

University of Mississippi

eGrove

Electronic Theses and Dissertations

Graduate School

2011

The Relationship Between Discrimination, Acculturation, and General Psychological Functioning in International Students

Michael J. Hirschel

Follow this and additional works at: <https://egrove.olemiss.edu/etd>



Part of the [Psychology Commons](#)

Recommended Citation

Hirschel, Michael J., "The Relationship Between Discrimination, Acculturation, and General Psychological Functioning in International Students" (2011). *Electronic Theses and Dissertations*. 135.
<https://egrove.olemiss.edu/etd/135>

This Dissertation is brought to you for free and open access by the Graduate School at eGrove. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of eGrove. For more information, please contact egrove@olemiss.edu.

THE RELATIONSHIP BETWEEN DISCRIMINATION, ACCULTURATION, AND
GENERAL PSYCHOLOGICAL FUNCTIONING IN INTERNATIONAL STUDENTS

A Dissertation Presented for the
Doctor of Philosophy Degree
in the Department of Psychology
The University of Mississippi

Michael J. Hirschel

August 2011

Copyright Michael J. Hirschel 2011
ALL RIGHTS RESERVED

ABSTRACT

International students come from all over the world to study in the United States. Cultural differences they experience can make the transition difficult, resulting in acculturative stress. Encountering discrimination is, unfortunately, a common concern for international students which may compound acculturative stress. The aim of the current study was to better understand discrimination felt by international students, and how it is related to pre-contact factors, acculturation factors, and adjustment factors. A more thorough understanding of this important, but often overlooked, aspect of acculturation could lead to future interventions designed to improve international student experiences while abroad. Pre-contact factors such as place of origin, physical appearance, age, and religion were examined in addition to acculturation factors such as acculturation strategy, length of time in the United States, English proficiency, and social support. Adjustment factors considered included acculturative stress, perceived discrimination, and inclinations to attribute discrimination. General psychological health was used as an overall outcome measure in order to provide a picture of the importance of the adjustment factors and to allow for comparisons to be made between them. Results suggest that feeling discriminated against is unfortunately common for international students. Country of origin, physical appearance, connectedness to mainstream culture, and English proficiency were found in the study to be particularly important regarding international student experiences. Efforts targeting these variables could improve experiences, and some ideas for such interventions are provided.

ACKNOWLEDGEMENTS

I would like to thank everyone who has provided assistance with this doctoral dissertation research. My advisor and dissertation committee chair, Dr. Laura Johnson, has put in a lot of effort, and all of her hard work and support is greatly appreciated. The other members of my dissertation committee, Dr. Stefan Schulenberg, Dr. Marc Showalter, and Dr. Michael Allen, have been incredibly wonderful in providing great ideas, suggestions, and feedback. My gratitude goes to my colleagues, Gilberte Bastien and Patricia Ofili, who have collaborated with me on this project, as well as the members of Dr. Johnson's lab who have been involved. I would like to thank my fiancée and soon to be wife, Asia, for her continuous support and encouragement through this long path which she knows so well. The advice and support of my parents really has been invaluable and I cannot thank them enough. Finally, thank you to my friends and everyone else who has enabled me to finally complete this epic journey and move forward with a smile.

TABLE OF CONTENTS

Section	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
INTRODUCTION	1
METHOD	15
RESULTS	27
DISCUSSION	48
REFERENCES	65
APPENDIX	75
VITA	93

INTRODUCTION

Each year over half a million international students come to study in the United States, which constitutes about 3.5% of all university students (Open Doors, 2008). These students travel from all over the world and in increasing numbers. Statistics reported from last academic year indicate that some of the countries with the most students in the United States include India, China, South Korea, and Japan (Open Doors, 2008). The students face many challenges adjusting to their new host country, including various forms of discrimination (Lee & Rice, 2007). Figuring out how to make the adjustment process easier for them and how to reduce (and ideally eliminate) discrimination are important goals, as is helping to ensure that they have meaningful, and not detrimental, experiences abroad. While the success of these students at an individual level is a concern, international students serve as cultural ambassadors between their home country and the country in which they are studying. In this manner, experiences which international students have can shape and impact relationships between countries and could have broad political implications.

Acculturation

When international students come to the United States they encounter new experiences, as cultures all over the world are different from one another. The types of new experiences vary and can include ones which are observable such as language differences, cuisine differences, dress differences, and custom differences as well as ones which are not observable such as values

and beliefs. Acculturation can be described as the process of changes that occur when two cultures come into contact with each other (Berry, Kim, Minde, & Mok, 1987). International students undergo this process of acculturation when they move to a new country and make adjustments to their beliefs and behaviors.

Acculturative Stress

The process of acculturation is often challenging. Difficulties caused by acculturation are collectively known as acculturative stress, and can include anxiety, depression, loneliness, being confused, feeling separated from others, being discriminated against, as well as physical symptoms (Berry et al., 1987; Sands & Berry, 1993; Sandhu & Asrabadi, 1998).

Acculturative stress has been examined in international students in the United States. Common findings include that students' ability in English, social support, and ethnicity are all associated with acculturative stress (e.g., Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004; Yeh & Inose 2003). Students better able to communicate in English and students with more social support tend to report less acculturative stress. Also, students from Europe often indicate having less acculturative stress compared to students from other continents. In addition, data suggest that students who have been in the country longer report less acculturative stress (e.g., Wilton & Constantine, 2003).

While the research just described all included multinational samples, some studies have focused on international students from a single country. For example, in a study of acculturative stress among Korean international students, it was found that higher stress was associated with worse psychological outcomes and that social support served as a moderator (Lee, Koeske, & Sales, 2004). In a study with Turkish international students, variables such as communicating

well in English, not being married, and having a stronger social network were associated with lower rates of acculturative stress (Duru & Poyrazli, 2007).

Perceived Discrimination

Perceived Discrimination is considered to be a part of acculturative stress. In fact, one study found it to be the largest factor contributing to acculturative stress in a measure developed for use with international students, the acculturative stress scale for international students (ASSIS), with other factors including feeling alone and isolated, feeling disliked, being afraid, and having difficulties adjusting to changes (Sandhu & Asrabadi, 1998). The use of the word “perceived” does not intend to imply that the discrimination is not real, only that there is a degree of subjectivity involved in labeling it as such (e.g., Kessler, Mickelson, & Williams, 1999). When an event is viewed as discrimination, there is a chance it could just be a misperception, and independently determining whether or not discrimination occurred is an extremely difficult task (Lee & Rice, 2007).

Feeling discriminated due to one’s ethnic background has been a focus in many studies with international students. For example, a study comparing a sample of international students with a sample of domestic students found that the international students reported more discrimination than the non-international students (Poyrazli & Lopez, 2007). In this study, the factors associated with perceived discrimination were age, length of time in the United States, and place of origin. Specifically, older age, a longer stay in the United States, and coming from somewhere other than Europe were associated with greater discrimination. In their discussion about potential future research, the researchers suggest looking at religious affiliation as a possible predictor of discrimination (Poyrazli & Lopez, 2007).

Although not a frequent focus, religion has been examined in relation to discrimination in a university setting. In one study, participants identifying as Muslim reported more perceived discrimination than participants identifying as Christian (Sodowsky & Plake, 1992). In this same study, participants identifying as Buddhist or Hindu reported perceived discrimination at levels between those identifying as Christian and those identifying as Muslim, though the differences were not statistically significant (Sodowsky & Plake, 1992). Lacina (2002) explains that many international students face difficulties due to their religious affiliations and she sums it up well in the statement that “many Americans are unreceptive to religions other than Christianity” (p.24).

A different study explored perceived discrimination in international students based on the region from which participants originated as well as the source of the discrimination (Hanassab, 2006). In general, the results indicated that students from the Middle East and Africa reported more discrimination compared to students from other regions. There were, however, differences found based on the source of discrimination. For example, students from Southeast Asia reported the most discrimination from professors. In discussing extending this work, the author of this study recommends examining country of origin rather than region, suggesting that there can be much variation among students within the same region (Hanassah, 2006).

Some studies examining the discrimination felt by international students have been conducted using qualitative methods. In one such examination, international students were interviewed and asked to provide descriptions of the discrimination they had experienced (Lee & Rice, 2007). Examples discussed included being ignored or stared at, being verbally insulted, and being physically assaulted. Like several of the other researchers, the authors of this study described a relationship between the students’ country of origin and perceived discrimination.

The international students who seemed to be more easily identified as being foreign, such as through their physical appearance or accent, tended to report more discrimination (Lee & Rice, 2007).

Discrimination toward international students has also been researched in other manners. Nasir (1994) sent letters to many residency programs for medical school graduates asking for information. Two such letters were sent to each program; they were almost identical with one difference. Either it was briefly mentioned that the sender was an international student or nothing was written about whether the sender was from the United States or not. The author reported a higher response rate to the unspecified letters. Also when both letters received responses, usually the unspecified letter received a more favorable response (Nasir, 1994).

Discrimination against international students is not unique to the United States. For example, Chinese students in Japan have reported experiencing discrimination (Brender, 2004) as have international students in the Ukraine (MacWilliams, 2004). One study examined perceived discrimination in samples of international students and international scholars in the United Kingdom and in Germany, finding that most participants reported experiencing some type of discrimination (Krahé, Abraham, Felber, & Helbig, 2005). A lack of proficiency in the local language and appearing foreign, which were both measured using self-report indicators, were associated with reporting more discrimination in this study (Krahé et al., 2005).

Several studies examining discrimination felt by international students have been discussed. This literature suggests that discrimination is, unfortunately, rather commonplace for international students. At the beginning of this section, it was discussed how discrimination is usually measured as a perception in that it is up to an individual to decide when an event is

discrimination and when it is due to something else. In the next section a related concept will be addressed, focusing on individual differences in terms of when attributions to discrimination are made and when they are not.

Attributions to Discrimination

Suppose an international student is waiting in line at a restaurant counter and is served after someone who arrived at the counter later. The student could potentially view the situation as due to discrimination on the part of the worker; in contrast, the student could view the situation as due to the worker not accurately remembering who came to the counter first. Some researchers refer to this condition as “attributional ambiguity” (Crocker, Voelkl, Testa, & Major, 1991, p. 220), where it is not clear what cause can be attributed to the occurrence. It seems that a lot of discrimination which is not blatant and obvious could potentially fall in this category.

Whether or not a person attributes an event to discrimination is related to perceived discrimination, but it is also different from it. Perceived discrimination refers to events in the past which have already occurred and were viewed as discrimination. In contrast, this attributional construct focuses on whether or not individuals are likely to label an imagined and potential future event as discrimination (Lightsey, Jr. & Barnes, 2007). Moderate correlations found between these two variables (e.g., Branscombe, Schmitt, & Harvey, 1999; Lightsey, Jr. & Barnes, 2007) suggest that while prior experiences with discrimination are related to the likelihood of future attributions to discrimination, they do not perfectly predict it, and therefore other factors are probably involved.

Some researchers suggest that people might make attributions to discrimination to protect their feelings about themselves in that by viewing events as discrimination people can believe

they have no control over or personal responsibility for what happened and could not have done anything to change the situation (e.g., Crocker and Major, 1989). However, other researchers contend that identifying with other members of a group who are discriminated against is the likely protective factor involved when discrimination is attributed (e.g., Branscombe et al., 1999). Regardless of any potential benefits, research indicates that making attributions to discrimination is associated with negative outcomes and that people tend to avoid making such attributions (e.g., King, 2003; Ruggiero & Taylor, 1997). As making attributions to discrimination in ambiguous situations appears to result in negative consequences, and as it has not been extensively researched in comparison to perceived discrimination (Lightsey, Jr. & Barnes, 2007), further investigation is warranted. Thinking back to the international student at the restaurant counter scenario, obtaining a better understanding of the factors and outcomes related to what kind of attribution this student makes could help lead to interventions for better international students outcomes.

General Psychological Health

Three related, yet different constructs have been discussed: acculturative stress, perceived discrimination, and attributions to discrimination. While each of these international student adjustment factors is important in its own right, it is also useful to consider how they are related to more commonly considered areas of psychological functioning. In this way, the importance of these factors becomes more apparent and it also allows for an easier comparison between the factors. Different types of measures can be used to indicate psychological functioning. For instance, in studies examining the association between perceived discrimination and mental health concerns sometimes depression is used as an indicator of psychological functioning (e.g.,

Mossakowski, 2003), sometimes depression and anxiety are used in combination (e.g., Cassidy, O'Conner, Howe, & Warden, 2004), and sometimes studies attempt to use measures that capture a wide range of mental health concerns (e.g., Moradi & Hasan, 2004; Moradi & Risco, 2006).

General psychological health represents this third strategy of measuring psychological health in a broad fashion, and it is often used as an outcome measure of treatment, with changes in scores indicating how successful a treatment has been (Blais et al., 1999). It has been previously examined in other cultures such as in the Czech Republic (e.g., Dragomirecka, Lenderking, Motlova, Goppoldova, & Šelepova, 2006) and with Spanish-speakers in the United States (e.g., Rivas-Vasquez et al., 2001). This cross-cultural use suggests that measuring general psychological health to be appropriate with an international student population.

Influences on the Adjustment Factors

While discussing the adjustment factors of acculturative stress, perceived discrimination, and attributions to discrimination, prior research was described explaining some variables which appear to influence these factors. For instance, higher levels of social support have been associated with lower levels of acculturative stress (e.g., Duru & Poyrazli, 2007; Poyrazli et al., 2004; Yeh & Inose 2003). In a similar fashion, having strong connections with other international students appears to reduce some negative effects of perceived discrimination (Schmitt, Spears, & Branscombe, 2003).

Another influencing variable appears to be cultural distance, which is how close the heritage and host cultures are to each other in terms of characteristics such as weather, clothing, cuisine, social conventions, wealth, religion, and opportunities for education (Babiker, Cox, & Miller, 1980). Also associated are language factors, sociodemographic characteristics, and

characteristics associated with the host society, such as degree of openness and receptivity to diverse cultures (e.g., Berry, 1997). As with more social support, having a closer culture distance has been related to less acculturative stress (e.g., e.g., Poyrazli et al. 2004; Yeh & Inose 2003) and less perceived discrimination (e.g., Hanassab, 2006; Poyrazli & Lopez, 2007).

“Acculturation strategy” refers to the degree which individuals retain customs and values of the culture they came from and the degree which they adopt customs and values of the new host culture during the acculturation process (Berry, 1998, p. 43). It is sometimes selected and sometimes imposed on people. The framework results in four strategies: integration, where both the heritage and host cultures are valued and followed; assimilation where the host culture is valued and followed and the heritage one is not; separation, where the heritage culture is valued and followed and the host one is not; and marginalization, where neither culture is valued or followed (Berry, 1998). Acculturation strategy has been linked with acculturative stress, with the integration strategy associated with lower levels of acculturative stress compared to the other three strategies (e.g., Donà & Berry, 1994; Krishnan & Berry, 1992).

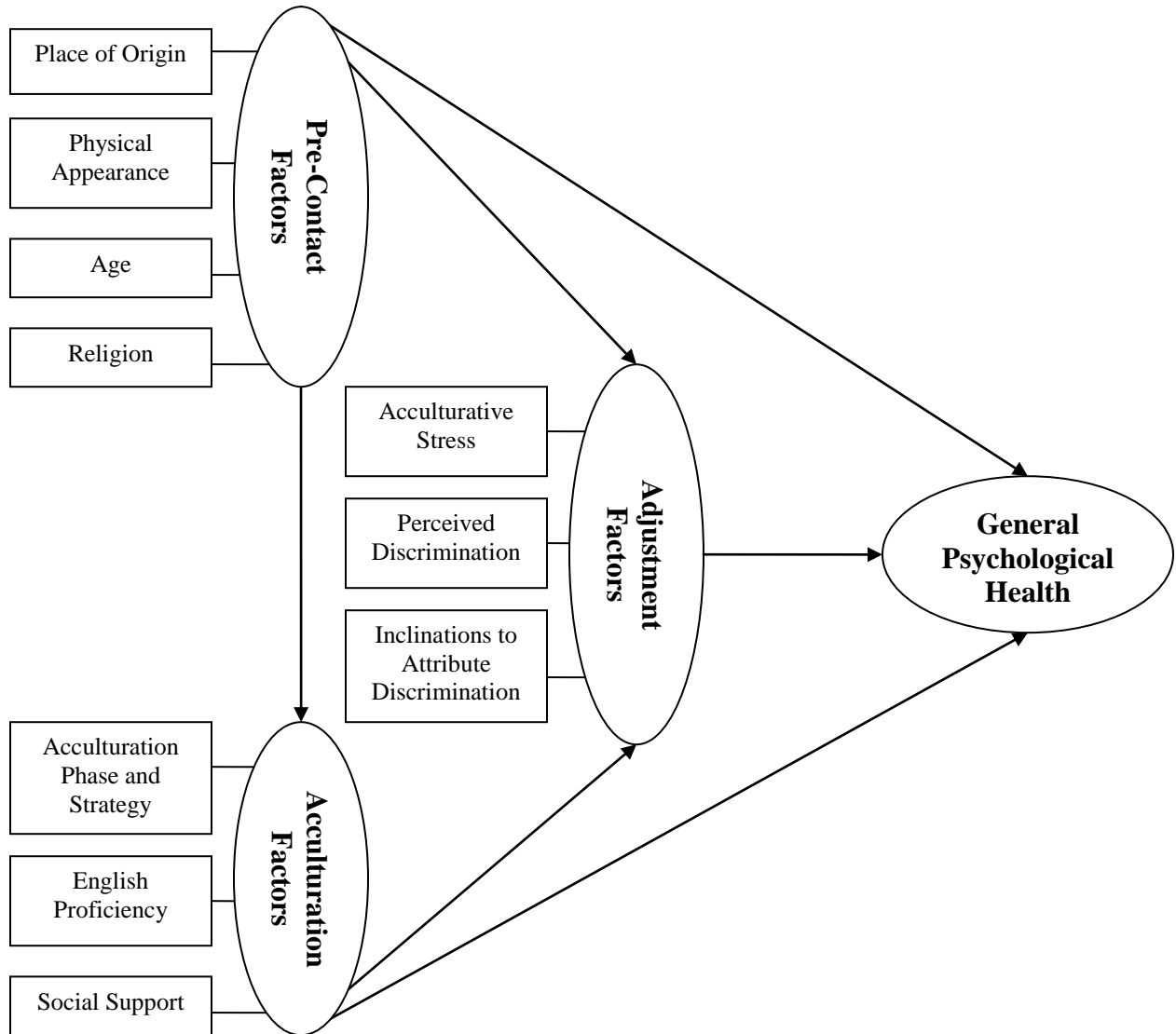
Participant age and length of time in the host country have also been addressed in terms of their relationship with the adjustment factors. Older age has been demonstrated to be associated with higher levels of perceived discrimination (e.g., Poyrazli & Lopez, 2007). Living in host country longer was found to associated with reduced acculturative stress (Wilton & Constantine, 2003), but increased perceived discrimination (e.g., Poyrazli & Lopez, 2007). One possible explanation for this contrasting finding is that living in the country longer enables both more time for adjustment in the acculturation process and more time for discrimination to occur at some point during the stay.

Based on all the associations discussed, it appears that characteristics such as where international students are from, how proficient they are in English, how different they appear compared to non-international students, how old they are, how long they have been in the USA, what religion they observe, the amount of social support they have available, and their acculturation strategy are related to the adjustment factors of acculturative stress, perceived discrimination, and attributions to discrimination. While most of these variables have received some previous empirical attention, there is a need to examine them all together in order to obtain a more complete picture of what life is like for international students and how it can be improved.

Current Study

The constructs of acculturative stress, perceived discrimination, and inclination to attribute discrimination were described in relationship to international student experiences. The aim of the current study (depicted in Figure 1) is to connect these pieces together. The goal is to obtain a better understanding of the discrimination that international students encounter and the effect it has on them. The current study expands the literature by exploring important variables associated with discriminatory experiences of international students all at once as well as by adding the variable of inclinations to attribute discrimination which has yet to be well examined. Acculturative stress is included in the analysis is to help determine if discrimination is the largest cause of distress as expected and indicated by prior research. Perceived discrimination will be measured in multiple manners, using general perceptions of past discrimination experienced, a more specified estimation of the number of times specific discriminatory events occurred, and a qualitative response. The idea is that the more data obtained about the discrimination

Figure 1. Graphical depiction of current study which will examine the relationship between pre-contact factors and acculturation factors of international students and adjustment factors of acculturative stress, perceived discrimination, and inclinations to attribute discrimination, as well as how these all are related to general psychological health.



international students encounter, the better it can be understood and targeted for reduction. Inclinations to attribute discrimination have rarely been examined and the current study is designed to examine how this construct is related to and different from the other adjustment factors. Finally, general psychological functioning will be employed as an overall outcome measure, enabling comparison of the three factors and a clearer picture of the impact they might have on international students.

International students are the focus of this study for multiple reasons. First, international students are a heterogeneous group from a variety of backgrounds and experiences. This fact suggests that in a sample of international students there is the potential for a wider range of scores on the constructs of interest than there would be from a sample more similar to each other. Separation of these constructs should better enable determination of how the variables are associated with each other. Diversity in the sample also adds to the potential generalizability of the findings. Additionally as previously suggested given the large number of international students in the United States, it can be important to make their experiences positive at an individual level as well as at group level for the broader political implications.

In terms of the specifics of the current study, one goal is to replicate previous findings of factors associated with acculturative stress and perceived discrimination in international students, and to determine if these factors extend to an inclination to attribute discrimination. Then the study plans to look at how the variables of acculturative stress, perceived discrimination, and whether or not people are inclined to attribute discrimination are related to general psychological health. While acculturative stress and perceived discrimination have been previously examined with international students, looking at the attributional inclinations of international students

regarding discrimination has not been examined in detail, if at all. This study will explore what distinct roles these three related constructs play in their relationship with general psychological functioning as well as how they overlap. Finally, all the parts of the study will be examined to better understand the general psychological functioning of international students as a whole, regarding the interactions between the pre-contact factors, acculturation factors, and the three adjustment factor constructs of interest.

Based on a review of the literature, the following hypotheses are offered:

1. International student pre-contact factors such as place of origin, physical appearance, religion, and age will be associated with the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. Greater cultural distance (e.g., coming from somewhere very different from the United States in terms of customs and dress) will be associated with more concerns on each of the three adjustment factors. In addition, older participants will report more concerns on each of the three adjustment factors. Regarding religion, if international students are actively religiously affiliated with a mainstream religious group (i.e., Christian) they will report lower levels of concern on each of the three adjustment factors, and if they are actively religiously affiliated with a non-mainstream religious group (e.g., Buddhist, Muslim, Hindu, or Jewish) they will report more concerns.
2. Acculturation factors such length of time in the United States, acculturation strategy, English proficiency, and social support will be associated with the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. Participants more proficient in English and participants with more

social support will report lower levels of concern on each of the three adjustment factors. Participants in the country a longer amount of time will report lower levels of acculturative stress, but higher levels of perceived discrimination and inclination to attribute discrimination compared to those in the country a shorter amount of time. Regarding acculturation strategy, higher connectedness to both culture of origin and country of study will be associated with lower levels of concern on each of the three adjustment factors.

3. The various measures of perceived discrimination will all be positively correlated with each other. Also, the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination will all be positively correlated with each other.
4. Acculturative stress, perceived discrimination, and inclination to attribute discrimination will all be negatively associated with general psychological health, and will each account for some unique variance in this association with general psychological health.

METHOD

Participants

Participants in the study were 118 international students at the University of Mississippi. They were recruited through the international student office and related clubs and programs. The sample included a mixture of undergraduate students (62%) and graduate students (38%) ranging in ages from 18 to 40. In terms of gender, 53% were female and 47% male. Most of the students reported being single (93%) with 6% married and 1% divorced. They came from many continents including Asia (51%), Africa (22%), Europe (16%), South America (7%), and North America (4%), and reported practicing various religions such as Christianity (53%), Islam (9%), Buddhism (6%), Hinduism (6%), some other religion (3%), no religion (20%), and 3% did not answer about religion.

Measures

Demographics. The demographics section of the study asked many different questions in an attempt to replicate prior finding of variables associated with perceived discrimination as well as to explore new areas. Participants were asked their age, gender, what country and city they are from, how long they have been in the United States, and their religious affiliation and involvement. There were additionally asked to determine to what extent other people can tell that they are international students based on how well they speak English and their physical appearance. English proficiency was measured as a composite of three questions on a 5-point

Likert-type scale asking self-reports of English fluency, accent when speaking English, and comfort communication in English, with higher scores indicating higher proficiency. Physical appearance was measured as a single question on a 7-point Likert-type scale asking “How easily do you believe people can tell you are an international student based on your physical appearance (e.g., skin color, hair style, clothing, etc.)”

Social Support. Social support was indicated based on a modified version of a social support measure created by Koeske and Koeske (1989, 1993). Participants were asked to indicate how much “practical” support and how much “emotional” support they obtain from various people in their lives (Koeske & Koeske, 1989, p. 245). This measure has previously been used in a sample of international students (e.g., Lee et al., 2004). For the current study, participants were asked to rate the amount of support they receive from international student friends not from their home country, international student friends from their home country, non-student international university and community members not from their home country, non-student international university and community members from their home country, students from the USA, non-student university and community members from the USA, and family members. A total score was used for the analyses to indicate overall social support available.

Vancouver Index of Acculturation (VIA). The Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000) was used as an indicator of acculturation strategy. The measure includes 10 pairs of items asking participants to rate how much they agree with statements regarding their connection with the new culture and the culture from which they originated. Each item is rated on a 9-point Likert-type scale, and items are summed to form two subscale totals, one for heritage and one for mainstream. Higher values indicate stronger association with that

particular culture. An example pair of items includes “I believe in the values of my heritage culture” and “I believe in mainstream North American values”, and the authors suggest that “North American” should be replaced with an appropriate label for the culture in which the measure is used (Ryder et al., 2000, p. 65). Psychometric support was obtained for the VIA with satisfactory internal consistency, correlations with expected related measures, and an expected two-factor structure (Ryder et al., 2000). For analyses, the separate scores were used indicating connectedness to the culture of origin and connectedness to United States culture.

Acculturative Stress Scale for International Students (ASSIS). To measure acculturative stress felt by international students, the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994) was used. The authors explain that the scale was initially created by consulting with international students about the problems they face and by examining literature in the area. Then an initial examination was performed on the scale, and with the results the total number of items was reduced from 125 to 78. After that, further psychometric evaluation was performed, and the scale was shortened to a total of 36 items (Sandhu & Asrabadi, 1994). The items are rated on a five point Likert-type scale, where respondents indicate how much they agree with each item, with total scores ranging from 36 to 180; higher scores indicate higher levels of acculturative stress. The measure takes about 25 minutes to complete, and it has been suggested that scores above 109 likely indicate significant acculturative stress (Sandhu & Asrabadi, 1998).

Regarding the psychometric properties of the measure, Sandhu and Asrabadi (1998) report that the scale showed strong internal consistency and split-half reliability. They used factor analysis in the validation process, and the ASSIS consisted of these seven factors:

Perceived Discrimination, Homesickness, Perceived Hate/Rejection, Fear, Stress Due to Change, Guilt, and Nonspecific. These factors are listed in decreasing order of the percentage of variance which they explained. The first factor, Perceived Discrimination, accounted for close to 38% of the total variance, with all of the other factors accounting for less than 10% of the total variance each, leading the authors to suggest that perceived discrimination is one of the biggest problems international students encounter (Sandhu & Asrabadi, 1998). The questions which load on the Perceived Discrimination factor have been employed before on their own as a measure of perceived discrimination (e.g., Zakalik & Wei, 2006).

It appears that the ASSIS has not received a lot of subsequent psychometric examination. However, Sandhu and Asrabadi (1998) describe some unpublished research of the scale. For example, in one study a sample of students from the United States were compared with a sample of international students, finding that the international students experienced more acculturative stress (Ansari, 1996, as cited in Sandhu & Asrabadi, 1998). In another, a high internal consistency was reported as was an association between acculturative stress and psychological functioning, and a six factor structure (using principle components analysis) with perceived discrimination accounting for the most variance (Buesh, McElmurry, & Fox, 1997, as cited in Sandhu & Asrabadi, 1998).

Although little research has systematically examined the psychometric properties of the ASSIS, it has been used in many studies, with some reporting some psychometric properties. For instance, the measure's internal consistency has been found to be at .92 or above in several studies (e.g., Constantine, Okazaki, & Utsey, 2004; Duru & Poyrazli, 2007; Poyrazli et al., 2004; Yeh & Inose 2003). While not the main focus of either study, there was a lack of support for the

factor structure of the ASSIS as described in its development examination in samples from East Asia (Ye, 2005) and from China (Ye, 2006), with different factor structures found in each of these studies as well.

Inclination to Attribute Discrimination. This measure is what Branscombe et al. (1999) developed and refer to as “attributions to prejudice across a variety of life situations” (p. 139). Participants read 10 hypothetical events and estimate the degree to which they believe discrimination was involved in the situation. Estimations are captured by selecting one of the 21 percentages displayed in units of 5%, with higher percentages indicating a belief that more prejudice was involved. The scenarios were developed in consultation with African Americans who described actual experiences they had encountered, and the content of the measure is intended to cover a wide array of possible situations. Sample situations include being told that an apartment for rent is no longer available when trying to look at it, being given a speeding ticket when barely speeding, and getting bad service at a restaurant. The authors report an internal consistency coefficient of .84 (Branscombe et al., 1999). As this measure was developed to be used with African Americans, it was adapted such that the wording is more appropriate for international students.

Although this measure appears not often used, it and similar measures have been examined in other research. Lightsey, Jr. and Barnes (2007) used the measure with a minor modification. The authors explain that they substituted the word “tendency” for the word “willingness”, believing it would avoid issues regarding thought about intentions (p. 37). They also report an internal consistency of .84 (Lightsey, Jr. & Barnes, 2007). Other researchers using similar indicators for inclination to attribute discrimination reference Branscombe et al. (1999)

with regard to the style of measurement (e.g., Adams, Fryberg, Garcia, & Delgado-Torres, 2006; Adams, Tormala, & O'Brien, 2006).

Perceived Discrimination Effects. Along with their measure of inclinations to attribute discrimination, Branscombe et al. (1999) included two questions to examine prior experiences with discrimination which African-Americans participants encountered. The questions are: "I feel like I am personally a victim of society because of my race" and "I consider myself a person who has been deprived of the opportunities that are available to others because of my race" (p. 140); participants rate how much they agree with the statements on a 7 point Likert-type scale. An internal consistency of .77 was obtained for these two items (Branscombe et al., 1999). Lightsey, Jr. and Barnes (2007) also asked participants these items and obtained an internal consistency of .82. Moderate positive correlations have been found when examining the relationship between perceived discrimination and an inclination to attribute discrimination, which was just described (Branscombe et al., 1999; Lightsey, Jr. & Barnes, 2007). Again as this measure was developed for use with African American participants and the current study focuses on international students, it was modified accordingly.

General Ethnic Discrimination Scale (GED). As an indicator of the frequency of experiences with discrimination and the impact these experiences have, participants completed the General Ethnic Discrimination Scale (GED; Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006). The GED is based on the Schedule of Racist Events (SRE; Landrine & Klonoff, 1996), but modified to be used with all populations whereas the SRE was developed specifically for use with African Americans. There are 18 items, each of which has three parts, with the final item containing only two parts. For each item, participants indicate on a 6-point Likert-type scale

how often a particular event has happened to them in the past year, in their entire life, and in all except the last item participants then indicate the amount of stress produced. A sample item is “How often have you been treated unfairly by teachers and professors because of your race/ethnic group?” (Landrine et al., 2006, p. 89).

Psychometric support has been obtained indicating that the GED has high internal consistency, it is correlated with expected related measures, and it has a three factor structure as designed (e.g., Landrine et al., 2006). The SRE which the GED is closely based on also has demonstrated similar strong psychometric properties (Klonoff & Landrine, 1999; Landrine & Klonoff, 1996). For the current study, since international students typically are only abroad studying for a limited time and this is the timeframe of interest, the first two questions for each item were combined asking international students about their experiences since they have arrived in the USA.

Discrimination Experiences Free Response. As an additional measurement of discrimination, participants were asked to think of an example, if they can, and to write about the time they felt the most discriminated against due to their status as an international student. They were also asked to rate how uncomfortable they were in this situation and to estimate how many similar experiences have occurred to them. This personal component gave participants a chance to express their individual experiences of being treated differently due to their cultural backgrounds.

Schwartz Outcome Scale (SOS-10). As a short measure of general psychological functioning, the Schwartz Outcome Scale (SOS-10; Blais et al., 1999) was used. It is a 10-item Likert-type questionnaire designed as a treatment outcome measure to be used with a wide

variety of populations by a wide variety of professionals. The items do not assess for specific symptoms of disorders but are intended to indicate overall functioning. Participants rate on a 7-point scale (scored 0-6) how closely each statement represents their psychological functioning over the past week. The measure is scored as a sum of the items ranging from 0 to 60 with higher numbers indicating better overall mental health functioning. Sample statements include “I feel hopeful about my future” and “I am interested in and excited about things in my life” (Blais et al., 1999, p. 372).

The SOS-10 has been reported to have strong psychometric properties, including an internal consistency coefficient at .95 or above, correlations with measures it is expected to be related to, support for a single factor structure as anticipated, and sufficient test-retest reliability (e.g., Blais et al., 1999; Laux & Ahern, 2003; Young, Waehler, Laux, McDaniel, & Hilsenroth, 2003). Some of the research has included non-clinical, university students (e.g., Young et al., 2003), and the SOS-10 has been translated into several languages (e.g., Dragomirecka et al., 2006; Rivas-Vasquez et al., 2001).

Procedures

Participant selection and recruitment. Participants were recruited through emails, fliers, and in-person solicitation at places where international students were likely to be found such as the weekly international student coffee hour and various organizational meetings.

Data collection. All of the measures described above were arranged in packets and given to participants to complete. Before they began filling out the measure, informed consent was obtained where topics such as any potential risks and the right to withdraw from the study at any time without consequences were covered. A researcher was available to assist participants with

questions or difficulties which came up in the data collection process. After participants completed the measures, debriefing occurred. The participants were engaged in conversation about their experiences as international students. Handouts and dialogue were provided regarding common difficulties international students might experience and resources available to assist them. This debriefing was done individually right after participants finished the survey, since they completed the measure at their own pace. The depth and duration of the discussion varied based on the desire and needs of each participant.

Data analysis. Analyses began with calculating descriptive statistics for all of the measures including means, standard deviations, and internal consistency reliabilities. Then analyses varied based on the hypotheses.

The first hypothesis examines the relationship pre-contact factors of international students such as place of origin, physical appearance, religion, and age and the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. For the nominal level variables of place of origin and religion, ANOVAs were used to indicate differences in the adjustment factors. Correlations were used to analyze differences in the adjustment factors based on age and physical appearance.

The second hypothesis looks at the association between the acculturation factors of length of time in the United States, acculturation strategy, English proficiency, and social support and the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. Correlations were used to indicate the relationship between all of these variables and the three adjustment factors. The measure of acculturation strategy produces two

scores, one for host culture and one for heritage culture, which was correlated and analyzed separately.

After ANOVAs and correlations were computed to analyze the first two hypotheses, several multiple regressions were used to examine the combined relationship between pre-contact and acculturation factors and the three adjustment factors. Specifically, a separate multiple regression was used for each measure of the adjustment factors, regressing on that particular measure. Whereas the earlier analyses targeted the individual significance of each factor, these regressions targeted the collective significance and allowed for comparison among these pre-contact and acculturation factors.

The third hypothesis examines the interrelatedness of the adjustment factors. As there are several measures of perceived discrimination, correlations were conducted between them. Correlations were also calculated between the measures of acculturative stress, perceived discrimination, and inclination to attribute discrimination.

The fourth and final hypothesis looks at the relationship between the adjustment factors and general psychological health. Correlations were calculated between these variables as a first step. Then, multiple regression were conducted with general psychological health as the dependant variable to see how variance was distributed across the adjustment factors.

The discrimination free response included both quantitative and qualitative data. The quantitative part was analyzed in a similar manner as the rest of the discrimination data. The qualitative part is exploratory in nature. Although the intention was to use content analysis (e.g., Miles & Huberman, 1984; Weber, 1985), the few number of responses caused significant limitations. Therefore these data were only categorized and described.

In addition to the aforementioned analyses, exploratory mediation analysis (e.g., Baron & Kenny, 1986) was performed. This quantitative technique examines how the adjustment factors mediate the relationships between pre-contact factors and general psychological health and between the acculturation factors and general psychological health. This method of analysis pulls together all of the constructs in the study and provide data about how they are interconnected.

Relationships among multiple variables were examined in the current study. With many statistical tests performed, the overall chances of finding a significant result in one of the comparisons when in reality it does not exist is increased. Some researchers might recommend adjusting the alpha-level to avoid this type of error (e.g., Curtin & Schulz, 1998). However, the American Psychological Association's Task Force on Statistical Inference (TFSI) has suggested that well documenting expectations and procedures might be a better approach (Wilkinson & TFSI, 1999), especially as one of the main problems of changing significance level values is that the power to detect differences which are real becomes severely lessened (e.g., Nakagawa, 2004). The current study followed these recommendations through describing predictions and methods in detail while retaining standard levels of significance.

Results of the current study are discussed in relation to the hypotheses and their implications for international student adjustment. The data indicate which pre-contact factors and acculturation factors were found to be most important in relation to the adjustment factors of acculturative stress, perceived discrimination, and inclinations to attribute discrimination. In this fashion, the study aimed to increase understanding about what influences the discrimination which international students encounter. The data hopefully provide a little more insight in terms of how the three adjustment factors are related to general psychological health. Pulling all of

these pieces together, the study strived to gain a better perspective into the lives of international students in the hopes that gaining knowledge in this area can lead to innovations which could bring improved experiences in the future for international students. All of these implications are discussed.

RESULTS

Descriptive Analyses

Means, standard deviations, and internal consistency reliability coefficients were calculated for all of the measures and are shown in Table 1.

The social support measure had a mean of 48.83. Lee et al. (2004) reported a mean of 2.59 per item in their study of Korean international students. As the version of the measure used had 14 items, the comparable mean per item would be 3.49 for the current study. These data indicate that more social support was reported among participants in the current study. This discrepancy could be due at least in part to the fact that only 38% of participants were graduate students compared to 80% in the Lee et al. (2004) study, and graduate students tend to be busier with less opportunity for support. It should be noted that data for the social support measure were only able to be used for 63 of the 118 participants in the current study due to not answering parts of it. Unfortunately the patterns of missing data were not consistent across participants which made attempts to analyze the data in an alternative manner unsuccessful.

The mean for the heritage subscale of the VIA was 71.99 and for the mainstream subscale was 63.18. While means for the VIA have not been reported in the literature frequently, those obtained in the current study on the heritage scale are similar to the mean of 70.19 obtained for Canadian aboriginal college student participants (Cheah & Nelson, 2004) and the mean of 71.5 obtained for North American sojourners in Taiwan (Swagler & Jome, 2005). The mainstream

Table 1

Measure means, standard deviations, and internal consistencies

Measure	N	Mean	SD	Chronbach's alpha
Social Support	63	48.83	9.93	.83
VIA - Heritage	117	71.99	9.94	.78
VIA - Mainstream	118	63.18	11.29	.83
ASSIS	110	77.33	21.61	.93
Inclination to Attribute Discrimination	116	422.68	230.47	.90
Perceived Discrimination Effects	114	5.21	2.83	.51
GED Frequency	107	28.91	9.50	.90
GED Stress	97	32.03	16.38	.93
SOS-10	115	48.34	8.60	.90

subscale mean of the current study was higher than the mean of 54.9 for the North American sojourners (Swagler & Jome, 2005), suggesting that international students in the United States potentially find it somewhat easier adjusting to the mainstream culture compared to North American sojourners in Taiwan. Mainstream acculturation was not assessed for the aboriginal student participants in the Cheah and Nelson (2004) study.

In the current study, the mean for the ASSIS was 77.33. This score is well below the cutoff of 109 which is suggestive as likely indicating significant acculturative stress (Sandhu & Asrabadi, 1998). Some previous studies involving international students report mean scores for the ASSIS. The mean of the current study is far below that of the Yeh and Inose (2003) study which reports a mean of 3.02 per item, corresponding to a total mean of 108.72, and it is close to that of the Constantine et al. (2004) study which reports a mean of 81.39.

Both the inclinations to attribute discrimination measure and the perceived discrimination effects measure associated with it have not been thoroughly previously examined. The mean in the current study for the inclinations to attribute discrimination measure was 422.68 and the mean for the perceived discrimination effects was 5.21. These means are well below those reported by Branscombe et al. (1999) of 62.07 per item for inclinations to attribute discrimination and 5.05 per item for perceived discrimination effects, corresponding to total means of 620.70 and 10.10 respectively. The current study means are below those obtained by Lightsey, Jr. and Barnes (2007) as well, which were 49.50 per item, corresponding to 495.00, for inclinations to attribute discrimination and 7.96 for perceived discrimination effects. The fact that these other studies consisted of African American participants whereas the current study consisted of international student participants likely contributed to the differences in means.

The mean for the GED frequency subscale in the current study was 28.91 and the mean for the GED stress subscale was 32.03. The measure was slightly modified to make it more applicable to the experiences of international students, and due to the changes the scores cannot be compared exactly. However, the scores are rather close to the means obtained in the measure's developmental study conducted by Landrine et al. (2006), where mean for the recent discrimination was 27.34 and the mean for appraised stress was 31.61.

In the current study, the mean for the SOS-10 was 48.34. This score is slightly higher than the means of 47.3 and 45.3 which were obtained in studies involving college student non-patient participants (Young et al., 2003). These results suggest that the participants on average were reporting general psychological functioning at or above the levels of functioning of peers.

Assumption Checking

In order to be sure that the results of the statistical examinations are valid and hold value in terms of generalizing to the larger population, checking the assumptions is critical. The statistics used in the current study included correlations, ANOVA, and multiple regression. Field (2009) provides directions for checking the assumptions of these tests which were followed.

For ANOVA, the main assumptions are that data should be independent, the dependent variable should be at interval or ratio level, there should be homogeneity of variance across factors, and each group should approximate the normal distribution (Field, 2009). The assumptions of independence and interval dependent variable data were both met based on the design of the study. Homogeneity of variance was examined using Levene's test, and the assumption was met for two of the four ANOVA analyses which were found to be statistically significant. Specifically there was evidence for homogeneity of variance while examining place

of origin with acculturative stress and perceived discrimination effects but not with discrimination frequency or inclinations to attribute discrimination. Normality was measured using the Kolmogorov-Smirnov test, and the assumption was met for three of the four ANOVA analyses which were found to be statistically significant. In this case the assumption was met for acculturative stress, discrimination frequency, and inclinations to attribute discrimination, but not for perceived discrimination effects. Although the assumptions of homogeneity of variance and normality were not met for a few of the analyses, ANOVA results tend to be somewhat robust to violations of these assumptions and the results likely therefore retain their importance (Field, 2009).

The main assumptions for the regression analyses include that the variables be of specific types, all important variables predicting the dependant measure should be included in the model, the data should be independent, the independent variables should have some variance, the relationship should be linear, there should not be high multicollinearity, there should be homoscedasticity, and residuals should be independent and normally distributed (Field, 2009). The design of the study and theory of the relationship of constructs covers the first five assumptions. In terms of multicollinearity, the fact that the highest correlation obtained in the current study was $r = .69$ suggests that it should not be a problem. Specific tests conducted indicate that it is not a problem as the VIF scores ranged from 1.12 to 1.35 and the tolerance scores ranged from .74 to .89. The examination of graphs of residuals was conducted and suggested that there was homoscedasticity as well as a normal distribution of residuals. The Durbin-Watson test was used to determine if the residuals were independent and this assumption was met for all but one of the regressions with significant results. Specifically it was identified as

a concern for the regression model with acculturative stress and discrimination frequency predicting general psychological health. Although this violation of assumption raises some question as to the usefulness of this particular regression, fortunately this result was not especially meaningful since the model only accounted for 8% of the variance.

Hypothesis Testing

The first hypothesis examines the relationship between pre-contact factors of international students such as place of origin, physical appearance, religion, and age and the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. It was hypothesized that attributes indicating a greater cultural distance would be associated with more adjustment concerns, older participants would report more adjustment concerns, and international students actively religiously affiliated with a mainstream religious group would report lower levels of adjustment concerns.

To explore the relationships between place of origin and the adjustment factors as well as between religion and the adjustment factors, ANOVA was used. Place of origin was found significantly associated with acculturative stress [$F(4,105) = 3.39, p < .05$], the perceived discrimination measures of discrimination frequency [$F(4,102) = 3.34, p < .05$] and perceived discrimination effects [$F(4,109) = 4.75, p < .01$], and inclinations to attribute discrimination [$F(4,111) = 5.28, p < .01$]. Post-hoc comparisons using the Tukey HSD test indicated that the significant group differences all involved students from Europe reporting lower levels on the adjustment factors compared to students from Asia in some cases or Africa in other cases. Students from Asia ($M = 81.91, SD = 22.04$) reported significantly more acculturative stress compared to students from Europe ($M = 62.47, SD = 16.72$). With regard to discrimination

frequency, students from Africa ($M = 32.45$, $SD = 11.73$) reported significantly more discriminatory events in comparison with students from Europe ($M = 23.32$, $SD = 5.03$). In terms of perceived discrimination effects, students from both Africa ($M = 6.62$, $SD = 3.11$) and Asia ($M = 5.41$, $SD = 2.69$) reported significantly more problems compared to students from Europe ($M = 3.33$, $SD = 1.65$). Finally, students from Africa ($M = 475.60$, $SD = 192.99$) as well as student from Asia ($M = 471.08$, $SD = 239.81$) demonstrated higher levels of inclination to attribute discrimination when compared with students from Europe ($M = 220.00$, $SD = 117.61$). No significant association was found between place of origin and the perceived discrimination measure of discrimination based stress [$F(4,92) = 1.48$, $p = .21$].

Religion was not found to be significantly associated with acculturative stress [$F(5,100) = 1.52$, $p = .19$], the perceived discrimination measures of discrimination frequency [$F(5,98) = 1.14$, $p = .34$], discrimination based stress [$F(5,89) = 1.12$, $p = .35$], and perceived discrimination effects [$F(5,104) = .39$, $p = .85$], nor inclinations to attribute discrimination [$F(5,107) = .74$, $p = .60$]. Potential reasons for the lack of findings regarding religion are addressed in the discussion section.

Correlations were used to explore the relationship between the variables of physical appearance, age, and frequency of religious involvement and the adjustment factors, with higher levels on all of the adjustment factors indicating more concerns. Physical appearance, with lower scores indicating appearing more as an international student, was found to be correlated at a significant level with acculturative stress ($r = -.21$, $p < .05$), but not with any of the measures of perceived discrimination including discrimination frequency ($r = -.05$, $p = .64$), discrimination based stress ($r = -.07$, $p = .50$), and perceived discrimination effects ($r = -.07$, $p = .47$), nor

inclinations to attribute discrimination ($r = -.14, p = .15$). Age was not found to be significantly correlated with acculturative stress ($r = -.04, p = .67$), any of the measures of perceived discrimination including discrimination frequency ($r = -.10, p = .30$), discrimination based stress ($r = -.01, p = .91$), and perceived discrimination effects ($r = -.09, p = .36$), nor inclinations to attribute discrimination ($r = -.14, p = .13$). Possible explanations for the lack of findings regarding age are addressed in the discussion section. There was a significant correlation between frequency of religious involvement and one of the measures of perceived discrimination, discrimination frequency ($r = .26, p < .01$), but not acculturative stress ($r = .06, p = .57$), the other measures of perceived discrimination including discrimination based stress ($r = .10, p = .32$) and perceived discrimination effects ($r = .10, p = .29$), nor inclinations to attribute discrimination ($r = .12, p = .19$).

The second hypothesis looked at the association between the acculturation factors of length of time in the United States, acculturation strategy, English proficiency, and social support and the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. It was hypothesized that students more proficient in English and participants with more social support will have lower levels of adjustment concerns, students in the country a longer amount of time will report lower levels of acculturative stress, but higher levels of perceived discrimination and inclination to attribute discrimination compared to those in the country a shorter amount of time, and higher connectedness to both culture of origin and country of study will be associated with lower levels of adjustment concerns.

Correlations were calculated to indicate the relationship between all of the acculturation factors and the adjustment factors. Length of time in the United States was not found to be

significantly correlated with acculturative stress ($r = -.13, p = .18$), any of the measures of perceived discrimination including discrimination frequency ($r = .05, p = .63$), discrimination based stress ($r = .02, p = .87$), and perceived discrimination effects ($r = .01, p = .88$), nor inclinations to attribute discrimination ($r = -.13, p = .17$). Connectedness to culture of origin was not found to be significantly correlated with acculturative stress ($r = .01, p = .90$), any of the measures of perceived discrimination including discrimination frequency ($r = -.03, p = .78$), discrimination based stress ($r = .00, p = .99$), and perceived discrimination effects ($r = .03, p = .75$), nor inclinations to attribute discrimination ($r = -.08, p = .39$). Connectedness to mainstream culture was found to be significantly correlated with acculturative stress ($r = -.28, p < .01$), but not to any of the measures of perceived discrimination including discrimination frequency ($r = .01, p = .96$), discrimination based stress ($r = -.06, p = .59$), and perceived discrimination effects ($r = -.10, p = .31$), nor inclinations to attribute discrimination ($r = -.17, p = .07$). English proficiency was found to be significantly correlated with acculturative stress ($r = -.31, p < .01$), but not to any of the measures of perceived discrimination including discrimination frequency ($r = -.18, p = .07$), discrimination based stress ($r = -.17, p = .10$), and perceived discrimination effects ($r = -.06, p = .56$), nor inclinations to attribute discrimination ($r = -.09, p = .36$). Social support was found to be significantly correlated with inclinations to attribute discrimination ($r = -.28, p < .05$), but not to acculturative stress ($r = -.02, p = .91$), nor any of the measures of perceived discrimination including discrimination frequency ($r = -.09, p = .51$), discrimination based stress ($r = -.06, p = .68$), and perceived discrimination effects ($r = .02, p = .90$).

Multiple regressions were calculated to examine the combined relationship between most of the pre-contact and acculturation factors which displayed significance (i.e., place of origin,

physical appearance, frequency of religious involvement, connectedness to mainstream culture, and English proficiency) and each of the adjustment factors. These regressions targeted the collective significance to allow for comparison among these pre-contact and acculturation factors. Place of origin was recoded to compare students from Europe to students from other continents as that is where the significant differences were found. Social support was left out of these analyses since a large proportion of participants did not complete the full measure (47%), and its inclusion would have led to a large decrease in power.

The results for the regression analyses are shown in Table 2. The model predicting acculturative stress accounted for 19% of the variance and was significant, $F(5,98) = 4.65, p < .01$. However only a few independent variables approached significance, including whether the student is from Europe ($\beta = .20, p = .05$), connection to mainstream culture ($\beta = -.17, p = .06$), and English proficiency ($\beta = -.20, p = .05$). The model predicting the perceived discrimination variable of discrimination frequency accounted for 15% of the variance ($R^2 = .15$) and was significant, $F(5,94) = 3.29, p < .01$. Significant variables in the model included frequency of religious involvement ($\beta = .24, p = .02$) and English proficiency ($\beta = -.22, p = .05$). The model predicting the perceived discrimination variable of discrimination based stress accounted for 7% of the variance ($R^2 = .07$) and was not significant, $F(5,86) = 1.26, p = .29$. The model predicting the perceived discrimination variable of perceived discrimination effects accounted for 8% of the variance ($R^2 = .08$) and was not significant, $F(5,101) = 1.68, p = .15$. The model predicting inclinations to attribute discrimination accounted for 17% of the variance ($R^2 = .17$) and was significant, $F(5,104) = 4.34, p < .01$. The only significant variable in the model was whether the student is from Europe ($\beta = .35, p = .00$).

Table 2

Multiple Regression for Adjustment Factors

Variable	<i>B</i>	SE <i>B</i>	β	Sig.	<i>R</i> ²
Acculturative Stress (ASSIS) Regression				.001	.192
From Europe	11.23	5.72	.20	.053	
Physical Appearance	-.60	.98	-.06	.539	
Frequency of Religious Involvement	1.10	1.65	.07	.507	
Connectedness to Mainstream Culture	-.37	.19	-.19	.056	
English Proficiency	-1.86	.94	-.20	.050	
Constant	99.24	18.02		.000	
Perceived Discrimination Frequency (GED) Regression				.009	.149
From Europe	4.32	2.50	.18	.087	
Physical Appearance	.29	.44	.07	.516	
Frequency of Religious Involvement	1.66	.71	.24	.022	
Connectedness to Mainstream Culture	.04	.09	.05	.649	
English Proficiency	-.88	.44	-.22	.049	
Constant	22.46	7.82		.005	

Perceived Discrimination Stress (GED) Regression				.288	.068
From Europe	8.22	5.15	.18	.114	
Physical Appearance	.15	.87	0.02	.867	
Frequency of Religious Involvement	.82	1.40	0.07	.558	
Connectedness to Mainstream Culture	.00	.16	.00	1.000	
English Proficiency	-0.97	.87	-.13	.268	
Constant	25.08	16.02		.121	
Perceived Discrimination Effects Regression				.146	.077
From Europe	1.99	.82	.26	.017	
Physical Appearance	.02	.14	.01	.893	
Frequency of Religious Involvement	.11	.22	.05	.609	
Connectedness to Mainstream Culture	-.01	.03	-.04	.702	
English Proficiency	-.01	.13	-.01	.966	
Constant	1.82	2.52		.473	

Inclination to Attribute Discrimination Regression				.001	.173
From Europe	214.89	60.37	.35	.001	
Physical Appearance	-1.02	10.13	-.01	.920	
Frequency of Religious Involvement	11.89	16.72	.07	.479	
Connectedness to Mainstream Culture	-3.20	1.93	-.16	.100	
English Proficiency	3.70	9.81	.04	.707	
Constant	152.73	187.73		.418	

The third hypothesis examined the interrelatedness of the adjustment factors. Correlations were conducted between them. Acculturative stress was found to be significantly correlated with all of the measures of perceived discrimination including discrimination frequency ($r = .38, p < .01$), discrimination based stress ($r = .41, p < .01$), and perceived discrimination effects ($r = .48, p < .01$) as well as with inclinations to attribute discrimination ($r = .40, p < .01$). Two of the three pairs of the perceived discrimination measures were significantly correlated including discrimination frequency with discrimination based stress ($r = .69, p < .01$) and discrimination frequency with perceived discrimination effects ($r = .23, p < .05$), while the correlation between discrimination based stress and perceived discrimination effects ($r = .15, p = .14$) was not significant. Finally, inclinations to attribute discrimination was found to be significantly correlated with all of the measures of perceived discrimination including discrimination frequency ($r = .49, p < .01$), discrimination based stress ($r = .46, p < .01$), and perceived discrimination effects ($r = .31, p < .01$).

The fourth and final hypothesis examines the relationship between the adjustment factors and general psychological health. Correlations were calculated between these variables as a first step. General psychological health was found to be correlated with acculturative stress ($r = -.26, p < .01$), but not with any of the measures of perceived discrimination including discrimination frequency ($r = -.16, p = .09$), discrimination based stress ($r = -.12, p = .22$), and perceived discrimination effects ($r = .01, p = .90$), nor with inclinations to attribute discrimination ($r = -.04, p = .71$).

Multiple regression was conducted with general psychological health as the dependant variable to see how variance would be distributed across the adjustment factors. The model

accounted for 13% of the variance ($R^2 = .13$) and approached significance, $F(5,75) = 2.31, p = .05$. Two of the five independent variables were significant including acculturative stress ($\beta = -.30, p < .05$) and the perceived discrimination variable of discrimination frequency ($\beta = -.38, p < .05$). The other measures of perceived discrimination including discrimination based stress ($\beta = .25, p = .12$) and perceived discrimination effects ($\beta = .11, p = .38$) and inclinations to attribute discrimination ($\beta = .13, p = .28$) were not significant. A new model was run using only the two significant factors and was found to be significant, $F(2,95) = 3.93, p < .05$, but only accounted for 8% of the variance ($R^2 = .08$). In this new model, acculturative stress retained its significance ($\beta = -.23, p < .05$) while the perceived discrimination variable of discrimination frequency did not ($\beta = -.09, p = .41$).

Exploratory Analyses

The discrimination free response included both quantitative and qualitative data. One part of the free response was a yes/no question as to whether the participant ever felt discriminated against due to being an international student. In responding, 33% said yes, 65% said no, and 2% did not answer the question. Using point-biserial correlations to see how these responses were associated with the other variables, no significant correlations were found with any of the pre-contact factors, the acculturation factors, nor with general psychological health. Significant correlations were found with acculturative stress ($r_{pb} = -.30, p < .01$), the perceived discrimination variables of discrimination frequency ($r_{pb} = -.26, p < .01$) and perceived discrimination effects ($r_{pb} = -.40, p < .01$), and inclinations to attribute discrimination ($r_{pb} = -.26, p < .01$).

The main qualitative portion asked participants to describe the discrimination they had experienced. Only 34% of participants ($n = 40$) wrote something in the blank space, including two participants responding that they had not felt discriminated at all. While more detailed statistical analyses were planned for these data, the small number of responses limited what could be done. The responses were read for themes and grouped into similar categories. All but one of the responses fit into exactly a single category, while one detailed response described discrimination in three categories. Therefore, a total of 42 responses were recorded. Of these responses, 21% described discrimination related to applications for employment or education, 14% described discrimination related to obtaining financial support, 14% described discrimination related to service in stores or restaurants, 12% described discrimination related to interactions with peers, 7% described discrimination related to others holding stereotypes, 7% described discrimination related to speaking English and communication, 5% described discrimination related to walking or riding a bike around town, 5% described discrimination related to interactions with authority figures, 5% described internalized feelings related to discrimination, 5% described discrimination related to academics and interactions with professors, and 5% described not experiencing any discrimination. Sample responses are provided in Table 3.

While the VIA was utilized as designed with two separate subscales measuring connectedness to heritage and mainstream culture, theory suggests that the combination of the two is important. As discussed previously, Berry (1998) describes four acculturation strategies based on these variables which are integration, assimilation, separation, and marginalization. For exploratory purpose, an attempt was made to categorize participants based on these strategies.

Table 3

Sample Responses from the Discrimination Free Response

Category	Sample Response
Applications for Employment or Education	“When it comes to employment, US citizens with lower qualifications are chosen. This is absolutely discriminatory.”
Obtaining Financial Support	“When I was denied financial assistanceship [sic] because it had to be given to the American students in my department first.”
Service in Stores or Restaurants	“I was told not to point at the food by the lady serving food, only because I did not know the name of the food. It really stressed me out.”
Interactions with Peers	“We ate our home country's food and an American girl said ‘It sucks!’ and laughed at us.”
Others Holding Stereotypes	“Western people think that Asian are poor country [sic]. And they don't have enough food to eat. They can't distinguish Japanese, Chinese, and Korean, etc... They just think Asian are Chinese.”
Speaking English and Communication	“In a conversation, Americans do not look me into my eyes; they speak and look at other Americans.”
Walking or Riding a Bike around Town	“While walking alone on the road, sometimes I hear unnecessary honking directed towards me. It is kind of unpleasant.”
Interactions with Authority Figures	“An immigration officer gave me a hard time at the airport ... because I had previously been an exchange student in high school at a US school and he must have not liked that.”
Internalized Feelings	“I am more sensitive to it when I am in bad mood, low spirit.”
Academics and Interactions with Professors	“Being called on in class; discussing/talking about home country in the regular classes as an example.”
Not Experiencing any Discrimination	“Never Been.”

The first strategy was to use the midpoint of each subscale for classification. The possible range of each subscale is 10 to 90 so the midpoint is 50. However, only two participants had scores at or below 50 on the heritage subscale and only 20 on the mainstream subscale. Therefore the vast majority of participants would be classified as integrated and with that comparisons could not really be made.

The next step was to examine the data to see if there were any obvious splitting points to separate between low and high connectedness, but there were not. Median splits were selected to be used to categorize between lower and higher connectedness for the current sample. The median for the heritage subscale was 71 and the median for the mainstream subscale was 65. Participants above the medians were classified as higher on the subscale and participants at or below the medians were classified as lower. These classifications were then used to categorize participants as either “leaning integrated”, “leaning assimilated”, “leaning separated”, and “leaning marginalized”. The word “leaning” is used as a reminder that the participants are merely selected for categories based on comparisons within the current data and that compared to other data most of the participants would likely be considered integrated. Analyses done this way can yield useful information, but all interpretations and assumed implications should be done with extreme caution.

The newly created acculturation strategy leaning was examined using ANOVA. Acculturation strategy leaning was found to be significantly associated with acculturative stress [$F(3,105) = 3.46, p < .05$], discrimination frequency [$F(3,102) = 2.81, p < .05$], and inclinations to attribute discrimination [$F(3,111) = 4.07, p < .01$]. Post-hoc comparisons using the Tukey HSD test indicated significantly higher levels of acculturative stress for the leaning separated

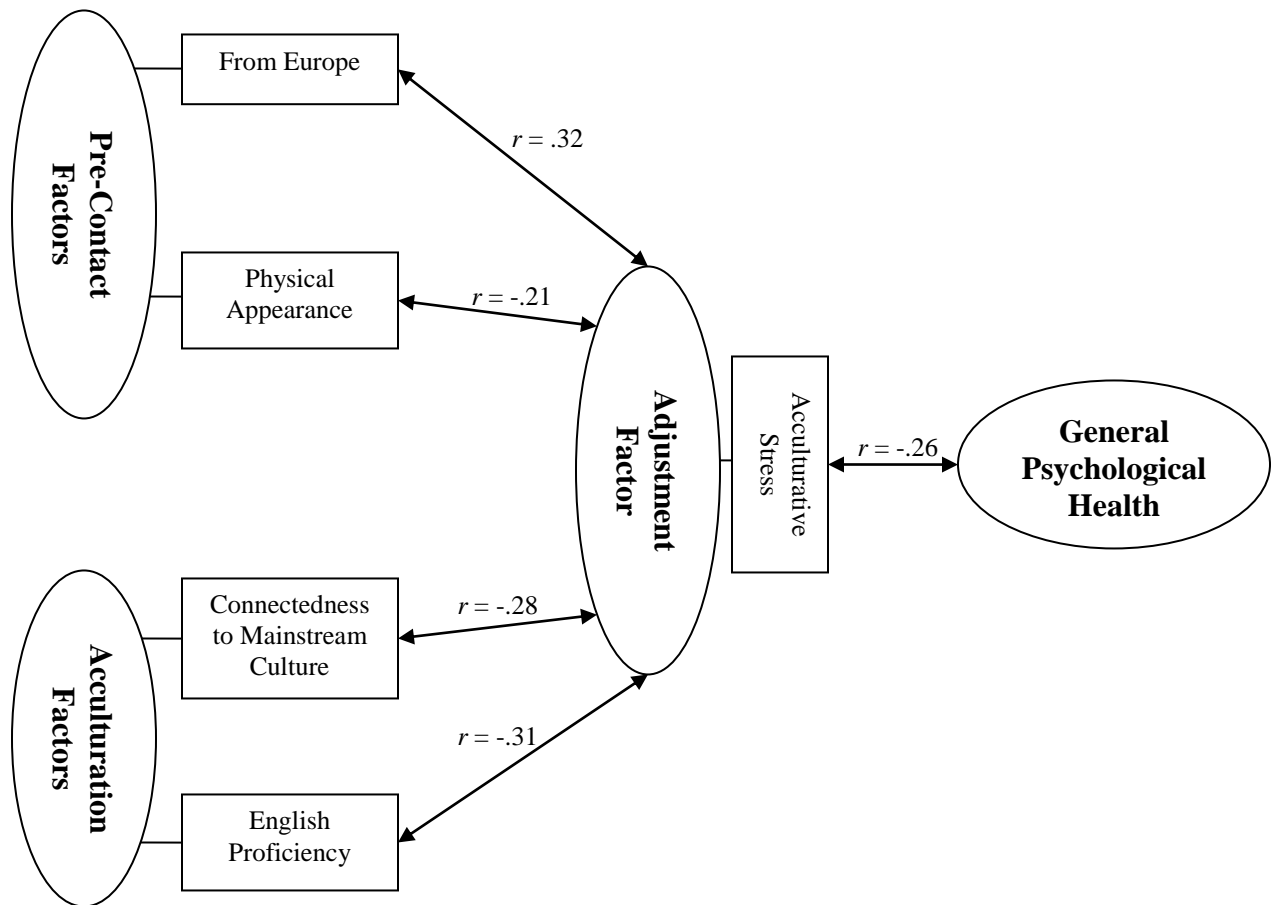
group ($M = 90.10$, $SD = 17.96$) compared to the leaning integrated group ($M = 71.87$, $SD = 20.83$), inclination to attribute discrimination at significantly higher levels for the leaning separated group ($M = 529.78$, $SD = 210.18$) in comparison with the leaning integrated group ($M = 345.03$, $SD = 206.36$), and no significant group differences for discrimination frequency. No significant association was found between acculturation strategy leaning and perceived discrimination effects [$F(3,109) = 1.48$, $p = .22$] or discrimination based stress [$F(3,93) = 1.64$, $p = .19$]. The new variable was additionally found to be significantly associated with general psychological health [$F(3,110) = 6.55$, $p < .01$]. In this case, the Tukey HSD test indicated that the differences were found between the leaning marginalized ($M = 44.26$, $SD = 9.99$) and leaning integrated ($M = 52.71$, $SD = 5.31$) groups.

In addition to the aforementioned analyses, exploratory mediation analysis (e.g., Baron & Kenny, 1986) was conducted with the goal of better understanding how all of the constructs in the study are interconnected. Unfortunately not nearly as many relationships between variables were found to be statistically significantly related as was expected, and so mediation analysis was only conducted on those which were significant. These major significant findings have been graphically presented in Figure 2.

Mediation analysis was used to see if the adjustment factor mediates the relationship between the pre-contact factor or acculturation factor and general psychological health. The adjustment factor mediator used was acculturative stress, the pre-contact factors examined were whether the student was from Europe as well as physical appearance, and the acculturation factors analyzed were connectedness to mainstream culture as well as English proficiency. The steps used for running the mediation analyses were as described by Preacher & Hayes (2004),

including using the SPSS macro code they provide in their article. This methodology is based on running three regression equations, including the initial variable predicting the outcome variable, the initial variable predicting the mediator, and the initial variable and mediator predicting the outcome variable. Then a Sobel test is run evaluating the data for mediation. Of the four variables examined, the only one which resulted in a significant mediatory relationship was whether or not the student was from Europe.

Figure 2. Graphical depiction of the major findings from the current study examining the relationship between pre-contact factors, acculturation factors, the adjustment factor of acculturative stress, and general psychological health.



DISCUSSION

The current study examined the experiences of international students, and in particular their experiences of discrimination and how that relates to other aspects of adjustment. The goal has been to increase the understanding of these experiences in order to provide directions for future interventions to improve international student experiences. Overall, the results suggest an important role for the variables of country of origin, physical appearance, connectedness to mainstream culture, and English proficiency. While the importance of many of the other variables examined was not well established in the current data, possible reasons for a lack of significant findings are explored. The results are discussed in terms of how they describe life for international students and what theoretical and practical implications they provide. Limitations along with directions for future research are presented.

Pre-Contact Factors and Adjustment Factors

The first hypothesis suggested that pre-contact factors such as place of origin, physical appearance, religion, and age would be associated with the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. Specifically, it was thought that attributes indicating a greater cultural distance would be associated with more adjustment concerns. In addition, it was believed that older participants would report higher levels of adjustment concerns.

Results indicated that place of origin was found to be associated with the adjustment factors. The overall finding was that international students from Europe generally reported lower levels of adjustment difficulties compared to international students from other continents. These results have been supported in the literature (e.g., Poyrazli, Thukral, & Duru, 2010; Yeh & Inose, 2003). Although previous studies suggest a relationship between religious membership and adjustment factors (e.g., Sodowsky & Plake, 1992) and between age and adjustment factors (e.g., Poyrazli & Lopez, 2007), there were no significant finding for these variable in the current study. The small group sizes of participants for most religions hindered the power to find differences for that variable. Fifty-three percent of participants identified as Christian, 20% reported not having a religion, and 3% did not answer the question, which left only 24% of participants combined reporting practicing Islam, Buddhism, Hinduism, or another religion. Similarly, a restriction in the range of ages lessened the opportunity to find significance. Participants ranged in age from 18 to 40, and only 7% of participants ($n = 8$) were over 30 years old.

Physical appearance and frequency of religious practice were each significantly associated with exactly one of the adjustment factor variables. The more easily a student could be identified as being from another country, the higher the acculturative stress. This finding is consistent with some previous research (e.g., Krahe et al., 2005). However, the correlation was quite low ($r = -.21$), and there were no significant findings between this variable and any of the other adjustment factors. It is likely that the subjective self-report nature of the measurement of physical appearance limited its ability to uncover more and stronger relationships. Regarding religious involvement, study results indicate that the more frequently international students participate in religious activities the more discriminatory events they reported. This result was

not predicted and unfortunately the data do not provide a detailed understanding of the finding. While this relationship has been found previously for people practicing minority religions (e.g., Ghaffari & Çiftçi, 2010), the majority of the participants identified as Christian and statistical analyses indicated no significant differences in scores among participants who identified belonging to a religion. Some possible explanations include that the students could be more targeted for discrimination because of their religious involvement, their religious involvement could somehow heighten their awareness of discrimination, or their religious involvement demonstrates their engagement in the community and therefore the increased opportunity for experiencing discrimination. Further research could be beneficial in teasing out these findings. Like with the physical appearance variable, the one significant correlation was low ($r = .26$) and there were no significant findings between frequency of religious involvement and any of the other adjustment factors.

Acculturation Factors and Adjustment Factors

The second hypothesis suggested that acculturation factors such as length of time in the United States, acculturation strategy, English proficiency, and social support would be associated with the three adjustment factors of acculturative stress, perceived discrimination, and inclination to attribute discrimination. Specifically, it was thought that higher proficiency in English, having more social support, and higher connectedness to both culture of origin and country of study would all be associated with fewer adjustment concerns. In addition it was believed that students in the country longer would report lower levels of acculturative stress but higher levels of perceived discrimination and inclination to attribute discrimination.

Results for the second hypothesis were somewhat limited. Although previous research indicated an association between length of time in the host country and the adjustment factors (e.g., Wilton & Constantine, 2003; Poyrazli & Lopez, 2007) and between connectedness to country of origin and the adjustment factors (e.g., Donà & Berry, 1994; Krishnan & Berry, 1992), no significant associations were found in the current study. Regarding length of time in the country, 51% of participants had been in the country less than a year suggesting possibly not as much variability as desired to find differences. In addition, since different relationships were expected to hold between this variable and acculturative stress and the other adjustment factors and since all of the adjustment factors were expected to be interrelated, it is hardly surprising a significant result was not obtained. As for connectedness to country of origin, the potential range of scores for the measure is from 10 to 90 but the range in responses was only 46 to 90 with only 8% of participants ($n = 9$) below 60. While likely beneficial for the students to have close ties with the cultures of their home countries, this restriction in range likely impeded the chances of significant findings.

Stronger connectedness to the mainstream culture and higher English proficiency were both associated with lower levels of acculturative stress, but not significantly related to any of the other adjustment factors. Higher levels of social support were related to lower levels of inclinations to attribute discrimination, but not to any of the other adjustment factors. All three of these significant findings were predicted and expected from prior research (e.g., Donà & Berry, 1994; Krishnan & Berry, 1992; Poyrazli et al., 2004; Yeh & Inose 2003). However, significant findings were expected and not found between these variables and the other adjustment factors. For both connectedness to the mainstream culture and English proficiency, non-significant

findings tended to be in the anticipated direction and a few approached significance (e.g., $p = .07$). Therefore it is likely that with a larger number of participants the relationships among these variables would be better established. With the social support measure, unfortunately it seems that it was a difficult measure for this population. Only 53% of participants ($n = 63$) answered all of the questions on the measure, and the high proportion of missing data led to decrease power to obtain significant findings. This measure was given an estimated reading grade level of 12.9 which could have been a problem. Related to understanding the instructions of the measure, it is quite possible that many participants did not understand what not applicable means as the “NA” option was rarely selected.

Multiple regressions were conducted to tie together the first two hypotheses and attempt to better understand the collective impact of the pre-contact and acculturation factors on the adjustment factors. These analyses suggest that the main factors in accounting for variance in the adjustment factors include whether the international student is from Europe or another continent, level of English proficiency, frequency of religious involvement, and connectedness to mainstream culture. Again, these associations have been found in previous research (e.g., Donà & Berry, 1994; Ghaffari & Çiftçi, 2010; Krishnan & Berry, 1992; Poyrazli et al., 2004; Yeh & Inose 2003). However, the associations varied depending on the adjustment factor variables examined and further research would be beneficial in gaining a more complete understanding of why that might be the case.

Adjustment Factors

The third hypothesis suggested that all of the adjustment factors should be interrelated. These factors included acculturative stress, discrimination frequency, discrimination based stress,

perceived discrimination effects, and inclinations to attribute discrimination. Nine of the ten possible pairs of variables were found to be significantly correlated in the direction anticipated, largely meeting expectations. The only non-significant finding was between the variables of discrimination based stress and perceived discrimination effects. Given that the perceived discrimination effects measure consists of only two items and has not yet been thoroughly empirically examined, this specific non-significant result is hardly surprising. This measure was included in the current study for consistency as it tends to be used alongside the inclinations to attribute discrimination measure.

Adjustment Factors and General Psychological Health

The fourth hypothesis suggested that higher levels on the adjustment factors would be associated with lower levels of general psychological health. As anticipated, such as relationship was found for acculturative stress; however, no significant relationship was obtained for any of the other adjustment factor variables. Similar to with the connectedness to country of origin variable, a restriction in range likely limited findings. The potential range of scores for the general psychological health measure is from 0 to 60. The range in responses was from 15 to 60, with 70% of participants ($n = 83$) scoring above 45. Although it is great news that in general the international student participants are reporting high levels of general psychological health, the lack of variability among participants makes finding differences among them rather difficult. In addition, it is possible that difficulties have underreported due the stigma of admitting having problems. Multiple regression analyses confirmed that the adjustment factor of acculturative stress was the most associated with general psychological health in these data.

Discrimination Free Response

As previously described, the discrimination free response included a yes/no question as to whether the participant ever felt discriminated against due to being an international student. A third of international students answered the question “yes”, which is a high proportion of the students. Correlations were used to examine the association between the answer to this question and the other variables in the current study. As expected, there were significant correlations with most of the measures of the adjustment factors. This result is intuitive as the question itself measures an adjustment factor. No significant correlations were found with any of the pre-contact factors, the acculturation factors, nor with general psychological health. While some associations were expected, it seems that the relationship among variables is somewhat complex and a simple yes/no dichotomy does not allow for much variability among the participants to detect differences.

The qualitative data from the discrimination free response were analyzed based on themes using many of the steps from content analysis (e.g., Miles & Huberman, 1984; Weber, 1985). It is noteworthy that at least two responses were categorized in each theme. That is, no international student described an experience of discrimination which was completely unique to that person. At least one other person described a somewhat related experience. The most common discrimination described was related to applying for a job or for education. This result makes sense given the age of the participants, their career trajectories, and the extra difficulties and steps required with working and attending schools for non-citizens. Difficulties related to employment for international students have been documented in the literature (e.g., Nyland et al., 2009). Another common experience of discrimination was associated with obtaining loans and

other financial support. Other common themes included describing discrimination related to service in stores and restaurants as well as discrimination related to interactions with peers.

Acculturation Strategy

In an exploratory analysis, the scores from the VIA were used to categorize participants into acculturation strategy groups. Most participants reported relatively strong connections to both the heritage and mainstream cultures. While good for the participants as these tend to be protective factors, restriction of range on the measures limits the possibilities for analyses and interpretations. As the data provided no clear dividing points, median splits were used to characterize acculturation strategy based on comparisons within the sample. Since the scores used for the lower ranges were merely lower compared to others in the sample and not based on what was possible on the measures, interpretations should be made with caution.

The finding from these analyses indicated that there were significant differences based on acculturation strategy and the adjustment factors. Although it would have been predicted that the differences would be found between the leaning integrated and leaning marginalized groups, the differences were actually found between the leaning integrated and leaning separated group. One potential explanation is that those participants in the leaning marginalized group care less about fitting in to either culture, and therefore report less distress in adjustment. When the association between acculturation strategy leaning and general psychological health was examined, the significant differences were found between the leaning integrated and leaning marginalized groups as would be predicted. Therefore, although it might be that people leaning marginalized are less concerned about adjustment, it does seem that their overall psychological health might still be significantly impacted.

Mediation Analysis

The final step of the exploratory analyses of the current study intended to lead to a better understanding of how the pre-contact factors, acculturation factors, adjustment factors, and general psychological health are all connected. Ideally the study would have obtained more significant findings which would have led to more data to integrate. The more robust variable among the adjustment factors was acculturative stress, and it was explored as a potential mediator. It was found to mediate the relationship between whether the international student came from Europe or another continent and general psychological health. However no mediation relationship was found for the variables of physical appearance, English proficiency, and connectedness to the mainstream culture. What this means is that it is likely that a student's place of origin likely influences the student's acculturative stress level which in turn influences general psychological health. The same path does not hold for the other variables and their relationship with general psychological health is better viewed directly.

Limitations

As with any study, this investigation is not without limitations. First of all, the study employs a correlational design, meaning that it cannot be used to determine cause and effect. For example, although acculturative stress found to be related to general psychological health, it does not mean that problems in the acculturation process necessarily led to poor psychological health. Other occurrences could explain the findings such as poorer psychological health led to problems with acculturation or some other unidentified variable is the culprit for both. Still, prior research and theory guided the current hypotheses and identifying associations remains important even if one cannot be absolutely sure of the direction of causality.

Another limitation is that the fact the measures were all self-report. One concern with self-reports is that participants might respond in a manner attempting to look better compared to what more objective measures would report. For example, some participants might have minimized experiences of being discriminated against due to a feeling that if they are honest that they will be viewed as complainers. Similarly participants might underreport discrimination as a means of trying to reduce their own hurt feelings from it. With self-reports a different concern is that there might not be great consistency across participants. For instance, when measuring participants' English proficiency by asking them how well they communicate in English, people whose communication skills are worse might actually give themselves better ratings due to the subjective nature of the question. Responses could be similar with the subjectivity in asking the degree to which participants' physical appearances suggest that they are international students. Despite these shortcomings, self-reports was used because people tend to be the best reporters of their own experiences and for the majority of the constructs more objective measures would be unfeasible to implement or overly costly.

Along with self-report, self-selection presents a limitation. International students choose whether or not to participate in the study. Although attempts were made to reach out to as many of the students as possible, it is likely that those more involved in the community would be the ones most willing to participate. The international students who are struggling the most are potentially the least likely to be represented in the data, and how that might impact the findings is unknown. Related to self-selection is the limitation that in the current study the majority of participants report functioning well. Again, missing the population of international students who are having more problems likely changes what is found.

The location of the study represents another limitation. It cannot be assumed that how international students find living in a small university town in Mississippi, with a population who tend to be somewhat traditional and conservative and where there is a long history of racial tension, extends to larger cities and other regions of country. In addition, the fact that the study has attempted to connect so many different constructs is that last limitation which will be discussed. Although a main goal of the study has been a better understanding of the complete picture of international student experiences and that requires analyzing many pieces, the importance that each individual piece plays might be somewhat hidden.

While this current study does involve limitations, it advances the literature in terms of a better understanding of international students' experiences by giving a more complete picture of many of the variables involved in international student adjustment. Next some ideas for future research will be discussed.

Future Research

While the current study did highlight several variables important in the well being of international students, more research would be beneficial in obtaining a better understanding of the complex relationship between the variables. In particular more detailed analyses of some of the variables with significant findings and with which interventions could be used, such as English proficiency and connectedness to mainstream culture, could be beneficial. Replicating the findings and expanding on the understanding of the connections would be a good start. Then could come some work exploring the impact of interventions such as seeing how things like participating in a cultural class, or taking part in a practicing English class, or being paired with a student from the mainstream culture would impact experiences and outcomes.

Since one concern of the current study is that those international students struggling the most might be underrepresented, further research making efforts to target participants less likely to self-select for this kind of study would be valuable. The line of research would likely be difficult, but some means could be by including international students who have engaged in therapeutic services such as at the counseling center or by tying a research project to the administrative processes of the university which could increase participation rates. Another way to expand the study to include others who might be having more difficulty with acculturation would be to conduct similar studies with refugees, immigrants, or non-student sojourners.

Another direction of research which would be useful would be a detailed analysis using a longitudinal design. If the full course of international students are examined from before they arrive until when they return, these data would allow better understanding of the acculturation process for the students and what might have served as protective factors for them and what made them more vulnerable to difficulties. Such a study would be difficult to implement, but extended data detailing the complete experiences of international students could be extremely valuable in understanding what life is like for them and how to improve what it is like to be an international student.

Practical Implications

The main findings of the current study were that the variables found most related to international student adjustment were country of origin, physical appearance, English proficiency, and connectedness to mainstream culture. While causality cannot be assumed, it follows that efforts targeting these variables could reasonably lead to improved experiences.

With regard to where students are from, knowing that the difficulty of adjustment appears to increase with greater cultural distances, interventions should target those students from cultures most dissimilar. Other studies have suggested similar focusing of efforts (e.g., Poyrazli et al., 2010). No assumptions should be made that merely because students are from a particular cultural background that they will or will not struggle adjusting; however, since resources frequently are scarce, it makes sense to focus efforts on where they are most likely needed. Still though, caution should be given as to not single out students and make them feel stigmatized. One possible manner of implementation would be to develop clubs for international students from certain cultures, for instance from Asia, which addresses the unique needs of students with similar backgrounds.

English proficiency is another variable associated with adjustment problems. Providing as much support as possible in learning and improving English communication is a practical implication of this finding. It could be implemented in multiple ways such as with informal discussion groups or with more formalized classes. In addition, obtaining English support could be either optional to international students or required. That decision should be weighed based on the benefits that the students would get out of going versus the demands already places on them.

Connectedness to mainstream culture is another variable which was found related to international student adjustment. Therefore efforts to make international students feel more connected to the local culture would likely be beneficial. One way this could be done would be with cultural classes, where various aspects of the culture are learned in a classroom setting and through field trips. Another manner would be to pair international students with willing non-internationals to hang out and get to know them and learn about the culture in a more informal

style. The University of Mississippi has already implemented programs attempting to improve the acculturation process of international students such as offering international coffee hours, weekly meetings of combination support and social groups, international sports teams, and various recreational trips.

The implications regarding the association between physical appearance and adjustment concerns are not as straightforward as for the other variables. While it might be possible to teach international students how to adapt their appearance to fit in, there are serious ethical considerations involved. A better approach likely would be to teach the greater community to show more appreciation and tolerance for cultural differences. Efforts in this area could go a long way in not only improving the experiences of international students, but the experiences of other minorities as well. The idea of encouraging in the greater community multicultural exposure, and hopefully with it tolerance, has been suggested by other researchers as well (e.g., Williams & Johnson, 2011).

Research and Theoretical Implications

Several of the analyses have led to various research and theoretical implications. Firstly with regard to research, measurement in the current study was a difficult task. Many of the measures had to be adapted to be used for international student participants and the majority of them have not frequently been previously examined with international students. The social support measure in particular seemed to cause problems. If the experiences of international students are going to be effectively and meaningfully measured and analyzed, there is a need for developing valid and reliable assessment tools for use with this population. While the current study made use of the best measures currently available, improvement in measurement would

likely lead to a better ability to obtain significant and useful findings with resulting valuable implications.

Current data suggest stronger religious involvement is related with more adjustment difficulties. Given that the majority of participants identified as Christian and mainstream religious affiliation and involvement is believed to be a protecting factor in the area of study, these results appear counterintuitive. The implications are that more research would be useful in replicating the finding, and if it holds more research and theoretical work would be beneficial to contribute to the understanding of what is involved. While some potential hypotheses for the findings have been provided, efforts for obtaining a better understanding would be good.

Another surprise finding was that participants in the separated adjustment leaning group were the ones reporting more adjustment difficulties compared to the integrated leaning group rather than the marginalized. In attempts to better understand this finding, similar analyses were conducted for general psychological health and the findings were as would be predicted. These results suggest that the leaning separated group reports the most adjustment concerns whereas the leaning marginalized group reports the worst general psychological health. A potential hypothesis was provided, but more work describing the factors involved in determining one's acculturation strategy and its implications would be of value.

Conclusion

The current study explored the experiences of international students, with a particular emphasis on felt discrimination. The goal was to obtain a better understanding what life is like for them in order to provide directions for future interventions to improve international student experiences. Results indicate that feeling discriminated appears unfortunately to be a common

occurrence for international students. Efforts to reduce this discrimination felt would be valuable as would further research on its impact on them. The data of the current study describe that the variables of country of origin, physical appearance, connectedness to mainstream culture, and English proficiency are likely of particular important with regard to the international student experience. These findings suggest that efforts made which target these variables could be beneficial in improving their experiences.

List of References

REFERENCES

- Adams, G., Fryberg, S. A., Garcia, D. M., & Delgado-Torres, E. U. (2006). The psychology of engagement with indigenous identities: A cultural perspective. *Cultural Diversity and Ethnic Minority Psychology, 12*, 493–508.
- Adams, G., Tormala, T. T., & O'Brien, L. T. (2006). The effect of self-affirmation on perception of racism. *Journal of Experimental Social Psychology, 42*, 616–626.
- Babiker, I. E., Cox, J. L., & Miller, P. M. (1980). The measurement of cultural distance and its relationship to medical consultations, symptomatology and examination performance of overseas students at Edinburgh University. *Social Psychiatry and Psychiatric Epidemiology, 15*, 109-116.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Blais, M. A., Lenderking, W. R. Baer, L., deLorell, A., Peets, K., Leahy, L., et al. (1999). Development and initial validation of a brief mental health outcome measure. *Journal of Personality Assessment, 73*, 359–373.
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review, 46*, 5-34.

- Berry, J. W. (1998). Acculturation and health: Theory and research. In S. S. Kazarian & D. R. Evans (Eds.), *Cultural clinical psychology: Theory, research, and practice* (pp. 39-57). New York: Oxford University Press.
- Berry, J. W. & Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, 21, 490-511.
- Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African-Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology*, 77, 135–149.
- Brender, A. (2004). In Japan, protection or prejudice? *Chronicle of Higher Education*, 50, A37-A38.
- Cassidy, C., O'Conner, R. C., Howe, C., & Warden, D. (2004). Perceived discrimination and psychological distress: The role of personal and ethnic self-esteem. *Journal of Counseling Psychology*, 51, 329-339.
- Cheah, C. S. L., & Nelson, L. J. (2004). The role of acculturation in the emerging adulthood of aboriginal college students. *International Journal of Behavioral Development*, 28, 495-507.
- Constantine, M. G., Okazaki, S., & Utsey, S. O. (2004). Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, 74, 230–241.
- Crocker, J., & Major, B. (1989). Social stigma and self-esteem: The self-protective properties of stigma. *Psychological Review*, 96, 608-630.

- Crocker, J., Voelkl, K., Testa, M., & Major, B. (1991). Social stigma: The affective consequences of attributional ambiguity. *Journal of Personality and Social Psychology, 60*, 218-228.
- Curtin, F., & Schulz, P. (1998). Multiple correlations and Bonferroni's correction. *Biological Psychiatry, 44*, 775-777.
- Donà, G., & Berry, J. W. (1994). Acculturation attitudes and acculturative stress of Central American refugees in Canada. *International Journal of Psychology, 29*, 57-70.
- Dragomirecka, E., Lenderking, W. R., Motlova, L., Goppoldova, E., & Šelepova, P. (2006). A brief mental health outcomes measure: Translation and validation of the Czech version of the Schwartz outcomes scale-10. *Quality of Life Research, 15*, 307-312.
- Duru, E., & Poyrazli, S. (2007). Personality dimensions, psychosocial-demographic variables, and English language competency in predicting level of acculturative stress among Turkish international students. *International Journal of Stress Management, 14*, 99-110.
- Field, A. (2009). *Discovering Statistics Using SPSS* (3rd edition). London: Sage.
- Ghaffari, A., & Çiftçi, A. (2010). Religiosity and self-esteem of Muslim immigrants to the United States: The moderating role of perceived discrimination. *International Journal for the Psychology of Religion, 20*, 14-25.
- Hanassab, S. (2006). Diversity, international students, and perceived discrimination: Implications for educators and counselors. *Journal of Studies in International Education, 10*, 157-172.
- Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior, 40*, 208-230.

- King, K. R. (2003). Racism or sexism? Attributional ambiguity and simultaneous membership in multiple oppressed groups. *Journal of Applied Social Psychology, 33*, 223–247.
- Klonoff, E. A., & Landrine, H. (1999). Cross-validation of the schedule of racist events. *Journal of Black Psychology, 25*, 231–254.
- Koeske, G. F., & Koeske, R. D. (1989). Work load and burnout: Can social support and perceived accomplishment help? *Social Work, 34*, 243–248.
- Koeske, G. F., & Koeske, R. D. (1993). A preliminary test of a stress-strain-outcome model for reconceptualizing the burnout phenomenon. *Journal of Social Service Research, 17*, 107–135.
- Krahé, B., Abraham, C., Felber, J., & Helbig, M. K. (2005). Perceived discrimination of international visitors to universities in Germany and UK. *British Journal of Psychology, 96*, 263-281.
- Krishnan, A., & Berry, J. W. (1992). Acculturative stress and acculturation attitudes among Indian immigrants to the United States. *Psychology and Developing Societies, 4*, 187-212.
- Lacina, J. G. (2002). Preparing international students for a successful social experience in higher education. *New Directions for Higher Education, 117*, 21-27.
- Landrine, H., & Klonoff, E. A. (1996). The schedule of racist events: A measure of racist discrimination and a study of its negative physical and mental health consequences. *Journal of Black Psychology, 22*, 144–168.

- Landrine, H., Klonoff, E. A., Corral, I., Fernandez, S., & Roesch, S. (2006). Conceptualizing and measuring ethnic discrimination in health research. *Journal of Behavioral Medicine, 29*, 79-94.
- Laux, J. M., & Ahern, B. (2003). Concurrent validity of the Schwartz outcome scale with a chemically dependent population. *Journal of Addictions and Offender Counseling, 24*, 2-10.
- Lee, J. J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination and neo-racism. *Higher Education, 53*, 381-409.
- Lee, J.-S., Koeske, G. F., & Sales, E. (2004). Social support buffering of acculturative stress: A study of mental health symptoms among Korean international students. *International Journal of Intercultural Relations, 28*, 399-414.
- Lightsey, O. R., Jr., & Barnes, P. W. (2007). Discrimination, attributional tendencies, generalized self-efficacy, and assertiveness as predictors of psychological distress among African Americans. *Journal of Black Psychology, 33*, 27-50.
- MacWilliams, B. (2004). Foreign students attacked in Ukraine, *The Chronicle of Higher Education, 50*, A45.
- Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis: A sourcebook of new methods*. Beverly Hills, CA: Sage Publications, Inc.
- Moradi, B., & Hasan, N. T. (2004). Arab American persons' reported experiences of discrimination and mental health: The mediating role of personal control. *Journal of Counseling Psychology, 51*, 418-428.

- Moradi, B., & Risco, C. (2006). Perceived discrimination experiences and mental health of Latina/o American persons. *Journal of Counseling Psychology, 53*, 411-421.
- Mossakowski, K. N. (2003). Coping with perceived discrimination: Does ethnic identity protect mental health? *Journal of Health and Social Behavior, 44*, 318-331.
- Nakagawa, S. (2004). A farewell to Bonferroni: The problems of low statistical power and publication bias. *Behavioral Ecology, 15*, 1044-1045.
- Nasir, L. S. (1994). Evidence of discrimination against international medical graduates applying to family practice residency programs. *Family Medicine, 26*, 625-629.
- Nyland, C., Forbes-Mewett, H., Marginson, S., Ramia, G., Sawir, E., & Smith, S. (2009). International student workers in Australia: A new vulnerable workforce. *Journal of Education and Work, 22*, 1-14.
- Open Doors, Institute of International Education. (2008). *Data tables: International students 2007-2008*. Retrieved January 15, 2009, from <http://www.opendoor.iienetwork.org/>
- Poyrazli, S., Kavanaugh, P. R., Baker, A., & Al-Timimi, N. (2004). Social support and demographic correlates of acculturative stress in international students. *Journal of College Counseling, 7*, 73-82.
- Poyrazli, S., & Lopez, M. D. (2007). An exploratory study of perceived discrimination and homesickness: A comparison of international students and American students. *The Journal of Psychology, 141*, 263-280.
- Poyrazli, S., Thukral, R. K., & Duru, E. (2010). International students' race-ethnicity, personality, and acculturative stress. *Journal of Psychology and Counseling, 2*, 25-32.

- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731.
- Rivas-Vasquez, R. A., Rivas-Vasquez, A., Blais, M. A., Rey, G. J., Rivas-Vasquez, F., Jacobo, M., et al. (2001). Development of a Spanish version of the Schwartz outcome scale-10: A brief mental health outcome measure. *Journal of personality assessment, 77*, 436–446.
- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79*, 49–65.
- Ruggiero, K. M., & Taylor, D. M. (1997). Why minority group members perceive or do not perceive the discrimination that confronts them: The role of self-esteem and perceived control. *Journal of Personality and Social Psychology, 72*, 373-389.
- Sandhu, D.S., & Asrabadi, B.R. (1994) Development of an acculturative stress scale for international students: Primary findings. *Psychological Reports, 75*, 435–448.
- Sandhu, D. S., & Asrabadi, B. R. (1998). An acculturative stress scale for international students: A practical approach to stress measurement. In C. P. Zalaquett & R. J. Wood (Eds.), *Evaluating Stress: A book of resources, Vol. 2* (pp. 1-33). Lanam, MD: Scarecrow Press.
- Sands, E. A., & Berry, J. W. (1993). Acculturation and mental health among Greek-Canadians in Toronto. *Canadian Journal of Community Mental Health, 12*, 117-124.
- Schmitt, M. T., Spears, R., & Branscombe, N. R. (2003). Constructing a minority group identity out of shared rejection: The case of international students. *European Journal of Social Psychology, 33*, 1–12.

- Sodowsky, G. R., & Plake, B. S. (1992). A study of acculturation differences among international people and suggestions for sensitivity to within-group differences. *Journal of Counseling and Development, 71*, 53–59.
- Swagler, M. A., & Jome, L. M. (2005). The effects of personality and acculturation on the adjustment of North American sojourners in Taiwan. *Journal of Counseling Psychology, 52*, 527-536.
- Weber, R. P. (1985). *Basic content analysis*. Beverly Hills, CA: Sage Publications, Inc.
- Williams, C. T., & Johnson, L. R. (2011). Why can't we be friends?: Multicultural attitudes and friendships with international students. *International Journal of Intercultural Relations, 35*, 41–48.
- Wilkinson, L., & Task Force on Statistical Inference. (1999). Statistical methods in psychology journals: Guidelines and explanations. *American Psychologist, 54*, 594-604.
- Wilton, L., & Constantine, M. G. (2003). Length of residence, cultural adjustment difficulties, and psychological distress symptoms in Asian and Latin American international college students. *Journal of College Counseling, 6*, 177–186.
- Ye, J. (2005). Acculturative stress and use of the internet among East Asian international students in the United States. *CyberPsychology and Behavior, 8*, 154-161.
- Ye, J. (2006). An examination of acculturative stress, interpersonal social support, and use of online ethnic social groups among Chinese international students. *The Howard Journal of Communication, 17*, 1-20.

- Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counselling Psychology Quarterly, 16*, 15-28.
- Young, J. L., Waehler, C. A., Laux, J. M., McDaniel, P. S., & Hilsenroth, M. J. (2003). Four studies extending the utility of the Schwartz outcome scale (SOS-10). *Journal of Personality Assessment, 80*, 130-138.
- Zakalik, R. A., & Wei, M. (2006). Adult attachment, perceived discrimination based on sexual orientation, and depression in gay males: Examining the mediation and moderation effects. *Journal of Counseling Psychology, 53*, 302-313.

Appendix

APPENDIX

This appendix contains the complete survey used in the current study:

Demographics:

1. What is your age?
2. What is your gender? Male / Female
3. Which best describes you? Undergraduate Student / Graduate Student / Neither
4. If not a student, what do you do?
5. What country and city/town are you from?
6. How long have you been in the USA?
7. How much longer do you anticipate being in the USA?
8. If you have lived somewhere other than the country you are from before coming to the USA, please describe where else you have lived and for how long.
9. Are you a member of a minority group in your home country?
10. What is your religion?
11. How frequently do you engage in religious activities?

Not at All							Very Often
1	2	3	Sometimes 4	5	6		7

12. How well do you think you speak English?

Not Very Well							Extremely Well
1	2	3	4	5	6		7

13. How much of an accent do you think you have when speaking English?

A Strong Accent							No Accent
1	2	3	4	5	6		7

14. How well do you think you read and understand English?

Not Very Well							Extremely Well
1	2	3	4	5	6		7

15. How easily do you believe people can tell you are an international student based on your physical appearance (e.g., skin color, hair style, clothing, etc.)

Very Easily							Not Very Easily
1	2	3	4	5	6	7	

Vancouver Index of Acculturation (VIA): (modified as shown)

1. I often participate in my ~~heritage~~ home cultural traditions.

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

2. I often participate in mainstream ~~North~~ U.S. American cultural traditions.

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

3. I would be willing to marry a person from my ~~heritage~~ home culture.

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

4. I would be willing to marry a ~~North~~ U.S. American person.

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

5. I enjoy social activities with people from the same ~~heritage~~ home culture as myself.

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

6. I enjoy social activities with typical ~~North~~ U.S. American people.

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

7. I am comfortable working with people of the same ~~heritage~~ home culture as myself.

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

8. I am comfortable working with typical ~~North~~ U.S. American people.

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

9. I enjoy entertainment (e.g., movies, music) from my ~~heritage~~ home culture.

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

10. I enjoy ~~North~~ U.S. American entertainment (e.g., movies, music).

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

11. I often behave in ways that are typical of my ~~heritage~~ home culture.

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

12. I often behave in ways that are 'typically ~~North~~ U.S. American.'

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

13. It is important for me to maintain or develop the practices of my ~~heritage~~ home culture.

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

14. It is important for me to maintain or develop ~~North~~ U.S. American cultural practices.

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

15. I believe in the values of my ~~heritage~~ home culture.

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

16. I believe in mainstream ~~North~~ U.S. American values.

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

17. I enjoy the jokes and humor of my *heritage home culture*.

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

18. I enjoy typical ~~North~~ U.S. American jokes and humor.

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

19. I am interested in having friends from my *heritage home culture*.

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

20. I am interested in having ~~North~~ U.S. American friends.

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

Social Support:

1. How much practical support do you receive from international students from your home country?

None at All						A Great Amount
1	2	3	4	5		

2. How much emotional support do you receive from international students from your home country?

None at All						A Great Amount
1	2	3	4	5		

3. How much practical support do you receive from international students not from your home country?

None at All						A Great Amount
1	2	3	4	5		

4. How much emotional support do you receive from international students not from your home country?

None at All						A Great Amount
1	2	3	4	5		

5. How much practical support do you receive from non-student international university and community members from your home country?

None at All					A Great Amount
1	2	3	4	5	

6. How much emotional support do you receive from non-student international university and community members from your home country?

None at All					A Great Amount
1	2	3	4	5	

7. How much practical support do you receive from non-student international university and community members not from your home country?

None at All					A Great Amount
1	2	3	4	5	

8. How much emotional support do you receive from non-student international university and community members not from your home country?

None at All					A Great Amount
1	2	3	4	5	

9. How much practical support do you receive from students from the USA?

None at All					A Great Amount
1	2	3	4	5	

10. How much emotional support do you receive from students from the USA?

None at All					A Great Amount
1	2	3	4	5	

11. How much practical support do you receive from non-student university and community members from the USA?

None at All					A Great Amount
1	2	3	4	5	

12. How much emotional support do you receive from non-student university and community members from the USA?

None at All					A Great Amount
1	2	3	4	5	

13. How much practical support do you receive from family members?

None at All					A Great Amount
1	2	3	4	5	

14. How much emotional support do you receive from family members?

None at All					A Great Amount
1	2	3	4	5	

Acculturative Stress Scale for International Students (ASSIS):

1. Homesickness bothers me.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

2. I feel uncomfortable to adjust to new foods.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

3. I am treated differently in social situations.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

4. Others are sarcastic toward my cultural values.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

5. I feel nervous to communicate in English.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

6. I feel sad living in unfamiliar surroundings.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

7. I fear for my personal safety because of my different cultural background.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

8. I feel intimidated to participate in social activities.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

9. Others are biased toward me.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

10. I feel guilty to leave my family and friends behind.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

11. Many opportunities are denied to me.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

12. I feel angry that my people are considered inferior here.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

13. Multiple pressures are placed upon me after migration.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

14. I feel that I receive unequal treatment.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

15. People show hatred toward me nonverbally.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

16. It hurts when people don't understand my cultural values.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

17. I am denied what I deserve.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

18. I frequently relocate for fear of others.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

19. I feel low because of my cultural background.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

20. Others don't appreciate my cultural values.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

21. I miss the people and country of my origin.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

22. I feel uncomfortable to adjust to new cultural values.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

23. I feel that my people are discriminated against.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

24. People show hatred toward me through actions.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

25. I feel that my status in this society is low due to my cultural background.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

26. I am treated differently because of my race.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

27. I feel insecure here.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

28. I don't feel a sense of belonging (community) here.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

29. I am treated differently because of my color.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

30. I feel sad to consider my people's problems.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

31. I generally keep a low profile due to fear.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

32. I feel some people don't associate with me because of my ethnicity.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

33. People show hatred toward me verbally.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

34. I feel guilty that I am living a different lifestyle here.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

35. I feel sad leaving my relatives behind.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

36. I worry about my future for not being able to decide whether to stay here or to go back.

Strongly Disagree			Not Sure		Strongly Agree
1	2	3	4	5	

Inclination to Attribute Discrimination: (modified as shown)

1. Suppose you go into a "fancy" restaurant. Your server seems to be taking care of all the other customers except you. You are the last person whose order is taken.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

2. Suppose you apply for a job that you believe you are qualified for. After the interview you learn that you didn't get the job.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

3. Suppose you wish to buy a house. You go to a real estate company and the agent there takes you to look at homes that you know are in exclusively ~~Black~~ minority areas.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

4. Suppose you parked your car at a parking meter and it has just expired. You arrive back at the car just as an officer is writing up a ticket. You try to persuade the officer not to give you the ticket, after all you are there now and the meter just expired. The officer gives you the ticket anyway.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

5. Suppose you go to look at an apartment for rent. The manager of the building refuses to show it to you, saying that it has already been rented.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

6. Suppose you are attracted to a particular ~~White~~ U.S. American man/woman and ask that person out for a date and are turned down.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

7. Suppose you have to fill out some government forms in order to apply for a loan that is important to you. You go to one office and they send you to another, then you go there and are sent somewhere else. No one seems to be really willing to help you out.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

8. Suppose you are driving a few miles over the speed limit and the police pull you over. You receive a ticket for the maximum amount allowable.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

9. Suppose you want to join a social organization. You are told that they are not taking any new members at this time.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

10. Suppose your boss tells you that you are not performing your job as well as others doing that job.

Estimate how much prejudice is involved in this situation:

0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

Perceived Discrimination Effects: (modified as shown)

1. I feel like I am personally a victim of society because of my ~~race~~ status as an international student.

Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	

2. I consider myself a person who has been deprived of the opportunities that are available to others because of my ~~race~~ status as an international student.

Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	

General Ethnic Discrimination Scale (GED): (modified as shown)

We are interested in your experiences with ~~racism~~ discrimination. As you answer the questions below, please think about your ~~ENTIRE LIFE, from when you were a child to the present~~ time in the United States as an international student. For each question, please circle the number that best captures the things that have happened to you. Answer each question ~~3~~ 2 times.

	Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often in the past year as an international student?	1	2	3	4	5	6
How often in your entire life?	1	2	3	4	5	6

1. How often have you been treated unfairly by **teachers and professors** because of your ~~race/ethnic group~~ international student status?

	Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

2. How often have you been treated unfairly by **employers, bosses and supervisors** because of your ~~race/ethnic group~~ international student status?

	Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

3. How often have you been treated unfairly by **your co-workers, fellow students and colleagues** because of your ~~race/ethnic group~~ international student status?

	Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

4. How often have you been treated unfairly by **people in service jobs** (by **store clerks, waiters, bartenders, bank tellers and others**) because of your ~~race/ethnic group~~ international student status?

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

5. How often have you been treated unfairly by **strangers** because of your ~~race/ethnic group~~ international student status?

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

6. How often have you been treated unfairly by **people in helping jobs** (by **doctors, nurses, psychiatrists, case workers, dentists, school counselors, therapists, social workers and others**) because of your ~~race/ethnic group~~ international student status?

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

7. How often have you been treated unfairly by **neighbors** because of your ~~race/ethnic group~~ international student status?

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6
How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6

8. How often have you been treated unfairly by **institutions (schools, universities law firms, the police, the courts, the Department of Social Services, the Unemployment Office and others)** because of your ~~race/ethnic group~~ international student status?

		Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
		1	2	3	4	5	6
How often as an international student?							
		Not at all stressful					Extremely stressful
		1	2	3	4	5	6
How stressful was this for you?							

9. How often have you been treated unfairly by **people that you thought were your friends** because of your ~~race/ethnic group~~ international student status?

		Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
		1	2	3	4	5	6
How often as an international student?							
		Not at all stressful					Extremely stressful
		1	2	3	4	5	6
How stressful was this for you?							

10. How often have you been **accused or suspected of doing something wrong** (such as **stealing, cheating, not doing your share of the work, or breaking the law**) because of your race/ethnic group?

		Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
		1	2	3	4	5	6
How often as an international student?							
		Not at all stressful					Extremely stressful
		1	2	3	4	5	6
How stressful was this for you?							

11. How often have people **misunderstood your intentions and motives** because of your ~~race/ethnic group~~ international student status?

		Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
		1	2	3	4	5	6
How often as an international student?							
		Not at all stressful					Extremely stressful
		1	2	3	4	5	6
How stressful was this for you?							

12. How often did you **want to tell someone off for being racist discriminatory towards you but didn't say anything?**

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6

How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6
---------------------------------	------------------------------	---	---	---	---	-----------------------------

13. How often have you been **really angry about something racist discriminatory that was done to you?**

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6

How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6
---------------------------------	------------------------------	---	---	---	---	-----------------------------

14. How often have you been **forced to take drastic steps** (such as **filing a grievance, filing a lawsuit, quitting your job, moving away, and other actions**) to deal with some **racist discriminatory** thing that was done to you?

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6

How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6
---------------------------------	------------------------------	---	---	---	---	-----------------------------

15. How often have you **been called a racist prejudice name?**

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6

How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6
---------------------------------	------------------------------	---	---	---	---	-----------------------------

16. How often have you **gotten into an argument or a fight about something racist discriminatory that was done to you or done to another member of your race/ethnic group international student?**

		Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?	Never 1	2	3	4	5	6

How stressful was this for you?	Not at all stressful 1	2	3	4	5	Extremely stressful 6
---------------------------------	------------------------------	---	---	---	---	-----------------------------

17. How often have you been **made fun of, picked on, pushed, shoved, hit, or threatened with harm** because of your ~~race/ethnic group~~ international student status?

		Never	Once in a while	Sometimes	A lot	Most of the time	Almost all the time
How often as an international student?		1	2	3	4	5	6
		Not at all stressful					Extremely stressful
How stressful was this for you?		1	2	3	4	5	6

18. How **different** would your life be now if you **HAD NOT BEEN** treated in a ~~racist~~ discriminatory and unfair way?

		The Same as it is now	A little different	Different in a few ways	Different in a lot of ways	Different in most ways	Totally Different
In the past year As an international student?		1	2	3	4	5	6
In your entire life?		1	2	3	4	5	6

Discrimination Experiences Free Response:

Consider your experiences as an international student in the United States:

1. Have there been times where you have felt discriminated against because of your status as an international student? Yes / No
2. If you have felt discriminated against because of your status as an international student, please describe the time you felt the most discriminated against.
3. Please rate how uncomfortable you felt during this experience:

Not at all Uncomfortable						Extremely Uncomfortable
1	2	3	4	5	6	7

4. How many times have you been discriminated against due to your status as an international student?

Schwartz Outcome Scale (SOS-10):

1. Given my current physical condition, I am satisfied with what I can do.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

2. I have confidence in my ability to sustain important relationships.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

3. I feel hopeful about my future.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

4. I am often interested and excited about things in my life.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

5. I am able to have fun.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

6. I am generally satisfied with my psychological health.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

7. I am able to forgive myself for my failures.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

8. My life is progressing according to my expectations.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

9. I am able to handle conflicts with others.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

10. I have peace of mind.

Never						All of the time or nearly all of the time
0	1	2	3	4	5	6

VITA

Michael J. Hirschel was born on March 1st, 1978 in Charlotte, North Carolina. He attended the University of North Carolina at Chapel Hill, graduating in December 2000 with a Bachelor of Science degree in mathematical science (emphasizing computer science) and a second major in psychology. Michael went on to work for PricewaterhouseCoopers and later IBM in the Washington D.C. area as a consultant before beginning graduate school in clinical psychology at the University of Mississippi in 2005. Employment during his graduate studies has included providing counseling to university students and community members at the Psychological Services Center and the University Counseling Center, assisting with research at St. Jude Children's Research Hospital, conducting assessments at the Psychological Assessment Clinic, working as a mental health consultant for Head Start, and working with both inpatient and outpatient populations at North Mississippi Medical Center – Behavioral Health. He is currently completing an APA accredited pre-doctoral internship at the Center for Multicultural Training in Psychology in Boston, Massachusetts.