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**THE RELATIONSHIP AMONG ACCULTURATION ORIENTATION,  
PERCEIVED DISCRIMINATION, PSYCHOLOGICAL FUNCTIONING  
AND GENDER AMONG SOUTH ASIAN AND SOUTH EAST ASIAN  
INTERNATIONAL STUDENTS IN THE UNITED STATES OF  
AMERICA**

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THE RELATIONSHIP AMONG ACCULTURATION ORIENTATION, PERCEIVED  
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SOUTH ASIAN AND SOUTH EAST ASIAN INTERNATIONAL STUDENTS IN THE  
UNITED STATES OF AMERICA

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DISSERTATION

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A dissertation submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy in the  
College of Education  
at the University of Kentucky

By  
Dia Anjali Mason

Lexington, Kentucky

Director: Dr. Robert Reese, Professor of Counseling Psychology

Lexington, Kentucky

2017

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## ABSTRACT OF DISSERTATION

### THE RELATIONSHIP AMONG ACCULTURATION ORIENTATION, PERCEIVED DISCRIMINATION, PSYCHOLOGICAL FUNCTIONING AND GENDER AMONG SOUTH ASIAN AND SOUTH EAST ASIAN INTERNATIONAL STUDENTS IN THE UNITED STATES OF AMERICA

The acculturation process for international students is influenced by several factors such as experiences of discrimination, economic condition, language fluency, and social support. Discrimination, which refers to negative or prejudicial behavior towards an individual or a group of individuals, takes place towards international students due to their poor grasp of the English Language (Lee & Rice, 2007), cultural differences (Cole & Ahmadi, 2003), and racial differences (Hanassab, 2006). Perceived discrimination (among other factors) has been identified as a potential moderator of the relationship between acculturation preferences and psychological functioning in acculturation theory (Berry, 2003). Apart from perceived discrimination, gender has also been recognized as predicting adjustment among international students (Lee, Park, & Kim, 2009). This study investigated the role perceived discrimination plays in the relationship between acculturation orientation and psychological functioning (i.e., depression and global life satisfaction), and the influence gender has on the relationship between acculturation orientation and psychological functioning among international students from South Asia and South East Asia. A series of mediational and moderational analyses were performed with hierarchical multiple regression analyses. The mediation effect of perceived discrimination on the relationship between acculturation orientation and psychological functioning was not significant for either factors of psychological functioning. While the interaction between identification with host culture and gender did not predict depression, it predicted global life satisfaction (GLS). Specifically, men who identified with their host culture had higher global life satisfaction scores. However, the interactions between identification with heritage culture and gender did not predict depression or global life satisfaction. The findings suggest that the Berry's (2003) acculturation model may not fit for international students. Future research on acculturation orientation as a variable mediating the relationship between perceived discrimination and psychological functioning is recommended.

**KEYWORDS:** International students, acculturation, acculturative stress,  
psychological adaptation, perceived discrimination

Dia Anjali Mason

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PERCEIVED DISCRIMINATION, PSYCHOLOGICAL FUNCTIONING  
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## **Chapter One: Introduction and Review of Literature**

International students are individuals who reside in a foreign country to pursue their educational goals (Ye, 2006). The number of international students attending institutions of higher education in the United States is currently the highest it has ever been, at 819,644 in 2012-2013 (Institute of International Education [IIE], 2013a). China, India, and South Korea are the top three countries of origin for international students in the United States (IIE, 2013b). Other countries represented by a large number of international students in order of number of students include Saudi Arabia, Canada, Taiwan, Japan, Vietnam, Mexico, Turkey, Nepal, Iran, France, Hong Kong, Indonesia, Nigeria, Thailand, Malaysia, Colombia, Venezuela, Kuwait, and Spain (IIE, 2013b). Although the opportunity to pursue higher education offers exciting possibilities, such a transition is not without its challenges.

The current literature on acculturation experiences of international students identifies that many who have difficulty adjusting to living in a new country do so due to (1) experiences of discrimination, (2) financial troubles, (3) language barriers, and (4) lack of social support. Discrimination, which refers to negative or prejudicial behavior towards an individual or a group of individuals, takes place towards international students due to their limitations with the English language (Lee & Rice, 2007), cultural differences (Cole & Ahmadi, 2003), and racial differences (Hanassab, 2006). The experience of discrimination may be particularly overwhelming for international students because they are often unprepared for racism (Nilsson, Butler, Shouse, & Joshi, 2008). Financial struggles can also be a debilitating factor for international students (Sam, 2001). In a study addressing the struggles of international students, participants reported

a need for more scholarships and financial aid (Sherry, Thomas, & Chui, 2010). International students who reported struggling financially noted they paid higher tuition fees and had limited opportunities to earn money in comparison to students who were citizens of the United States (Sherry, Thomas, & Chui, 2010). Proficiency in the English language is another factor affecting adjustment (Andrade, 2006) and has been identified as a predictor of acculturative stress (Ye & Inose, 2003). For example, students from Taiwan have been reported to experience acculturative stress due to their weak grasp of the English language (Swagler & Ellis, 2003). Taiwanese international students who self-reported having a weak grasp of English, were found to be at risk for depression (Dao, Lee, & Chang, 2007). In addition to discrimination, financial troubles, and language barriers, social support is another factor that has been found to improve psychological functioning among international students (Dao, Lee, & Chang, 2007; Yeh & Inose, 2003). Research has shown that international students who lose social support networks upon moving to a foreign country are more likely to struggle with poor psychological well-being (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Hayes & Lin, 1994).

As explicated, there is an expanse of literature that addresses reasons that make adjustment difficult for individuals belonging to the international student community. Apart from the factors mentioned earlier, gender has also been recognized as predicting adjustment among international students. Studies report that female international students from Asia demonstrate better adjustment to the host culture than their male counterparts (Lee, Park, & Kim, 2009; Ying & Han, 2006). The difference in adjustment has been attributed to differing gender roles in the United States due to which female

international students experience more freedom and less restraint of traditional gender roles (Lee et al., 2009). Stress resulting from cross-cultural challenges is referred to as acculturative stress (Berry, Kim, Minde, & Mok, 1987). Factors that lead to acculturative stress such as perceived discrimination and academic problems have been found to lead to depression (Jung, Hecht, & Wadsworth, 2007), increased susceptibility to poor mental health (Graham & Hudley, 2005), and poor self-esteem (Chen, 1999). The aforementioned psychological states are used as indicators of psychological functioning in acculturation literature.

### **Statement of the Problem**

While perceived discrimination (among other factors) has been identified as a potential moderator of the relationship between acculturation preferences and psychological functioning in acculturation theory (Berry, 2003), there is limited empirical research to provide support for this model particularly among international students. Shariff (2013) tested to see if perceived discrimination influenced the relationship between acculturation orientation and psychological functioning among second generation South Asian young adults residing in Canada. Results indicated a poor fit. The purpose of the current study is to test the influence perceived discrimination has on the relationship between acculturation orientation and psychological functioning among international students; as experience of discrimination is a factor recognized to impact international students in the United States, particularly international students who appear to be racial minorities (Lee & Rice, 2007). Samples of international students from South Asia and South East Asia will be examined because these regions have the largest representations of international students in the United States (IIE, 2013b). This study is

important because it will shed light on the impact of perceived discrimination on the relationship between acculturation orientation and psychological functioning among different groups of international students. The findings are important in today's political climate and can potentially assist organizations working with international students to develop interventions that are specific to the needs of different international student groups.

In the section that follows I will provide a theoretical critique of Berry's model of acculturation, provide a review of the current literature on acculturation, perceived discrimination, psychological functioning, and gender differences among international students in terms of acculturation and psychological functioning. I will then elaborate on the purpose of this study.

### **Acculturation**

Berry (2005), defines acculturation as "the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members" (p.698). In a more exhaustive definition of acculturation, Chirkov (2009) describes the process of acculturation for the immigrating individual. According to Chirkov (2009) acculturation is:

a process that is executed by an agentic individual after meeting and entering a cultural community that is different from the cultural community where he or she was initially socialized. Acculturation involves a deliberate, reflective, and, for the most part, comparative cognitive activity of understanding the frame of references and meanings with regard to the world, others, and self that exist in one's "home" cultural community and which one has discovered in a new

cultural community. This process emerges within the context of interactions, both physical and symbolic, with the members of the “home” and new cultural communities. (p. 178).

There are generally two camps regarding the process of acculturation that can be categorized as unidimensional models of acculturation or bidimensional perspectives. The unidimensional model recognizes acculturation as a process in which immigrants are absorbed into the dominant (or host) culture. The model follows that immigrants change their values, attitudes, and behaviors to fit with the dominant culture and lose a connection with their heritage culture (i.e., values, customs, and traditions that are salient to the culture they are born into). Assimilation, which refers to a person or group giving up their heritage culture and adopting the host culture (Berry, 2006), is the goal for the unidimensional model of acculturation (Castro, 2003). In the unidimensional approach to acculturation, individuals are on a continuum of identities from exclusive identification with the host culture to exclusive identification with the heritage culture (Ryder, Alden, & Paulhus, 2000). In contrast to the unidimensional model of acculturation, the bidimensional model of acculturation suggests that immigrants can maintain their ethnic identity while developing a connection with the host culture (Castro, 2003).

For this study, a bidimensional model of acculturation was used to conceptualize acculturation of international students because the bidimensional model recognizes both the influence of the host and heritage culture. Since most international students are in contact with both the host culture and their heritage culture, it is important to use a bidimensional model to understand their acculturation process. In the section that

follows, I review Berry's model of acculturation and provide a critique in terms of how this model fits with the acculturation process of international students.

**Berry's model of acculturation.** Berry's (1997, 2003) model of acculturation is a well-known bidimensional model of acculturation. Berry's model is helpful in understanding the different ways in which an immigrating group may respond to being exposed to a different culture. In Berry's model, assimilation is not seen as the end but as one of the strategies that an individual or a group may or may not choose to employ while settling in the host country. Individuals or groups may approach acculturation with several strategies that reflect their attitude towards their heritage culture and the host culture (Organista, Marin, & Chun, 2009).

Acculturation begins with a cultural exchange between the immigrating group and the host culture (*group level* acculturation; see Figure 1.1). The nature of the exchange between the immigrating group and host culture determines the psychological impact of acculturation at an *individual level* (Berry, 2005). Acculturation may affect people's behaviors at the individual level while group level acculturation may lead to reorganization or changes in culture (food, dress, entertainment, language), institutions (health care, education), and structures (policies) within a society over time.

Factors such as age, gender, education, socioeconomic status, reason for migration, and cultural distance from the host culture are some individual factors of the immigrating group that influence the acculturation process (Berry, 1997). Apart from individual factors, the attitude of the mainstream culture towards sojourners also needs to be considered. A plural society, which is composed of many cultural groups, or a multicultural society in which the different cultural groups are valued in the community,

may be more accepting of individuals from different cultures than a unicultural society, composed of one dominant culture. Plural societies are less likely to impose cultural change or exclude immigrants. Apart from providing support as a cultural community, plural societies are also more likely to have institutions that provide culturally sensitive services like hospitals or schools (Bornstein & Cote, 2006). In comparison to a plural society, it may be more difficult for immigrants to adjust to a unicultural society because such societies often do not provide any services to help accommodate immigrants (Bornstein & Cote). For example, it may be difficult for a non-English speaking individual to find a translator at a hospital in a unicultural society.

Berry (1997) determined choice of acculturation orientation by the immigrating group's desire to (a) maintain heritage culture and (b) interact with the mainstream culture. Based on the possible combinations of the two dimensions, Berry identified four acculturation strategies: (a) *assimilation*, (b) *separation*, (c) *integration*, and (d) *marginalization* (Berry, Kim, Power, Young, & Bujaki, 1989). Figure 1.2 demonstrates how the four acculturation strategies used by immigrating groups are determined by a combination of desire to maintain heritage culture and to interact with the mainstream culture. Assimilation is the process by which the sojourners give up values and traditions of their heritage culture and immerse themselves into the host culture. Separation takes place when the sojourners maintain their heritage values and traditions and avoid interacting with the individuals or groups who belong to the host culture. In the integration strategy a sojourner maintains their heritage culture while also interacting with individuals and groups who belong to the host culture. Lastly, in the

marginalization strategy, sojourning individuals demonstrate little interest in maintaining their heritage culture as well as the host culture.

Choice of acculturation strategy affects the level of acculturative stress (Berry, Kim, Minde, & Mok, 1987). Individuals who use the integration strategy and identify strongly with both the host culture and their heritage culture will experience the lowest amount of acculturative stress. In comparison, individuals who use the marginalization strategy and have a weak identification with both the host and heritage culture will experience the highest amount of acculturative stress. There is ample empirical evidence supporting Berry's (1997) theoretical framework that indicates the integration strategy leads to the least amount of acculturative stress while assimilation is found to lead to a medium degree of acculturative stress (Berry, Kalin, & Taylor, 1995; Berry & Kim, 1988; Lambert & Taylor, 1989; Zheng & Berry, 1991). The same studies have reported that marginalization and separation result in the most acculturative stress. Contrary to this, in their research with international students, Cemacilar and Falbo (2008) found that those who expressed a separation strategy prior to coming to the United States reported having fewer struggles associated with living in a new environment. Cemacilar and Falbo attributed their alternate findings to the fact that their research subjects were international students who were temporary sojourners instead of immigrants and may not have needed to assimilate due to the temporary nature of their visit.

While the studies discussed earlier have examined Berry's acculturation strategies, this current study examines acculturation orientation. For the purpose of this study, acculturation orientation refers to degree of identification with host and heritage culture while acculturation strategy refers to strategies of acculturation proposed by Berry

(1997) such as assimilation, separation, marginalization, and integration. The decision to examine acculturation orientation instead of acculturation strategy is based on the unique nature of the sample. This sample consists of international students who have been exposed to their heritage culture for a substantial amount of time. Due to extended exposure to their heritage culture, along with their sojourner status, application of Berry's four acculturation strategies would not be relevant.

Research examining the relationship between acculturation orientation, adjustment, and psychological functioning are limited and vary in their findings. Ward and Kennedy (1994) found that individuals from New Zealand working overseas who identified strongly with the host culture experienced less adjustment difficulties while individuals who identified strongly with their heritage culture reported lower levels of depression. Ward and Rana-Deuba (1999) examined adjustment outcomes of acculturation orientations of foreign residents in Nepal. Individuals who had a strong identification with their heritage culture experienced lower levels of depression than individuals who had a weak identification with their heritage culture. There was no relationship between psychological well-being and identification with the host culture. Individuals who had a weak identification with the heritage culture experienced more difficulty associated with adaptation.

As noted earlier, Berry's (1997) model also addresses the role of the host culture in influencing the experience and process of acculturation of an immigrating individual. An individual's choice of strategy for acculturation may be influenced by the host culture and its attitude towards the acculturating individual or group (Berry, 2006). For example, if the host society is not welcoming towards an individual, then it may be difficult to

integrate. Figure 1.3 depicts how the mainstream cultures attitude towards maintaining their own culture combined with their desire to interact with the immigrating groups determines their approach to acculturation.

Berry (2003) addressed four acculturation strategies used by the host culture: (a) *melting pot* refers to a situation in which the host culture encourages the immigrating individuals or group to assimilate, (b) *separation* refers to when the host culture may encourage segregation by insisting that the immigrant group remain separate, (c) *exclusion* refers to when the host culture may marginalize the immigrant group and create an environment of exclusion and (d) *multiculturalism* refers to a situation in which the host culture can help in creating a multicultural society by encouraging immigrants to maintain their heritage culture while adopting aspects of the host culture.

**Berry's model of acculturation pertaining to international students.** Berry's (1997, 2003) model of acculturation recognizes that sojourners such as international students may feel inclined to maintain connections with their heritage culture while developing relationships and understanding the host culture. Most international students have friends and family back in their countries of origin with whom they maintain close contact. Many international students return home when possible and in this way regain contact with their culture of origin. Further, few international students come to the United States with the expectation of staying and settling there for the rest of their lives (Hazen & Alberts, 2006). Because many do not intend to stay in a foreign country for the rest of their lives, international students do not need to completely adopt the new culture. It may be crucial for international students to maintain their heritage culture if they plan to return home once they have completed their education. Many international students

may not find it necessary or may not choose to mingle with people who do not share their cultural heritage. If they have found a group of friends from their heritage culture, they may choose to not associate with people who are culturally different from them. Through this means, international students may not assimilate into the host culture and may separate instead. Berry's model of acculturation also addresses the fact that the choice of acculturation strategy and acculturation orientation does not lie solely with the immigrating individual. An international student may come to the United States with the hope of learning about the culture. If an international student experiences discrimination by the host society the student's ability and inclination to learn about and identify with the host culture may be affected. Even though Berry's (1997, 2003) model does not elaborate on the impact of perceived discrimination it recognizes that experience of discrimination influences the relationship between acculturation orientation and psychological functioning. In the section that follows, I outline the available research on acculturation orientation, perceived discrimination, and psychological functioning among international students to explain the relationship between the three variables before I elucidate the purpose of this study.

### **Psychological Functioning, Perceived Discrimination, Acculturation Orientation, and Gender**

In this section I explore the literature on psychological functioning, perceived discrimination, acculturation orientation, and gender and provide definitions for the variables as they pertain to this study. After reviewing information available on the variables listed, I introduce the purpose of this study. I also list the hypotheses and introduce operational definitions of all the variables used.

## **Psychological Functioning**

The term psychological functioning is also referred to as psychological well-being, emotional well-being, psychological adjustment, psychological distress, and psychological health in acculturation literature. Several indicators of psychological functioning have been used in research examining the relationship between acculturation preferences and psychological functioning. The indicators identified include depression, anxiety, self-esteem, stress, life satisfaction, and academic performance (Bryan & Omizo, 2006; Centinkaya-Yidiz, Cakir, & Kondakci, 2011; Farver, Bhadha, & Narang, 2002; Jung, Hecht, & Wadsworth, 2007; Nesdale & Mak, 2003; Sochos & Diniz, 2011; Ward & Kennedy, 1994). In the current study, the term psychological functioning will consist of depression and global life satisfaction (GLS). Depression is defined as the experience of multiple symptoms including feelings of hopelessness, guilt, shame, depressed affect, and somatic symptoms (Radloff, 1977). GLS is defined as subjective experience of satisfaction with one's life (Pavot, Diener, Colvin, & Sandvik, 1991). Depression and GLS have been chosen because they encompass both a positive element and a negative element of psychological functioning. While depression has been used in acculturation research to account for psychological distress, GLS has been used to account for well-being.

## **Perceived Discrimination**

Perceived discrimination refers to the perception that one has received differential or negative treatment due to membership in a group that is deemed as unfavorable in society. For this study, perceived discrimination is international students' (specifically South Asian and South East Asian international students) interpretation of being subject

to prejudice due to their racial minority status (Araujo, 2011). Chavajay and Skowronek (2008) found that 82% of the 130 international students they interviewed (78% of whom were from Asia) experienced stress due to feeling rejected and discriminated by the host culture. White international students have been found to have more positive experiences in comparison to international students from other racial backgrounds (Lee & Rice, 2007). While international students from South East Asia, South Asia, the Middle East, and Latin America reported experiencing extensive discrimination, international students from Canada, Europe, and New Zealand did not (Lee & Rice, 2007). Hanassab (2006) found that international students from the Middle East and Africa experienced more discrimination than students from other regions. In fact, discrimination is one of the reasons why students from the Middle East left the United States and returned home after the September 11, 2001 attack (McMurtie, 2001; as cited by Lee & Rice, 2007). Women who wear saris or hijabs reported being subject to hostility even prior to the September 11 attack (Cole & Ahmadi, 2003).

### **Acculturation Orientation and Psychological Functioning**

International student acculturation research varies greatly in its findings related to acculturation orientation and psychological functioning. Some studies have found that individuals who identify more with the host culture report lower levels of depression (Parker, Chan, Tully, & Eisenbruch, 2005; Oh, Koeske, & Sales, 2002). Consistent with the last statement, Dao, Lee, and Chang (2007) reported that Asian international students who demonstrated lower levels of identification with the host culture were more likely to experience depression. Other studies have found that stronger identification with heritage culture results in lower levels of depression (Asvat & Malcarne, 2008). Buddington

(2002) reported no significant relationship between depression and identification with the host culture but reported that international students who identified more with the host culture seemed to be experiencing more stress. The studies referenced demonstrate that even though there is a relationship between the variables acculturation orientation and psychological functioning, there is no clarity regarding which of the orientations of acculturation (identification with heritage culture or identification with host culture) lead to positive psychological functioning.

### **Perceived Discrimination and Psychological Functioning**

The inverse relationship between perceived discrimination and psychological functioning is well established. A meta-analysis of 134 studies, confirmed that perceived discrimination has a negative effect on both mental and physical health (Pascoe & Richmond, 2009). Several studies confirm an inverse relationship between perceived discrimination and depression among international students (Jung, Hecht, & Wadsworth, 2007; Rahman & Rollock, 2004; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008). In addition to depression, a positive relationship between perceived discrimination and perceived general stress and an inverse relationship between perceived discrimination and self-esteem has been found (Wei et al., 2008). Among international students from Turkey, students who felt more socially connected reported lower levels of perceived discrimination and experienced fewer struggles associated with adjustment (Duru & Poyrazli, 2011). In sum, research in the area of perceived discrimination and psychological functioning indicates a positive correlation between perceived discrimination and depression, stress, adjustment, and a negative correlation between perceived discrimination and self-esteem.

## **Acculturation Orientation and Perceived Discrimination**

Even though acculturation theories elaborate on the relationship between acculturation orientation and perceived discrimination (Berry, 2003; Padilla & Perez, 2003), there is no empirical evidence of this relationship among international students. Literature on the relationship between acculturation orientation and perceived discrimination is also limited among other minority communities. Awad (2010) assessed the impact of acculturation orientation and religious identification on perceived discrimination among Middle Eastern individuals living in the United States. Individuals who reported weak identification with the host culture experienced more discrimination. However, Muslim individuals who reported strong identification with the host culture experienced the most discrimination, while Christians who demonstrated strong identification with the host culture reported experiencing lower levels of discrimination.

Branscombe, Schmitt, & Harvey (1999) found that African Americans who identified strongly with their minority group identity experienced higher self-esteem and personal well-being in comparison to those who did not. The authors of this study created a *rejection-identification model* in which they proposed that ascribing certain situations as being caused by prejudice has a negative impact on an individual's self-esteem and personal well-being. However, identifying with one's heritage culture mediates the relationship between perceived discrimination and psychological functioning, resulting in higher self-esteem and positive personal well-being.

In a study examining the smoking behavior among Hispanic adolescents, Unger, Schwartz, Huh, Soto, and Baezconde-Garbanati (2014) found that even though perceived discrimination was positively associated with substance use, which they recognized as a possible coping strategy for acculturative stress, identification with one's heritage culture was protective against an increase in substance use. A second study (Torres, Driscoll, & Voell, 2012) examined acculturation orientation as a moderator for perceived discrimination and acculturative stress among Latino adults. While identifying with the host culture served as a moderator for perceived discrimination and acculturative stress, identifying with one's heritage culture did not (Torres, Driscoll, & Voell, 2012).

Shariff (2013) examined the influence of perceived discrimination on the relationship between acculturation orientation and psychological distress among South Asian immigrants in Canada and hypothesized that perceived discrimination would moderate the relationship between acculturation orientation and psychological distress. Contrary to the findings reviewed above, Shariff's (2013) findings did not support the theoretical model proposed by Berry as well as Padilla and Perez's theory that states that perceived discrimination influences the relationship between acculturation strategy and psychological distress. While the direct path from perceived discrimination to psychological distress was significant in Shariff's study, acculturation orientation did not have a direct influence on psychological distress. Further, the moderating influence of perceived discrimination was also not significant. The fact that this study was the first to use structural equation modeling as opposed to multiple regression may be one of the explanations for the results (Shariff, 2013). Shariff suggests that instead of perceived

discrimination moderating the relationship between acculturation orientation and psychological functioning, there is a possibility instead that acculturation orientation may moderate the relationship between perceived discrimination and psychological distress. Overall, the findings are inconsistent regarding the nature of the relationship between perceived discrimination, acculturation orientation, and psychological distress.

In order to develop a stronger understanding of the relationship between perceived discrimination, acculturation orientation, and psychological distress, it is important to replicate this study with other populations to recognize if revisions need to be made to the acculturation theory developed by Berry. The current study will attempt to replicate the study described above with a sample of international students in order to continue adding to research on Berry's acculturation theory. Apart from perceived discrimination, gender is another factor that has been found to influence acculturation orientation and subsequent psychological distress. In the section below, I will discuss gender in terms of its relationship with acculturation orientation and psychological functioning.

### **Gender, Acculturation, and Psychological Functioning**

A weakness in the literature on international students is the tendency to lump international students into one category, thus, ignoring within-group differences (Yoon & Portman, 2004). There is limited research on how demographic variables such as gender, age, and race/ethnicity impact acculturative stress among South Asian and South East Asian international students. In addition to examining if perceived discrimination influences the relationship between acculturation orientation and psychological functioning, this study will also examine the moderating effect of gender on the

relationship between acculturation orientation and psychological functioning. More research in this area is important because it will give clarity and direction to individuals working with international students to help make effective interventions. The current literature examining gender differences among international students addresses acculturation strategies (integration, separation, assimilation, and marginalization) but not acculturation orientation (identification with the host and heritage culture). This literature is reviewed below.

Among Chinese international students residing in Germany, men were found to choose separation as their strategy for acculturation while women chose integration (Yu & Wang, 2011). The difference in choice of acculturation strategy was attributed to men's experience of social stigma in the German culture. While men needed to separate in order to cope with the social stigma, the women did not because they were more accepted by the host culture. In contrast, among Chinese international students in Australia, men used integration strategy and experienced the highest levels of emotional well-being among all participants in the study, while women used the marginalization strategy and demonstrated the lowest level of emotional well-being (Zheng, Sang, & Wang, 2004). In the U.S., while the separation strategy was the most commonly used acculturation strategy among Turkish international students, female students chose the integration strategy more than their male counterparts (Bektas, 2004). From the studies described, it is apparent that there are gender differences in choice of acculturation strategy among international students across the world.

The aforementioned studies examining acculturation strategy also approached acculturation as a bidimensional concept and grouped individuals into four strategies

(integration, separation, marginalization, & assimilation) based on their scores on the heritage and mainstream dimensions of acculturation scales. Unlike the studies described earlier that examined acculturation strategies, studies that examined acculturation orientation among international students have not looked at gender differences. Instead of grouping individuals based on what strategy they use, this study will use a dimensional approach and identify individuals based on their identification with the host and their heritage culture.

### **Social Support**

Before going on to discuss the purpose of this study, I discuss the concept of social support, as it is one of the variables that will be controlled for in this study. Social support is an important variable to explore with regards to acculturation especially among international students as research has shown that international students who lose social support networks upon moving to a foreign country are more likely to struggle with poor psychological well-being (Constantine et al., 2005; Hayes & Lin, 1994). Social support has also been found to have a negative relationship with indicators of psychological well-being such as depression and anxiety among non-international college students (Elliot & Gramling, 1990; Yasin & Dzulkifli, 2010). There are several definitions of social support. Albrecht and Adelman's (1987) definition of social support highlights communication, reduction in uncertainty, and enhancing experience of personal control as key features, while Gottlieb's (2000) definition emphasizes improvement in coping, esteem, belonging, and competence through exchanges. Mattson and Hall (2011) provide a comprehensive definition of social support that defines the variable as "a transactional communicative process, including verbal and/or nonverbal communication that aims to

improve an individual's feelings of coping, competence, belonging, and/or esteem" (p.184). Social support can differ in nature depending on whether it is *actual support* or *perceived support* (Mattson & Hall, 2011). Actual support, refers to the support that is received and perceived support refers to the experience that support is available (Mattson & Hall, 2011). Perceived support has been reported to be more beneficial than actual support (McDowell & Serovich, 2007) as actual support may not be exactly what an individually is looking for. For example, an international student who is struggling academically may call his parents for support. The student's parents offer him advice on how to improve his grades and provide encouragement. Despite the provision of support from the parents, the student may feel dissatisfied because he experiences his parents as unhelpful.

Schaefer, Coyne, and Lazarus (1981) recognized that the concept of social support does not have a clear definition, which makes for inconsistent measurement of the variable. Schaefer, Coyne, and Lazarus identified five types of support: (a) *emotional support*, which caters to emotional needs; (b) *esteem support*, which boosts self-esteem; (c) *network support*, which is a reminder of available support; (d) *information support*, which refers to provision of items or information when needed; and (e) *tangible support*, which refers to provision of help that is of a physical nature such as helping someone move a television or assistance in fixing a car. Psychological support (such as emotional, esteem, and network) is meant to change mood, attitudes and thoughts; instrumental support (such as information and tangible support) is meant to assist an individual's performance directly (Schaefer, Coyne, & Lazarus, 1981). The literature on social support cautions that all social support is not positive and beneficial (Mattson & Hall,

2011).

### **Purpose of the Study**

The purpose of this study was to investigate the role of perceived discrimination in the relationship between acculturation orientation and psychological functioning in international students from South Asia and South East Asia. This study will also examine the moderating effect of gender on the relationship between acculturation orientation and psychological functioning. Although the influence of perceived discrimination on the relationship between acculturation orientation and psychological functioning has been tested by Sharif (2013), it has not been tested with international students. If this model is supported empirically, it can be tested with other groups of international students. From a theoretical perspective, the findings of this study will be beneficial for organizations and individuals working with international students from South Asia and South East Asia in helping to better address discrimination. Understanding the impact of perceived discrimination is particularly crucial in the current political climate of the U.S, given an increase in anti-immigration sentiments, in which immigrant minorities, particularly Muslims and women, feel targeted by the government.

### **Hypotheses**

Below are the following hypotheses for this study:

Hypothesis 1: Based on the theory proposed by Berry (2003), the acculturation orientation-psychological functioning relationship will be mediated by perceived discrimination with a sample of international students, controlling for covariates (age, ethnic identity, years in United States, English language fluency, and Social Support).

Hypothesis 2: Gender will moderate the relationship between acculturation orientation and psychological functioning controlling for covariates (age, ethnic identity, years in U.S., English language fluency, and social support) with a sample of international students.

### **Operational definitions**

In the section below I provide operational definitions for acculturation orientation, perceived discrimination, depression, satisfaction with life, ethnic identity, proficiency in English, and social support as they are all variables that are measured in this study.

**Acculturation orientation.** Acculturation orientation was operationalized using the Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000). The VIA recognizes that acculturation is a bidimensional construct and the two factors within this construct, namely mainstream and heritage identities are free to vary independent of each other. The VIA is a 20 item self-report measure and assesses the extent to which respondents are immersed in both the host culture and their heritage culture. The VIA measures three domains: (a) adherence to traditions, (b) social relationships, and (c) values.

**Perceived discrimination.** Perceived discrimination was operationalized using the perceived discrimination factor of the Acculturation Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994). The ASSIS is a self-report measure and contains 8-items.

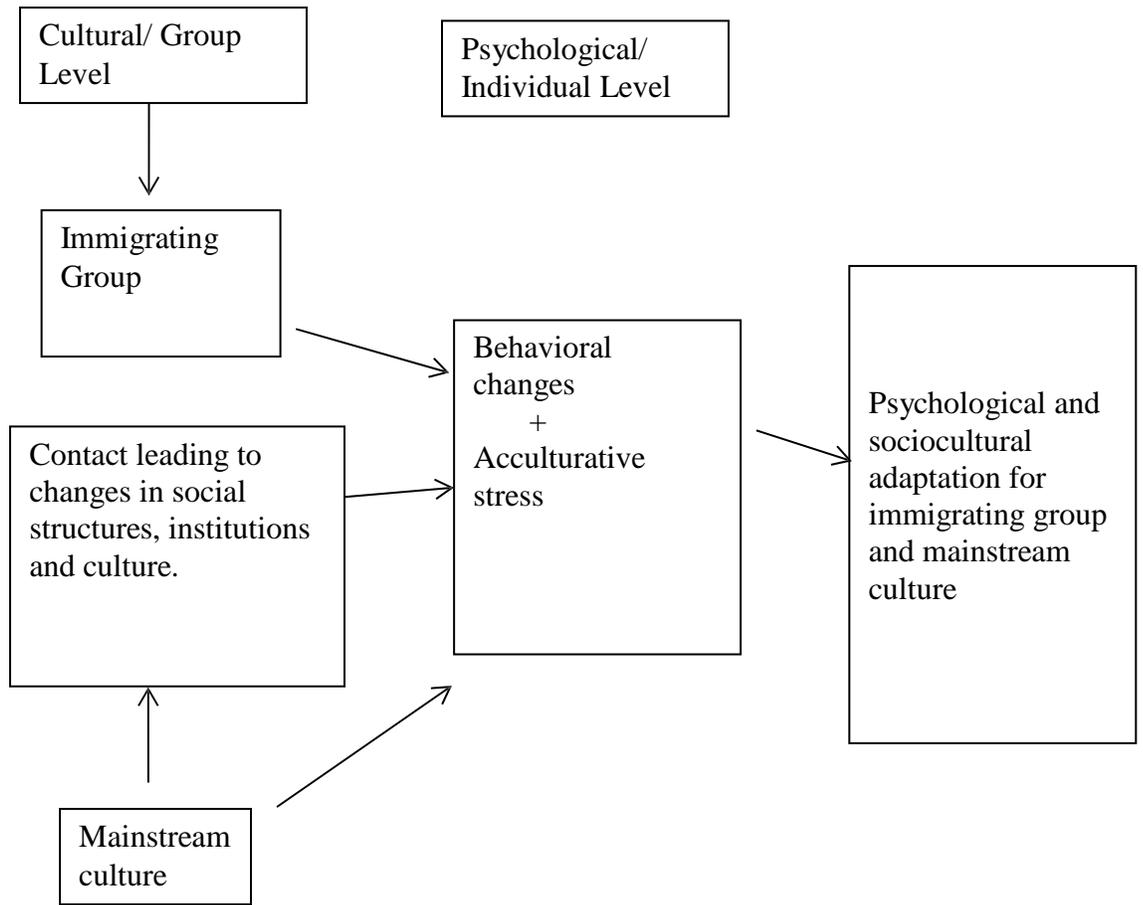
**Psychological functioning.** Psychological functioning was operationalized by two factors, depression and life satisfaction. Depression will be operationalized using the Center for Epidemiologic Studies Depression scale (CES-D; Radloff's, 1977), created to

measure symptoms of depression among a non-clinical population. The CES-D contains 20 items and addresses 4 factors: depressive affect, somatic symptom, well-being, and interpersonal relations. The second measure of psychological functioning in this study, Global life satisfaction (GLS), was operationalized using Pavot and Diener's (1993) Satisfaction With Life Scale (SWLS), which measures global cognitive judgments of life satisfaction. The SWLS consists of 5 items and contains a cognitive component and an emotional component.

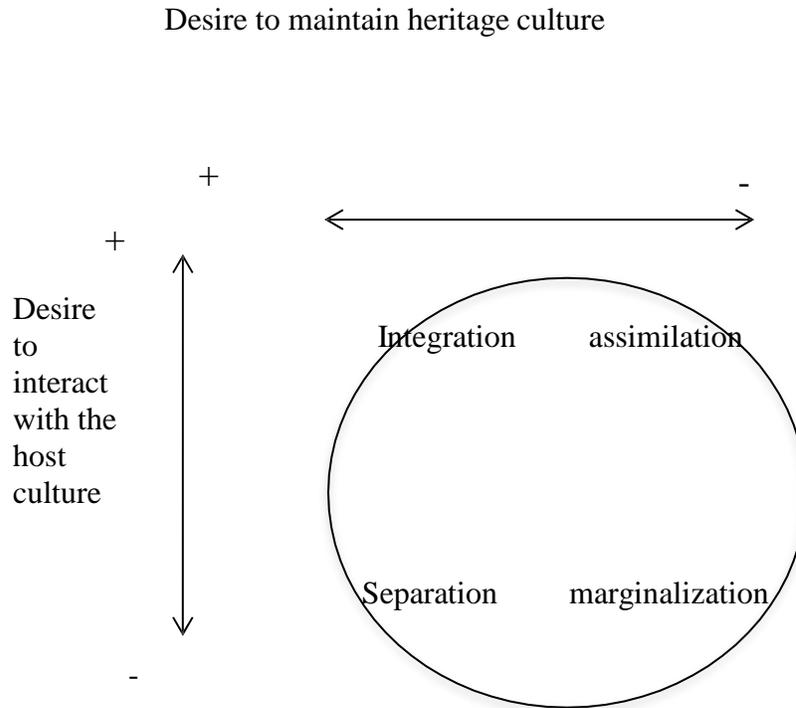
**Ethnic Identity.** Ethnic identity was operationalized using the Multi Ethnic Identity Measure (MEIM; Roberts, Phinney, Mase, Roberts, & Romero, 1999). The MEIM assesses attitudinal and behavioral aspects of ethnic identity and contains 12 items, 5 of the items address ethnic identity exploration and 7 of the items address ethnic identity commitment.

**Proficiency in English.** Proficiency in English language was operationalized using a composite score from 3 items inquiring into level of fluency, comfort and frequency.

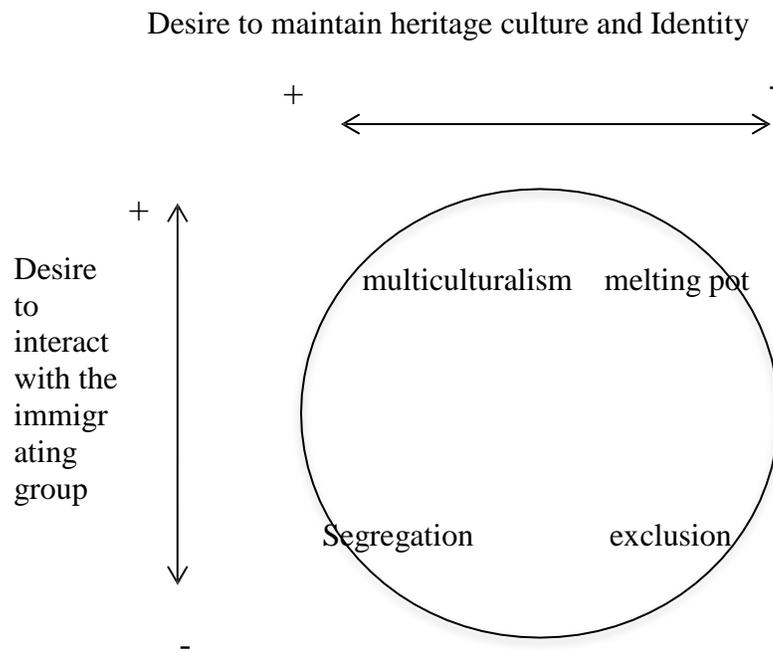
**Social support.** Social support was operationalized using Sarason, Sarason, Shearin, and Pierce's (1987) Social Support Questionnaire- Short form (SSQSR) which measures 2 dimensions of perceived social support: satisfaction and network.



*Figure 1.1.* A framework of acculturation. Adapted from “Acculturation: Living Successfully in Two Cultures,” by J. W. Berry, 2005, *International Journal of Intercultural Relations*, 29, p. 703. Copyright 2005 by the Elsevier Ltd.



*Figure 1.2.* Acculturation strategies used by immigrant groups/ sojourners. Adapted from “Acculturation: Living Successfully in Two Cultures” by J. W. Berry, 2005, *International Journal of Intercultural Relations*, 29, p. 705. Copyright 2005 by the Elsevier Ltd.



*Figure 1.3.* Acculturation strategies used by host culture. Adapted from “Acculturation: Living Successfully in Two Cultures,” by J. W. Berry, 2005, *International Journal of Intercultural Relations*, 29, p. 705. Copyright 2005 by the Elsevier Ltd.

## **Chapter Two: Method**

I investigated the role perceived discrimination plays in the relationship between acculturation orientation and psychological functioning of international students from South Asia and South East Asia. I also evaluated the role gender plays in the relationship between acculturation orientation and psychological functioning among the same groups of international students.

### **Participants**

The participants for this study were recruited via email from multiple institutions of higher education in different geographic locations in the United States. Participants were international students from South Asia and South East Asia who were holders of an F-1, student visa or a J-1, temporary educational exchange visitor visa, and were over age 18 years. A total of 237 individuals began the survey. With a drop-out rate of 46%, 128 surveys were completed. Twelve participants failed to meet criteria of being international students from South Asia or South East Asia. Ten participants were eliminated because they did not correctly fill out the SSQS scale.

The final sample contained 106 individuals, 72 (67.9%) females and 34 (32.1%) males. Table 2.1 displays information about the gender, age, and program of study of participants. Sixty-six (62.3%) participants identified as being between 18-25 years old and 44 (41.5%) participants reported enrollment in undergraduate programs (see Table 2.1). Participants represented 15 countries, 64 (60.38%) participants were from India or China (see Table 2.2). Twenty-six (24.52%) participants identified as Muslim, while 21 (19.81%) identified as having no religious affiliation (see Table 2.3). Thirty-three (36.19%) participants stated having lived in the United States for less than a year and 65

(61.90%) participants were between the ages of 18-25 when they immigrated to the U.S. (see Table 2.4).

## **Measures**

In the section that follows the instruments used to measure the predictor variables, the mediator, the outcome variables, and covariates of this study are described. All the measures identified for this study are self-rating scales, have been normed on international students from Asia, and have been found to generate valid and reliable scores. Coefficient alphas from the current sample are reported for each measure.

**Acculturation orientation.** The Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus 2000; Appendix B) was used to measure acculturation orientation. The VIA views acculturation as a bidimensional construct and contains 2 subscales and 20 items that assess the extent to which respondents are immersed in the host culture and their heritage culture. Each culture scale has 10 items, which are identical in wording except for the culture referenced and are scored separately. *Adherence to traditions*, *social relationships*, and *values* are the three domains of acculturation that are assessed. Items are rated on a 9-point Likert scale ranging from 1 (*disagree*) to 9 (*agree*). The heritage score is the mean of the odd numbered items and the host score is the mean of the even numbered items. Scores range from 20 to 180 for each subscale. The VIA asks questions that address attitudes towards several different dimensions and aspects of the cultures. Statements like “I enjoy jokes and humor of my heritage culture” and “I am interested in having friends from my heritage culture,” address cognitive complexity. All questions on the VIA use an endorsement format, which asks individuals to express how certain statements are congruent with themselves. The endorsement format helps with

orthogonality of the heritage and host dimensions and allows for “conceptual independence” between the two subscales (Kang, 2006, p. 676).

The VIA was administered to a diverse population to ensure that it applied to individuals from different cultures (Ryder, et al., 2000). The sample of undergraduate Chinese students consisted of 140 females and 64 males between the ages of 18-25, 125 of whom were first generation immigrants, and 79 were second-generation immigrants. The sample of East Asian undergraduate students consisted of 54 females and 16 males between the ages of 18-30 years; 36 of whom were first generation and 34 were second-generation immigrants. The sample also consisted of 100 female and 40 male undergraduate students who identified as being from cultures that were non-East Asian and non-English speaking, who were between the ages of 17-37 years and were referred to as the miscellaneous group. Twenty-two of these individuals were first generation and 118 second generation immigrants.

Internal consistency estimates for the heritage items was .91, .92, and .91 for the Chinese, East Asian, and miscellaneous samples respectively. The internal consistency for scores on the host items was also high for the Chinese ( $\alpha = .89$ ), East Asian ( $\alpha = .85$ ), and miscellaneous ( $\alpha = .87$ ) samples. The mean inter item correlations for each of the dimensions were high for both the heritage items ( $r$ 's = .52, .53, .51) and the host items ( $r$ 's = .45, .38, .44) respectively. Concurrent validity was evaluated by comparing the two dimensions with (a) percentage of time lived in a Western, English-speaking country, (b) percentage of time educated in a Western, English-speaking country, (c) the unidimensional acculturation score provided by the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn, Ahuna, & Khoo, 1992) which is an acculturation

instrument widely used to measure acculturation among Asians in the United States, and (d) a single-item validity check measuring current cultural identification in a unidimensional fashion. The percentages of time lived in and educated in the West were significantly associated with the Mainstream subscale ( $r$ 's = .47 and .41, respectively,  $ps < .001$ ). Significant associations were found between the SL-ASIA and the Heritage and Host subscales ( $r$ 's = -.30 and .54, respectively,  $ps < .001$ ), and the same was true for the single-item identity measure ( $r$ 's = -.34 and .44, respectively,  $ps < .001$ ).

**Perceived discrimination.** The perceived discrimination factor of the Acculturation Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994; Appendix C) which uses a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was used to measure perceived discrimination. The perceived discrimination subscale contains 8-items. Adding scores on items 3, 9, 11, 14, 17, 23, 26, and 29 gives a total score for this factor. Total scores range from 1 to 40 with higher scores indicating more perceived discrimination. Examples of items include “many opportunities are denied to me” and “I feel that I receive unequal treatment.”

This instrument was administered to 86 men and 42 women during test construction. Participants from Asia representing China, India, Japan, Korea, and Taiwan comprised 43.75 % of the sample; 26.56 % of participants were from Latin America, 17.17 % were from the Middle East, and 12.5 % were from Europe and Africa. Internal consistency estimates of the perceived discrimination factor ranged from .85 to .90 for samples of international students from different countries including India, China, Iran, Iraq, and Saudi Arabia (Chavajay & Skowronek, 2008; Jung, Hecht, & Wadsworth, 2007; Poyrazli, Thukral, & Duru, 2010; Tavakoli, Lumley, Hijazi, Slavin-Spenney, & Parris,

2009). Negative correlations with adjustment and positive correlations with depression offer evidence of convergent validity for the ASSIS (Constantine, Okazaki, & Utsey, 2004; Wei et al. (2007).

**Depression.** The Center for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977; Appendix D) was used to measure depression. The CES-D contains 20 items and is used to measure symptoms of depression among the general population. The CES-D was tested in household interview surveys and in psychiatric settings. The CES-D was chosen to be one of the determinants of psychological functioning for this study because it is one of the most frequently used depression instruments for a non-clinical population. The items are rated on a 4-point Likert type scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*) and address 4 factors: depressive affect, somatic symptoms, well-being, and interpersonal relations. Scores range from 0-60 and a score of 16 or higher indicates a possibility of depression. Participants are asked to answer questions based on their experience over the past week. Examples of items include, “I was bothered by things that usually don’t bother me” and “I felt I was just as good as other people.” A coefficient alpha of .87 has been reported for Taiwanese college students (Wang, Slaney, & Rice, 2007), .91 for international students from Africa, Asia, and Latin America (Constantine et al., 2004); .89 on the English version and .91 on the Chinese version for Chinese international students (Wei et al., 2007), .92 for international students from Taiwan (Dao, Lee, & Chang, 2007), and .92 for international students from China (Chirkov, Vansteenkiste, Tao, & Lynch, 2007). The correlations of the CES-D with the Hamilton Clinicians Rating scale and the Raskin Rating scale were .69 and .75, respectively (Radloff, 1977). The correlations of the CES-D to the Hamilton Clinicians

Rating scale and the Rasking Rating scale were almost as high as the correlations for the 90-item SCL 90 (Radloff, 1977).

**Global life satisfaction.** The Satisfaction With Life Survey (SWLS; Pavot & Diener, 1993; Appendix E) is a 5-item self-report measure of global cognitive judgments of life satisfaction. The SWLS contains a cognitive component and an emotional component. Items are rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly disagree*). A score between 5-9 is considered *extremely dissatisfied*, 10-14 is considered *dissatisfied*, 15-19 is categorized as slightly below average in life satisfaction, 20-24 is considered an average score, 25-29 is considered a high score, and 30-35 is considered *highly satisfied*. Examples of items include, “If I could live my life over, I would change almost nothing” and “The conditions of my life are excellent.” The SWLS demonstrates high internal consistency with a Cronbach’s alpha of .87 among Asian American students (Yoon, Hacker, Hewitt, Abrams, & Cleary, 2012); .83 and .86 among international students in Canada (Chirkov, Safdar, Guzman, & Playford, 2008). Evidence of construct validity for the SWLS has been found through negative and positive correlations with clinical measures of distress and scales measuring affect. Blais, Vallerand, Pelletier, and Briere (1989) reported a strong negative correlation ( $r = -.72, p = .001$ ) between SWLS and the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Larsen, Diener, and Emmons (1985) found a correlation of  $-.31$  between SWLS and a measure of negative affect. Smead (1991; as cited by Pivot & Diener, 1993) administered the SWLS in conjunction with the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988) and reported correlations of .44 between the SWLS and positive affect and of  $-.48$  between the SWLS and negative affect.

## **Covariates**

An ethnic identity measure was used as a covariate because several researchers have found that ethnic identity impacts the relationship between the experience of discrimination and psychological functioning. Yip, Gee, and Takeuchi (2008) found that a strong ethnic identity moderated the positive relationship between perceived discrimination and psychological functioning among American born Asian individuals between the ages of 41 to 50 years. Similar results were found among African American individuals (Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003; Sellers, & Shelton, 2003). Torres, Yznaga, and Moore (2011) found that Latino/a individuals who were inquisitive and interested in increasing their knowledge of their heritage culture (*ethnic identity exploration*) experienced more psychological distress associated with discrimination while individuals who demonstrated a sense of belonging and personal investment in their heritage culture (*ethnic identity commitment*) did not experience psychological distress associated with experience of discrimination. In order to isolate the relationship between perceived discrimination and psychological functioning, a measure of ethnic identity was used to control for differences in ethnic identity.

**Ethnic identity.** The Multi Ethnic Identity Measure (MEIM; Roberts et al.'s, 1999; Appendix F) was used to assess attitudinal and behavioral aspects of ethnic identity. The MEIM consists of 12 items, 5 addressing ethnic identity exploration and 7 addressing ethnic identity commitment. Items 1, 2, 4, 8, and 10 address ethnic identity search, while items 3, 5, 6, 7, 9, 11, & 12 address affirmation, belonging, and commitment. Items are scored on a 4-point Likert scale with 1 *strongly disagree* and 4 *strongly agree*. The mean of all the items is the MEIM score and ranges from 12 to 48.

Examples of items include: “I have a lot of pride in my ethnic group” (affirmation, belonging, & commitment) and “I am active in organizations or social groups that include mostly members of my own ethnic group” (ethnic identity search).

The MEIM has generated internally consistent scores ( $\alpha = .91$ ) with international students (Poyrazli, 2003). MEIM scores were associated positively with different psychological well-being measures such as self-esteem ( $r = .20$ ), coping ( $r = .23$ ), sense of mastery ( $r = .19$ ) and optimism ( $r = .19$ ) (Roberts et al., 1999).

**Proficiency in English language.** Fluency in English was measured and controlled in this study as fluency in English has been found to be a predictor of psychological functioning among international students (Dao, Lee, & Chang, 2007; Yeh & Inose, 2003). Fluency in English (Appendix G) was measured using a composite score from 3 items that use a 5-point Likert type scale from 1 (*very poor*) to 5 (*extremely good*). Examples of items include, “What is your present level of English fluency?” and “How comfortable are communicating in English?” Ye and Inose (2003) reported a Cronbach alpha of .78 with a sample of international students, 61% of whom were from Asia, while Dao, Lee, and Chang (2007) reported a Cronbach’s alpha of .81 with a sample of international students from Taiwan.

**Social Support.** Social support was measured and controlled in this study as social support has been found to be a predictor of psychological functioning among international students (Dao, Lee, & Chang, 2007; Yeh & Inose, 2003). The Social Support Questionnaire - Short form (SSQSR; Sarason, Sarason, Shearin, & Pierce, 1987; Appendix H) was used to measure social support. The SSQSR contains 12 items and measures 2 dimensions of perceived social support: satisfaction and network. The items

are rated on a 6-point Likert type scale from 1 (*very dissatisfied*) to 6 (*very satisfied*). The six odd numbered items measure social support network (e.g., “Whom can you count on to be dependable when you need help?”) while the six even numbered items measure satisfaction with social support (e.g., “How satisfied?”). A total score for the network dimension can be computed by adding up the number of people mentioned on each of the odd numbered items. A total score for the satisfaction dimension can be computed by adding all the items. Total scores range from 12 to 36 for the satisfaction dimension and from 0 to 108 for the network dimension. Dao, Lee and Chang (2007) reported a Cronbach’s alpha of .82 for the total score with international students from Taiwan while Yeh and Inose (2003) reported a Cronbach’s alpha of .91 for the satisfaction dimension among an eclectic group of international students.

**Demographics.** The participants completed a brief questionnaire requesting background information, including current age, age of immigration to the United States, gender, country of origin, years resided in the United States, religious affiliation, academic year, GPA, program of study. Students were asked to choose the category that represents their gender (e.g. male, female, transgender, or other), race, highest education, degree of study, type of visa, and relationship status. Specific questions can be found in Appendix I.

## **Procedure**

This study was approved by the University of Kentucky Institutional Review Board (IRB). After receiving approval, a recruitment email (see Appendix J) with a link to the survey site in Qualtrics was sent to potential participants. Participants were recruited via email from the listserv of the International Students Office at University of

Kentucky. Further recruitment was conducted via email from the listserv of the International Section of Counseling Psychology Division 17 and the Council of Counseling Psychology Training Programs listserv, American Psychological Association. A link to the study was also shared on the social media website Facebook (Facebook, n.d.). Since the described method of recruitment did not generate enough participants the recruitment strategy was modified and international student offices of 73 randomly selected universities were contacted. Of the 73 universities contacted, 8 agreed to share the survey with their international student body.

I created a web-based survey through Qualtrics (Qualtrics, 2015) with the aforementioned measures. Before being administered the measures, participants were provided an online informed consent (see Appendix K) that outlined the purpose of the study and addressed research ethics in accordance with the American Psychological Association (APA) guidelines for conducting research with human subjects and the Office of Research Integrity (ORI). Participants were provided information about the purpose of the study, reason for recruitment, procedure to complete the study, approximate time needed to complete the study, the possible risks and benefits of participation, incentives to participate, and the option of voluntary termination from participation in the study. Participants were also informed about the anonymous nature of the research study and were given the opportunity to ask questions prior to agreeing to participate by emailing the Principle Investigator with any questions. Surveys were completed. The order of the measures was the same for each participant. Pilot participants completed the survey in 10 to 15 minutes. Participants were not paid for their time. Participants who successfully completed the entire survey were given an

opportunity to be entered into a raffle to win one of two \$50 Amazon.com gift cards. Participants were asked to enter their e-mail address if they wanted to be entered into the raffle. Participant numbers were entered into a raffle using raffle software to randomly choose the winners of the raffle. Winning participants' numbers were used to connect the participant to their email addresses. Winners were contacted via email and were asked to provide their mailing address. The gift cards were mailed to "Research Participant" at the address that the winners provided.

### **Statistical Methods**

A priori power analysis using G\*Power 3.1.9.2 software for Macintosh OS X 10.7 to 10.9 was conducted to determine the minimum sample size needed for this study (Faul, Erdfelder, Buchner, & Lang, 2009). This power analysis assumed that three predictors (acculturation orientation, perceived discrimination, and gender) would be used in a linear multiple regression model. The alpha level was set to .05; the power was set at .80 and an effect size of 0.50 was selected. A minimum of 100 participants were found to be necessary to detect a medium effect size. A sample size of 110 was the goal to account for 10% incomplete surveys.

SPSS 23 was used to analyze the data. Two multiple linear regression analyses were conducted to determine if psychological functioning (outcome variable) could be predicted from acculturation orientation and perceived discrimination scores (predictor variables). Two separate multiple linear regressions were run because psychological functioning is operationalized by two factors: depression and GLS. The null hypothesis tested was that the multiple  $R^2$  would be equal to 0 and that the regression coefficients would be equal to 0. Before testing the hypotheses, I examined the data for assumption

of normality. I assessed the normality of the data by examining kurtosis and skewness. The data were not normally distributed; therefore, I conducted a logarithm transformation and a square root transformation. The variance inflation factor and tolerance were examined when assessing for multicollinearity. To determine linearity, the scatterplot was reviewed and Mahalanobis Distance was examined to determine outliers. Cooks distance was examined to check the influence of participants on the model. The Durbin-Watson statistic was computed to evaluate independence of errors.

A series of mediation and moderation analyses were performed with hierarchical multiple regression analyses (see Appendix A). I used the procedure recommended by Baron and Kenny (1986) to produce models with and without controlling for covariates. Frazier, Tix, and Barron (2004) expanded on Baron and Kenny's model and provide a checklist for performing mediation and moderation analyses. I incorporated Frazier et al.'s (2004) instructions into the description of the analyses in the sections that follow.

To test hypothesis 1, (The acculturation orientation-psychological functioning relationship will be mediated by perceived discrimination.) a mediational analysis was conducted and 12 models were run. I followed the four steps recommended by Frazier et al. (2004) to establish if perceived discrimination mediates the relation between acculturation orientation and psychological functioning (see Appendix A). The first step is to determine if there is a significant relationship between acculturation orientation and psychological functioning (depression and GLS). I conducted a stepwise hierarchical regression analysis to adequately test for direct effects of acculturation orientation on psychological functioning. I first tested the effect of age, ethnicity, years in United States, English language fluency, and social support on psychological functioning. Next,

I conducted general linear regressions to test the hypotheses regarding the direct effect between acculturation orientation (predictor variable) and psychological functioning (outcome variable). This step is represented in part c of Figure 2.1. Since this study has two outcome variables (depression and GLS) each of the models described were run for each outcome variable.

The second step is to show that acculturation orientation (predictor variable) is associated with perceived discrimination (mediator variable). My next set of regression equations tested the effect of each acculturation orientation factor (identification with heritage culture and identification with host culture) on perceived discrimination. This is illustrated by part a of Figure 2.1.

The third step is to show that perceived discrimination is related to psychological functioning (controlling for the effects of acculturation orientation on psychological functioning). If acculturation orientation has no effect on psychological functioning when controlling for perceived discrimination, then I can say that perceived discrimination is a mediator between acculturation orientation and psychological functioning.

The final step in the analysis is to test the significance of the mediation effect. Baron and Kenny (1986) and Frazier et al. (2004) describe a modified version of the Sobel's (1982) test of mediation. The formula for this test is as follows:  $(b^2s_a^2 + a^2s_b^2 + s_a^2s_b^2)^{1/2}$ . In this formula  $b$  represents the unstandardized regression coefficient was path b from Figure 2.1,  $a$  represents the unstandardized regression coefficient was path a from Figure 2.1. The variables  $s_a$  and  $s_b$  represent their respective standard errors. This test produces a  $z$  score of the mediated effect. If the score is greater than 1.96, then the effect

is considered significant assuming an alpha level of .05. I conducted 2 of these tests given that I have two predictor variables.

The four steps recommended by Frazier et al. (2004) and described above can be illustrated as follows:

$$\text{Step 1: } Y_i = \beta_0 + \beta_1 X_1 + E_i$$

$$\text{Step 2: } Y_i = \beta_0 + \beta_2 X_2 + E_i$$

$$\text{Step 3: } Y_j = \beta_0 + \beta_1 X_1 + E_j$$

$$\text{Step 4: } Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + E_i$$

$Y_i$  is psychological functioning,  $X_1$  is acculturation orientation,  $X_2$  is perceived discrimination, and  $Y_j$  is perceived discrimination.

To test for hypothesis 2 (i.e., Gender will moderate the relationship between acculturation orientation and psychological functioning), a moderation analysis was conducted and four moderation models were run. For the moderation model, in the first step I ran general linear regressions to test the hypotheses regarding the direct effect between the acculturation orientation variable and psychological functioning (depression and GLS). This step is represented in part a of Figure 2.2.

The second step is to show that psychological functioning is associated with gender (moderator variable). My next set of regression equations tested the effect of each psychological functioning factor (depression and GLS) on gender (male and female). This step is illustrated in part b of Figure 2.2. In the final step, I tested for the effect of the interaction between acculturation orientation and gender on psychological functioning. This step is illustrated in part c of Figure 2.2. The steps described above can be can be illustrated as:

$$\text{Step 1: } Y_i = \beta_0 + \beta_1 X_1 + E_i$$

$$\text{Step 2 : } Y_i = \beta_0 + \beta_2 X_2 + E_i$$

$$\text{Step 3: } Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + E_i$$

$Y_i$  is psychological functioning,  $X_1$  is acculturation orientation, and  $X_2$  is gender.

To test for significance of the moderation, the single degree of freedom  $F$  test, representing stepwise change in variance explained as a result of the addition of the product term.

Table 2.1

*Gender, Age, and Program of Study (N= 106)*

Characteristic	<i>N</i>	%
Gender		
Female	72	67.92
Male	34	32.07
Age		
18-25	66	62.26
26-35	36	33.96
36-55	3	2.83
Above 55	1	0.94
Program of Study		
Masters	25	23.58
Doctoral	37	34.90
Undergraduate	44	41.50

Table 2.2

*Nationality (N=105)*

Characteristic	<i>N</i>	%
Country of Origin		
India	44	41.51
China	20	18.87
North Korea	9	8.49
Indonesia	5	4.72
Taiwan	4	3.77
Vietnam	4	3.77
Nepal	4	3.77
Thailand	3	2.83
Japan	3	2.83
Pakistan	2	1.89
Philippines	2	1.89
Singapore	1	0.94
Malaysia	1	0.94
Myanmar	1	0.94
South Korea	3	2.83

Table 2.3

*Religious Affiliations (N=105)*

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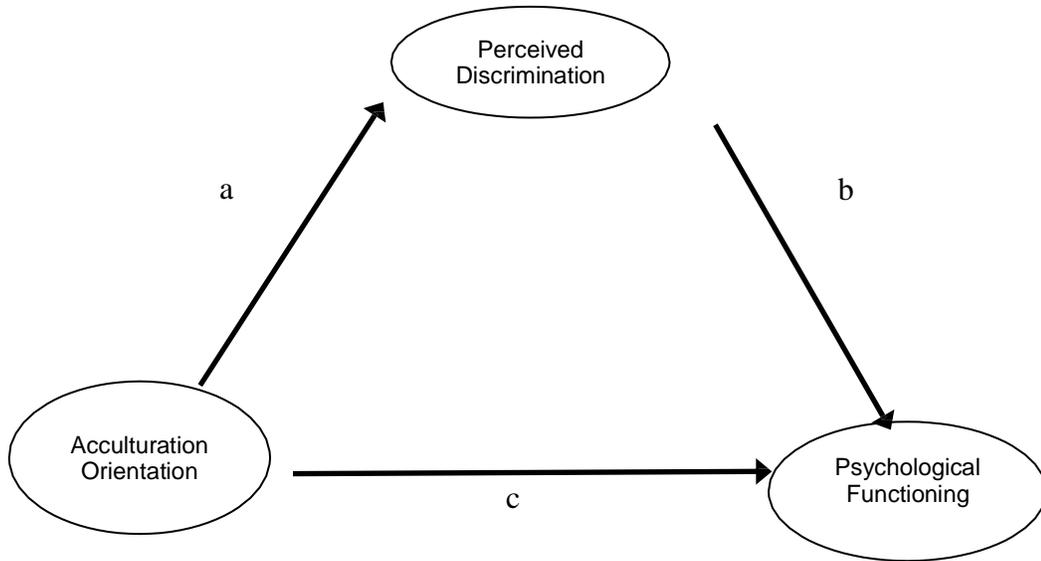
Characteristic	N	%
Religion		
Agnostic	6	5.66
Atheist	13	12.26
Buddhist	6	5.66
Catholic	3	2.83
Hindu	18	16.98
Muslim	26	24.53
Seventh Day Adventist	8	7.55
Sikh	2	1.89
None	21	19.81

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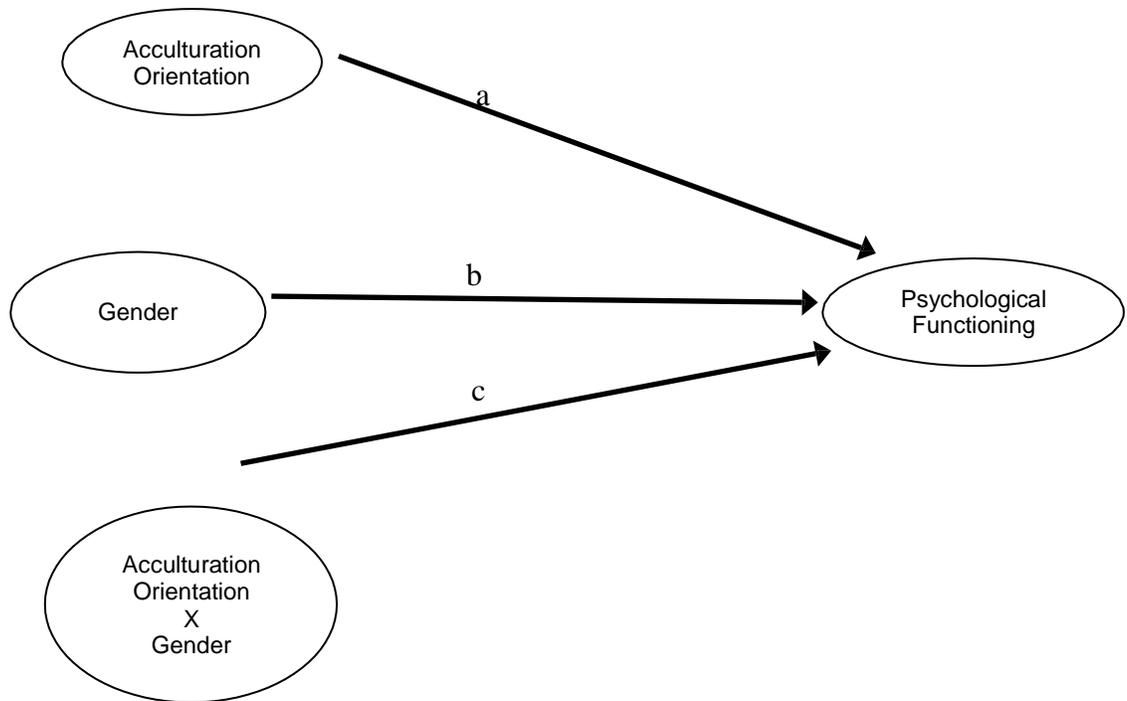
Table 2.4

*Years lived in the U.S. and Age at Time of Immigration to the U.S. (N=105)*

<i>Characteristic</i>	<i>N</i>	<i>%</i>
<i>Years</i>		
Less than one year	38	36.19
1 -3 years	29	27.61
3-5 years	19	18.09
5-9 years	11	10.47
10 years and more	8	7.61
<i>Age</i>		
18-25	65	61.90
26-34	36	34.28
35-54	4	3.80



*Figure 2.1.* Model of mediating role of perceived discrimination on acculturation orientation and psychological functioning. Adapted from “The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations,” by Baron and Kenny, 1986, *Journal of Personality and Social Psychology*, 51, p. 1176.



*Figure 2.2.* Model of moderating role of gender on acculturation orientation and psychological functioning. Adapted from “The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations,” by Baron and Kenny, 1986, *Journal of Personality and Social Psychology*, 51, p. 1174

## Chapter Three: Results

In this chapter I describe the assessment of regression assumptions. Next, I explain the steps taken to test the two hypotheses. I describe the statistical methods in text and illustrate them in tables.

### Evaluation of Assumptions of Regression

Before I began testing the hypotheses, I tested for the assumptions of regression. In order to do this, I ran every analysis twice as the outcome variable (psychological functioning) is comprised of two factors (depression and GLS). Below I describe how I assessed for normality, multicollinearity, linearity, independence, and homogeneity of variance.

**Normality.** The assumption of normality was tested via the examination of the standardized residuals (Fields, 2009). For depression, review of the Shapiro-Wilk test for normality ( $SW = .781$ ,  $df = 106$ ,  $p = .000$ ) and skewness (-.359) and kurtosis (5.448) statistics suggested possible evidence of deviation from normality. As the skewness and kurtosis were not less than the standard error another method of testing for significance of the standardized residuals was applied. Given the data did not meet the assumption of normality a logarithm transformation and a square root transformation were conducted. A review of the Shapiro-Wilk test for normality using a logarithm transformation ( $SW = .773$ ,  $df = 106$ ,  $p = .000$ ) and a square root transformation ( $SW = .771$ ,  $df = 106$ ,  $p = .000$ ) suggest deviation from normality. The skewness (-.423) and kurtosis (4.785) for the logarithm transformation did not support normality. The skewness (-.397) and kurtosis (4.978) for the square root transformation also suggested deviation from normality. Since neither transformation was found to improve normality

the data are being used without transformations. Fields (2009) recommends that since the Shapiro-Wilk test is sensitive to sample size, it should always be used in conjunction with visual inspection of histograms and skewness and kurtosis. Inspection of the histogram (see Figure 3.2) demonstrates the data indeed approximate a leptokurtic distribution.

Similar methods were used to test normality for GLS. Review of the Shapiro-Wilk test for normality ( $SW = .758$ ,  $df = 106$ ,  $p = .000$ ) and skewness (.457) and kurtosis (5.040) statistics suggest possible evidence of deviation from normality. A logarithm transformation was conducted and the statistics continued to suggest deviation from normality ( $SW = .747$ ,  $df = 106$ ,  $p = .000$ ) including the skewness (.457) and kurtosis (5.571). A square root transformation was conducted and statistics suggest deviation from normality ( $SW = .752$ ,  $df = 106$ ,  $p = .000$ ) including the skewness (.459) and kurtosis (5.186) as well. On inspection of the histogram (see Figure 3.1), it appears that the data does not deviate from normality. As a result we will proceed to the next steps assuming that the assumption of normality has been fulfilled. Table 3.1 provides descriptive statistics on acculturation orientation, depression, and GLS.

**Multicollinearity.** I examined the tolerance and variance inflation factor (VIF) to determine the level of multicollinearity. For the depression factor and the GLS factor tolerance was greater than .10 for identification with heritage culture (.735), identification with host culture (.746), and perceived discrimination (.975). Tolerance below 0.1 has been reported to indicate lack of multicollinearity while a tolerance value below 0.2 may indicate a potential problem (Menard, 1995; as cited by Fields, 2009). A VIF greater than 10 would suggest multicollinearity (Bowerman & O'Connell, 1990;

Myers, 1990; as cited by Fields, 2009). The VIF was less than 10 for all three predictor variables (1.360, 1.341, and 1.026 respectively). These results suggest no multicollinearity.

**Linearity.** A review of the scatterplot of the predictor variables (acculturation orientation and perceived discrimination) and the outcome variable (depression) indicates that linearity is a reasonable assumption. The Mahalanobis Distance was also examined and a critical value of 16.27 was used to determine outliers within the data set. One outlier with a value of 25.72 was identified and removed from the sample because it is much higher than the critical value. The analysis of standardized residuals also indicated that two participants had residual values that were above 3.0. In both cases it would appear that the subjects identified experiencing higher levels of depression than predicted by the model. Since the Cooks Distance (D) maximum value (.266) is smaller than 1 this indicates that the two participants do not have undue influence on the model's ability to predict the outcome and do not need to be removed (Cook & Weisberg, 1982; as cited by Fields, 2009).

The scatterplot of the predictor variables and GLS (outcome variable) also indicated possible linearity as evidenced by a rectangular distribution. The Mahalanobis Distance was also examined and a critical value of 16.27 was used to determine outliers within the data set. One outlier with a value of 25.72 was identified and removed from the sample because it is much higher than the critical value.

**Independence.** The Durbin-Watson statistic was computed to evaluate independence of errors. The value was 2.195 for depression and 2.095 for GLS. Since both these values are above the cut off of 1 they are considered acceptable (Fields,

2009). This suggests that the assumption that all the values of the outcome variables are independent has been met in the case of both outcome variables.

**Homogeneity of variance:** The scatterplot of standardized residuals showed that the data met the assumption of homogeneity of variance for both the depression and GLS.

I used hierarchical multiple regression to evaluate the effects of acculturation orientation and perceived discrimination on psychological functioning of international students. For hypothesis 1 (acculturation orientation-psychological functioning relationship will be mediated by perceived discrimination), I conducted a mediational analysis. For hypothesis 2 (gender will moderate the relationship between acculturation orientation and psychological functioning), I conducted a moderation analysis.

### **Acculturation Orientation, Psychological Functioning & Perceived Discrimination**

To test hypothesis 1, a mediational analysis was conducted and 12 models were run, 6 for each outcome variable. I will explain each of these steps as they are illustrated in Figure 2.1. Table 3.3 presents information from the analyses that are not reported in the narrative.

**Direct effects of acculturation orientation on psychological functioning.** The first step is to determine if there is a significant relationship between acculturation orientation and psychological functioning (depression and GLS). I conducted a stepwise hierarchical regression analysis to adequately test for direct effects of acculturation orientation on psychological functioning (path c in Figure 2.1). I first tested the effect of age, ethnicity, years in the United States, English language fluency, and social support on psychological functioning. Next, I conducted general linear

regressions to test the hypotheses regarding the direct effect between acculturation orientation (predictor variable) and psychological functioning (outcome variable). I ran 4 separate analyses, one for each combination of acculturation orientation factor and psychological functioning factor. I found a relationship between identification with heritage culture and depression ( $F [6,98] = 2.860, p < .05$ ). In terms of Figure 2.1,  $c_{1a} = -2.405, t = -2.787 (df = 105, p = .006)$ . The inverse relationship between identification with heritage culture and depression indicates that with increase in identification with heritage culture, there is a decrease in depression. Since I was able to find a significant relationship between identification with heritage culture and depression, the first condition necessary for mediation was satisfied. I found no relationship between identification with host culture and depression ( $F [6,98] = 1.899, p > .05$ ). In terms of Figure 2.1 the unstandardized regression weight for identification with host culture for predicting depression was  $-1.323$  and  $c_{1b} = -1.323, t = -1.572 (df = 105, p = .119)$ . Since the relationship between identification with host culture and depression was not significant, the first condition necessary for mediation was not satisfied when identification with host culture was used as the factor representing acculturation orientation with depression as the outcome variable. While identification with heritage culture can continue to be used in this model, identification with host culture cannot be used in conjunction with depression as the outcome variable, as it does not meet one of the primary conditions of mediation as recommended by Frazier et al. (2004).

When examining GLS as the outcome variable, I found no relationship between identification with heritage culture and GLS ( $F [6, 98] = 1.399, p > .05$ ). In terms of Figure 2.1, the unstandardized regression weight for identification with heritage culture

for predicting GLS was .807. Thus,  $c_{2a} = .807$ ,  $t = 1.196$ , ( $df = 105$ ,  $p = .235$ ). I found no relationship between identification with host culture and GLS ( $F [6,98] = 1.206$ ,  $p > .05$ ). In terms of Figure 2.1, the unstandardized regression weight for identification with host culture for predicting GLS is .378;  $c_{2b} = .378$ ,  $t = .587$  ( $df = 105$ ,  $p = .559$ ). The first condition necessary for mediation was not satisfied when either of the acculturation orientation factors (identification with host culture and identification with heritage culture) were examined with GLS as the outcome variable. As I was unable to find a relationship between GLS and either of the acculturation orientation factors, I will no longer use GLS in this model as it does not meet conditions recommended by Frazier et al. (2004). Even though there are 4 different c paths that have been calculated the only one that is relevant to this study is  $c_1$  as it is the only relationship that is statistically significant.

**Direct effects of acculturation orientation on perceived discrimination.** The second step as represented by path a in Figure 2.1, is to show that acculturation orientation (predictor variable) is associated with perceived discrimination (mediator variable). My next set of regression equations tested the effect of identification with heritage culture on perceived discrimination. The unstandardized regression weight for identification with heritage culture for predicting perceived discrimination is -1.730;  $a = -1.730$ ,  $t = -2.278$  ( $df = 105$ ,  $p = .025$ ). The second condition necessary for mediation was satisfied when using identification with heritage culture as the acculturation orientation factor and perceived discrimination as the mediating variable. As mentioned earlier regression equations with identification with host culture as the predictor

variable and GLS as the outcome variable will not be run as these variables did not meet criteria for mediational analysis.

**Perceived discrimination and psychological functioning.** The third step, as represented by path b in figure 2.1, is to show that perceived discrimination is related to psychological functioning (controlling for the effects of acculturation orientation on psychological functioning). The third condition necessary for mediation was satisfied. The unstandardized regression weight for perceived discrimination in predicting depression is .477 when controlling for identification with heritage culture. Thus,  $b = .477$ ,  $t = 4.080$  ( $df = 105$ ,  $p = .000$ ). This shows that as we increase perceived discrimination by one unit (more experience of perceived discrimination) while controlling for identification with heritage culture, the predicted value on depression increases by .477 units, indicating a positive relationship between perceived discrimination and depression.

**Mediation analysis.** The fourth step as represented by path c' in figure 2.1 is to show that the effect of acculturation orientation on psychological functioning is zero when controlling for perceived discrimination. The unstandardized regression weight for identification with heritage culture in predicting depression is -.878 when controlling for perceived discrimination. Thus,  $c' = -.878$ ,  $t = -1.270$  ( $df = 105$ ,  $p = .207$ ). This coefficient is not significantly different from zero.

The final step in the analysis is to test the significance of the mediation effect. Baron and Kenny (1986) and Frazier et al. (2004) describe a modified version of the Sobel's (1982) test of mediation. The formula for this test is as follows:  $(b^2s_a^2 + a^2s_b^2 + s_a^2s_b^2)^{1/2}$ . In this formula  $b$  represents the unstandardized regression coefficient was path

$b$ ,  $a$  represents the unstandardized regression coefficient was path  $a$  from Figure 2.1. The variables  $s_a$  and  $s_b$  represent their respective standard errors. For this data set the formula is as follows  $[(.477)^2(.759)^2 + (1.730)^2(.117)^2 + (.759)^2(.117)^2]^{1/2} = .494$ . This test produces a  $z$  score of the mediated effect. If the score was greater than 1.96, then the effect would have been considered significant assuming an alpha level of .05. However, since the score is .494. The effect is not significant.

### **Acculturation Orientation, Psychological Functioning, & Gender**

To test for the hypothesis 2 (gender will moderate the relationship between acculturation orientation and psychological functioning), a moderational analysis was conducted and four moderation models were run. Before beginning the analysis I followed steps recommended by Frazier et al. (2004) and dummy coded gender, centered both the acculturation orientation factors (identification with heritage culture and identification with host culture), and created four interaction terms (identification with heritage culture x male, identification with heritage culture x female, identification with host culture x male, and identification with host culture x female).

**Direct effect between acculturation orientation and psychological functioning.** For the moderational model, in the first step I ran general linear regressions to test the hypotheses regarding the direct effect between the acculturation orientation variables and psychological functioning (depression and GLS). This step is represented in part a of Figure 2.2. Similar to step 1 for hypothesis 1, I first tested the effect of age, ethnicity, years in the United States, English language fluency, and social support on psychological functioning. Next, I conducted general linear regressions to test the hypotheses regarding the direct effect between acculturation orientation

(predictor variable) and psychological functioning (outcome variable). Since I have two outcome variables, I ran a separate analysis for each combination of variables. I found a relationship between identification with heritage culture and depression ( $F [6,98] = 2.860, p < .05$ ). In terms of figure 2.2, the unstandardized regression weight for identification with heritage culture for predicting depression is  $-2.405$ ;  $a_{1a} = -2.405, t = -2.787 (df = 104, p = .006)$ . I found no relationship between identification with heritage culture and GLS ( $F [6,98] = 1.399, p > .05$ ). In terms of Figure 2.2, the unstandardized regression weight for identification with heritage culture for predicting GLS is  $.807$ ;  $a_{2a} = .807, t = 1.196, (df = 104, p = .235)$ . I found no relationship between identification with host culture and depression ( $F [6,98] = 1.899, p > .05$ ). In terms of figure 2.2 the unstandardized regression weight for identification with host culture for predicting depression is  $-1.323$ ;  $a_{1b} = -1.323, t = -1.572 (df = 105, p = .119)$ . I found no relationship between identification with host culture and GLS ( $F [6,98] = 1.206, p > .05$ ). In terms of Figure 2.2, the unstandardized regression weight for identification with host culture for predicting GLS is  $.378$ ;  $a_{2b} = .378, t = .587 (df = 105, p = .559)$ .

**Direct effect between gender and psychological functioning.** The second step is to show that psychological functioning is associated with gender (moderator variable). In the next set of regression equations I tested the effect of each psychological functioning factor (depression and GLS) on gender (male and female). This step is illustrated in part b of Figure 2.2. I found no relationship between gender and depression ( $F [6,98] = 1.474, p > .05$ ). In terms of Figure 2.2, the unstandardized regression weight of gender for predicting depression is  $.688$ ;  $b_{2b} = .688, t = .361 (df = 104, p = .719)$ . I also found that gender does not have a direct effect on GLS ( $F [6,98]$

= 1.984,  $p > .05$ ). In terms of Figure 2.2, the unstandardized regression weight of gender for predicting GLS is  $-3.064$ ,  $t = -2.17$  ( $df = 105$ ,  $p = .032$ ). Thus, in this study, there is no relationship between gender and both factors of psychological functioning.

**Direct effect of interaction on psychological functioning.** In the final step, I tested for the effect of the interaction between acculturation orientation and gender on psychological functioning. This step is illustrated in part c of Figure 2.2. The acculturation orientation factor and gender factor corresponding to each interaction term were controlled for in the first step. The interactions between identification with heritage culture and gender did not predict depression ( $F [3,101] = 1.349$ ,  $p > .05$ ) or GLS ( $F [3,101] = 2.930$ ,  $p > .05$ ). The interaction term between identification with host culture and gender did not predict depression ( $F [3,101] = 1.992$ ,  $p > .05$ ) but did predict GLS ( $F [3,101] = 3.108$ ,  $p < .05$ ). This suggests a positive relationship between identification with host culture and GLS.

Table 3.1  
*Descriptive Statistics of Predictor and Outcome Variables*

	Range	Min.	Max.	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
GLS	30.00	5.00	35.00	22.98	6.64	-.39	.23	-.32	.46
DEP	46.00	.00	46.00	20.23	8.84	.55	.23	.22	.46
IDHost	5.00	4.00	9.00	6.12	1.05	.26	.23	-.32	.46
DHeritage	5.30	3.70	9.00	6.93	1.17	-.39	.23	-.04	.46

Table 3.2  
*Relationships between Predictor and Outcome Variables and Perceived Discrimination*

	DEP	IDHost	IDHeritage	PD	GLS
DEP	1.000				
IDHost	-.194*	1.000			
IDHeritage	-.195*	.403**	1.000		
PD	.400**	-.145	-.208*	1.000	
GLS		.083	.094	-.321**	1.000

\* $p \leq .05$ , \*\* $p \leq .01$

Table 3.3  
*Mediation Effect of Perceived Discrimination on the Association Between Acculturation Orientation and Psychological Functioning (N= 105)*

Test of mediation effect	<i>B</i>	<i>SE</i>	Adjusted <i>R</i> <sup>2</sup>	<i>F</i>
Step 1 (Path c)				
Path C <sub>1</sub>			.153	.020*
Outcome: Depression				
Constant				
Controlled: Covariates				
Predictor: ID Heritage (Path c <sub>1a</sub> )	-2.405*	.863		
ID Host (Path c <sub>1b</sub> )	-.378	.645		
Path C <sub>2</sub>			.079	.489
Outcome: GLS				
Constant	3.429	8.748		
Controlled: Covariates				
Predictor: ID Heritage (Path c <sub>2a</sub> )	.807	.675		
ID Host (Path c <sub>2b</sub> )	-1.323	.842		
Step 2 (Path a)			.090	.043*
Outcome: PD				
Constant				
Controlled: Covariates				
Predictor: ID Heritage	-1.730*	.759		
Step 3 (Path b)			.173	.000**
Outcome: Depression				
Constant				
Controlled: ID Heritage				
Predictor: PD	.477**	.117		
Step 4 (Path c')			.173	.207
Outcome: Depression				
Constant				
Controlled: PD				
Predictor: ID Heritage	-.878	.691		

\**p* ≤ .05, \*\**p* ≤ .01

Table 3.4

*Moderation Effect of Gender on the Association Between Acculturation Orientation and Psychological Functioning (N= 105)*

Test of moderation effect	<i>B</i>	<i>SE</i>	Adjusted R Square	R Square Change	<i>F</i>
Step 1 (Path a)					
Path a <sub>1</sub>			.		
Outcome: Depression					
Constant					
Controlled: Covariates					
Predictor: ID Heritage	-	.863	.097*	0.67	2.860
(Path a <sub>1a</sub> )	2.405				
ID Host	-	.842	.049	.023	1.899
(Path a <sub>1b</sub> )	1.323				
Path C <sub>2</sub>					.
Outcome: GLS					
Constant					
Controlled: Covariates					
Predictor: ID Heritage	.807	.675	.023	.013	1.399
(Path a <sub>2a</sub> )					
ID Host	.378	.645	.012	.003	1.206
(Path a <sub>2b</sub> )					
Step 2 (Path b)					
Outcome: Depression					
Constant					
Controlled: Covariates					
Predictor: Gender	.688	1.905	.027	.001	1.474
Outcome: GLS					
Constant					
Controlled: Covariates					
Predictor: Gender	3.064	1.412	.054	.043	1.984
Step 3 (Path c)					
Outcome: GLS					
Constant					
Controlled: ID Heritage, Gender					
Predictor: ID Heritage x Gender	.550	1.206	.039	.002	2.390
Outcome: Depression					
Constant					
Controlled: ID Heritage, Gender					

Table 3.4 (continued).

Predictor: ID Heritage x Gender Outcome: GLS Constant Controlled : IDhost, Gender	.310	1.628	.010	.000	1.349
Predictor: IDhost x Gender Outcome: Depression Constant Controlled : IDHost, Gender	1.895	1.398	.057	.017	3.108
Predictor: IDHost x Gender	2.530	1.888	.028	.017	1.992

\* $p \leq .05$ , \*\* $p \leq .01$

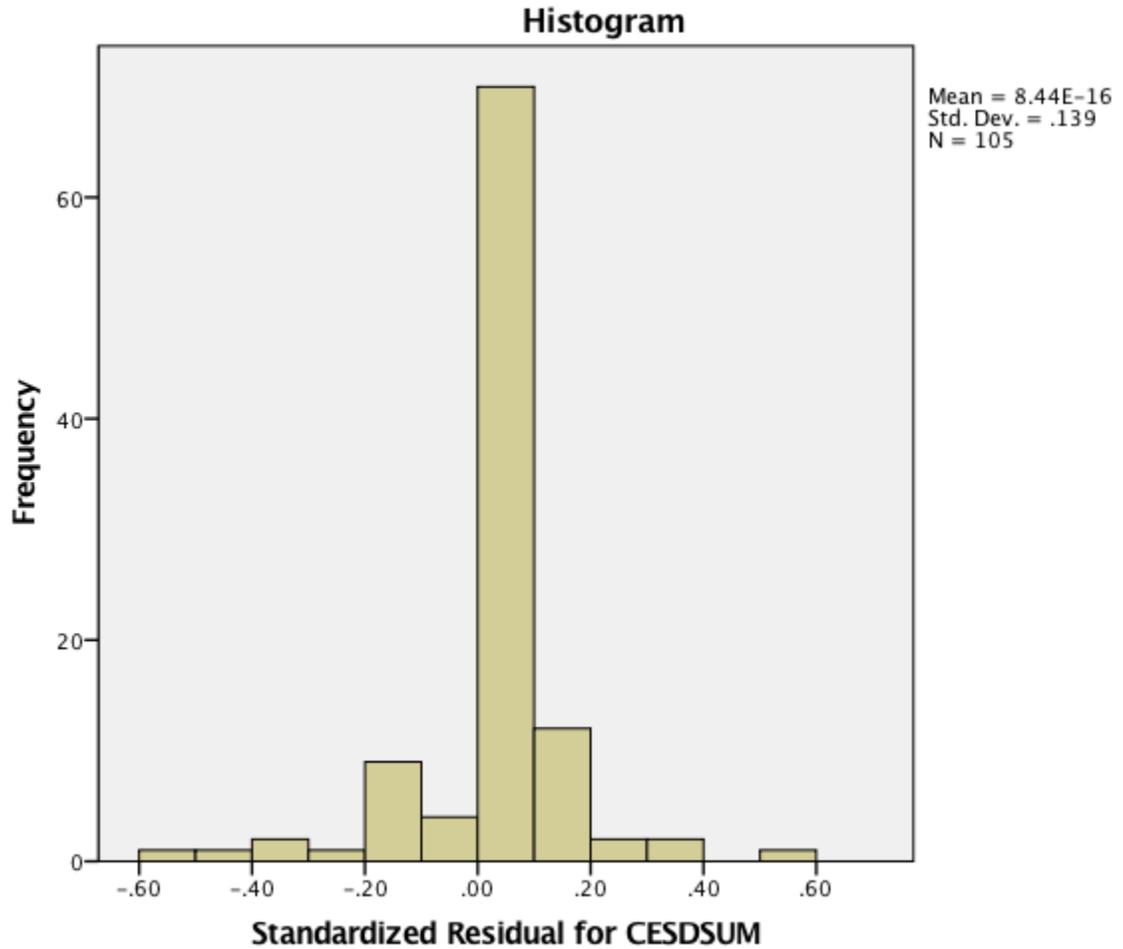
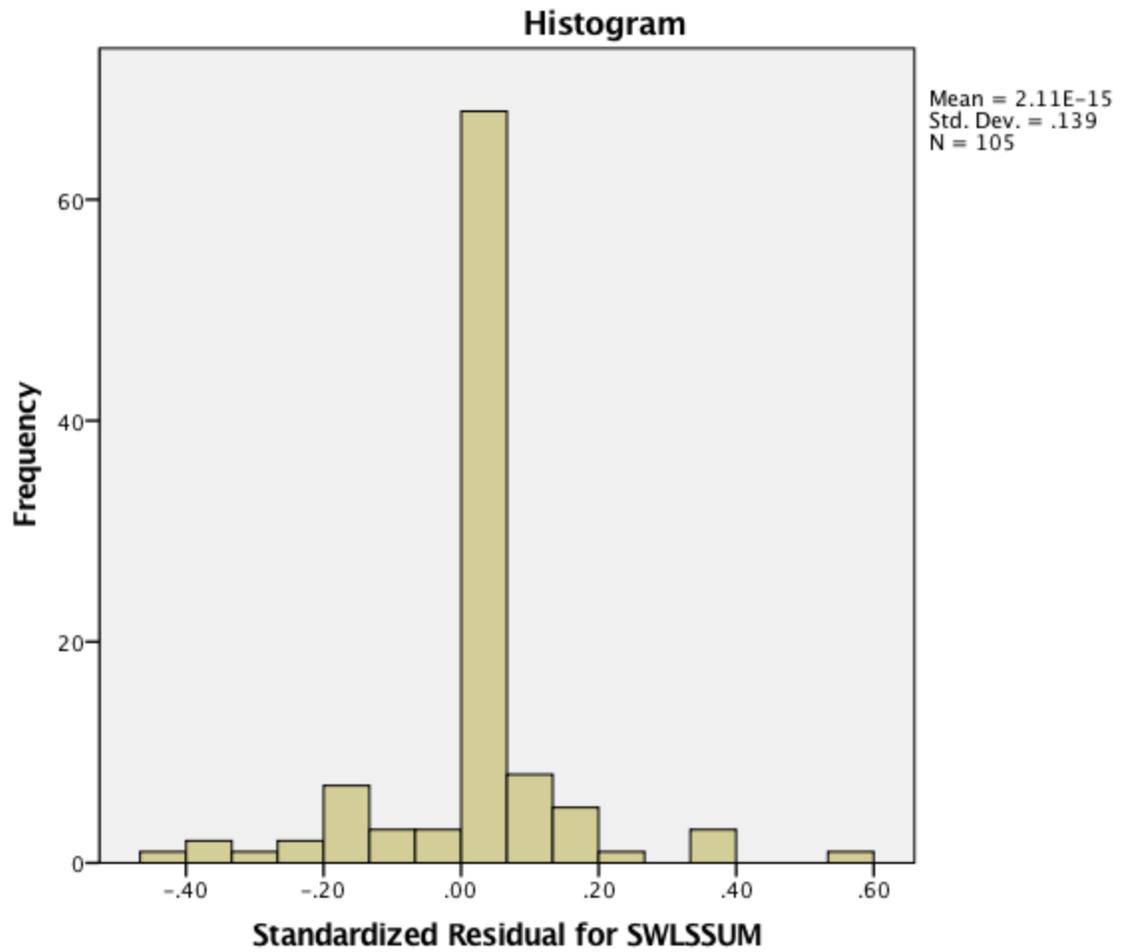


Figure 3.1. Histogram demonstrating that data is normally distributed with depression as the outcome variable.



*Figure 3.2.* Histogram demonstrating that data is normally distributed with GLS as the outcome variable.

## **Chapter Four: Discussion and Conclusions**

In this chapter I discuss the findings of this study in the context of their contribution to the acculturation literature particularly among Asian international students. I also compare and contrast the findings in the current study with research reviewed in Chapter One. Finally, I highlight the implications of the findings for future research and work with international students.

### **Contribution to International Student Literature**

This study contributes to the international student acculturative stress literature by examining the impact on perceived discrimination and gender on the relationship between acculturation orientation and psychological functioning. Although there is literature examining the relationship between acculturation orientation, perceived discrimination, and psychological functioning among immigrant populations (Torres, Driscoll, & Voell, 2012), there is currently no research examining this relationship among international students. Shariff (2013) tested to see if perceived discrimination influenced the relationship between acculturation orientation and psychological functioning among second generation South Asian young adults residing in Canada. Results indicated that perceived discrimination did not moderate the relationship between acculturation orientation and psychological functioning. The findings in the current study corroborate previous research suggesting that perceived discrimination does not impact the relationship between acculturation orientation and psychological functioning but with a new population, namely South Asian and South East Asian International students in the U.S. The results point to the need for reevaluation of Berry's model with international students. Since there is limited research, particularly among international students, about

the relationship between acculturation orientation and perceived discrimination, this study makes a contribution in that area as well.

As mentioned earlier, within group differences have been ignored in international student acculturation literature (Yoon & Portman, 2004). Research on gender differences among international students is limited. This study is one of the few to examine gender differences among South Asian and South East Asian international students and is the first to look at gender as a factor moderating the relationship between acculturation orientation and psychological functioning. Further, studies examining acculturation among international students use the construct acculturation strategy instead of acculturation orientation. This study is one of the few to examine acculturation orientation and psychological functioning among international students. Acculturation orientation was used in this study because the population consists of international students who have been exposed to their heritage culture for a substantial amount of time. Due to extended exposure to their heritage culture, along with their sojourner status, acculturation orientation instead of Berry's four acculturation strategies may be more relevant. In the next section, I will elaborate on the findings of this study further.

### **Review of Findings**

A series of mediational and moderational analyses were performed with hierarchical multiple regression analyses in this study. I used the procedure recommended by Baron and Kenny (1986) to produce models with and without controlling for covariates. Frazier, Tix, and Barron (2004) expanded on Baron and Kenny's model and provide a checklist for performing mediation and moderation analyses. I incorporated Frazier et al.'s (2004) expansion on Baron and Kenny's model

to test for the impact of perceived discrimination and gender on the relationship between acculturation orientation and psychological functioning among international students. Based on the literature reviewed in Chapter One, I generated two hypotheses regarding the relationship between acculturation orientation and psychological functioning among South Asian and South East Asian international students. The first hypothesis states that the acculturation orientation-psychological functioning relationship would be mediated by perceived discrimination and the second hypothesis states that gender would moderate the relationship between acculturation orientation and psychological functioning. Results did not fully support either of the hypotheses. The present study found that the mediation effect of perceived discrimination on the relationship between acculturation orientation and psychological functioning was not significant for either factors of psychological functioning (depression and GLS). This may be because the population of this study were international students from South Asia and South East Asia in the U.S. who may not have been exposed to as much overt racism in an academic setting due to their model minority status in comparison to other groups of international students, such as students from the Middle East and Africa, who have been reported to experience more discrimination (Hanassab, 2006). Another possible reason for the lack of significance of the first hypothesis may be that rather than perceived discrimination moderating the relationship between acculturation orientation and psychological functioning, there is a possibility, instead, that acculturation orientation may moderate the relationship between perceived discrimination and psychological distress (Shariff, 2013). Torres, Driscoll, and Voell (2012) found support for the role of acculturation orientation as a moderator between perceived discrimination and acculturative stress. Other studies report that

acculturation orientation acts as a mediator in the relationship between perceived discrimination and psychological distress among South Asians in Hong Kong (Tonsing, Tse, & Tonsing, 2016) and perceived discrimination and psychological functioning (measured as self-esteem and positive personal well-being) among African Americans in the U.S. (Branscombe, Schmitt, & Harvey, 1999).

For the second hypothesis, this study found that the interaction between identification with host culture and gender did not predict depression. Further, the interactions between identification with heritage culture and gender did not predict depression or GLS. However, the interaction between identification with host culture and gender did predict GLS. This suggests that men who scored higher on the identification with host culture scale were more likely to report higher scores on GLS, indicating a positive relationship between identification with host culture and GLS. Previous research examining acculturation, gender, and psychological functioning highlight the fact that male international students experience more hostility from the host culture and respond by choosing an acculturation strategy that helps them cope (Yu & Wang, 2011). While the research on acculturation strategies and psychological functioning report inconsistent findings, there is a possibility that identifying with the host culture for male participants in this study led to less acculturative stress, which resulted in higher levels of GLS.

I found no relationship between identification with host culture and depression and no relationship between identification with host or heritage culture and GLS. However, I found an inverse relationship between identification with heritage culture and perceived discrimination and a positive relationship between perceived discrimination and depression. The fact that there was an inverse relationship between identification

with heritage culture and depression but no relationship between identification with host culture and depression may be due to the sojourner status of international students. If they identify as sojourners, international students may not attempt to identify with the host culture as they may choose to continue socializing within their own communities. Further, international students may identify with the host culture less because they are temporary sojourners instead of immigrants and may not need to identify with the host culture due to the temporary nature of their visit (Cemacilar & Falbo, 2008).

There may be several reasons to attribute to the fact that there was no relationship between either of the acculturation orientation factors and GLS. Firstly, the GLS scale used may not be best suited for international students. Pavot and Diener (1993) recognize that life satisfaction is a reflection of individuals' values and goals. Even though there is no research in this area there is a possibility that Asian international students may be more inclined to respond in a particular direction due to cultural values regarding expression of experience. Further, since construct validity of this measure was assessed by giving the survey to individuals with severe mental illness, prisoners, and trauma survivors, there is the possibility that the survey may not be as sensitive to individuals who experience lower levels of distress.

Psychological functioning in this study was measured via a scale measuring depression (CES-D) and a scale measuring GLS (SWLS). The mean score on the CES-D among participants in this study was 20.23, the median score was 19 and the mode was 15. The highest score was 46. The standard deviation indicates variability (8.84). Since scores on the CES-D range from 0 to 60, with scores of 16 or higher indicating a possibility of depression (Radloff, 1977) participants in this study scored lower on this

depression scale. This indicates that individuals in this sample on average were either not experiencing symptoms of depression, or did not feel comfortable revealing their symptoms in the answers. One of the reasons for this outcome may be that international students may be hesitant to admit to depression due to stigma associated with admitting to such feelings and experiences (Mori, 2000). There is also the possibility that they may not be aware of the symptoms they are experiencing.

GLS scores ranged from 5 to 35. The mean score was 22.98 and the median score was 24. The average score of individuals from developed nations is between 20-24 and this indicates general satisfaction with some areas needing improvement in their lives (Diener, 2006). The standard deviation of the scores is 6.64 indicating variation in responses to the SWLS. While I controlled for social support, I did not control for all confounding variables that may impact global life satisfaction in this study such as quality of religious and spiritual life, quality of learning and growth, opportunities for leisure, and satisfaction with self (Deiner, 2006). The lack of control over the variables mentioned may have impacted the relationship between global life satisfaction and the two acculturation orientation factors.

### **Strengths and Limitations**

In this section I will discuss the strengths and limitations of this study. The findings of this study shed light on the value of examining factors that contribute to psychological health and well being of South Asian and South East Asian international students. Despite the limitations that I mention next, this study took a novel approach to acculturation related struggles of South Asian and East Asian international students in the U.S. First, the current study used self-report measures, which are prone to social

desirability response bias. Second, since this is a web-based survey and I had no way of controlling the environment in which individuals took the survey, internal validity may have been compromised. Third, in terms of measuring psychological functioning, there is a possibility that international students may not report accurate experience of depression because they do not feel comfortable sharing their private emotional experiences. Emotional struggles due to acculturation may take different dimensions. Some international students may experience this as anxiety or physical symptoms such as headaches and stomach aches. The current study only accounted for emotional distress in the form of specific symptoms of depression and GLS. Fourth, the low number of responses received from international students is another limitation. A sample size larger than 106, which is the sample size of the current study, would be beneficial because it would enable me to better detect differences with smaller effect sizes. The specific population (International students from South and South East Asia) increased difficulty of recruitment. Even though several universities were contacted, very few agreed to distribute the survey among their students. Further, while 237 students began the survey, only 54% completed it. Fifth, the findings of the current study should be carefully interpreted because this study focused on a particular group of international students (South and South East Asian) in the U.S. The generalizability beyond this group is limited. While this study attempted to add to literature about international student acculturation by examining the impact of perceived discrimination and gender on the relationship between acculturation orientation and psychological functioning, there were several factors that may have impeded the study. Sixth, while the VIA is acknowledged for being used frequently, covering multiple domains and having good psychometric

properties (Celenk & Van de Vijver, 2011), there are several shortcomings that have not been addressed. Some of the questions in the VIA use descriptors such as “typical North American” or “typically North American” or “North American values” that refer to the existence of a typical North American culture. Using language suggesting an aggregate American culture, an aggregate list of values or a “typical American people” may be problematic because it does not account for the fact that different regions of the U.S. have distinct traditions and customs (Zimmermann, 2015). The scale provides no definition for a typical American culture. Further, the scale assumes that the majority population in the U.S. consists of White individuals when it poses the statement, “I am interested in having White American friends” or “I enjoy white American jokes and humor.” According to the United States Census Bureau, in 2010, 69.1% of the people in the United States were identified as White. Not accounting for all the other racial groups present in the U.S. is flawed as it does not account for the impact of an individual’s experience and interactions with other racial groups. In the next section, I will discuss implications for future research.

### **Future Research**

Even though meditational analyses can be performed with either multiple regression or SEM, according to Frazier et al., (2004) SEM is considered the preferred method because it can control for measurement error, provide information regarding degree of fit of the entire model, and is more flexible than regression by allowing inclusion of multiple outcome variables. Future research may consider SEM instead of multiple regression. Since a shortcoming of this study was the small sample size, future studies that endeavor to look at the impact of perceived discrimination may consider a

longer timeline for collecting data. Since there was a high drop out rate in this study, shortening the length of the survey is another way of ensuring a larger sample size. It may also be beneficial to consider other recruitment methods. Another way of possibly recruiting more participants, especially for a study with a more specific population, is to recruit in person by attending international student meetings or other cultural diversity activities for students.

Since acculturation orientation has been identified as mediating the relationship between perceived discrimination and psychological functioning (Branscombe, Schmitt, & Harvey, 1999; Tonsing, Tse, & Tonsing, 2016), future research considering acculturation among international students may consider looking at acculturation orientation as a mediating factor instead of perceived discrimination. Apart from investigating the impact of acculturation orientation as a mediating factor, it would be important, particularly in today's political climate to look at the impact of perceived discrimination on other populations of international students who may experience more governmental or social profiling such as international students who identify as Muslim or international students from the Middle East. Future studies could also consider measuring psychological functioning from a broader perspective and include measures that assess impact on self-esteem, self-efficacy, and anxiety. Identifying another instrument constructed more specifically to measure life satisfaction among international students is also advisable. Even though this has not been looked into with international students, there is a possibility that certain subgroups of international students may be more comfortable expressing dissatisfaction than others. Value systems that emphasize expression of positive experiences and gratitude may inhibit some international students

from being able to communicate experience of dissatisfaction. Therefore, something to consider for future research with international students is whether life satisfaction should be considered a measure of psychological functioning. Future research may also consider using another measure of acculturation or collecting qualitative data in conjunction with quantitative data regarding experience with host and heritage culture to account for difference in experiences.

## Appendix A

### Proposed Analyses for the Study

<b>Hypothesis</b>	<b>Predictor Variable</b>	<b>Outcome Variable</b>	<b>Covariate</b>	<b>Analysis</b>
Hypothesis 1: The acculturation orientation-psychological functioning relationship will be mediated by perceived discrimination.	Acculturation Orientation	Psychological Functioning	Age Ethnic Identity Years in U.S. English Language Fluency Social Support	Hierarchical Multiple Regression: Step 1: Covariates Step 2: Covariates + Predictor
Hypothesis 2: Gender will moderate the relationship between acculturation orientation and psychological functioning.	Acculturation Orientation	Psychological Functioning	Age Ethnic Identity Years in U.S. English Language Fluency Social Support	Hierarchical Multiple Regression: Step 1: Covariates Step 2: Covariates + Predictor

## Appendix B

### Vancouver Index of Acculturation

Please circle *one* of the numbers to the right of each question to indicate your degree of agreement or disagreement.

Many of these questions will refer to your *heritage culture*, meaning the original culture of your family (other than American). It may be the culture of your birth, the culture in which you have been raised, or any culture in your family background. If there are several, pick the one that has influenced you *most* (e.g. Irish, Chinese, Mexican, African). If you do not feel that you have been influenced by any other culture, please name a culture that influenced previous generations of your family. Your heritage culture (other than American) is:

Strongly disagree	Disagree	Neutral/Depends	Agree	Strongly Agree
1	2	3	4	5
6	7	8	9	

	1	2	3	4	5	6	7	8	9
1. I often participate in my <i>heritage cultural</i> traditions									
2. I often participate in host North American cultural traditions									
3. I would be willing to marry a person from my <i>heritage culture</i> .									
4. I would be willing to marry a North American person.									
5. I enjoy social activities with people from the same heritage culture as myself.									
6. I enjoy social activities with typical North American people.									
7. I am comfortable working with people of the same <i>heritage culture</i> as myself.									
8. I am comfortable working with typical North American people.									
9. I enjoy entertainment (ex. music, movies) from my <i>heritage culture</i> .									
10. I enjoy North American entertainment (ex. music, movies).									
11. I often behave in ways that are typical of my <i>heritage culture</i> .									
12. I often behave in ways that are 'typically North American'.									
13. It is important for me to maintain or develop the practices of my <i>heritage culture</i> .									
14. It is important for me to develop north American practices.									
15. I believe in the values of my <i>heritage culture</i> .									
16. I believe in host North American values.									
17. I enjoy the jokes and humor of my <i>heritage culture</i> .									
18. I enjoy typical North American jokes and humor.									
19. I am interested in having friends from my <i>heritage culture</i> .									
20. I am interested in having North American friends.									

## Appendix C

### Perceived Discrimination

<b>Strongly Disagree 1</b>	<b>Disagree 2</b>	<b>Undecided 3</b>	<b>Agree 4</b>	<b>Strongly Agree 5</b>
1. I am treated differently in social situations			1 2 3 4 5	
2. Others are biased towards me			1 2 3 4 5	
3. Many opportunities are denied to me			1 2 3 4 5	
4. I feel that I receive unequal treatment			1 2 3 4 5	
5. I am denied what I deserve			1 2 3 4 5	
6. I feel that my people are discriminated against			1 2 3 4 5	
7. I am treated differently because of my race			1 2 3 4 5	
8. I am treated differently because of my color			1 2 3 4 5	

## Appendix D

### Social Support Questionnaire Short

The following questions ask about people in our environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give the persons initials, their relationship to you (See example). Do not list more than one person next to each of the numbers beneath the question.

For the second part, circle how satisfied you are with the overall support you have.

If you have had no support for a question, check the words “no one,” but still rate your level of satisfaction. Do not list more than nine persons per question.

Please answer all the questions as best you can. All your responses will be kept confidential.

#### EXAMPLE:

Who do you know whom you could trust with information that could get you in trouble?

No one	1) T.N. (brother)	4) L.S. (employer)	7)
	2) L.M. (friend)	5)	8)
	3) S.D. (sister)	6)	9)

1. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

2. Whom can you count on to be dependable when you really need help?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

3. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

4. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

5. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

6. Who accepts you totally, including both your worst and your best points?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

7. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

8. Whom can you really count on to care about you, regardless of what is happening to you?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

9. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied 1-very dissatisfied

10. Whom can you really count on to help you feel better when you are feeling generally down-in-the dumps?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

11. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

12. Whom can you count on to console you when you are very upset?

No one	1)	4)	7)
	2)	5)	8)
	3)	6)	9)

13. How satisfied?

6-very satisfied 5-fairly satisfied 4-a little satisfied 3-a little dissatisfied 2-fairly dissatisfied  
1-very dissatisfied

## APPENDIX E

### Satisfaction with Life Survey

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

Strongly Disagree	Disagree 2	Slightly Disagree 3	Neither Agree Nor Disagree 4	Slightly Agree 5	Agree 6	Strongly Agree 7
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	1. In most ways my life is close to my ideal
	2. The conditions of my life are excellent
	3. I am satisfied with my life
	4. So far I have gotten the important things I want in my life
	5. If I could live my life over, I would change almost nothing

## APPENDIX F

### Multi Ethnic Identity Measure

In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic or Latino, Black or African American, Asian American, Chinese, Filipino, American Indian, Mexican American, Caucasian or White, Italian American, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in: In terms of ethnic group, I consider myself to be \_\_\_\_\_

Use the numbers below to indicate how much you agree or disagree with each statement.

**(4) Strongly agree   (3) Agree   (2) Disagree   (1) Strongly disagree**

1. I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.
2. I am active in organizations or social groups that include mostly members of my own ethnic group
3. I have a clear sense of my ethnic background and what it means for me.
4. I think a lot about how my life will be affected by my ethnic group membership.
5. I am happy that I am a member of the group I belong to.
6. I have a strong sense of belonging to my own ethnic group.
7. I understand pretty well what my ethnic group membership means to me.
8. In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.
9. I have a lot of pride in my ethnic group.
10. I participate in cultural practices of my own group, such as special food, music, or customs.
11. I feel a strong attachment towards my own ethnic group.
12. I feel good about my cultural or ethnic background.
13. My ethnicity is
  - (1) Asia including China, Japan
  - (2) South Asian including Nepal, Bhutan, India Pakistan, Bangladesh, Mauritius, Sri Lanka, Maldives, Tibet, Afghanistan.
  - (3) South East Asia including Indonesia, East Malaysia, Singapore, Philippines, East Timor, Brunei, and Christmas Island, Cambodia, Laos, Myanmar (Burma), Thailand, Vietnam, and Malaysia
  - (4) Mixed; Parents are from two different groups
  - (5) Other (write in): \_\_\_\_\_
14. My father's ethnicity is (use numbers above)
15. My mother's ethnicity is (use numbers above)

## APPENDIX G

### Proficiency In English

Very Poor 1	Poor 2	Fair 3	Good 4	Extremely Good 5					
					1	2	3	4	5
					1	2	3	4	5
					1	2	3	4	5

## APPENDIX H

### Center for Epidemiologic Studies Depression Scale (CES-D)

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

	Rarely or none of the time (less than 1 day)	Some or little of the time (1- 2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me				
2. I did not feel like eating, my appetite was poor				
3. I felt that I could not shake off the blues even with help from my family and friends				
4. I felt I was just as good as other people				
5. I had trouble keeping my mind on what I was doing				
6. I felt depressed				
7. I felt that everything I did was an effort				

8. I felt hopeful  
about the future

9. I thought my  
life had been a  
failure

10. I felt fearful

11. My sleep  
was restless

12. I was happy

13. I talked less  
than usual

14. I felt lonely

15. People were  
unfriendly

16. I enjoyed  
life

17. I had crying  
spells

18. I felt sad

19. I felt that  
people dislike  
me

20. I could not  
get “going”

## APPENDIX I

### Demographic Form

1. What is your age? \_\_\_\_
2. What is your sex? Female\_\_ Male\_\_ Other \_\_\_\_
3. Marital Status: Married\_\_\_\_ Divorced/Separated    Widowed\_\_\_\_ Single \_\_\_\_
4. What is your nationality? \_\_\_\_\_
5. What is your religious/spiritual affiliation? \_\_\_\_
6. What is your cumulative GPA ? \_\_\_\_
7. What type of program are you currently enrolled in?  
Masters    Doctoral    ESL\_\_ Undergrad    Visiting Scholar \_\_\_\_
8. How long have you lived in the U.S.? \_\_\_\_\_
9. At what age did you move to the U.S.? \_\_\_\_\_
10. Please indicate your geographic location (city/province) in the U.S. : \_\_\_\_\_
11. What year of school are you currently enrolled in: \_\_\_\_\_

## Appendix J

### Sample Recruitment Letter

Dear fellow International students,

I am also an international student at the University of Kentucky and am reaching out to you to participate in a research study about your experiences in the U.S. With your help, I hope to gain a deeper understanding of what it is like for you to adapt to the U.S. culture and what factors influence this experience. I would be grateful if you would consider taking 20-30 minutes of your time to fill out an on line questionnaire. The hyper link to this study is below:

To be eligible to participate in this study you must be a current international student on a F-1, student visa or a J-1, temporary educational exchange visitor visa, and be over age 18 years. The link above will give you more information about participation. All your responses will be confidential and you may end your participation in this study at any time. At the end of the study, you will have the opportunity to enter into a draw to win 1 of 3 \$25 Amazon.com Gift Cards as a token of appreciation for your participation (Chances depend on number of entrees.)

This study has received IRB approval from the Office of Research Integrity at University of Kentucky. If you have any questions about this study, please feel free to contact me at [dama233@uky.edu](mailto:dama233@uky.edu), or my advisor, Dr. Robert Reese, at [jeff.reese@uky.edu](mailto:jeff.reese@uky.edu).

Thank you very much for taking the time to take part in my research.

Warm regards,

Dia Mason

## Appendix K

### **Informed Consent**

#### Consent to Participate in a Research Study

#### **The Role of Discrimination in International Students' Acculturation Process**

#### **WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?**

You are one of about 110 people being invited to take part in a research study about the role of discrimination in international students' acculturation process. You are being invited to take part in this research study because you are an international student at a higher education institution in the United States.

#### **WHO IS DOING THE STUDY?**

The person in charge of this study is Dia Mason, M.A., Ed. S., a doctoral candidate in the University of Kentucky Department of Educational, School, and Counseling Psychology. Dr. Robert Reese, of the department of Educational, School and Counseling Psychology is guiding her. There may be other people on the research team assisting at different times during the study.

#### **WHAT IS THE PURPOSE OF THIS STUDY?**

The purpose of this study is to understand how international students' experience of discrimination influences their acculturation process, and the subsequent impact on their psychological functioning.

#### **ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?**

There are no foreseeable reasons why you should not take part in this study. To the best of our knowledge, the things you will be doing in this research study have no more risk of harm than you would experience in everyday life.

#### **WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?**

This study consists of an online survey that will be accessible through Qualtrics for two months. It will take you approximately 20-30 minutes to complete the survey. You may take more than one session for completion.

#### **WHAT WILL YOU BE ASKED TO DO?**

You will be asked questions about you will be asked questions about how much you connect with the American culture and your heritage culture, your experiences as an international student, how you feel about your life, and your experience of social support. You will also be asked to share general demographic information e.g., age, country of origin and number of years resided in the U.S., etc.

### **WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?**

To the best of our knowledge there are no risks involved with participation in the study.

### **WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?**

There are no benefits from taking part in this study. Your participation may, in the future, assist in the process of providing international students at higher education institutions in the United States with beneficial services.

### **DO YOU HAVE TO TAKE PART IN THE STUDY?**

You will not lose any benefits or rights you would normally have if you choose not to take part in the study. You can change your mind about participating in the study at any point.

### **IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?**

If you do not want to be in the study, there are no other choices except not to participate in the study.

### **WHAT WILL IT COST YOU TO PARTICIPATE?**

There are no costs associated with participation in the study.

### **WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?**

Your name will be placed into a raffle that may give you the opportunity to win one of three \$25 Amazon.com gift cards. The odds of winning are 3 in approximately 110.

### **WHO WILL SEE THE INFORMATION THAT YOU GIVE?**

We will make every effort to keep confidential all research records that identify you to the extent allowed by law. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will

not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information confidential.

The data collected in this study will be kept confidential. Data entered will not be linked to any identifying information. No data will be reported in such a manner that it could reveal your identity. Only data stripped of identifying information will be shared with the researchers to analyze. We will keep private all research records that identify you to the extent allowed by law.

**CAN YOUR TAKING PART IN THE STUDY END EARLY?**

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue.

**WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?**

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Dia Mason, M.A., Ed. S at [dama233@uky.edu](mailto:dama233@uky.edu). If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

\_\_\_\_\_  
Signature of person agreeing to take part in the study

\_\_\_\_\_  
Date

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Printed name of person agreeing to take part in the study

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Name of [authorized] person obtaining informed consent

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**Dia Anjali Mason, MA, EdS**

**EDUCATION**

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- 2011-2013      Education Specialist in Counseling Psychology**  
University of Kentucky, Lexington, KY
- 2008-2010      Master of Arts in Clinical Psychology, Counseling Specialization**  
The Chicago School of Professional Psychology, Chicago, IL
- 2003-2007      Bachelor of Arts in Psychology**  
The College of Wooster, Wooster, OH
- Junior Independent Thesis: Social Exclusion: Effects and Reasons for Lapses in Self-Regulation
  - Senior Independent Study Thesis: Emotional Intelligence: Impact of Stress on Self- Regulation.

**CLINICAL EXPERIENCE**

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**Doctoral Intern**, University of Illinois Chicago Counseling Center, Chicago, IL  
**August 2015-Present**

**Crisis Worker**, John H. Stroger Cook County Hospital Emergency Department,  
Chicago, IL  
**February 2015- November 2016**

**Mental Health Consultant**, The Children’s Center, Cicero and Berwyn, IL  
**February 2015- June 2016**

**Fellow**, Chicago Institute For Psychoanalysis, Chicago, IL  
**August 2014- June 2015**

**Practicum Counselor**, Behavioral Health Care Associates, Schaumburg, IL  
**August 2014-May 2015**

**Practicum Counselor**, Counseling Center, University of Kentucky, Lexington, KY  
**August 2013- May 2014**

**Practicum Counselor**, Counseling Center, Eastern Kentucky University, Richmond, KY  
**August 2013- May 2014**

**Clinical Supervisor**, Department of Educational, School and Counseling Psychology,  
University of Kentucky, Lexington, KY  
**September 2013-December 2013**

**Practicum Counselor/Psychotherapist**, Counseling Center, University of Kentucky,  
Lexington, KY  
**August 2012- May 2013**

**Practicum Counselor**, Chrysalis House, Lexington, KY  
**January 2012- June 2012**

**Behavioral Health Counselor**, Alden Lakeland Rehabilitation and Health Care Center,  
Chicago, IL  
**December 2010- July 2011**

**Psychotherapist**, Master's Practicum, St. Mary's Hospital Outpatient Mental Health  
Clinic, Chicago, IL  
**August 2009- June 2010**

**Residential Intern**, Eliada Homes, Inc, Asheville, NC  
**June 2007-June 2008**

#### **TEACHING EXPERIENCE**

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**Instructor/GCS 199: Career Counseling Seminar**, Eastern Kentucky University,  
Richmond, KY  
**January 2014- May 2014**

**Guest Lecturer, Biopsychosocial Assessments**, Institute for Clinical Social Work,  
Chicago, IL  
**December 2013, December 2014**

**Guest Lecturer, Diversity Topics**, The Chicago School of Professional Psychology,  
Chicago, IL  
**September 2009-July 2010**

#### **RESEARCH EXPERIENCE**

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**Co- Principal Investigator**, Effectiveness of an Interpersonal Process Psychotherapy  
Group for International Students  
**September 2013-May, 2014**

**Co- Principal Investigator**, Privilege and Oppression Consciousness Raising Workshop  
**August 2012- May, 2014**

**Graduate Research Assistant**, College of Nursing, University of Kentucky, Lexington,  
KY  
**June 2012- 2015**

**Multicultural Affairs Fellow  
September 2009-July 2010**

**PUBLICATIONS AND CONFERENCE PRESENTATIONS**

---

Okoli, C.T.C., **Mason, D.A.**, Brumley-Shelton, A., Robertson, H. (in press). Providing tobacco treatment in a community mental health setting: A pilot study. *Journal of Addictions Nursing*

Okoli, C., **Mason, D.**, Brumley-Shelton, A., Robertson, H. (October 2015). *Outcomes of an evidence-based smoking cessation program delivered concurrently in community mental health and non-mental health settings*. Poster presented at the 29<sup>th</sup> Annual American Psychiatric Nurses Association Conference, Lake Buena Vista, FL.

Kodet, J., & **Mason, D. A.** (August 2014). *Experiential Workshop Addressing Privilege, Oppression, & Meritocracy: Pilot Study Findings*. Poster presented at the American Psychological Association Convention, Washington D.C.

Li, M., & **Mason, D.A.** (August, 2014). *International Students: The Relationship between Acculturation and Adjustment Outcomes*. Poster presented at the American Psychological Association Convention, Washington D.C.

Li, M., & **Mason, D. A.** (August, 2013). *The Role of Attachment Style and Acculturation Stress in International Student's Psychological Well-being*. Poster presented at the American Psychological Association Convention, Honolulu, HI.

**Mason, D. A.**, & Kodet, J. (January, 2013). *Experiential Consciousness Raising Workshop on Privilege and Oppression for Undergraduate Students*. Poster presented at the National Multicultural Conference and Summit, Houston, Tx.

**Mason, D. A.** (March 2010). *Crossing Borders: Global Redefining of Mental Illness*. Poster presented at the 2010 Multifaceted Themes of Diversity Conference, Chicago, IL.

Okoli, C.T.C., **Mason, D.A.**, Brumley-Shelton, A., Robertson, H. *Treatment outcomes of an evidence-based smoking cessation program offered concurrently in community mental health and non-mental health settings*. Manuscript submitted for publication.

**Mason, D.A.**, & Li, M. *International Student Acculturation: The Effectiveness of Acculturation Stress on Psychological Well-being*. Manuscript in preparation.

Kodet, J., & **Mason, D.A.** *Effectiveness of an Experiential Consciousness Raising Workshop on Privilege and Oppression for Undergraduate students*. Manuscript

in preparation

Li, M., & Mason, D.A. *The Role of Attachment Style in International Student's Psychological Well-being*. Manuscript in preparation.

## **PROFESSIONAL DEVELOPMENT**

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39<sup>th</sup> Annual Group Relations Conference, Northwestern University, Chicago, IL  
**April, 2015**

Empowerment Feminist Therapy Training, University of Kentucky, Lexington, KY  
**March 2013**

Trauma Seminar, University of Kentucky, Lexington, KY  
**Fall, 2012**

## **PROFESSIONAL ORGANIZATIONS**

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**American Psychological Association**  
2010-2015

**American Counseling Association**  
2009-2011 **International MACC Counsel**  
2009-2010

## **AWARDS**

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- Distinguished Students Award for Commitment to Diversity (2010)
- Multicultural Affairs Fellowship (2009-2010)
- Henry J. Copeland Fund: Enhancement of Senior Independent Study (2006-2007)
- Dean's List