A, (UMI No. AAT 9204754).

Ward, C., & Kennedy, A. (1994). Acculturation strategies. Psychological adjustment and sociocultural competence during cross-cultural transitions. *International Journal of Intercultural Relations*, *18*, 329-343.

Ward, C., & Rana-Deuba, A. (1999). Acculturation and adaptation revisited. *Journal of Cross-Cultural Psychology*, *30*, 422-442.

Wehrly, B. (1986). Counseling international students: Issues, concerns, and programs. *International Journal of the Advancement of Counseling*, *9*, 11-22.

Wethington, E., & Kessler, R.C. (1986). Perceived social support, received support, and adjustment to stressful life events. *Journal of Health and Social Behavior*, *27*, 78-89.

Wilton, L., & Constantine, M. G. (2003). Length of residence, cultural adjustment difficulties, and psychological distress symptoms in Asian and Latin American international college students. *Journal of College Counseling*, *6*, 177-186.

Winkelman, M. (1994). Cultural shock and adaptation. *Journal of Counseling and Development*, *73*(6), 121-126.

Wingfield, S. R. (2000). Perception of culture shock of international students at Tennessee State University. *Dissertation Abstract International*, *62*(03), 887A, (UMI No. AAT 3007592).

Yang, B., & Clum, G. A. (1994). Life stress, social support, and problem-solving skills predictive of depressive symptoms, hopelessness, and suicide ideation in an Asian student population: A test of a model. *Suicide and Life Threatening Behavior*, *24*(2), 127-139.

Yang, B., & Clum, G. A. (1995). Measures of life stress and social support specific to an Asian student population. *Journal of Psychopathology and Behavioral Assessment*, *17*, 51-67.

Ye, J. (2006). An examination of acculturative stress, interpersonal social support, and use of online ethnic social groups among Chinese international students. *The Howard Journal of Communication, 17*, 1-20.

Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction and social connectedness as predictors of acculturative stress. *Counseling Psychology Quarterly*, *16*, 15-28.

Ying, Y. (2005). Variation in acculturative stressors over time: A study of Taiwanese students in the United States. *International Journal of Intercultural Relations*. *29*(1), 59-71.

Yoon, E., & Portman, T. A. (2004). Critical issues of literature on counseling international students. *Journal of Multicultural Counseling and Development*, *32*(1), 33-44.

Zhang, N., & Rentz, A. L. (1996). Intercultural adaptation among graduate students from the People's Republic of China. *Colleges Student Journal*, *30*, 321-328.

Zimmerman, S. (1995). Perceptions of intercultural communication competence and international student adaptation to an American campus. *Communication Education*, *44*(4), 321-335.

Appendix A - KSU IRB Approval Letter

TO: Karen Myers-Bowman   Proposal Number: 4205
       FSHS
       308 Justin Hall

FROM: Rick Scheidt, Chair
         Committee on Research Involving Human Subjects

DATE: February 21, 2007

RE: Proposal Entitled, "Factors influence acculturative stress among international students in the United States"

The Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is exempt from further review.

This exemption applies only to the proposal currently on file with the IRB. Any change affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Exemption from review does not release the investigator from statutory responsibility for obtaining the informed consent of subjects or their authorized representatives, as appropriate, either orally or in writing, prior to involving the subjects in research. The general requirements for informed consent and for its documentation are set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR 46.116-117, copies of which are available in the University Research Compliance Office and online at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116. In cases of remote oral data collection, as in telephone interviews, oral consent is sufficient and the researcher is required to provide the respondent with a copy of the consent statement only if the respondent requests one. The researcher must, however, ask the respondent whether he or she wishes to have a copy. The initiative in requesting a copy must not be left to the respondent. Regardless of whether the informed consent is written or oral, the investigator must keep a written record of the informed consent statement, not merely of the fact that it was presented, and must save this documentation for 3 years after completing the research.

The identification of a human subject in any publication constitutes an invasion of privacy and requires a separate informed consent.

Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Appendix B - Online Cover Letter, Informed Consent and

Student's Questionnaire

AXIO SURVEY

INTERNATIONAL STUDENTS'
ACCULTURATION OUTCOMES

Opening Instructions

INFORMED CONSENT

Dear Student:

Welcome! My name is Rosemary Eustace. I am a PhD candidate at Kansas State University (KSU). As part of my research project I would like to invite you to participate in an online survey regarding the factors influencing acculturation stress among international students. This information is needed in facilitating positive academic and social outcomes for international students in the United States.

You will be asked to complete a series of questions in which you select the option that best represents you, your experiences and feelings. The survey should take about 20-30 minutes to complete. After reading this page, I suggest you print this page for your own record before you move on to the survey. There is no option to save your responses, so please have ample time to complete the questionnaire. After you have completed the survey, please CLICK on the **DONE** button at the bottom of the page and the survey will be sent to our computer to be compiled with the rest of the completed surveys. The responses will be securely stored on a private server at Kansas State University. No name or identifying information will be required to complete the survey. Participation is strictly anonymous and the responses are confidential. There are no known risks associated with participating in the study.

Permission to conduct the study has been granted from the KSU Institutional Review Board on 2/21/07. Participation is completely voluntary. By clicking on the **NEXT** button below and completing this study, you agree to the following statements:

> I understand the requirements of this project and my role as a participant. I understand that my participation in the survey is completely voluntary and I have the right to withdraw at any time.

If you choose to withdraw, you may do so at anytime without any negative consequences by exiting the web browser. If you have questions about the study, you can contact Dr Karen Myers-Bowman, the project director, School of Family Studies and Human Services, Kansas State University, Manhattan, KS 66502, phone (785)-532-1491. If you have any questions regarding the rights of subjects in this study or about the manner which this study is conducted, you may contact Dr. Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 1 Fairchild Hall, Kansas State University, Manhattan, KS 66502, phone (785)-532-3224. You may also contact me at: email- reu7493@ksu.edu and phone (937)-435-2622.

Page 1

For each of the following questions, please select the answer that best describes you. You will not be asked your name or any other identifying information.

Question 1 ** *required* **

What is your SEX (Gender)?

Question 2 ** *required* **

What is your CURRENT AGE (in years)? [e.g., 76]

Characters Remaining: 2

Question 3

On what FAITH is your RELIGION based?

Question 4

Which

Question 5

What is your MARITAL STATUS?

Page 2

The following questions will ask you about your children.

Question 6 ** *required* **

Do you have CHILDREN?
  YES
  NO

Page 3

Fill out this page only if you answered:

- *YES* on question *6. Do you have CHILDREN?* on *page 2* .

Question 7

How many children do you have? [e.g., 10].

Characters Remaining: 2

94

Question 8

How many of your children are boys? [e.g., 03].

Characters Remaining: 2

Question 9

How many of your children are girls? [e.g., 05].

Characters Remaining: 2

Question 10

How old are your children? Please use the space provided. [e.g., 08, 12].

Characters Remaining: 50

Page 4

Question 11

This question is about your current FAMILY STATUS in the United States. Please choose the one that best suits you.

Question 12

How long have you LIVED IN THE UNITED STATES?

Question 13

What is your current SOURCE OF FUNDING for your studies ? You may choose more than one answer.

- [ ] GRADUATE TEACHING/RESEARCH ASSISTANTSHIP
- [ ] SCHOLARSHIP
- [ ] FAMILY FUNDS
- [ ] OTHER

Question 14

What is your MONTHLY GROSS INCOME in US Dollars? [e.g., $ 1,206]

Characters Remaining: 5

Question 15

WHAT IS YOUR VISA TYPE?

95

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Question 16

The following are about cultural values. Choose the BEST number that describes your level of agreement with the statements.

1 - STRONGLY AGREE | 2 - SOMEWHAT AGREE | 3 - AGREE

4 - SOMEWHAT DISAGREE | 5 - DISAGREE | 6 - STRONGLY DISAGREE

	1	2	3	4	5	6
16.1 It is of value to you to have contact with US culture during your stay in the United States?						
16.2 Is it of value to you to have contact with your own ethnic culture during your stay in the United States?						

Question 17

Most of the cultures worldwide are described by their values, behaviors and beliefs along various points in a continuum as either **INDIVIDUALISTIC** or **COLLECTIVISTIC**.

Individualistic culture values are centered towards independence in individual decision making, responsibilities and benefits by holding the individual as the primary unit of reality and ultimate standard of value.

Collectivistic culture values center towards interdependence in group interaction by holding the group as the primary unit of reality and ultimate standard of value.

On a scale of 1 to 7 (below), how would you rate the cultural values, beliefs or behaviors of your **country of origin** and your **current community in the United States.**

1 - INDIVIDUALISTIC | 2 - MOSTLY INDIVIDUALISTIC

3 - SOMEWHAT INDIVIDUALISTIC | 4 - IN BETWEEN | 5 - SOMEWHAT COLLECTIVISTIC

6 - MOSTLY COLLECTIVISTIC | 7 - COLLECTIVISTIC

	1	2	3	4	5	6	7
17.1 Your country of origin?							
17.2 Your current community in the United States?							

Page 6

Question 18

What was your employment status before you came to the United States?

96

Question 19

How would you describe your SOCIAL CLASS before you came to the United States?

Question 20

How would you describe your current SOCIAL CLASS in the United States?

Question 21

For how many YEARS [e.g., 12] did you take courses taught in ENGLISH (e.g., Geometry, Physics, History) in your home country? [NOTE: This means courses OTHER THAN basic English skills].

Characters Remaining: 2

Question 22

Reflecting on your personal experience, when were your courses taught in English? Check ALL that apply.

☐ Primary/elementary school

☐ Middle School

☐ High school

☐ Vocational school

☐ College/University

Question 23 ** required **

Is ENGLISH your NATIVE LANGUAGE?

YES

NO

Page 7

Fill out this page only if you answered:

- *NO on question 23. Is ENGLISH your NATIVE LANGUAGE? on page 6 .*

Question 24

What is/are your NATIVE LANGUAGE(s)? List them in the space provided. [e.g., Korean, Swahili]

Characters Remaining: 50

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Question 25

The following section is about some common stressors reported among international students. Please select the number that BEST describes the level of difficulty you have had regarding these issues since coming to the United States.

1 - VERY DIFFICULT | 2 - DIFFICULT | 3 - SOMEWHAT DIFFICULT
4 - SOMEWHAT NOT DIFFICULT | 5 - NOT DIFFICULT AT ALL

	1	2	3	4	5
25.1 Academic					
25.2 Health					
25.3 Language					
25.4 Family					
25.5 Food					
25.6 Living arrangements					
25.7 Cultural value differences					
25.8 Weather					
25.9 Social interactions (e.g., friendships)					
25.10 Your future outlook (e.g., life after college education is completed)					
25.11 Terrorism threats					
25.12 Transportation					
25.13 Safety					
25.14 Social Support					

Question 26

Are there any other issues that have been difficult for you during your stay in the United States? If yes, please list them in the space provided.

Characters Remaining: 50

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Question 27

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In this section, you have questions about your acculturation experiences. For each of the statements, please indicate your level of agreement by checking in the box that most closely reflects your feelings. Use the scale below to describe your responses.

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN

	1	2	3	4
27.1 I worry about whether I will have my future career in the U.S.A.				
27.2 I worry about my financial situation.				
27.3 My financial situation influences my academic study.				
27.4 I worry about my future as to whether I will return to my home country or stay in the U.S.A.				
27.5 I do not want to return to my home country, but I may have to do so.				
27.6 My financial situation makes my life here very hard.				
27.7 I owe money to others/banks/credit card companies.				
27.8 I worry about not being able to give financial aid to my family in my home country.				
27.9 I worry about my future career in my home country.				
27.10 When I speak in English, I feel embarrased.				
27.11 My English makes it hard for me to read articles, books, etc.				
27.12 I cannot express myself well in English.				
27.13 My English makes it hard for me to understand lectures.				
27.14 I can feel racial discrimmination toward me from other students.				
27.15 People treat me well even though I am a foreigner.				

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Question 28

For each of the following statements, please indicate your level of agreement by checking the box that most closely reflects your feelings. Use the scale below.

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN

	1	2	3	4
28.1 I think that people are very generous here.				
28.2 I can feel racial discrimination toward me in stores.				

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28.3 I can feel racial discrimination toward me from professors.				
28.4 I can feel racial discrimination toward me in restraurants.				
28.5 I like the religions in the U.S.A.				
28.6 I worry about whether I will have my future career in my home country.				
28.7 I do not like American food.				
28.8 I like the things people do for their entertainment here.				
28.9 The American way of being direct is uncomfortable to me.				
28.10 I like American music.				
28.11 I enjoy the American holidays.				
28.12 I want to go back to my home country in the future, but I may not be able to do so.				
28.13 I feel uncomfortable with the weather here.				
28.14 I worry about getting sick here.				
28.15 I worry about my academic performance.				

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Question 29

In this section, you have additional questions about your acculturation experiences. For each of the statements, please indicate your agreement with the statements by checking in the box that most closely reflects your feelings.

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN

	1	2	3	4
29.1 I am not doing as well as I want to in school.				
29.2 I do not like the ways people treat each other here.				
29.3 I study very hard in order not to disappoint my family.				
29.4 It is a biggest shame for me if I fail in school.				
29.5 I feel lonely here.				
29.6 I miss my home country.				
29.7 I feel worried about future terrorist attacks affecting my life or those of my loved ones.				

	1	2	3	4	5
29.8 I feel uncomfortable to fly because of terrorism threats.					
29.9 I do not worry that people will treat me differently because of terrorism issues.					
29.10 I worry a lot that I might one day become a target of terrorism backlash during my stay in the United States.					

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Question 30

All the remaining questions are about your social support systems. Please read each statement carefully, and decide how well you think these different sources of support have been helpful to you. The statements appear repetitive but they represent different perspectives on your support systems. Reflect on your experiences and then choose the number that **BEST** describes your response. Use the scale below.

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN

5 - DOES NOT APPLY

	1	2	3	4	5
30.1 I have contact with my old friends in my home country.					
30.2 I trust my secondary families (uncles, aunts, etc).					
30.3 I trust the international student center on campus.					
30.4 My secondary families (uncles, aunts, etc) are available when I need them.					
30.5 I am satisfied with my old friends in my home country.					
30.6 I have contact with the international student center on campus.					
30.7 My old friends in my home country are available when I need them.					
30.8 I trust my old friends in my home country.					
30.9 My secondary families (uncles, aunts, etc) mean a lot to me.					
30.10 I am satisfied with the international student center on campus.					
30.11 I am satisfied with my secondary families (uncles, aunts, etc).					

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Question 31

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The following additional statements are asking you about your social support. Please read each statement carefully, and decide how well you think these different sources of support have been helpful to you. Reflect on your experiences and click on the number that BEST describes your response.

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN
5 - DOES NOT APPLY

	1	2	3	4	5
31.1 The international center on campus is available when I need it.					
31.2 My old friends in my home country mean a lot to me.					
31.3 The international student center on campus means a lot to me.					
31.4 Community activities here mean a lot to me.					
31.5 I am satisfied with student organizations on campus.					
31.6 I have contact with student organizations on campus.					
31.7 I participate in community activities here.					
31.8 I trust the people I meet in community activities.					
31.9 The student organizations on camps are available when I need them.					
31.10 People I meet in community activities are available when I need them.					
31.11 Student organizations on campus mean a lot to me.					
31.12 I am satisfied with community activities here.					
31.13 I trust student organizations on campus.					
31.14 My new friends in the U.S.A are available when I need them.					
31.15 I trust my family.					
31.16 I trust my new friends in the U.S.A.					

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Question 32

These are the final statements asking you about your social support system. Please read each statement carefully, and decide how well you think these different sources of support have been helpful to you. Reflect on your experiences and click on the number that BEST describes your

1 - NEVER | 2 - RARELY | 3 - SOMETIMES | 4 - OFTEN

5 - DOES NOT APPLY

	1	2	3	4	5
32.1 My family is available when I need it.					
32.2 I am satisfied with my new friends in the U.S.A.					
32.3 My new friends in the U.S.A mean a lot to me.					
32.4 I have contact with my new friends in the U.S.A.					
32.5 I trust my religious place (e.g., church, mosque) here.					
32.6 I have contact with my religious place (e.g., church, mosque) here.					
32.7 I trust my advisor/faculty for support.					
32.8 My religious place (e.g., church, mosque) here means a lot to me.					
32.9 I am satisfied with my religious place (e.g., church, mosque) here.					
32.10 My religious place (e.g., church, mosque) here is available when I need it.					
32.11 My host family means a lot to me.					
32.12 I trust my host family for support.					
32.13 I rely on my host family for support.					
32.14 My host family is available when I need it.					
32.15 I rely on my advisor/faculty for support.					
32.16 My advisor/faculty is available when I need them.					
32.17 My advisor/faculty means a lot to me.					

Closing Message

THANK YOU SO MUCH FOR TAKING THIS TIME TO COMPLETE THE SURVEY! IF YOU HAVE ANY COMMENTS OR QUESTIONS ABOUT THE SURVEY PLEASE EMAIL ME AT: reu7493@ksu.edu

- End of Survey -

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Appendix C - List of Tables and Figures

Table C.1 Summary of Items and Factor Loadings from Principle Components Analysis with Varimax Rotation for the ISASS (N = 605)

Variable	Subscale Item Name	Component Loading				Communality
		1	2	3	4	
Q25.9	Social interactions (e.g., friendships)	**0.78**	0.22	0.08	0.03	0.69
Q25.14	Social support	**0.75**	0.07	0.15	0.25	0.64
Q25.7	Cultural value differences	**0.64**	0.38	-0.05	0.12	0.56
Q25.8	Weather	-0.06	**0.71**	0.02	0.06	0.51
Q25.5	Food	0.23	**0.68**	-0.06	0.11	0.51
Q25.4	Family	0.23	**0.54**	0.30	-0.02	0.44
Q25.6	Living arrangement	0.29	**0.52**	0.25	0.20	0.46
Q25.1	Academic	-0.11	0.03	**0.82**	0.05	0.69
Q25.3	Language	0.48	-0.19	**0.52**	0.11	0.55
Q25.2	Health	0.12	0.21	**0.49**	0.22	0.35
Q25.10	Your future outlook (e.g., life after college)	0.34	0.15	**0.44**	-0.12	0.35
Q25.13	Safety	0.19	0.09	0.06	**0.79**	0.67
Q25.11	Terrorism threats	-0.00	0.06	0.05	**0.75**	0.57
Q25.12	Transportation	0.18	0.38	0.10	**0.39**	0.34

Table C.2 Summary of Items and Factor Loadings from Principle Components Analysis with Varimax Rotation for the ILS (N = 605)

Variable	Subscale item name	Component loading											Communality
		1	2	3	4	5	6	7	8	9	10	11	
Q28.2	I can't express myself in English	**0.89**	0.02	0.06	0.04	-0.04	0.02	0.0	0.10	0.03	0.01	0.01	0.81
Q28.1	My English makes it hard for me to read articles, books, etc.	**0.84**	0.01	0.06	0.03	-0.04	-0.01	0.07	-0.0	0.15	0.01	0.05	0.74
Q28.3	My English makes it hard for me to understand lectures	**0.83**	0.03	0.12	0.04	0.01	0.02	0.08	-0.02	0.14	-0.03	0.06	0.74
Q27.6	When I speak English I feel embarrassed	**0.79**	0.06	0.09	0.12	-0.03	0.08	0.02	0.07	-0.01	-0.02	0.01	0.70
Q27.10	My financial situation makes my life here very hard	0.07	**0.80**	0.10	0.11	-0.04	0.04	-0.0	0.09	0.09	-0.07	0.09	0.67
Q27.2	I worry about my financial situation	-.01	**0.74**	0.03	0.24	0.01	0.01	0.11	0.15	0.03	0.06	-0.09	0.66
Q27.3	My financial situation influences my academic study	0.11	**0.73**	0.08	0.10	-0.06	0.06	0.17	0.03	0.04	-0.02	-0.08	0.61
Q27.8	I worry about not being able to financially support my family in my home country	0.03	**0.64**	0.12	0.11	-0.02	0.15	0.09	-0.01	0.01	0.08	0.21	0.52
Q27.7	I owe money to others/banks/credit card companies	-.09	**0.63**	0.14	-0.09	0.16	0.02	-0.12	-0.09	0.13	-0.12	0.16	0.53
Q28.7	I can feel racial discrimination toward me in stores	0.04	0.06	**0.88**	0.05	-0.07	0.13	0.02	0.04	-0.03	0.01	0.04	0.80
Q28.9	I can feel racial discrimination toward me in restaurants	0.07	0.11	**0.87**	0.01	-0.11	0.12	0.04	0.06	-0.03	0.03	0.03	0.81
Q28.4	I can feel racial discrimination toward me from other students	0.19	0.07	**0.69**	-0.0	-0.02	0.17	0.06	0.17	0.05	-0.28	-0.04	0.65
Q28.8	I can feel racial discrimination toward me from professors	0.11	0.21	**0.65**	0.07	-0.01	0.04	0.10	-0.00	0.05	-0.18	0.17	0.55
Q29.1	I worry about whether I will have my future career in my home country	0.12	0.09	-0.03	**0.85**	0.06	0.02	0.03	-0.07	0.11	0.04	0.24	0.82
Q27.4	I worry about my future as to whether I will return to my home country or stay in the U.S.	0.0	0.24	0.11	**0.75**	0.01	0.04	0.00	0.14	0.03	-0.07	-0.26	0.74

Table C.2 Summary of Items and Factor Loadings from Principle Components Analysis with Varimax Rotation (Continued)

Variable	Subscale item name	Component loading											Communality
		1	2	3	4	5	6	7	8	9	10	11	
Q27.9	I worry about my future career in my home country	0.16	0.05	-0.04	**0.75**	0.02	0.07	0.10	-0.01	0.13	0.02	0.35	0.75
Q27.1	I worry about whether I will have my future career in the U.S.	0.02	0.32	0.08	**0.61**	0.09	0.04	0.08	0.14	0.02	-0.13	-0.39	0.67
Q29.5	I like American music	-.03	0.01	-0.07	0.03	**0.74**	-0.04	-0.08	-0.02	0.03	0.01	-0.05	0.57
Q29.6	I enjoy American holidays	0.05	-.02	-0.11	-0.00	**0.70**	0.06	0.21	-0.07	-0.13	0.13	-0.03	0.60
Q29.3	I like the things people do here for their entertainment	-.09	0.0	-0.0	0.09	**0.68**	-0.09	-0.08	0.00	-0.0	0.14	-0.01	0.51
Q29.2	I do not like American food	0.04	-.01	0.08	-0.03	**-0.48**	0.08	-0.09	0.39	-0.15	0.32	0.15	0.55
Q28.10	I like the religions in the U.S.	0.04	0.10	0.02	-0.03	**0.40**	0.16	0.33	-0.15	-0.04	0.23	0.00	0.39
Q30.7	I feel worried about future terrorist attacks affecting my life or those of my loved ones	0.06	0.10	0.05	-0.02	0.03	**0.83**	0.10	0.08	0.03	-0.06	-0.01	0.73
Q30.8	I feel uncomfortable to fly because of terrorism	0.05	0.06	0.13	0.04	-0.02	**0.78**	0.07	0.11	-0.0	-0.03	0.11	0.67
Q.30.10	I worry a lot that I might one day become a target victim of terrorism backlash during my stay in the U.S.	-.01	0.06	0.20	0.09	-0.08	**0.76**	-0.01	-0.00	0.00	-0.02	0.01	0.63
Q30.3	I study very hard in order not to disappoint my family	0.03	0.10	0.06	0.03	0.06	0.11	**0.79**	0.14	0.11	-0.08	0.09	0.70
Q30.4	It is a biggest shame for me if I fail in school	0.11	0.09	0.10	0.09	-0.01	0.03	**0.77**	0.06	0.17	0.06	0.04	0.66
Q30.6	I miss my home country	0.03	-0.0	0.03	-0.03	-0.06	0.12	0.18	**0.74**	-0.05	-0.08	0.14	0.64
Q30.5	I feel lonely here	0.10	0.09	0.18	0.10	-0.05	0.03	0.05	**0.66**	0.32	-0.00	0.01	0.60
Q29.9	I worry about getting sick here	0.12	0.22	0.05	0.15	0.05	0.09	-0.04	**0.43**	0.14	0.00	0.39	0.45
Q30.1	I am not doing as well as I want to in school	0.19	0.08	0.01	0.11	-0.01	-0.02	0.14	0.03	**0.79**	0.06	0.04	0.70
Q29.10	I worry about my academic performance	0.20	0.21	-0.07	0.15	0.01	0.02	0.32	0.12	**0.67**	0.06	-0.02	0.67

Table C.2 Summary of Items and Factor Loadings from Principle Components Analysis with Varimax Rotation (Continued)

Variable	Subscale item name	Component loading											Communality
		1	2	3	4	5	6	7	8	9	10	11	
Q30.2	I don't like the way people treat each other here	-.03	0.10	0.35	0.02	-0.23	0.14	-0.16	0.20	**0.41**	-0.22	0.13	0.50
Q28.5	People treat me well even though I am a foreigner	-.10	-.04	-0.18	-0.02	0.08	-0.00	-0.07	-0.01	0.22	**0.75**	-0.01	0.66
Q28.6	I think people are very generous here	0.09	-.02	-0.13	-0.05	0.26	-0.14	0.12	-0.04	-0.14	**0.66**	-0.07	0.59
Q29.8	I feel uncomfortable with the weather here	-.04	0.09	0.13	0.05	0.04	0.03	0.04	0.34	-0.03	0.05	**0.57**	0.47
Q29.4	The American way of being direct is so uncomfortable to me	0.12	0.11	0.09	0.03	-0.22	0.06	0.12	0.00	0.04	-0.14	**0.54**	0.41

Table C.3 Inter-Correlations Between the Respondents' Socio-cultural and Demographic Predictors of Acculturative Stress

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Sex	--												
2	Age	-.06	--											
3	Marital status	.38**	.04	--										
4	Family Status	.11**	.22**	-.26**	--									
5	Years lived in the U.S.	.10*	.35**	-.10*	.14**	--								
6	Modes of acculturation	-.04	0.04	.01	.04	-.12	--							
7	Cultural value (your country of origin)	.01	0.08	-.12**	-.01	.08	0.01	--						
8	Cultural value (current U.S. community)	.06	.02	-.11**	-.11**	-.07	0.05	.12**	--					
9	Employment status	.07	-.51**	.24**	-.15**	-.02	.04	-.09*	-.01	--				
10	Social class prior acculturation	-.03	.13**	.03	.06	.10*	-.04	-.08*	.00	-.14**	--			
11	Social Class during acculturation	.04	0.25**	-.16**	.04	.08*	-.07	.01	.02	-.22**	.34**	--		
12	Years trained in English	.09*	-.00	.03	-.05	-.08	.07	.05	-.03	-.06	-.14**	-.02	--	
13	Monthly income	.04	.35**	-.21**	.09*	.26**	-.02	.05	-.02	-.15**	.03	.10*	-.02	--

Note: p < 0.05*, p < 0.01**

Appendix D - Findings from Open-Ended Question

Findings from the Open Ended Question

International Students' Views of Acculturative Stressors

As previously mentioned, the open-ended question was intended to give additional insight into what the participants described as their acculturative stressors. A content analysis of the 191 online responses was conducted to determine the emergent categories. For the most part, the responses were brief sentences or words that described what the students viewed/felt as the stressor(s) they encounter during their acculturation. To enhance the rigor of the analysis, two researchers were contacted and asked to independently evaluate the responses. For most of the items, the researchers' evaluations agreed the author's initial analyses. Six categories of the acculturative stressor emerged from the students' responses: (a) Economic issues (b) Culture insensitivity and diversity issues (c) Relational issues (d) Immigration and Administrative issues (e) Family issues and (f) Other issues. Each category will be considered in turn in the following section. Figure D.1 illustrates the percentage distribution of the respondents' comments by the acculturative stressors categories.

Economic Issues

About 36% (n = 69) of the respondents made comments referring to this category. The specific subcategories extracted from this category include: employment related issues, money, credit history and health care issues. The following are some of the students' comments:

Amount of work expected OVER the required amount

Finding an internship

Get jobs as an international student (difficult)

Money

Finances

Coming to term with spending in $s & not rupees

If you're broke in the US that's it

Survive with minimum stipend

Initial lack of credit history

Scholarship for international students

Leaving my children in Africa due to financial constraints

Traveling expenses

111

Money management

Cost of health care

Expensive in health care

My insurance does not cover pre-existing illness

Financial, establishing credit

Culture Insensitivity and Diversity Issues)

About 26% (n = 49) of participants made comments on cultural and diversity issues.

Stereotyping, discriminations, racism, food and value differences were among the common

comments. Examples of these comments are:

Others are judgmental

People try stereotyping even in 21st century

Negative societal response to international students

Dealing with stereotypes, sometimes good or bad

Cultural ignorance and religious bigotry

Accent differences, offending stereotypes

There is no diversity in (name of university), I have my hard time

Discrimination

Being accepted as an Arab

Discrimination from advisors and the department

Racism

Culture of alcoholism

Getting used to drinking and partying

Tipping issues

Accent differences

Speed of speaking

Adapting to food

Professional Competitiveness & Individualism

Relational Issues

About 15% (n = 28) of participants mentioned acculturative stressor pertaining to

relational issues. These students identified issues such as marital relationships, faculty-student

relationships, student-international student relationships and loneliness. Examples of the comments include:

Attraction to the other sex

Finding a girlfriend

Long distance relationship

Marriage

Relating to people in department

Relationship with advisor

Boss incompatibility

Faculty is mean to international student

Hard to make friends with Americans

Most American students do no want international students

Totally new world, develop new relationships

Alienation

Being lonely

Immigration and Administrative Issues

Some students 9% (n = 19) identified issues such as visa issues, social security number, administrative procedures and tax income as acculturative stressors during their international study. Examples of these comments are:

F1 visa causes much difficulty to gain a job

Have to leave US to renew visa

My wife's visa status does not allow her to work

Getting information regarding visa

Administrative procedures

Bureaucracy

Certain US laws unknown to foreigners

Getting SS number, so no money till getting the #

Tax income… whereas I am not working at all here

Family Issues

Six percent (n =12) of the 191 participants gave comments that reflected family issues as acculturative stressors. Some examples of the comments in this category are:

I miss my family especially my 11 month old daughter

Not enough time for family

Not many opportunities for spouse

Child care

Being away from parents, grandparents and siblings

Homesickness

Other Issues

Other acculturative stressors identified by the 10% (n = 20) of participants made comments such as:

Experiencing bad health because of stress

Extreme climate changes

Living arrangements

Too many choices for everything

Using computer and internet

Time management

Too little time for leisure

Started doing drugs in the US

Ordeal with mandatory health insurance

In summary, the open ended comments on acculturative stress brought to light additional stressors facing international students during their international study. For instance, the findings clearly indicate that economic, cultural and relational are an important stressor among international students.

Figure D.1 Percentage Distributions of the Respondents' Views on Acculturative Stressors