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SEARCHING FOR SUCCESS:
PREDICTORS OF ACADEMIC ADJUSTMENT OF INTERNATIONAL STUDENTS

A Thesis presented for the
Master of Arts Degree
in the Department of Psychology
The University of Mississippi

By

GILBERTE BASTIEN

August 2011

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ABSTRACT

Over recent decades, the number of international students enrolled in American universities has continued to increase. International students face a number of challenges in adapting to a new cultural milieu. The process of transitioning from one cultural environment to another is known as *acculturation*. Previous studies of acculturation have identified acculturative stress, English proficiency, and social support as key factors associated with the overall adjustment of international students (Mori, 2000; Pedersen, 1991; Sandhu, 1995, Sandhu & Asrabadi, 1998). Of particular significance for international students are the challenges stemming from pedagogical differences between foreign and U.S. institutions of higher learning. Despite an extensive body of acculturation research, few studies have provided an in-depth examination of the academic component of acculturation. The present study sought to extend the work in this area by examining factors impacting academic adjustment. Predictors of academic adjustment of international students were investigated with a sample of 122 undergraduate and graduate international students at a mid-sized university in northern Mississippi. Based on Berry (1997) and Ward's (1993) acculturation models, it was hypothesized that academic adjustment and psychosocial adjustment would be predicted by different variables. Hierarchical regressions revealed length of stay in the U.S., English proficiency, and help-seeking were the strongest predictors of academic adjustment, whereas age and attachment to the university community predicted psychological adjustment. Psychological adjustment was also significantly associated with acculturation strategy and cultural distance. Results support Ward and Kennedy's proposed

distinction between the psychological and socio-cultural components of cultural adjustment and suggest the need for targeted support interventions to facilitate adjustment in each domain.

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INTRODUCTION

Every year, millions of students enroll in post-secondary institutions across the United States and embark on one of the most challenging phases of adult development. For many students, the transition from high school to college involves a number of hurdles that can result in the experience of psychological distress. Increased academic demands, personal responsibilities (e.g., managing finances, prioritizing duties, etc.), and distance from family contribute to the difficulty of the adjustment process and can ultimately result in withdrawal from school, if not properly addressed (Gerdes & Mallinkrodt, 1994). For international students, who are often uprooted from all that is familiar, adjusting to life as students in the U.S. poses an even greater challenge, making them particularly vulnerable to adverse psychological outcomes (Poyrazli, Arbona, Bullington, & Pisecco, 2001; Zhang & Dixon, 2003).

According to a report released by the Institute of International Education (IIE) in 2010, over half a million international students (690,923) were enrolled in universities in the U.S. during the 2009-2010 academic year, indicating international students make up an estimated 3.6% of university students in the United States (Open Doors, 2010). International students contribute unique perspectives that serve to enrich the educational experience of all students who attend U.S. institutions of higher learning (Wolanin, 2000). In addition to their academic contributions, international students represent a foreign policy asset. International student enrollment contributes to the U.S. economy and impacts international relationships that are of key significance, given the increasingly global nature of business, politics, and the economy. In

order to facilitate academic success and ensure continued enrollment of international students, university personnel must better understand and meet the needs of this unique and diverse population.

The adjustment of international students has been the focus of a growing body of empirical work. Much of the work in this area has been grounded in Berry's (1997) theory of acculturation. More recent research has drawn from the work of Ward and Kennedy (1991, 1993, & 1994), who offer a conceptualization of acculturation as comprised of two distinct components: psychological and socio-cultural adjustment. Few studies have connected Berry and Ward's models to inform their investigations of cultural adjustment. The present study will attempt to bridge the gap between the two through an examination of the academic component of international student adjustment. Specifically, the respective contributions of acculturative stress, cultural distance, English proficiency, social support, and help seeking behaviors to the academic adjustment of international students will be examined. What follows is a review of studies that have examined the key variables of interest in the present study.

Cultural Adjustment

The process through which individuals adjust to changes in their cultural environment has been the central focus of a growing body of research in multicultural and cross-cultural psychology. Samples comprised of a variety of acculturating groups, ranging from refugees to ethnic minorities within the U.S., have all been studied with the aim of elucidating the complex process of cultural adjustment (Hovey & Magana, 2000; Vega, et al., 1985; Padilla, 2001). The most widely accepted explanations of the psychological stress associated with the process of adjusting from one cultural environment to another have their roots in Lazarus' transactional model of stress and coping (Lazarus, 1984; 1991). Lazarus' model postulates that when faced

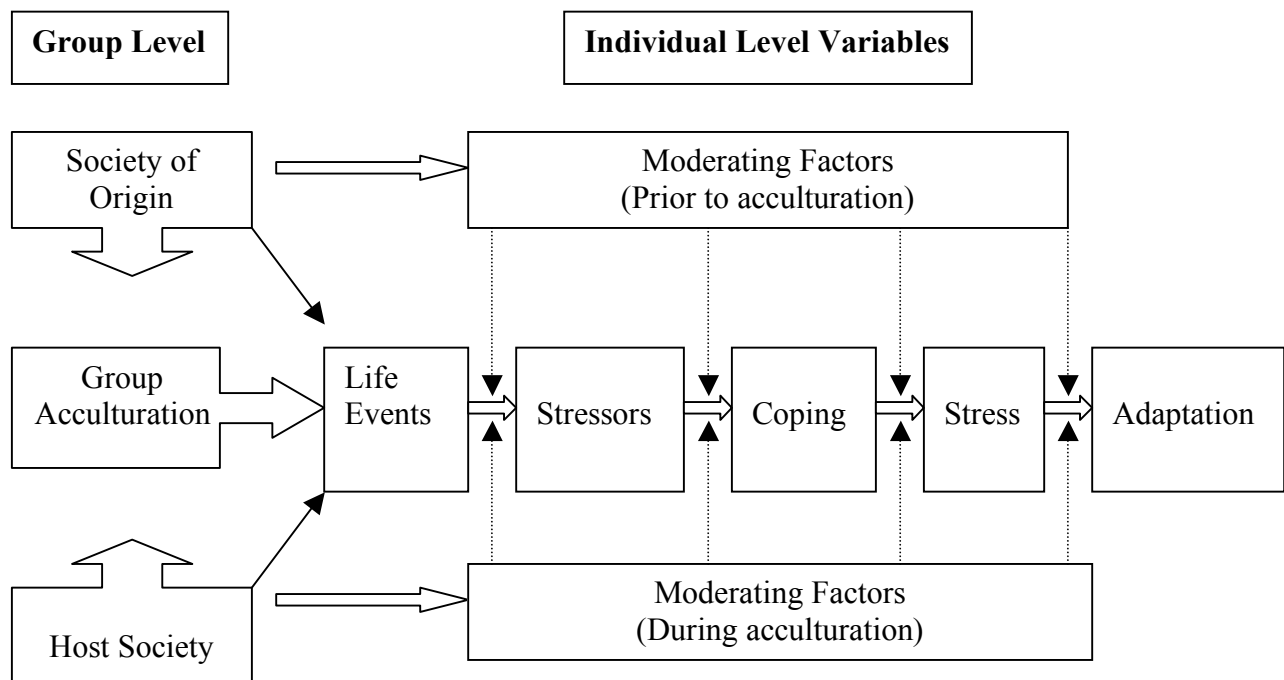
with some life event or environmental demand, an individual will engage in an appraisal of the significance of the situation (termed *primary appraisal*). This primary appraisal determines the level of stress experienced (if any), as well as decisions regarding the course of action or coping strategy implemented (termed *secondary appraisal*). If the situation is deemed to be of minimal relevance based on one's personal goals and values, it may be addressed with slight behavioral shifts. On the other hand, if the situation is assessed to be problematic but reparable, the product is psychological stress. This stress is ultimately alleviated through coping strategies targeted at either directly resolving the situation (*problem-focused coping*) or managing the negative emotions associated with the experience (*emotion-focused coping*). Alternatively, the event may be appraised to be problematic but outside of one's ability to resolve. This latter position is proposed to be associated with negative psychological outcomes such as endorsement of anxiety (due to perceptions of an impending threat) and/or depression (due to perceptions of loss, sense of hopelessness, etc.) (Lazarus, 1984; 1991).

Berry's Acculturation Model

Working out of the framework of Lazarus' theory of stress and coping, Berry (1997) conceived a model of acculturation to explain cultural adjustment (Figure 1). Acculturation describes the process through which individuals learn to adapt to a new cultural situation. More specifically, Berry defines acculturation as changes in values, beliefs, and behaviors that occur as a result of sustained contact between two or more cultures (Berry, 1997). Berry's framework for acculturation was designed to serve as a guide for research and highlights key components of the acculturation process as well as the interactions among acculturation variables. According to this conceptual framework, group or cultural-level factors interact with a number of variables at the individual level to impact a person's acculturation experience. Group level variables include

situational factors such as characteristics of one's culture of origin (e.g., political context, economic situation, demographic factors, etc.), features of the host society (e.g., attitudes toward and policies of immigration, availability of ethnic and/or general social support, etc.), as well as cultural changes that occur at the group level. At the individual level, person variables that are in place prior to acculturation (e.g., age, SES, personality characteristics, etc.) as well as those that emerge during the acculturation process (e.g., length of time spent in the society of settlement, coping strategies employed, etc.) are believed to significantly impact the overall course of adjustment.

Figure 1: John Berry's Acculturation Model



Berry's model of acculturation encompasses both the process and structure of acculturation occurring at the group and individual levels. Contact between two or more cultural groups produces changes in the collective features of the groups in contact. These include changes in the political, economic, and social structures of the involved groups. The broad

context of group level changes is argued to exert a significant influence on an individual's appraisal of the challenges they face during the acculturation process (Berry, 1997). That is, the group level changes set the stage for the type of acculturation experiences an individual will have by determining the types of events they will encounter. This in turn influences the strategies employed as well as the resulting effects (e.g., psychological distress) of acculturation related stressors. The complex interaction of group and individual variables determines the long-term outcomes of the acculturation process.

A major component of the acculturation process is acculturative stress (Berry, et al., 1987; Berry & Kim, 1988). A commonly experienced byproduct of the acculturation process, acculturative stress encompasses mildly pathological and disruptive behaviors as well as symptoms of anxiety, depression, identity confusion, anger, substance abuse, and family conflict (Berry et al., 1987; Sandhu & Asrabadi, 1998). The concept of acculturative stress stems from Lazarus' premise that significant stressors are associated with a marked decline in overall well-being (Lazarus, 1991; Lazarus & Folkman, 1984; Ying, Lee, & Tsai, 2006). The experience and management of acculturative stress is argued to vary depending on the strategy adopted in approaching cultural adjustment. According to Berry's model, two underlying factors form the basis for the strategy adopted by acculturating individuals: (1) decisions about maintaining connections to one's heritage culture and (2) decisions about embracing the norms, values, and beliefs of the host and/or other cultures (Rudmin & Ahmadzadeh, 2001). Decisions regarding these two factors are described in terms of four acculturation strategies (Figure 2). These strategies are *assimilation* (describes a decision to establish a connection with the dominant culture while neglecting aspects of one's culture of origin), *separation* (decision to maintain a connection with one's native culture while rejecting the values and norms of the host culture),

integration (decision to embrace the values, behaviors, and norms of both the heritage and host cultures), and *marginalization* (characterized by a rejection of both the heritage and host cultures, thereby isolating oneself). A number of studies in this area have provided support for these strategies as differentially adaptive (Berry, 1998; Ryder, Alden, & Paulhus, 2000; Sodowsky & Plake, 1992; Barratt & Huba, 1994; Ward & Kennedy, 1994). Specifically, the marginalization mode or strategy of acculturation has been shown to be associated with higher acculturative stress and a number of adverse psychological outcomes, whereas integration/biculturalism is argued to be associated with lower levels of acculturative stress (Berry, et al., 1987; Berry & Kim, 1988).

Figure 2: *Berry's Acculturation Modes/Strategies*

	Maintain connections to heritage culture	Neglect connections to heritage culture
Embrace norms of the culture of settlement	INTEGRATION	ASSIMILATION
Reject norms of the culture of settlement	SEPARATION	MARGINALIZATION

Acculturative Stress

The number of studies implicating acculturative stress as a significant factor in the adjustment experience of international students has grown extensively over the last couple of decades. These studies have consistently demonstrated a link between elevated levels of acculturative stress and adverse psychological symptoms such as anxiety and depression (Barratt & Huba, 1994; Berry, et al 1987; Constantine, et al, 2005; Duru & Poyrazli, 2007; Johnson &

Sandhu, 2007). As explained by Berry's conceptual model, when the challenges inherent to the acculturation process are judged to outweigh one's available resources, the result is acculturative stress and negative psychological outcomes. A study by Zhang & Dixon (2003) found Asian international students endorsed significant levels of anxiety and depression. Similar findings have been reported from studies with Turkish as well as multi-ethnic samples of international students (Poyrazli et al., 2001; Olivas & Li, 2006; Crockett et al., 2007). Although the impact of acculturative stress on psychological functioning has been investigated extensively, less has been done in elucidating the specific impact of acculturative stress on academic functioning or more broadly socio-cultural adjustment.

Psychological vs. Socio-cultural Adaptation

A related consideration of particular importance in the present study is a distinction between the psychological and socio-cultural components of cultural adjustment. The view of these aspects of adjustment as distinct constructs was introduced by Ward and colleagues and was heavily informed by Lazarus' theory of stress and coping, Berry's acculturation model, as well as Argyle's social skills model, which has been the basis of Furnham and Bochner's (1986) work on culture learning and cross-cultural transitions (Ward & Searle, 1991; Ward & Kennedy, 1993). The psychological aspect of acculturation describes an acculturating individual's sense of well-being and satisfaction, whereas socio-cultural adjustment refers to the social learning process through which the individual learns to navigate the new cultural environment.

Acculturation research has provided support for significant qualitative differences between these categories, suggesting they are influenced by different factors (Ward & Kennedy, 1993; Spencer-Oatey & Xiong, 2006; Johnson & Sandhu, 2007). In their 1993 studies, Ward & Kennedy concluded the best predictors of psychological adjustment were personality factors (e.g., locus of

control, introversion/extraversion, etc.), life changes, and social support. On the other hand, socio-cultural adjustment was best predicted by factors such as amount of time spent in the host culture, cultural distance, English proficiency, acculturation strategy, and quantity of interactions with natives of the host culture (Ward & Kennedy, 1993).

Unique features of international student adjustment

It has been established in the acculturation literature that certain aspects of acculturation apply across different acculturating groups (e.g., refugees, immigrants, sojourners, etc.) (Aponte & Johnson, 2000; Berry, 1997; Johnson & Sandhu, 2007; Sodowsky & Plake, 1992; Ward & Searle, 1991). These common features of the acculturation process include language difficulties, stress, separation from family, experiences of discrimination, shift in social status, as well as adjusting to new systems of communication and behavior. Despite these shared features of the acculturation process, international students represent a unique group of acculturating individuals. A key distinction between international students and other acculturating groups is that they tend to have a set period of time within which they must adjust to a new culture. Furthermore, they often come into the adjustment process with the knowledge and expectation that they will return to their countries of origin. Often times, this means they will be faced with some level of re-entry stress upon returning to their native countries (Singaravelu & Pope, 2007).

Additionally, academic functioning is often the primary focus for this group. International students face considerable academic stress, as they often have higher expectations for academic achievement when compared to their American counterparts (Misra, Crist, & Burant, 2003; Yeh & Inose, 2003). Many undergo a highly rigorous selection process for international study. Due to the competitive nature of this process, members of this population often represent the crème of the crop from their respective countries and tend to have very high

expectations of academic performance and success. This intrinsic pressure is often compounded by high familial and/or community expectations of achievement and success (Pedersen, 1991). International students also face considerable financial pressures throughout their academic tenure. Although they tend to have limited to no access to scholarships, loans, and/or access to welfare benefits, they are often required to pay higher, out-of-state tuitions (Lin & Yi, 1997). Furthermore, employment restrictions often preclude working to cover tuition and other expenses. Thus financial pressures are often a source of great stress.

Academic Adjustment

Several studies have established that academic adjustment is a key component of the overall adjustment of international students (Gerdes & Mallinkrodt, 1994; Lin & Yi, 1997; Mori, 2000; Poyrazli et al., 2001). Academic adjustment encompasses factors such as academic abilities, motivation, achievement, and institutional commitment (Gerdes & Mallinkrodt, 1994). In addition to the stressors commonly faced by most acculturating groups, international students must deal with difficulties stemming from significant pedagogical differences (Mori, 2000). International students often receive their primary education from foreign institutions based on educational systems that differ significantly from those that form the basis of U.S. institutions of higher learning. Common features of the U.S. pedagogical system such as oral presentations, group projects, and class discussions may be unfamiliar to international students, posing a particular challenge (Cadieux & Wehrly, 1986). In fact, standard practices within American academic settings (e.g., speaking out in class) often conflict with what is considered appropriate or normal within academic settings in other cultures (Misra & Castillo, 2004). For example, Asian, Middle Eastern, and African international students surveyed in past studies have described being taught to sit quietly in class (i.e., less emphasis on student dialogue & questions)

and reported being tested on verbatim memorization of class material once or twice per academic year rather than taking multiple quizzes/tests and having smaller assignments (Aubrey, 1991).

International students often serve as teaching or research assistants, and they face a number of challenges in carrying out their duties within these roles. They may lack familiarity with the testing and/or grading system of the university (Lin & Yi, 1997). They may also encounter difficulties in communicating with students due to heavy accents. In addition to being confronted with frustration and anger from their students due to communication barriers, international students may feel alienated due to resentment from colleagues who may view them as lacking competency or qualifications for assistantship positions due to their lack of English proficiency (Lin & Yi, 1997). Thus, international students often experience considerable obstacles in adjusting to U.S. academic norms (Pedersen, 1991; Sandhu & Asrabadi, 1994). Given the unique challenges associated with navigating a new pedagogical system, it is not surprising that international students have been found to be particularly vulnerable to academic adjustment difficulties when compared to their mainstream counterparts (Gerdes & Mallinkrodt, 1994; Lin & Yi, 1997; Mori, 2000; Poyrazli et al., 2001).

Cultural Distance

To a great extent, pedagogical differences appear to reflect the cultural distance between the country of origin and the country of settlement. Cultural distance describes the extent to which two or more cultures differ from one another in areas such as clothing, cuisine, social conventions, religion, weather, wealth, and education (Babiker, Cox, & Miller, 1980). Studies investigating the direct impact of cultural distance on academic adjustment are rare. However, in one such study, greater cultural distance predicted more adjustment difficulties (Poyrazli et al., 2001). In further support of this link, studies in this area have indicated pedagogical differences

tend to be particularly problematic for students from Asia, the Middle East, and Africa, areas that have been noted as having a greater cultural distance in relation to the U.S. when compared to those from Westernized cultures (Aubrey, 1991).

Social Support

Social support has been widely studied and consistently linked to overall psychological well-being. One important way in which social support has been argued to influence cultural adjustment is that lack of social contacts reduces access to useful information that could facilitate adaptation to the new cultural environment (Olivas & Li, 2006). Past research has provided support for a moderating role of social support with regards to psychological distress stemming from the acculturation process (Yeh & Inose, 2003; Misra, Crist, & Burant, 2003). In a study exploring predictors of acculturative stress, Yeh and Inose (2003) found that social support satisfaction and social connectedness were significant predictors of acculturative stress. The researchers concluded this was due to the fact that new social connections fill the void created by the loss of immediate access to social support systems left behind in the country of origin. Furthermore, it was concluded that the significant influence of social connectedness can be attributed to the fact that many international students come from collectivist cultures in which one's sense of identity and values are shaped by the quality of social connections (Yeh & Inose, 2003).

As it relates to academic adjustment specifically, previous research has provided preliminary support for the vital role of social support in the academic adjustment of international students. The results of a study conducted by Mallinckrodt & Leong (1992) indicated social support (particularly from one's academic program) is associated with better academic outcomes and psychological well-being. Social interaction with co-nationals (i.e.,

individuals from the culture of origin) facilitates adjustment by providing the acculturating student with a connection to their cultural values (Yeh & Inose, 2003; Misra et al., 2003).

However, a growing body of research suggests social networks with domestic students may be just as (if not more) important, as these provide internationals with greater opportunities to learn the social norms and key social skills of the host culture (Furnham, & Alibhai, 1985; Lin & Yi, 1997; Spencer-Oatey, & Xiong, 2006).

English Proficiency

Another key variable that has been found to greatly influence adjustment of international students is English proficiency (Olivas & Li, 2006; Mori, 2000; Zhang & Dixon, 2003; Poyrazli et al., 2001). Using an ethnically mixed sample of international students, Olivas and Li found a strong correlation between language proficiency and adjustment. The authors concluded low English proficiency affects adjustment by reducing the likelihood of seeking social interactions, which in turn, reduces access to useful information that might facilitate adjustment (Olivas & Li). Several studies have also provided evidence of an association between English proficiency and academic functioning. Results of a study on adjustment difficulties of Turkish international students yielded a high positive correlation between English proficiency and academic performance (Poyrazli, Arbona, Bullington, & Pisecco, 2001). These findings are not surprising when one considers the potential implications of limited communication abilities in an academic setting. Specifically, international students are more likely to have difficulty understanding lectures, understanding class readings, and articulating their knowledge in presentations and/or essays (Lin & Yi, 1997). Thus, limited English proficiency poses a direct threat to the academic adjustment of international students.

Help-seeking Behaviors

Help seeking describes efforts to increase mastery and competence by seeking assistance to facilitate completion of relevant tasks (Nadler, 1986; Nadler, 1987; Zhang & Dixon, 2003). With regard to academic functioning, help seeking behaviors would include attempts to secure aid with the ultimate aim of improving academic performance and achievement. Examples may include receiving tutoring, making use of faculty office hours, participating in study groups, use of academic support services provided through the university, etc. These types of behaviors are most consistent with Lazarus' notion of problem-focused coping (Lazarus & Folkman, 1984). In other words, for international students faced with academic challenges that are appraised to be problematic, engaging in active coping strategies (such as seeking academic assistance) should serve to alleviate acculturative stress and related academic adjustment difficulties (Berry, 1997).

Current Study

As illustrated by the above review of acculturation research to date, the adjustment of international students is greatly influenced by a number of factors. Specifically, previous work in this area has pointed to a significant role of acculturation strategy, acculturative stress, social support, cultural distance, as well as English proficiency. However, these studies have often focused on the psychological aspect of acculturation, while largely neglecting the socio-cultural component of cultural adjustment. The present study sought to reaffirm these variables as predictors by examining the extent to which their previously illustrated effects extend to the socio-cultural component of adjustment (i.e., academic adjustment) within a sample of international students. Additionally, the role of active coping (in the form of academic help seeking behaviors) was investigated.

Although past research has provided considerable support for the integration/bicultural modes of acculturation as most adaptive and the marginalization/assimilation modes as least adaptive, these studies have largely focused on the psychological aspect of cultural adjustment, while failing to examine the influence of acculturation strategy on socio-cultural adjustment. More recent work by Ward and colleagues suggests the assimilation strategy may not be detrimental as it relates to socio-cultural adjustment. However, few studies have directly examined the differential impact of acculturation strategy on psychological and socio-cultural adjustment. For the purpose of this study, measures of academic adjustment and GPA were conceptualized as representing the socio-cultural component of cultural adjustment. Conversely, measures of acculturative stress and emotional adjustment were selected to represent the psychological component of cultural adjustment. Overall, this study was driven by two primary questions: (1) What is the nature of the adjustment process experienced by international students and (2) Are psychological and academic adjustment predicted by the same factors?

The following hypotheses were proposed:

Hypothesis 1:

A regression model comprised of 1) demographic factors (age and length of time spent in the U.S.), 2) pre-acculturation factors (cultural distance and English proficiency), and 3) potential moderating factors (social support, academic help-seeking, and acculturation strategy) will predict acculturative stress.

1a: Cultural distance will be associated with acculturative stress and English proficiency.

1b: Participants from areas more culturally similar to U.S. American society will endorse less acculturative stress and higher scores on a measure of psychological

adjustment. That is, participants from regions such as Europe will endorse less acculturative stress and will obtain higher personal-emotional adjustment scores when compared to those from more culturally distant regions (e.g., Africa, Asia, and Latin/Central America European countries).

1c: The higher the level of reported social support, the less acculturative stress will be endorsed. Greater academic help-seeking behaviors will also predict lower acculturative stress. Consistent with Berry's acculturation model, the interaction factor of acculturation strategy will account for unique variance in acculturative stress. Specifically, participants who strongly identify with both the host and heritage cultures will report lower levels of acculturative stress.

Conversely, participants who fail to maintain connections with the heritage and host cultures will report higher levels of acculturative stress.

Hypothesis 2:

The aforementioned regression model (comprised of demographic, pre-acculturation, and moderating factors) will predict Personal-Emotional adjustment. A similar pattern of results is expected.

Hypothesis 3:

A regression model comprised of 1) demographic factors (age and length of time spent in the U.S.), 2) pre-acculturation factors (cultural distance and English proficiency), and 3) potential moderating factors (social support, academic help-seeking, and acculturation strategy) will predict academic adjustment.

3a: Cultural distance will be associated with acculturative stress and English proficiency.

3b: Participants from culturally similar areas will obtain higher scores on a measure of academic adjustment. That is, participants from regions such as Europe will obtain higher academic adjustment scores when compared to those from more culturally distant regions (e.g., Africa, Asia, and Latin/Central America European countries).

3c: The higher the level of reported social support, the higher the academic adjustment score obtained. Greater academic help-seeking behaviors will also predict higher academic adjustment scores.

3d: Consistent with Ward's model of sociocultural adaptation, we expect host culture affiliation (rather than the acculturation interaction term) to account for unique variance in academic adjustment. Specifically, the higher the level of identification with the host culture, the higher the score on a measure of academic adjustment.

Hypothesis 4:

The aforementioned regression model (comprised of demographic, pre-acculturation, and moderating factors) will predict GPA. A similar pattern of results is expected.

METHOD

Participants

The sample for the study consisted of 122 students currently enrolled at the University of Mississippi. Participants were recruited with the assistance of the International Programs Office as well as a number of international student organizations (e.g., African Caribbean Association, Latin American Student Organization, etc.). There were 69 female and 53 male participants ranging in age from 17 to 40 ($M = 23.57$, $SD = 4.83$). The majority of participants were single (93%), undergraduate students (62%). Regarding region of origin, 50% of the participants were from Asia, 23% from Africa, 16% from Europe, 7% from South America, and 4% from North America.

Measures

Socio-demographic Questionnaire: Developed by the researcher, the questionnaire covered basic demographic variables (e.g., age, gender, marital status, field of study, current GPA), exposure to American culture (e.g., country of origin, number of years spent in the U.S., level of proficiency with use of the English language), social life (e.g., involvement in extracurricular activities/organizations on campus/in the community, number of American friends), as well as questions about academic help-seeking (e.g., use of faculty office hours, use of free tutoring through the academic departments, participation in study groups/review sessions, etc.). Adopting the methods used by Barrat and colleagues (Barrat & Huba, 1994), level of English proficiency was assessed using the following questions:

1. 'What is your present level of English fluency?'
2. 'How comfortable are you communicating in English?'
3. 'How often do you communicate in English?'

Participants answered these questions using a 5-point Likert type scale. Previous studies have reported Cronbach's alphas ranging from .56 to .78 for the 3 items (Barrat & Huba, 1994; Cross, 1995; Yeh and Inose, 2003).

Acculturative Stress Scale for International Students (ASSIS): This measure was developed by Sandhu and Asrabadi (1994) and is used to assess the adjustment problems of international students. The ASSIS consists of 36 items using a 7-point Likert type response format (1 = Strongly disagree to 7 = Strongly agree). The ASSIS is broken down into 7 subscales. The following are examples of the types of items comprising each subscale: Perceived discrimination ("I am treated differently in social situations"), Homesickness ("I miss the people and country of my origin"), Perceived hate ("People show hatred toward me nonverbally"), Fear ("I fear for my personal safety because of my different cultural background"), Stress due to change ("I feel uncomfortable to adjust to new cultural values"), Guilt ("I feel guilty to leave my family and friends behind"), and Miscellaneous (made up of 10 items). The overall score on the measure is the sum of scores on all 36 items. Regarding the psychometric properties of the measure, Sandhu and Asrabadi (1998) report that the scale showed strong internal consistency and split-half reliability. Studies examining the psychometric properties of the ASSIS have reported internal consistency of .92 or above (Constantine, Okazaki, & Utsey, 2004; Duru & Poyrazli, 2007; Poyrazli et al., 2004; Yeh & Inose 2003). In the current study, the internal consistency reliability (Cronbach's alpha) was .93.

Vancouver Index of Acculturation (VIA) (Ryder, Alden, & Paulhus, 2000): This measure of acculturation was used to assess participants' acculturation to and identification with both their culture of origin and the host culture (i.e., U.S. American culture). The VIA is comprised of 20 items rated on a 9-point Likert-type scale ranging from 1 = "strongly disagree" to 9 = "strongly agree", with a midpoint of 5 = "neutral/depends". Half of the items assess identification with the culture of origin (*Heritage Scale*), while the other 10 measure identification with the new culture (*Host Scale*). The following sample items represent the Heritage and Host subscales, respectively: "I believe in the values of my heritage culture" and "I believe in mainstream North American values" (Ryder et al., 2000, p. 65).

Previous studies that have investigated the psychometric properties of this measure have provided promising evidence for its effective use with a variety of ethnocultural populations. Cronbach alpha coefficients and mean inter-item correlations were used to assess the reliability of the revised VIA (Ryder and colleagues, 2000). For the Heritage subscale, Cronbach alpha coefficients of .91, .92, and .91 were obtained for the Chinese, East Asian, and miscellaneous samples, respectively. Inter-item correlations for these samples were also high (.52, .53, and .51). The Host subscale also yielded high Cronbach alpha coefficients and mean inter-item correlations for the three samples (.89, .85, and .87; .45, .38, .44, respectively). For the current sample, the Heritage and Host subscales yielded Cronbach alpha coefficients of .78 and .83, respectively, suggesting solid internal consistency for both subscales of the VIA.

Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1989). The SACQ is a 67-item self-report questionnaire originally developed for publication in 1989 (Baker & Siryk, 1999). The SACQ was revised in 1999 and measures four aspects of college adjustment: Academic, Social, Personal-Emotional, and Attachment to the University. Twenty-four items

make up the Academic adjustment subscale, and they assess various educational demands characteristic of the college experience. Twenty items make up the Social adjustment subscale and assess interpersonal and societal demands inherent in adjustment to college. The Emotional subscale consists of 15 items aimed at determining both psychological and physical well-being and distress. The final 15-item subscale measures Attachment to the university. This subscale assesses students' feelings about being at this specific college and the bond between the student and the institution.

Items are scored using a nine-point scale ranging from “applies very closely to me” to “doesn’t apply to me at all.” Each scale point is associated with a numeric value ranging from one to nine. However, survey respondents do not see the scoring values that correspond to their responses. For some of the items, the 9-point scale is arranged in ascending order, while for others, the scale is arranged in descending order. In other words, the value of a given point on the scale depends on the statement to which it is being applied. For example, the farthest point to the left indicating “applies very closely to me” is scored as a “1,” or lowest adaptation score for the statement “I have been feeling tense and nervous lately.” The same point on the scale would be scored a “9” or highest adaptation score for the statement “I enjoy writing papers for courses.” Regarding the psychometric properties of the SACQ, internal reliability coefficients for the full scale range from .81 to .90. Alpha coefficients for the individual scales range from .81 to .90 for Academic adjustment subscale, .83 to .91 for the Social adjustment subscale, .77 to .86 for the Emotional adjustment subscale, and .85 to .91 for the Attachment subscale. Additionally, Baker and Siryk (1989, 1999) described a number of studies providing evidence for criterion-related or construct validity for each of the four subscales of the SACQ. Specifically, the SACQ subscales have been found to correlate with variables such as student attrition, grade point average, use of

campus counseling or psychological services, as well as social activity involvement (Baker & Siryk, 1999).

Social Support. Social support was measured using a modified version of a social support measure created by Koeske and Koeske (1989, 1993). Participants were asked to indicate how much “practical” and “emotional” support they receive from various groups of people in their lives (Koeske & Koeske, 1989). This measure has been used in previous studies using international student samples (e.g., Lee et al., 2004). For the current study, participants were asked to rate the amount of support they receive from (1) international student friends from countries other than their own, (2) co-national international student friends, (3) non-student international university and community members not from their home country, (4) non-student international co-nationals affiliated with the university or community, (5) American university students, (6) American non-student members of the university or greater community, and (7) family members. The total score provided by this scale was used in the present study as a measure of overall social support. The sample for this study yielded a Cronbach alpha of .83 for this measure, suggesting high internal reliability.

Procedures

Recruitment. Recruitment proved to be a bit of a challenge with this targeted and small of a population. As such, a multi-pronged recruitment approach was used to obtain the required number of participants for this study. The primary investigator collaborated with the International Programs Office at the University of Mississippi to facilitate recruitment of international student participants. Student names and corresponding email addresses were obtained from the international programs database. A letter and description of the study was sent to potential participants via email inviting them to come to the collection sites at designated

times to complete survey packets. Follow-up emails were also sent to increase likelihood of response. Additionally, flyers about the study were posted around campus, and students were recruited through international organizations on campus (e.g., Cultural Connections Group, International Ladies' Club, African & Caribbean Association, etc.). When these strategies failed to provide the desired number of participants, campus locations and events often frequented by international students were targeted for in person recruitment of participants.

Data Collection: Participants received a cover letter describing the purpose of the study as well as policies surrounding confidentiality. Self-report questionnaire packets consisting of a statement of IRB approval, a consent form, a demographic questionnaire, as well as the measures described above were then distributed to each participant. To control for order effects, the measures were arranged in a counterbalanced order. Packets were numbered and did not include participants' names to maintain anonymity. After completing their questionnaire packets, participants were given the opportunity to ask questions about the study. Additionally, a list of local mental health resources was provided in case participants wished to pursue help in managing adjustment related distress or other concerns.

Data Analysis: Data were screened for outliers, prior to analysis. Descriptive statistics were then calculated for each measure. Correlational analyses were conducted to explore bivariate relationships among the variables of interest and to determine which variables would be entered into the regression model (See Table 3). Hierarchical multiple regression analyses were then conducted to test the proposed hypotheses (see Table 4).

RESULTS

Descriptive Analyses

On the Acculturative Stress Scale for International Students (ASSIS), this sample had an overall mean of 78.43 (SD = 22.15). This score suggests relatively mild to moderate levels of acculturative stress, as it falls well below the 109 cutoff that would indicate significant acculturative stress (Sandhu & Asrabadi, 1998). Mean scores for the Vancouver Index of Acculturation (VIA) were; Heritage (M = 71.54, SD = 9.90) and Host (M = 62.83, SD = 11.19). On the social support measure, this sample obtained an overall mean of 44.36. Comparing this to a mean of 36.26, this sample of international students reported greater availability of social support as compared to the international student sample surveyed by Lee and colleagues (2004). For the Student Adaptation to College Questionnaire (SACQ), the following means and standard deviations were obtained for each subscale: Academic (M = 107.17, SD = 19.60), Social (M = 88.58, SD = 17.78), Personal-Emotional (M = 82.59, SD = 17.12), and Attachment (M = 4.08, SD = .42). For all the SACQ indices, the higher the score, the better the self-assessed adjustment in that domain (Baker & Siryk, 1999).

Table 1

Selected Demographic Characteristics of the Sample (N = 125)

Variable	Frequency	% of Sample
Gender		
Male	53	43%
Female	69	57%
Educational status		
Undergraduate	75	62%
Graduate	45	37%
Faculty/staff	2	2%
Program of Study		
Liberal Arts	49	40%
Accountancy	9	7%
Applied Sciences	4	3%
Business Administration	15	12%
Education	6	5%
Engineering	27	22%
Journalism	3	3%
Pharmacy	6	5%
Law	1	1%
Region of Origin		
Africa	28	23%
Asia	62	50%
Europe	19	16%
North America	5	4%
South America	8	7%

Table 2

Descriptive Statistics for Key Variables

Variable	<u>M</u>	<u>SD</u>	Range of Scores
Age in Years	24	4.83	17 – 40
GPA	3.60	.44	2.00 – 4.00
Time in US (in months)	24	31.86	1 – 216
Acculturative Stress Scale for International Students (ASSIS)			
Total Score	78.72	21.88	40 – 134
Vancouver Index of Acculturation (VIA)			
Heritage Subscale	71.67	9.98	46 – 90
Host Subscale	63.06	10.97	33 – 86
Social Support			
Emotional Support	3.66	.74	1.50 – 5.00
Practical Support	3.64	.77	1.43 – 5.00
Total	44.07	11.17	13 – 70
Student Adaptation to College Questionnaire (SACQ)			
Academic Adjustment	106.15	16.88	66 - 152
Social Adjustment	87.77	16.31	42 - 142
Personal-Emotional Adjustment	82.75	16.90	43 - 119
Attachment to University	37.71	6.86	19 - 55
Full Scale Score	317.14	35.94	201 - 413

Note. Higher SACQ scores indicate better adjustment.

Correlation Analyses

In order to assess the degree of association among the four outcome variables, correlations were computed using Pearson's product moment correlations. Acculturative stress was significantly negatively correlated with emotional adjustment ($r = -.407, p < .01$), suggesting the more acculturative stress experienced, the less well-adjusted international students will be emotionally. On the other hand, the data failed to demonstrate the expected significant correlation between academic adjustment and GPA ($r = .039, p = .72$), the variables selected to represent the socio-cultural domain of overall adjustment. Possible explanations for the non-significant relationship between GPA and academic adjustment are included in the discussion section.

A correlation matrix was generated to explore bivariate relationships among the predictor variables (see Table 3). Overall social support was significantly correlated with connection to culture of origin ($r = .214, p < .05$), but not with acculturative stress ($r = -.019, p = .84$), nor academic adjustment ($r = .058, p = .53$). English proficiency was found to be significantly correlated with time spent in the U.S. ($r = .306, p < .01$). Proficiency in English was also significantly related to acculturation strategy, with a correlation of $r = .270$ for connection to the culture of origin ($p < .01$) and $r = .289$ for connection to U.S. American culture ($p < .01$). Although English proficiency was not significantly related to overall social support, it was significantly related to practical social support ($r = .193, p < .05$), suggesting international students with greater proficiency in English are more likely to report greater availability of practical support.

Connection to U.S. American culture was strongly positively correlated to time spent in the U.S. ($r = .252, p < .01$), negatively related to social adjustment ($r = -.205, p < .05$), and

negatively related to acculturative stress ($r = -.249, p < .01$). Emotional adjustment was significantly related to age ($r = .214, p < .05$) and attachment to the university community ($r = .280, p < .01$). Significant relationships emerged between help-seeking behaviors and academic adjustment ($r = .281, p < .01$), social adjustment ($r = .334, p < .01$), social support ($r = -.211, p < .05$), as well as time spent in the U.S. ($r = -.300, p < .01$). However, the expected correlation between help-seeking and acculturative stress was not found ($r = .011, p = .90$). Finally, a significant inverse relationship was identified between attachment to the university community and acculturative stress ($r = -.234, p < .01$).

An analysis of variance (ANOVA) was used to assess the association between participants' region of origin and the variables of interest. Region of origin was significantly associated with acculturative stress [$F(4,117) = 3.68, p < .01$] and English proficiency [$F(4,117) = 25.34, p < .01$]. In order to further examine the significant relationships, post-hoc comparisons were computed using Tukey HSD test. Results revealed that participants from Europe reported significantly less acculturative stress as compared to participants from both Africa and Asia. Regarding English proficiency, significant differences were found between the scores of participants from Africa as compared to each other region (i.e., Asia, Europe, South America, etc.). Specifically, participants from European countries reported higher levels of proficiency as compared to participants from other regions. The expected significant association between place of origin and academic adjustment was not found [$F(4,117) = 1.86, p = .121$]. Further explanation of these mixed findings is provided in the discussion section.

Table 3
Intercorrelations Among Predictor Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	—	.233*	.067	.047	-.071	.112	.113	.214*	.003	.165	-.039	.074
2. Time in U.S.		—	.070	.252**	-.102	.306**	.176	.024	.030	-.029	-.300**	.066
3. VIA_Home			—	.332**	.068	.270**	-.023	.083	-.068	.000	-.106	.214*
4. VIA_Host				—	-.249**	.289**	-.055	.116	-.205*	-.002	-.122	.112
5. ASSIS					—	-.087	-.099	-.407**	-.052	-.234**	.011	-.019
6. English Proficiency						—	-.135	.096	-.156	-.110	-.045	.111
7. Academic Adjustment							—	.105	.591**	.047	.281**	.058
8. Personal-Emotional Adjustment								—	-.153	.280**	.009	-.022
9. Social Adjustment									—	.134	.334**	-.079
10. University Attachment										—	.066	-.046
11. Help seeking											—	-.211*
12. Social Support												—

* $p < .05$. ** $p < .01$

Assumption Checking

Given the significant correlations among the variables of interest in the study, residual plots and collinearity diagnostics were examined to ensure that the assumptions for multiple regression were met. Specifically, tolerance and variance inflation factors were examined as a check for multicollinearity. Tolerance levels were high, and variance inflation factors were low (Field, 2009). Thus, multicollinearity among the independent variables did not seem to be a problem. Next, histograms and plots of residuals were examined to check the other assumptions of multiple regression including normality, linearity, and homogeneity of variance. Overall, the visual representations of the data did not indicate any serious problems.

Regression Analyses

Hypotheses 1 and 2 indicate age, time spent in the U.S., cultural distance, English proficiency, social support, acculturation strategy, and help-seeking behaviors predict psychological adjustment. Acculturative stress and emotional adjustment were believed to best represent psychological adjustment. Separate hierarchical multiple regressions were computed in order to assess the extent to which the same variables would predict socio-cultural adjustment (i.e., GPA and academic adjustment). Specifically, hypotheses 3 and 4 proposed that the aforementioned variables would predict GPA and academic adjustment. Although the same variables were entered into the models predicting psychological and academic adjustment, variables were expected to relate differently to psychological adjustment as compared to academic adjustment. In particular, it was expected that acculturation strategy and help-seeking behaviors would account for more variance in academic adjustment than psychological adjustment. Results of the regression analyses are summarized in Tables 4, 5, and 6.

To test the predictive model proposed for psychological adjustment (H1 - acculturative stress and H2 - emotional adjustment), two separate multiple regressions were performed, one for each outcome variable. Predictor variables were entered into the model as follows:

Block 1: Demographic factors (age and length of time spent in U.S.)

Block 2: Pre-acculturation factors (English proficiency)

Block 3: Potential moderating factors (social support, academic help-seeking behaviors, and acculturation strategy)

Specific directional predictions about the role of individual factors were then assessed through an examination of beta weights. The overall model predicting acculturative stress accounted for 10% of the variance ($R^2 = .095$) and was not significant [$F(7,107) = 1.603, p = .14$], with age being the only significant independent variable ($\beta = .24, p < .05$). The overall model predicting personal-emotional adjustment accounted for 8% of the variance ($R^2 = .083$) and was not significant [$F(7,107) = 1.377, p = .22$]. Here again, age was the only significant variable in the model ($\beta = .24, p < .05$).

To test the hypothesis that age, time spent in the U.S., cultural distance, English proficiency, social support, acculturation strategy, and help-seeking behaviors predict socio-cultural adjustment (H3 and H4), a multiple regression analysis was conducted with academic adjustment as the criterion variable. Because the correlation analyses failed to demonstrate a significant relationship between GPA and academic adjustment or between GPA and any of the predictor variables, GPA was eliminated as an outcome variable. The model predicting academic adjustment accounted for 24% of the variance ($R^2 = .237$) and was significant [$F(7,107) = 4.751, p < .01$]. Examination of the individual variables showed that time spent in the

U.S. ($\beta = .38, p < .01$), English proficiency ($\beta = -.24, p < .05$), and help-seeking behaviors ($\beta = .42, p < .01$) contributed significantly to this effect.

Table 4

Regression Analysis of Variables Predicting Acculturative Stress

Step and Variables	<i>B</i>	β	Sig	<i>F</i>	<i>R</i> ²
Step 1			.044	3.21*	.05
Age	.885	.238**	.014		
Time in US	-.012	-.023	.811		
Step 2			.055	2.61	.07
Age	.865	.232**	.016		
Time in US	-.030	-.056	.574		
English Proficiency	.208	.113	.243		
Step 3			.222	1.38	.08
Age	.881	.237**	.016		
Time in US	-.036	-.067	.530		
English Proficiency	.141	.077	.463		
Social Support	-.069	-.044	.649		
Connection to Home Culture	.041	.024	.815		
Connection to Host Culture	.193	.124	.232		
Help Seeking	.301	.028	.777		

* $p < .05$. ** $p < .01$

Table 5

Regression Analysis of Variables Predicting Personal-Emotional Adjustment

Step and Variables	<i>B</i>	β	Sig	<i>F</i>	<i>R</i> ²
Step 1			.044	3.21*	.05
Age	.885	.238**	.014		
Time in US	-.012	-.023	.811		
Step 2			.055	2.61	.07
Age	.865	.232**	.016		
Time in US	-.030	-.056	.574		
English Proficiency	.208	.113	.243		
Step 3			.222	1.38	.08
Age	.881	.237**	.016		
Time in US	-.036	-.067	.530		
English Proficiency	.141	.077	.463		
Social Support	-.069	-.044	.649		
Connection to Home Culture	.041	.024	.815		
Connection to Host Culture	.193	.124	.232		
Help Seeking	.301	.028	.777		

* $p < .05$. ** $p < .01$

Table 6

Regression Analysis of Variables Predicting Academic Adjustment

Step and Variables	<i>B</i>	β	Sig	<i>F</i>	<i>R</i> ²
Step 1			.152	1.92	.03
Age	.178	.048	.618		
Time in US	.087	.164	.091		
Step 2			.032	3.04*	.08
Age	.217	.058	.538		
Time in US	.121	.227**	.023		
English Proficiency	-.398	-.217**	.025		
Step 3			.000	4.75**	.24
Age	.107	.029	.743		
Time in US	.199	.375**	.000		
English Proficiency	-.441	-.241**	.013		
Social Support	.245	.159	.075		
Connection to Home Culture	.082	.048	.607		
Connection to Host Culture	-.072	-.046	.625		
Help Seeking	4.437	.422**	.000		

* $p < .05$. ** $p < .01$

Supplemental Analyses

Although it was not originally proposed as a predictor variable, information was gathered about participants' sense of attachment or connection to the university community. Correlation analyses indicated university attachment (as measured by the University Attachment subscale of the Student Adaptation to College Questionnaire) was significantly correlated with emotional adjustment ($r = .280, p < .01$) and emotional social support ($r = .199, p < .05$). Based on the significant correlations among variables related to psychological adjustment, a separate regression, which included university attachment, was computed, with emotional adjustment as the outcome variable. Time spent in the U.S. was entered in the first step, followed by time spent in the U.S., age, and English proficiency. University attachment was added in the third step of the regression. This model predicted 12% of the variance in emotional adjustment and was significant [$F(4, 114) = 4.046, p < .01$]. University attachment ($\beta = .66, p < .05$) contributed the most to the significance of the overall model.

As previously noted, Berry (1997) proposed four acculturation strategies based on an individual's connection to their culture of origin and culture of settlement. In the present study, the VIA was used to measure the construct of acculturation strategy, as its heritage and host subscales provide information about participants' level of connection to both their culture of origin and U.S. American culture. Mean scores on the heritage and host subscales suggest this sample had a more integrated or bicultural orientation overall. These data are comparable to those obtained in other studies. For example, a study of North American sojourners in Taiwan yielded a mean score of 71.5 for the Heritage subscale (Swagler & Jome, 2005). The mean for the Host subscale of the VIA in the current study is slightly higher than that obtained for the

North American sojourners (54.9), suggesting the participants in the current study reported greater connection to U.S. American culture (Swagler & Jome, 2005).

Berry's acculturation model suggests a combination or interaction of the VIA subscales should be examined in order to group participants into one of the four acculturation strategies: assimilation, integration, separation, and marginalization. Attempts to group participants into these categories proved to be a challenge. First, an interaction term was created using the centered means of the VIA subscales. The VIA interaction variable was not significantly correlated with any of the predictor or outcome variables. Next, an attempt was made to classify participants into the four strategy groups by using the midpoint of each subscale of the VIA. That is, since the possible range of each subscale is 10 to 90, 50 would be used as the midpoint. Using this method, for example, a participant scoring above 50 on both the Heritage and Host subscales would be categorized as using a bicultural or integrated acculturation strategy. However, relatively few participants scored below 50 on either subscale (1 for the Heritage subscale and 16 for Host), with the majority falling into the integrated acculturation strategy group. Thus, there was insufficient variability in acculturation strategy for useful comparisons to be made.

For exploratory purposes, a median split was performed to break the sample into groups based and high/low connection with the heritage and host cultures. The median for the heritage subscale was 71 and the median for the mainstream subscale was 65. Participants above the medians were classified as higher on the subscale and participants at or below the medians were classified as lower. Participants were then categorized into one of the four groups describing acculturation strategy (i.e., integrated, assimilated, separated, and marginalized). This acculturation variable was significantly associated with English proficiency [$F(3,121) = 4.32, p$

< .01]. Post-hoc comparisons using the Tukey HSD test indicated English proficiency scores of those placed in the Integrated category were significantly higher than those in the Marginalized category. Acculturation strategy was not significantly associated with any of the remaining predictor or outcome variables in this study. It is worth emphasizing here that the acculturation strategy groupings are relative to the current sample. Objective groupings based on other data would likely categorize the majority of the participants in this study as using an integrated acculturation strategy. As such, analyses involving this variable should be interpreted with caution.

DISCUSSION

Summary of Findings

The present study investigated the adjustment experience of international students. The extent to which age, time spent in the U.S., cultural distance, English proficiency, social support, acculturation strategy, and help-seeking behaviors predict academic and psychological adjustment was explored. The collected data lends partial support for the hypotheses outlined at the outset of this project. Academic and emotional adjustment were predicted by different variables. Specifically, amount of time spent in the U.S., English proficiency, and help-seeking behaviors emerged as the strongest predictors of academic adjustment for international students, whereas age was the only significant predictor of psychological adjustment. Additional exploratory analyses showed that level of attachment to the university community was also significantly associated with psychological adjustment but not academic adjustment. These findings are consistent with the literature suggesting psychological and socio-cultural adjustment are distinct components of overall adjustment (Ward & Kennedy, 1993).

Our predictions regarding the relationships among the acculturation variables were not all supported. On the one hand, academic adjustment was significantly correlated with help-seeking behaviors. However, the data failed to demonstrate the expected significant association between academic adjustment and the following variables: cultural distance, social support, and acculturation strategy (as measured by connection to home and host culture, separately). The use of region of origin as a proxy of cultural distance rather than a standardized measure to assess

this construct may have contributed to the nonsignificant association between cultural distance and academic adjustment. Although social support has consistently been linked to adjustment experience of international populations (Barratt & Huba, 1994; Crockett et al., 2007; Gerdes & Mallinckrodt, 1994; Lee, Koeske, & Sales, 2004; Mallinckrodt & Leong, 1992; Misra, Crist, & Burant, 2003; Yeh, & Inose, 2003), no such link was found in the present study. The measure of social support used in this study appears to have been difficult for the participants to understand. The fact that the social support measure was found to have an estimated reading grade level of 12.9, coupled with the fact that only 53% of the sample provided a response for every item suggests comprehension likely could have been a problem. Had more participants been able to provide data for this measure, social support might have emerged as a significant predictor. The lack of a clear association between academic adjustment and acculturation strategy may be attributed to the lack of sufficient variability in acculturation orientation within the sample. The majority of participants in this study endorsed an integrated or bicultural acculturation strategy, which made comparisons across different acculturation categories difficult.

Regarding psychological adjustment, age, connection to U.S. American culture, and university attachment were all found to be significantly related to acculturative stress and/or emotional adjustment. ANOVA analyses also revealed a significant association between acculturative stress and cultural distance, such that participants from regions argued to be more culturally similar to the U.S. endorsed less acculturative stress as compared to those from more culturally distant areas. However, no significant relationships were found between the psychological adjustment variables and English proficiency, social support, or connection to the participants' culture of origin. The lack of a significant association between psychological adjustment and English proficiency is consistent with findings from past studies suggesting

English proficiency has a greater impact on the socio-cultural domain of adjustment (Ward & Kennedy, 1993). The lack of a significant association between psychological adjustment and social support likely reflects the previously mentioned issue of comprehension of the measure. Although not significant, scores on the connectedness to home culture scale of the VIA approached significance ($p = .07$) and related to psychological adjustment in the expected direction. As such, it is possible that a significant association could have been established with a larger sample.

Implications of Results

The increased presence of international students at American institutions and the unique vulnerabilities of this population warrant active explorations of ways to facilitate their success. Research has provided data highlighting psychological aspects of cultural adjustment, often emphasizing endorsement of psychopathological symptoms within this population (Berry, 1997; Popadiuk & Arthur, 2004; Sandhu, Portes & McPhee, 1996). However, fewer studies have examined the socio-cultural aspect of cultural adjustment. Through a closer examination of key components of the acculturation process, the present study sought to further develop our understanding of the adjustment experience of international students. Additionally, this study highlights the important role of active coping strategies (e.g., help-seeking behaviors) in shaping the adjustment process.

Overall, results revealed significant differences between academic and psychological adjustment, which has important implications for working with international students in a university setting. Specifically, findings suggest the need for targeted interventions designed to meet both the psychological and socio-cultural needs of the international student population. This study adds to the literature on acculturation and may be useful in the development of

programs to foster positive adjustment experiences for international students. For example, findings of this study suggest university administrators need to focus on enhancing international student's attachment to the university community in order to enhance adjustment to U.S. American institutions of higher learning.

Limitations

Although this study is one of very few that have focused on the academic aspect of the adjustment experience of international students, there were a number of limitations to the study. Regarding methodological limitations, the current study used a relatively small sample and lacked randomization (i.e., participants were not randomly selected). Additionally, all of the measures used were self-report, which does not provide information about participants' actual behaviors. As such, social desirability may have impacted participants' responses to some extent. Another limitation is the fact that the sample of international students used in this study represents a particular university in the south. Thus, findings may not reflect the experience of international students at other colleges and universities in the U.S. and abroad. Additionally, as participants were not randomly selected, the sample may not fully represent the international student population at this university. Although email invitations were sent to every international student at this institution, it is possible that the students who chose to participate in the study represent the most socially connected, most proficient in English, and overall most well adjusted. The use of non-translated, English measures likely excluded less acculturated students or those who do not feel as confident in their knowledge of English. Additionally, the fact that the average GPA for this sample was 3.60 suggests the students who are having a difficult time academically either did not choose to participate or may have left and therefore could not be examined.

The sample of the current study was not evenly balanced in terms of region of origin, with Asian students making up 50% of the sample. A related issue concerns the grouping of cultural distance based on continent of origin. As participants came from over 75 different countries, this approach fails to capture diversity within each category of origin. However, given the number of different countries, the uneven spread of participants across those countries, and the relatively small sample in this study, grouping based on continent seemed to make the most sense. This method of examining cultural distance based on region of origin has also been used in a number of studies using international samples (Babiker, Cox, & Miller, 1980; Constantine et al., 2005; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004; Sodowsky & Plake, 1992; Spencer-Oatey & Xiong, 2006; Yeh & Inose 2003). Another limitation is the fact that the predictive model proposed in this study is nonexhaustive and accounts for a relatively small amount of variance. Other potentially significant predictors may include personality characteristics (e.g., introversion/extraversion) and experiences of discrimination. The exclusive use of quantitative methods (particularly self-report measures) in this study may also represent a limitation. Qualitative methods likely would have provided further details to enhance understanding of the adjustment experience of international students. Despite these limitations, this study provided useful information that can deepen our understanding of the adjustment experience of international students.

Future Directions

Regarding future directions, mixed methods should be employed as often as possible when studying this population. The combination of qualitative and quantitative methods is likely to better elucidate the nuances of the phenomenon of acculturation. For example, use of qualitative methods may provide more information about the experiences of international

students from specific countries, thereby facilitating a deeper understanding of cultural diversity within the regions examined in the present study. As previously mentioned, the proposed models in this study did not account for all of the variance in academic adjustment. As such, the role of many other potential predictors remains to be illustrated. For example, the questionnaire used in this study inquired about participants' religious affiliation, religious involvement, as well as participation in specific organizations/programs. An extension of the current project may focus on examining the role of these factors in academic adjustment. Given that a number of participants reported involvement in multicultural organizations (including organizations within the Cultural Connection Programs), an examination of the impact of participation in these programs for international group members would be particularly useful.

Another potentially fruitful extension of the current study would be an experimental study in which an intervention could be implemented, emphasizing the key predictors identified in this and similar studies. Specifically, the intervention could target the strongest predictors identified in this study (English proficiency, help-seeking behaviors, attachment to the university community) and groups of international students (participants vs. control) can be compared based on academic adjustment and other adjustment factors. Such experiments would likely yield important contributions to acculturation research. Finally, although the current study focused on international students here in the U.S., the academic adjustment experiences of American students studying abroad needs to be examined empirically.

Conclusion

The findings generated in the current study raise important policy-related issues for universities/colleges in meeting the needs of international students. Given the fact that international students have greater adjustment needs but less resources, international education

programs need to be positioned to address the unique needs of this student population (Misra, Crist, & Burant, 2003). The results of this study highlight the importance of attending to both the psychological and sociocultural needs of international students and have implications for academic assistance and orientation services for international students. Specifically, results provide support for the influence of English proficiency and academic help-seeking on the academic adjustment of international students. A critical implication of these findings is that efforts to assist international students in doing their best academically should encourage and provide resources geared towards active help-seeking (e.g., use of writing center, career services, tutors, professor office hours, etc.). It is also critical that international students have ample opportunities to practice English in a “safe” environment. Programs/interventions in which international students are able to interact with both other internationals and native students/community members may address this need (e.g., international conversation groups, host family programs, programs that pair international students with an American buddy).

Regarding psychological adjustment, it is imperative that university programs and/or workshops be available to assist international students in establishing a sense of connection to the greater university community. These efforts may be particularly crucial for students from culturally distant regions (e.g., Asia, Africa, Middle East, etc.). Previous research focused on international student adjustment also suggests a need to educate the university community in order to create a more welcoming environment for international students (Johnson & Sandhu, 2007; Misra, Crist, & Burant, 2003). Specifically, cultural awareness and sensitivity training for faculty and staff may facilitate greater understanding of the unique needs of international students.

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VITA

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