2019

Cultural Distance, Acculturative Stress, Social Support, and Psychological Adaptation of International Students

Ariel Mitchell Ladum
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Ariel M. Ladum

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Gary Burkholder, Committee Chairperson, Psychology Faculty
Dr. Rebecca Jobe, Committee Member, Psychology Faculty
Dr. Bonnie Nastasi, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2019

Abstract

Cultural Distance, Acculturative Stress, Social Support, and Psychological Adaptation of International Students

by

Ariel M. Ladum

MA, Portland State University, 2006

BS, University of Oregon, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

February 2019

Abstract

International students experience stress and adaptation difficulties as they study in a new culture. This study examined how cultural distance, acculturative stress, and social support interacted to influence positive and negative emotional responses among international students in the northern part of Cyprus. Acculturation models and the stress-buffering hypothesis served as theoretical frameworks. The 2 research questions involved understanding whether international students experienced more negative emotional responses compared to students from the home culture and whether social support moderated acculturative stress and reactions to being in the northern part of Cyprus. An analysis of variance (ANOVA) was used to examine differences in emotional reactions between home and international students while 2 hierarchical multiple regressions examined the moderation hypotheses. ANOVA results indicated that Turkish-Cypriots had more positive emotional responses than international students. Results did not support social support as a moderator for either international students' acculturative stress or their emotional reactions. However, results suggested that unmet expectations, less financial satisfaction, and less social support predicted acculturative stress, while being in a relationship, having higher Turkish proficiency, having unmet expectations, and experiencing higher acculturative stress predicted more negative emotional reactions. These results may help universities design programs to support the psychological adaptation of international students, which could ultimately facilitate student retention.

Cultural Distance, Acculturative Stress, Social Support, and Psychological Adaptation of International Students

by

Ariel M. Ladum

MA, Portland State University, 2006

BS, University of Oregon, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

February 2019

Acknowledgments

I would like to thank my dissertation advisor, Dr. Gary Burkholder, for his feedback, consultation, and training throughout the duration of this project, as well as Dr. Janice Haaken for the hours she spent molding me into the student I have become—without her guidance, I would not have been competent to pursue a PhD in psychology. My family also contributed immeasurably to my success. I could not have completed this process were it not for the unwavering encouragement of my mother, Bonnie Mitchell, or the considerable support of my father, Robert Ladum. My husband, Mustafa Ipekcioğlu, supported me on a daily basis, making it possible for me to concentrate on and complete this project. Finalizing this project would not have been possible without all of these contributions, and I sincerely thank everyone who made it possible.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Millions of students leave their home countries every year to study abroad (Organisation for Economic Co-operation and Development [OECD], 2017), and this number increased by 50% from 2005 to 2012 (OECD, 2015). These students face negative psychological experiences in comparison to students from the host culture as well as students from their own home countries who do not elect to study abroad (e.g., O'Reilly, Ryan, & Hickey, 2010; Pan, Wong, Joubert, & Chan, 2008; Sherry, Thomas, & Chui, 2010; Zheng & Berry, 1991). Although not all students who study abroad experience the same level of difficulty in adapting to the host culture, all study-abroad students face some adaptation difficulties (Berry, 1997). Therefore, the purpose of this study was to investigate the role of social support as a buffer for acculturative stress and negative psychological adaptation among international students who experience cultural distance vis-à-vis the host cultural context. A better understanding of factors that predict or protect against specific consequences may provide a foundation for designing strategies and resources to improve the psychological adaptation of international students. Such strategies might not only ameliorate the study-abroad experiences of international students, but also facilitate student retention (Berry, Kim, Minde, & Mok, 1987; Chirkov, Safdar, de Guzman, & Playford, 2008; Chirkov, Vansteenkiste, Tao, & Lynch, 2007; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013), thus benefiting universities and economies dependent on the education sector.

This chapter introduces the study, presenting a brief summary of the literature, the knowledge gap that the study addressed, and why the study was needed—including the

main research questions. The chapter contains a description of the purpose of the study and states the main hypotheses. Although the theoretical framework is taken up in more detail in Chapter 2, this chapter summarizes main tenets of the theoretical foundation. This chapter also addresses the research design (described in more detail in Chapter 3), defines key study variables, and summarizes the methodology. Assumptions inherent in the study are addressed, as are the scope, delimitations, limitations, and potential significance of the results.

Background

Adaptation outcomes for immigrants and sojourners (e.g., international students) have been divided into two dimensions: psychological and sociocultural (Demes & Geeraert, 2015; Ward & Kennedy, 1993b, 1999). Ward and Kennedy (1993b, 1999) defined psychological adaptation in terms of feelings of well-being and life satisfaction, and sociocultural adaptation in terms of the ability to learn culturally appropriate behavior and fit into the host culture. Both dimensions of adaptation have been studied in relation to a range of antecedent factors. Although the literature on international student adaptation is difficult to organize due to the wide range of variables and definitions (Bierwiaczonek & Waldzus, 2016), some variables previously established as playing a role in the adaptation process include social contact, gender, and stress (e.g., Zhang & Goodson, 2011); acculturation orientation (e.g., Suanet & van de Vijver, 2009); coping strategies and social support (e.g., Galchenko & van de Vijver, 2007); personality (e.g., Poyrazli, Thukral, & Duru, 2010; Suanet & van de Vijver, 2009); unmet expectations (e.g., Khawaja & Dempsey, 2008; Sherry, Bhat, Beaver, & Ling, 2004); financial

satisfaction (e.g., Khawaja & Dempsey, 2008); cultural distance (Bektaş, 2004; Suanet & van de Vijver, 2009); amount of time spent in the host country (e.g., Duru & Poyrazli, 2011; Park, Song, & Lee, 2014); language proficiency (e.g., Duru & Poyrazli, 2011; Sam, Tetteh, & Amponsah, 2015); and perceived discrimination (e.g., Baba & Hosoda, 2014; Duru & Poyrazli, 2011; Poyrazli et al., 2010).

Of the predictors featured in the literature, stress, social support, country/region of origin, length of stay, English proficiency, and gender were reported most frequently for psychological adaptation outcomes—including acculturative stress (Zhang & Goodson, 2011). Alternately, Bierwiaczonek and Waldzus (2016) examined which factors were studied most often specifically in relation to international student adaptation and concluded that factors such as cultural distance and family-related variables had not been studied as often in this group compared to other groups (i.e., migrants and expatriates), while other factors such as social interaction, social resources, and social stressors had been widely studied in international students compared to other groups. Therefore, the study combined well-established predictors of adaption (i.e., social support and stress) in international students with those to which previous research had paid less attention (i.e., cultural distance).

Social support may have a direct relationship with psychological adaptation outcomes, or it may play a moderating role between a stressor and the consequences of that stressor. According to the stress-buffering hypothesis, social support may moderate the relationship at two different points: (a) the perception of a stressor as “stressful” and the experience of stress, and (b) the experience of stress and more general psychological

adaptation (Cohen & Wills, 1985). While previous research has, indeed, examined these relationships individually, no previous study has examined both at the same time to investigate where social support may play a more important role: buffering against the interpretation of a stressor as stressful, or buffering against the negative psychological effects of actually experiencing stress. In fact, previous research has conflated the experience of stress with more general psychological adaptation by using acculturative stress as an outcome variable (e.g., Ait Ouarasse & van de Vijver, 2004; Berry et al., 1987; Demes & Geeraert, 2015; Galchenko & van de Vijver, 2007; Geeraert & Demoulin, 2013; James, Hunsley, Navara, & Alles, 2004). Therefore, this study fills a gap in the research literature not only by focusing on the role of cultural distance as a stressor within the international student population, but also by examining the point at which social support may have its moderating effect. This is needed because international students face stress and negative psychological adaptation outcomes not experienced by students studying in their home countries, and the number of students electing to study abroad is increasing.

Problem Statement

As of 2015, 5 million students were studying outside their home countries, which was more than 5 times the number of students who studied abroad in 1975 (ICEF Monitor, 2016). The majority of these students elect to study in English-speaking countries due to the prominence of English in scientific communication (Altbach, Reisberg, & Rumbley, 2009). In order to benefit from this market, many universities in non-English-speaking countries have opened English-medium programs to attract these

students (as is the case in the northern part of Cyprus). Although the transition to studying at the university level can be stressful for all students, international students experience more stress than home students (Zheng & Berry, 1991; Zhou, Jindal-Snape, Topping, & Todman, 2008) and experience certain stressors such as perceived discrimination and homesickness (e.g., Poyrazli & Lopez, 2007; Rajapaksa & Dundes, 2002), communication problems, and difficulties in adapting to a new culture (Ang & Liamputtong, 2008; Sherry et al., 2010) that may not affect students studying in their home culture as severely, if at all. Stress is, in fact, a common presenting concern among international students who seek psychological help from on-campus guidance and counseling centers (Yakushko, Davidson, & Sanford-Martens, 2008). To the extent that students experience more negative adaptation outcomes as the result of increased stress, they are more likely to terminate their course of study and return home early (Berry et al., 1987; Chirkov et al., 2008; Chirkov et al., 2007; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013). This could have negative consequences for economies reliant on the education sector such as the northern part of Cyprus ("North Cyprus Economy," 2013; Study in North Cyprus, 2017).

This study not only simultaneously examined two different points at which social support could buffer the effects of stress, but also did so in an under-researched population. Previous research has not examined the psychological adaptation of international students in the northern part of Cyprus, despite their increasing numbers. In fact, although the number of students from Turkey studying at the university where data were collected decreased slightly from about 9,000 to about 8,600 from the 2007-2008 to

the 2016-2017 academic year, the number of international students from other countries increased from 1,800 to 7,800, indicating the necessity of addressing the needs of this growing population.

Purpose of the Study

The purpose of this quantitative survey research study was to investigate factors that may predict psychological adaptation of international students based on a sample of international students studying at a university in the northern part of Cyprus. To address this question, the study used a quantitative approach based on survey data to perform analysis of variance (ANOVA) and hierarchical multiple regression analyses. First, an ANOVA was performed to verify that there was, indeed, a significant difference in the psychological adaptation of home and international students. Second, two hierarchical multiple regressions were performed to examine the moderating role of social support between cultural distance and acculturative stress, and between acculturative stress and psychological adaptation. Stage 1 of both hierarchical multiple regressions included covariates (i.e., gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources). Stage 2 of the first hierarchical multiple regression included cultural distance and social support main effects, while Stage 3 included their interaction to investigate whether social support moderated the relationship between cultural distance and acculturative stress. Here, cultural distance and social support were predictors while acculturative stress was the outcome variable. Stage 2 of the second hierarchical multiple regression included acculturative stress and social support main effects, while Stage 3

included their interaction to investigate whether social support moderated the relationship between acculturative stress and psychological adaptation. Here, acculturative stress and social support were predictors while psychological adaptation was the outcome variable.

Research Questions and Hypotheses

There were two primary research questions. The first was comparative: Do international students experience worse psychological adaptation compared to Turkish-Cypriot students? The second concerned the moderating role of social support and had two subquestions: First, does the level of international students' socioemotional and instrumental social support moderate the relationship between how differently international students perceive their home and host cultures and their level of stress related to adapting to a new cultural context? Second, does the level of international students' socioemotional and instrumental social support moderate the relationship between their level of stress related to adapting to a new cultural context and their emotional state?

Three hypotheses were tested, the first of which was comparative:

H_{01}: International students will not have lower psychological adaptation scores than Turkish-Cypriot students.

H_1: International students will have lower psychological adaptation scores than Turkish-Cypriot students.

The next two hypotheses focused on the moderating effects of social support:

H_{02}: Social support does not moderate the impact of cultural distance on acculturative stress.

H_2: Social support moderates the impact of cultural distance on acculturative stress. Specifically, I expect international students who report higher cultural distance and higher social support to report less acculturative stress than international students who report higher cultural distance and lower social support. In general, international students reporting lower cultural distance are predicted to report lower levels of acculturative stress, regardless of levels of social support.

H_{03}: Social support does not moderate the impact of acculturative stress on psychological adaptation.

H_3: Social support moderates the impact of acculturative stress on psychological adaptation. Specifically, I expect international students who report higher acculturative stress and higher social support to report better psychological adaptation than international students who report higher acculturative stress and lower social support. In general, international students who report lower acculturative stress are predicted to report better psychological adaptation, regardless of levels of social support.

Both moderation hypotheses included age, gender, country of origin, relationship status, time in host country, proficiency in both English and Turkish, unmet expectations, and lack of financial resources as covariates. For Hypothesis 2, the predictor variables were cultural distance and social support while the outcome variable was acculturative stress. For Hypothesis 3, the predictor variables were acculturative stress and social support while the outcome variable was psychological adaptation.

Theoretical Framework

This study drew on acculturation models by Berry (1997) and Ward and Geeraert (2016) as well as the stress-buffering hypothesis (Cohen & Wills, 1985), each of which is discussed in more detail in Chapter 2. Berry's comprehensive acculturation framework details the factors involved in and the process that takes place during acculturation. It positions both group-level situational variables (i.e., characteristics of the society of origin, characteristics of the society of settlement, and how these factors determine group-level acculturation in terms of the physical, biological, economic, social, and cultural changes required of the acculturating group) and individual-level variables that exist prior to acculturation (e.g., age, gender, migration motivation, cultural distance, personality) or that come up during acculturation (e.g., discrimination, length of time in host country, social support) as moderators and/or mediators at different points in time. These factors come together to influence how individuals pass through a succession of five main phenomena during acculturation: acculturation experience (i.e., life events), appraisal of experience (i.e., stressors), strategies used (i.e., coping), immediate effects (i.e., stress), and long-term outcomes (i.e., adaptation). In this framework cultural distance is a potential moderator/mediator that exists prior to intercultural contact. According to Berry, people who experience more cultural distance may also experience more culture clash and subsequent worse psychological adaptation. Ward and Geeraert's model of acculturation, however, shifts the role of cultural distance from an intervening to an instigating variable. That is, the cultural distance that results from intercultural contact may cause stress, which, in turn, may require coping or may prompt increased

cultural awareness of both a sojourner's home and host culture. But regardless of whether cultural distance is experienced negatively, as a stressor, or more positively, as an impetus for personal growth, the sojourner must find a way to manage these changes (Ward & Geeraert, 2016). Therefore, according to both models cultural distance could be a source of stress in the acculturation process, the experience of stress may have long-term effects on psychological adaptation, and social support may moderate these effects.

The stress-buffering hypothesis (Cohen & Wills, 1985) proposes that social support may moderate the relationship between stress and its consequences at two points: preventing an event from being perceived as stressful and protecting against negative psychological outcomes of events that have been perceived as stressful (Cohen & Wills, 1985). In terms of Berry's (1997) and Ward and Geeraert's (2016) models, social support could moderate the cognitive appraisal of life events (e.g., perceived cultural distance) as stressful (see Lazarus & Folkman, 1984), thus impacting the experience of acculturative stress. It could also function as a coping strategy to reduce the effects of acculturative stress on psychological adaptation more generally. Both of these propositions were directly investigated in the main study research questions.

Nature of the Study and Definitions

The nature of this study was quantitative, which was consistent with investigating factors that predict psychological adaptation outcomes among international students. Psychological adaptation was the criterion variable in the second hierarchical multiple regression, while acculturative stress was the criterion variable in the first hierarchical multiple regression but a predictor in the second. Psychological adaptation was

operationalized in terms of how comfortable and happy international students feel in the host culture (Demes & Geeraert, 2014). Acculturative stress is defined as "a form of stress in which the stressors are identified as having their source in the process of acculturation" (Zheng & Berry, 1991, p. 453) and was operationalized in terms of the special concerns of international students that induce stress (Sandhu & Asrabadi, 1994). Psychological adaptation was measured using the Brief Psychological Adaptation Scale (BPAS; Demes & Geeraert, 2014), which was validated in research that included over 2,500 international students studying in 50 different countries (Demes & Geeraert, 2015). Stress directly linked to the experience of adapting to a foreign cultural context was measured using the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994), which has been used in previous research involving Turkish students (Erdinc Duru & Poyrazli, 2011). The ASSIS has been used extensively in research involving international students and is designed to provide a comprehensive assessment of their acculturative stress (Sandhu & Asrabadi, 1994). It includes subscales for perceived discrimination, homesickness, fear, guilt, perceived hatred, stress due to change (cultural shock), and 10 additional items that are combined for an overall acculturative stress score (Sandhu & Asrabadi, 1994).

Predictor variables (in addition to acculturative stress, which also plays the role of moderator variable) included cultural distance and social support. Social support was operationalized in terms of specific functions rather than structure as recommended for capturing its moderating effects (Cohen & Wills, 1985). To this end, the study included the Index of Sojourner Social Support (ISSS) Scale (Ong & Ward, 2005), which

measures perceived availability of functional social support. The scale has 18 items, with half comprising socioemotional support and half comprising instrumental support. Cultural distance was operationalized subjectively rather than objectively. That is, the research used a measure of perceived cultural distance that asked participants to estimate the degree of difference between home and host culture rather than a more objective measure such as cultural values (e.g., Hofstede & Bond, 1984), GDP, or gross income inequality metrics (Suanet & van de Vijver, 2009). The Brief Perceived Cultural Distance Scale (BCPDS; Demes & Geeraert, 2014) asks participants to evaluate differences between their home and host culture in 12 categories: climate, natural environment, social environment, living, practicalities, food, family, social norms, values, people, friends, and language.

Covariates included age, gender, country of origin, relationship status, time in host country, proficiency in both English and Turkish, unmet expectations, and lack of financial resources. Demographic information was collected by asking participants to report their age, gender, and country of origin (Poyrazli & Lopez, 2007; Poyrazli et al., 2010). Relationship status was measured using a set of three categories: single, in a relationship, or married (e.g., Zhang, 2012). Time in host country was measured by asking participants to choose from categorical options: less than 1 year, 1 year, 2 years, 3 years, or more than 4 years (e.g., Zhang, 2012). Language proficiency in both English (academic context) and Turkish (daily life context) was assessed with two 4-point Likert items (poor ability to excellent ability; Wang & Mallinckrodt, 2006; Ward & Kennedy, 1993a). Lack of financial resources was evaluated using one item that required

participants to indicate their level of satisfaction with their overall financial situation on a 5-point Likert scale as used in previous research (e.g., Khawaja & Dempsey, 2008; Sam, 2001). Unmet expectations was measured with one 3-point Likert item that asked participants to rate their actual experience of living in the northern part of Cyprus compared with their expectations before leaving their home countries (1: *better than expected*, 2: *the same as expected*, 3: *worse than expected*; Swami, 2009)

Data were collected from undergraduate students studying in English-medium programs at a university in the northern part of Cyprus. The sample included Turkish-Cypriot students from the host culture, as well as international students. These international students included those from Turkey—who enjoyed more cultural similarities vis-à-vis Cypriot culture—as well as students from many other countries who did not experience the same level of cultural similarity. Data collection was planned in three stages: (a) visiting classrooms, (b) coordinating with student clubs to recruit specific groups of students, and (c) asking participants to refer others to the study. Actual data collection differed slightly from what was planned and is described in more detail in Chapter 3. Comparative analysis of home and international student psychological adaptation was conducted based on an ANOVA, while the predictive role of cultural distance for acculturative stress, the predictive role of acculturative stress for psychological adaptation, as well as the moderating effects of social support within both of these relationships was examined based on hierarchical multiple regression analyses.

Assumptions

There was the assumption that even though these international students might

experience cultural distance, social support, acculturative stress, and psychological adaptation to different degrees and in different ways due to the unique interaction of their individual characteristics, home-culture background, and experience of the host-culture context, they all did experience these phenomena. It was further assumed that students who study abroad experience similar types of stressors that can be assessed by the constructs in the study, and that these constructs distinguish international from domestic students. A third assumption was that, on average, international students studying in the northern part of Cyprus do not differ qualitatively from international students studying in other countries. It may be, however, that international students in the northern part of Cyprus have shared characteristics other than cultural background that differentiate them—as a group—from international students studying in other parts of the world. That is, motivational forces may also be at play: Students studying in the northern part of Cyprus may be *pulled* by the language of instruction, cost of the program, program quality, and immigration policies (OECD, 2016), but they also may be *pushed* by political and social conflicts in their home countries. To the extent that students are pushed to study abroad as a means of avoiding difficult conditions in their home countries, they experience more negative adaptation outcomes (Berry et al., 1987; Chirkov et al., 2008; Chirkov et al., 2007; Demes & Geeraert, 2015).

Scope and Delimitations

This research examined the moderating effect of functional social support on the relationship between perceived cultural distance and acculturative stress, as well as between acculturative stress and psychological adaptation. All variables were

operationalized in a multifaceted way that included different aspects of each. One delimitation, however, was that all surveys were composed uniquely of closed-ended Likert-scale items when participants might have informed alternate aspects of their experiences and the variables selected if they had responded to open-ended questions.

A further delimitation was the selection of specific variables. Although previous research on culture shock—a conceptual ancestor of cultural distance—has been criticized for focusing on sociocultural rather than psychological adaptation (e.g., Chapdelaine & Alexitch, 2004), this research was otherwise limited by its focus on psychological adaptation to the exclusion of sociocultural adaptation. A variety of psychological adaption problems have been established among international students (Mori, 2000; Zhang & Goodson, 2011), and measuring both psychological and sociocultural dimensions of adaptation would have put an unfair burden of research participation on participants. Furthermore, the research focused on socioemotional and instrumental social support functions rather than other specific functions of social support, global functional social support measures, or structural aspects of social support. Acculturative stress as a response to a stressor, and cultural distance as the stressor, also delimited the focus of the research. At the same time, the role of factors such as cultural distance in psychological adaptation among international students have received less research attention than other factors (Bierwiaczonek & Waldzus, 2016; Zhang & Goodson, 2011). This research, therefore, provided the opportunity to fill this gap and excluded more well-established predictors, such as perceived discrimination.

Other delimitations emanated from the sample characteristics, study design, and

study location. The sample itself was limited to undergraduate students, whose experiences may differ qualitatively from those of graduate students. Moreover, the national composition of the sample, with higher concentrations of specific national groups, does not mirror that in all university contexts. Time was also an issue, given the cross-sectional nature of the research. Previous research (e.g., Cheng, 1997; Chirkov et al., 2008; Demes & Geeraert, 2015) has taken a longitudinal approach, which is better suited to examining the acculturation process as it unfolds and establishing which variables are antecedent and which are consequent. Finally, the research was delimited by the geographic location in the northern part of Cyprus and the data collection site. Wang and Mallinckrodt (2006) found different adaptation outcomes for students on different campuses. Therefore, even if future research is constrained to one geographic location or cultural context, data should be collected from more than one university (Zhang, Mandl, & Wang, 2010).

A final delimitation was linked to the theoretical framework. Although the project integrated newer and more seminal theoretical frameworks, other theoretical frameworks would have emphasized different variables as well as propagated different research questions. For example, self-determination theory focuses on examining human motivation based on three universal human needs—competence, relatedness, and autonomy—the fulfillment of which is associated with superior social development and well-being (Deci & Ryan, 2000; Ryan & Deci, 2000). These needs are more or less fulfilled by both the regulatory processes that control behavior (e.g., goal pursuit) and the content of the goal itself (i.e., intrinsic and extrinsic aspirations), with autonomous or

self-determined forms of regulation and intrinsic goal content associated with more positive outcomes (Deci & Ryan, 2008; Ryan & Deci, 2000). Had the research been guided by this theoretical framework, motivational factors would have played a more principal role.

Limitations

Limitations were linked to the sample, measurement tools, study design, and findings being culture specific. Sample limitations were related to the generalizability of the results. First, the sample itself was a convenience sample (e.g., Lee, Koeske, & Sales, 2004). Second, participants self-selected into the study based on desire to participate, which introduced bias (Wei et al., 2007). Third, the sample itself may have had a unique profile in that studying in the northern part of Cyprus is attractive to international students denied student visas to Western or European countries, Turkish students unable to study in their home country, and Turkish-Cypriot students unable to leave the northern part of Cyprus and study abroad themselves.

Limitations related to the measurement tools included using self-report measures, measures not being validated in the cultural context in which they were used, collecting data in English, overlap between measures, and using specific types of measures suggested for capturing the hypothesized relationships. Self-report measures are inherently problematic (Rienties & Tempelaar, 2013; Swami, 2009; Zhang, Mandl, & Wang, 2010) and can, for instance, result in distortions due to participant bias, dishonesty, or recall problems (Atri, Sharma, & Cottrell, 2007). Even though the study used empirically validated measures as recommended by Kuo and Roysircar (2006), no

self-report measure has perfect reliability. Therefore, generalizability is limited by measure reliability. Moreover, all measures were neither validated nor developed in the same cultural context in which they were used, leaving questions about how well those measures capture phenomena across cultural contexts (Atri et al., 2007; Fritz, Chin, & DeMarinis, 2008). A further concern regarding the measures was that they were in English when English was the first language of only some respondents. Asking participants to respond in a language other than their first language may have affected the accuracy of responses (e.g., Waxin, 2004). Moreover, there was overlap between the BPAS and the ASSIS: six of the eight items in the BPAS overlap with the culture shock and homesickness subscales of the ASSIS. A final limitation concerning the measurement tools was their ability to detect the relationships hypothesized to exist among the variables. One problem associated with previous research is that the measures used could not capture the role of the phenomena as conceptualized in the research question (e.g., Kashima & Loh, 2006). Therefore, I selected measures that operationalized each variable in a way that matched how that variable was proposed to function in the research questions, although this means that results do not illustrate how variables may function in relation to one another if operationalized differently.

Limitations linked to study design included analyzing international students as a composite group and using a cross-sectional, quasi-experimental design. The sample pooled all international students, which created the "heterogeneity challenge" (Wang et al., 2012, p. 425), in that grouping international students results in ignoring intra- and intergroup differences. This posed a risk to study validity, as the analysis might not have

detected relationships between specific variables that existed within one group but not another. Result generalizability also was limited by the cross-sectional nature of the study. As cross-sectional research studies are conducted in a highly defined moment in time, results also reflect societal influences (Wei, Wang, Heppner, & Du, 2012). Furthermore, it is not possible to discuss cause-effect relationships among variables due to the quasi-experimental nature of the design (Swami, 2009; Wei et al., 2012).

A final limitation of the current study was the research context. Data were collected at one university in the northern part of Cyprus. This limited generalizability both within and beyond Cyprus in that findings may reflect university-specific as well as host-context-specific results. The research did, however, include a comparison group of host-culture students to allow for comparative analysis of psychological adaptation of home and international students within a particular context.

Significance

This research filled a gap in understanding by focusing specifically on the role of cultural distance as a stressor and by examining the moderating role of social support on acculturative stress as well as psychological adaptation. This project was unique not only because it examined cultural distance, which had not been adequately studied among international students (Bierwiaczonek & Waldzus, 2016), but also because it shifted the role of cultural distance from an intervening variable to an instigating variable—a move supported by results from Suanet and van de Vijver's (2009) research on the adaptation of international students in Russia. While Berry (1997) proposed an acculturation framework (which has guided much research) that included cultural distance as a

moderating or mediating variable, Ward and Geeraert (2016) proposed a more recent model of acculturation in which cultural distance is the result of intercultural contact that occurs when the sojourner arrives in the host culture. This intercultural contact, and the resulting perception of cultural distance, is a source of stress that requires coping, perhaps by means of social support (Ward & Geeraert, 2016). Establishing the role of cultural distance would provide evidence for developing policies and practices around predeparture screening, courses, and training as well as after-arrival counseling, programs, and services to ameliorate student well-being and student retention (Zheng & Berry, 1991).

Results of the study provide insight into the roles played by individual factors in determining psychological adaptation outcomes among this population. Insights from this study should aid universities in understanding problems that may be contributing to international students terminating their study programs early, thus supporting student adaptation and retention. International students comprise a substantial portion of the overall student body at many universities and are particularly vital to economies dependent on the education sector, such as the northern part of Cyprus. Therefore, understanding factors that may be hindering their adaptation is particularly relevant as it will allow universities to develop policies and practices to address the problems their international student bodies are facing.

Summary

This chapter introduced the main research question and hypotheses regarding the buffering effects of social support when international students experience cultural

distance or acculturative stress. While the results have the potential to help guide policies and resource generation to improve the study-abroad experiences of international students, create an overall healthier student body, and help universities retain students, design choices were made that defined the scope of the study and produced both delimitations and limitations. Here, the discussion outlined these delimitations and limitations, as well as assumptions inherent in the study. Chapter 2 contains information regarding the theoretical framework of acculturation models and the stress-buffering hypothesis that guided the study. Included is a discussion of the main variables, including cultural distance, social support, acculturative stress, and psychological adaptation.

Chapter 2: Literature Review

Although nearly 8 million international students are projected to be studying abroad by 2025, the number of those students electing to study in destinations such as the United States and the United Kingdom, which have dominated the study-abroad market, has been waning, while the number of students choosing to study in lesser-known contexts has been increasing (ICEF Monitor, 2016). While students from different cultural backgrounds may face different types of stressors depending on the destination in which they choose to study, international students experience more stress in general than do home students (Zheng & Berry, 1991; Zhou et al., 2008), as well as more adjustment problems than their domestic counterparts (O'Reilly et al., 2010) and more difficulty than they would have experienced had they remained in their cultures of origin (Chapdelaine & Alexitch, 2004; Pan et al., 2008), and they face stressors associated with being a sojourner in a foreign cultural context that students from the host culture do not experience (Ang & Liamputtong, 2008; Hechanova-Alampay, Beehr, Christiansen, & Van Horn, 2002; Poyrazli & Lopez, 2007; Rajapaksa & Dundes, 2002; Sherry et al., 2010). As a result, these students have a higher risk of terminating their studies and returning home prior to program completion (Berry et al., 1987; Chirkov et al., 2008; Chirkov et al., 2007; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013). Similar findings illustrate how this phenomenon manifests among those residing temporarily in another country for work rather than study. Stahl and Caligiuri (2005), for instance, found that the degree of perceived difference between home and host culture predicted intent to stay negatively among expatriate German managers in both Japan and the United States.

If students, do, indeed, terminate their courses of study early, this could have a negative effect on economies reliant on the education sector, such as the northern part of Cyprus ("North Cyprus Economy," 2013; Study in North Cyprus, 2017). Therefore, it is important to understand factors contributing to the psychological adaptation of international students in the northern part of Cyprus as a means of supporting the adaptation process and maximizing student retention.

Adaptation for international students has been divided into psychological and sociocultural dimensions (Demes & Geeraert, 2015; Ward & Kennedy, 1993b, 1999). Psychological adaptation has been evaluated by outcome measures such as psychological well-being and life satisfaction, while sociocultural adaptation has been defined in terms of the ability to function in the host culture (Demes & Geeraert, 2015; Ward & Kennedy, 1993b, 1999). Both forms of adaptation in international students have been studied in relation to a range of antecedent factors, the literature on which is difficult to organize due to the wide range of variables and definitions (Bierwiaczonek & Waldzus, 2016) and mixed support for the role of some variables. Despite difficulty in definitively stating which variables are or are not involved in determining adaptation outcomes for international students, both demographic and other variables have been implicated. Demographic variables include age (e.g., Lee et al., 2004), gender (e.g., Dao, Lee, & Chang, 2007), relationship status (e.g., Rajapaksa & Dundes, 2002), and country of origin (e.g., Poyrazli & Lopez, 2007; Poyrazli et al., 2010), while other variables include amount of time spent in the host country (e.g., Duru & Poyrazli, 2011; Park et al., 2014), language proficiency (e.g., Duru & Poyrazli, 2011; Sam et al., 2015), unmet expectations

(e.g., Khawaja & Dempsey, 2008; Sherry et al., 2004), lack of financial resources (e.g., Khawaja & Dempsey, 2008), cultural distance (Bektaş, 2004; Suanet & van de Vijver, 2009), perceived discrimination (e.g., Baba & Hosoda, 2014; Duru & Poyrazli, 2011), acculturative stress (e.g., Smith & Khawaja, 2011), motivation (Chirkov et al., 2008; Chirkov et al., 2007), and social support (e.g., Sam et al., 2015; Wang et al., 2012). Many of these variables have been linked to negative psychological adaptation in the form of symptoms such as higher stress, lower self-esteem, worse mental health (e.g., depression, anxiety), less life satisfaction, and more physiological complaints that could all induce international students to return home early.

This chapter includes brief background on how cultural distance, acculturative stress, and social support are related to the psychological adaptation of international students to illustrate why it is important to study the relationships among these variables. The chapter then specifies the search strategy used to review existing literature that provided a foundation for the study. Key points in the theoretical and conceptual frameworks that guided the selection of main study variables and formulation of the research questions are presented next, followed by current research findings related to the relationship between psychological adaptation and cultural distance, acculturative stress, and social support. These research findings are reviewed, as are methodological strengths and weaknesses, before the chapter concludes with a summary of major themes and how the study fills a gap in the literature on international students' psychological adaptation.

Literature Search Strategy

Descriptors used to search the literature were based on terms used in the primary research question: *adaptation*, *adaptation outcomes*, *sociocultural adaptation*, *psychological adaptation*, and *international students*. Although the final project focused on psychological adaptation, the literature on sociocultural adaptation was included because, in some research, sociocultural adaptation was shown to be a predictor of psychological adaptation. Some alternate terms were also used, including *acculturation*, *cultural adjustment*, *cultural adaptation*, *study abroad*, and *sojourner*. Results from searches based on the description *sojourner* returned results based not only on international students, but also on other types of sojourners, such as expatriates and immigrants, which have been woven into the literature review. Boolean operators such as *and*, *or*, and *not*, as well as truncation, helped in performing more exact searches. For example, searches used the truncated term *adapt** so that search results included articles with *adapt* or *adaptation*. This search was carried out using the PsycINFO database as well as Google Scholar. Initial searches did not include date specifications; however, subsequent searches set the date at 2010 to focus on more recent publications while still casting a wide net for related research. As I reviewed the findings of these research studies, I also procured relevant articles mentioned in their introductions. Finally, several existing recent literature reviews provided a reading list of articles to include in the literature review. The literature review was carried out in an iterative process that vacillated between reading and cataloguing research findings and tracking down additional articles mentioned therein to expand the literature review.

Theoretical Foundation

Theoretical models used to explain culture shock and adaptation in international students suggest that the degree of life changes (such as those stemming from cultural distance) and situational factors (such as social support) are both relevant variables in how well international students adjust to and cope with stressful life changes (Zhou et al., 2008). Two such acculturation models by Berry (1997) and Ward and Geeraert (2016), as well as the stress-buffering hypothesis (Cohen & Wills, 1985), guided the research.

Berry's Acculturation Framework

Berry (1997) proposed a seminal acculturation framework that describes both the factors involved in and the process that takes place during acculturation to determine the psychological outcomes experienced by migrant groups (e.g., sojourners such as international students) as they adapt to a host context. Here, *acculturation* is the overall process of making both psychological and cultural changes instigated by contact with the host culture, whereas *adaptation* refers to how these changes manifest in response to contextual requirements (Berry, 1997; Berry, Phinney, Sam, & Vedder, 2006). This model was selected not only due to its prominent place in the literature, but also because of its comprehensive nature. Berry's framework includes group-level variables (i.e., situational) and individual-level variables (i.e., personal) that may act as moderators and/or mediators, and it orders them in terms of when they would play a role in the acculturation process as it unfolds over time. Group-level factors include characteristics of the society of origin and the society of settlement as well as how these factors determine group-level acculturation in terms of the physical, biological, economic, social,

and cultural changes required of the acculturating group. In addition to the group-level variables that set the stage for acculturation, two sets of factors that may play a moderating or mediating role through this process are introduced: individual-level factors that exist prior to acculturation (e.g., age, gender, migration motivation, cultural distance, personality) as well as those that arise during acculturation (e.g., discrimination, length of time in host country, social support). The acculturation process itself includes a succession of five main phenomena: acculturation experience (i.e., life events), appraisal of experience (i.e., stressors), strategies used (i.e., coping), immediate effects (i.e., stress), and long-term outcomes (i.e., adaptation).

Berry's (1997) framework is comprehensive, but previous research has not always employed consistent measures of its variables. For instance, research examining country of origin as a group-level variable that influences adaptation outcomes has used various modes of operationalizing differences emanating from the country of origin. Fritz, Chin, and DeMarinis (2008) found that international students studying in the United States experienced significant differences in their levels of anxiety and irritability based on broad geographic categorizations (i.e., Asian versus European students). Other research has operationalized these differences in terms of cultural values that previous research established as characterizing a particular group. Research has also investigated the role(s) of differences in particular cultural values in psychological adaptation. For example, Geeraert and Demoulin (2013) found that culture, operationalized according to both Hofstede's cultural dimensions and Schwartz's cultural values, did not predict stress or

self-esteem for Belgian adolescents participating in a year-long study-abroad program in 29 different countries.

Other research has focused on individual-level factors. Research findings on these variables, while also mixed, are quite robust. For instance, in terms of individual-level factors that exist prior to acculturation, Berry et al. (1987) found that women experienced more stress than men; however, Cetinkaya-Yildiz, Cakir, and Kondakci (2011) did not find any gender differences among male and female international students studying in Turkey. In terms of personality, Atri, Sharma, and Cottrell (2007) found that control and commitment elements of hardiness did predict mental health for Asian-Indian international students studying in the United States, and Church (1982) provided a list of personality characteristics such as closed-mindedness and ethnocentrism in a review of factors that had been shown to play a role in the psychological adaption of international students studying in the United States. In terms of individual-level factors that arise during acculturation, variables such as discrimination, length of time in host country, and social support have all been implicated. For example, while Baba and Hosoda (2014) found that length of stay was not associated with sociocultural adaptation for Asian students studying in the United States, Briones, Verkuyten, Cosano, and Tabernero (2012) found that the relationship between psychological adaptation and length of residence was stronger for immigrants in Spain who experienced more cultural distance vis-à-vis the host culture.

One reason why research findings testing relationships among variables in Berry's framework may be so inconsistent is that each study isolates a piece of the picture from

other elements—all of which should be studied at the same time (Berry, 1997). Another reason for the inconsistent findings can be found in how the variables have been measured. Studies investigating cultural distance, stress, social support, and psychological adaptation have operationalized the variables differentially. Cultural distance, for example, has been measured directly and described based on previous evaluations of specific cultural characteristics. Objective or subjective tools have been used with subjective measures capturing perceived discrepancies between the home and host cultures, while objective measures have focused on cultural dimensions, differences in GDP, or gross income inequality metrics (Babiker, Cox, & Miller, 1980; Suanet & van de Vijver, 2009; Szabo, Ward, & Jose, 2016).

Research on stress as an adaptation outcome also has been based on a variety of measures. Much research has used general stress scores, although many studies have also defined stress more specifically in terms of acculturative stress or focused on particular predictors of stress such as perceived discrimination and, to a lesser degree, homesickness (e.g., Cheng, 1997; Crockett et al., 2007; Lee et al., 2004; Park et al., 2014; Yakunina, Weigold, Weigold, Hercegovac, & Elsayed, 2013). Still other measures have focused on sources of stress that lie in intercultural competence (or lack thereof). For instance, intercultural competence concerns around work efficacy and personal/social efficacy predicted depression among South Asian students studying in the United States (Rahman & Rollock, 2004).

Conceptualizations of social support also have taken on various manifestations. For instance, social support has been operationalized in terms of social connectedness,

which evaluates the degree of closeness the individual feels to different sources of social support (Lee & Robbins, 1998). Cohen and Wills (1985), however, suggested that all conceptualizations of social support could be understood in terms of four categories: (a) global structural (i.e., the total number of relationships regardless of who they are with), (b) specific structural (i.e., focuses on particular relationships or those with specific groups such as conationals, host nationals, other international students, etc.), (c) global functional (i.e., a composite measure of general availability of social support), or (d) specific functional (i.e., measures a specific need that is, or is not, met by existing social support resources). Measures in each of these categories may be more or less sensitive to the direct or moderator/mediator effects of social support (Cohen & Wills, 1985).

Finally, a wide range of outcome variables also have been used to operationalize psychological adaptation, including acculturative stress. These variables capture psychological responses resulting from changes necessitated by the acculturation process, including disappointment, anxiety, fear, nervousness, sadness, anger, loneliness, homesickness, anger, depression, helplessness, identity confusion, loss of self-confidence, lowered self-esteem and self-confidence, social isolation, and psychosomatic issues (Smith & Khawaja, 2011; Zheng & Berry, 1991). In terms of Berry's (1997) acculturation framework, the study concentrated on the interaction between individual-level factors that both exist prior to (i.e., cultural distance) and emerge during (i.e., social support) the acculturation process to determine adaptation outcomes—immediate (acculturative stress) and long-term (psychological adaptation). Particular attention was paid to operationalize the variables so that they corresponded to the research questions.

Results can be integrated with research on the relationships between other variables in Berry's framework to locate these factors within a broader field. Future research can then investigate the relative importance of variables in determining adaptation outcomes at different points in the acculturation process for students from and in particular cultural contexts.

Ward and Geeraert's Process Model of Acculturation

While Berry's (1997) framework positioned both cultural distance and social support as moderating (or mediating) factors between the experience of acculturation and the short-term outcome of acculturative stress as well as the long-term outcome of psychological adaptation, Ward and Geeraert's (2016) more recent process model of acculturation shifted the role of cultural distance from an intervening to an instigating variable, which supports the role of cultural distance investigated in this research project. This model reflects Suanet and van de Vijver's (2009) previous suggestion that cultural distance would be better viewed as an antecedent than as a mediating or outcome variable, and it can easily be reconciled with Berry's more comprehensive framework.

Within Ward and Geeraert's (2016) model, cultural distance is the result of intercultural contact that occurs when the sojourner arrives in the host culture. This intercultural contact, and its resulting perception of cultural distance, can be a source of stress that requires coping as well as an impetus for growing cultural awareness (home and host), both of which the sojourner must manage (Ward & Geeraert, 2016). Therefore, according to models by Berry (1997) and Ward and Geeraert (2016), cultural distance could be a source of stress in the acculturation process, the effects of which for both the

short-term result of acculturative stress and long-term effects on psychological adaptation may be moderated by social support.

In fact, results of both qualitative and quantitative research have pointed to cultural distance underlying the experience of stress. Results of qualitative research have suggested that the perception of cultural distance and the experience of cultural differences function as sources of stress for international students (Ang & Liamputtong, 2008; McLachlan & Justice, 2009; Yan & Berliner, 2013). Moreover, international students studying in the United States were found to be experiencing “change overload" (e.g., weather, food, academic, social differences), which contributed to adjustment problems (McLachlan & Justice, 2009, p. 29). Results of quantitative research also have linked cultural distance to stress, although findings are not uniform and cultural distance has been operationalized in a variety of ways (e.g., Galchenko & van de Vijver, 2007; Poyrazli et al., 2010; Szabo et al., 2016). For instance, archival research indicated that adjusting to American culture was a primary motivation for seeking psychological support services among international students studying in the United States (e.g., Yakushko et al., 2008). Moreover, Fritz et al. (2008) found that being in a new environment and experiencing social differences functioned as a source of stress to different degrees among international students based on country of origin. Overall, these quantitative results were generated by conceptualizations of cultural distance as perceived rather than ascribed, that is as stemming from perceived discrepancies between the home and host cultures rather than in terms of cultural dimensions, differences in GDP, or gross

income inequality metrics (Babiker et al., 1980; Suanet & van de Vijver, 2009; Szabo et al., 2016).

This research operationalized cultural distance in terms of perceptions of differences between the home and host cultures on a number of dimensions. This type of subjective measure is important for evaluating how individual students experience cultural distance in relation to social support, acculturative stress, and psychological adaptation within a particular sociocultural context. The dimensions of cultural distance evaluated in subjective measures emerge from the broad array of stressors that arise during the acculturation process. Berry (1997) specified four main sources of stress: biological, economic, social, and cultural. More recently, however, Ying (2005) added an additional source—functional. Functional stressors are rooted in language, financial, and transportation difficulties, as well as work/study related problems (Ying, 2005). All five of these stress domains are included in the measure of cultural distance by Demes and Geeraert (2014) used in the research. Therefore, examining the relationship between perceived cultural distance and acculturative stress provided the opportunity to examine cultural distance as a source of stress for international students adapting to a new cultural context.

Stress-Buffering Hypothesis

The stress-buffering hypothesis explores the protective role of interpersonal relationships against the negative consequences of stress (Cohen & Wills, 1985). This hypothesis coincides with both the five phenomena that comprise the process of acculturation according to Berry's (1997) model and the role of cultural distance as an

instigating source of stress as proposed in Ward and Geeraert's (2016) model. Together, these three models explain how social support may interact with cultural distance and, in turn, stress, to affect psychological adaptation as examined in this research project.

Examining the interaction between cultural distance and social support answers calls for more research on interaction effects in Berry's model (Wang & Mallinckrodt, 2006). Berry's five phenomena in the acculturation process include the acculturation experience (which could be the experience of intercultural contact itself, and the resulting perception of cultural distance as proposed by Ward and Geeraert [2016]), appraisal of that experience (which may refer to evaluating the cultural distance as stressful as discussed by Lazarus and Folkman [1984]), strategies used (which could include the enlistment of social support), immediate effects (e.g., acculturative stress), and long-term outcomes (e.g., psychological adaptation). The stress-buffering hypothesis supports this conceptualization of the acculturation process because it proposes that social support may play a buffering role at two points: diminishing the extent to which an event is perceived as stressful and protecting against long-term negative psychological outcomes if stress is experienced (Cohen & Wills, 1985). In terms of Berry's and Ward and Geeraert's models, social support could be a moderating factor affecting cognitive appraisal of life events (e.g., perceived cultural distance) as stressful (see Lazarus & Folkman, 1984) in the short-term (and thereby impacting the experience of acculturative stress), and it could also function as a coping strategy to reduce the long-term effects of cultural distance to the extent that it has, indeed, been perceived as stressful.

The role of social support in determining psychological adaptation and stress responses has been studied quite extensively, although, again, the results are not uniform. The inconsistent findings may have been generated by a mismatch between the type of measure used to evaluate social support and the type of relationship between social support and psychological adaptation being studied (i.e., direct effect, moderator, or mediator; Cohen & Wills, 1985). Despite these varying research results, Smith and Khawaja (2011) identified social support as an important buffer of acculturative stress that enhances adaptation based on a review of acculturation literature focused on sources of stress. Moreover, based on research with German expatriate managers in both Japan and the United States, Stahl and Caligiuri (2005) determined that overall social support had a positive influence on perceptions of stress but that social support may have become more valuable as a coping resource when cultural distance and/or acculturative stress levels were higher, which is precisely the type of relationship predicted by the stress-buffering hypothesis. In fact, Krohne (2001) specifically suggested that social support buffered the extent to which cultural distance results in stress because it affects the appraisal of the cultural distance as a stressor as per Lazarus and Folkman's (1984) theory of cognitive appraisal.

Although social support is the most commonly studied form of social resource in research on international students (Bierwiaczonek & Waldzus, 2016), this research sought to further investigate the role of social support in international students' psychological adaptation in conjunction with cultural distance and acculturative stress based on the stress-buffering hypothesis (Cohen & Wills, 1985). The stress-buffering

hypothesis suggests that social support may protect a person from perceiving a stressor (such as cultural distance) as stressful, or it may protect people from experiencing negative psychological outcomes if they have already interpreted stressors as stressful (Cohen & Wills, 1985). Previous research has examined one or the other of these relationships, but it has not examined both simultaneously. Moreover, focusing on these variables provides a means of examining the new role of cultural distance as an instigating rather than an intervening variable proposed by Ward and Geeraert (2016), and perhaps updating Berry's (1997) framework. Therefore, this research seeks to investigate the moderating role of social support between a potential stressor (i.e., cultural distance) and the experience of acculturative stress, as well as between acculturative stress and negative psychological adaptation outcomes while controlling for a range of factors previously established to play a role in international students' psychological adaptation (i.e., gender, age, relationship status, language proficiency, country of origin, time in host country, unmet expectations, and financial resources).

Literature Review

Variables featured are cultural distance, social support, acculturative stress, and psychological adaption. Cultural distance was investigated as a predictor of acculturative stress while acculturative stress was investigated as a predictor of psychological adaptation. Therefore, acculturative stress played the role of both predictor and outcome variable in subsequent analyses. Social support was investigated as a predictor for both acculturative stress and psychological adaptation as well as a moderator of the relationship between cultural distance and acculturative stress, and between acculturative

stress and psychological adaptation. Covariates included gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources. These covariates are commonly included in research on international student adaptation, although results have not always been consistent regarding their relationship to adaptation.

Previous studies have focused on the moderator role of social support in different sojourner populations. For instance, Al-Sharideh and Goe (1998) conducted cross-sectional research using regression analyses and found that the number of strong relationships with conationals (but not host nationals) moderated the relationship between perceived assimilation to American culture and self-esteem (as a psychological adaptation outcome) among international students studying in the United States. Baba and Hosoda (2014) also used a cross-sectional design and regression analyses to find that social support did not interact with any stressors measured in the research to predict sociocultural adjustment, just as Solberg, Valdez, and Villarreal (1994) found that social support did not buffer against the negative effects of stress for college adjustment among Hispanic students in the United States. Research based on the same design, although analyzed using path analysis, found that assessment of spousal support did not moderate the relationship between perceived discrimination and depression although social undermining (i.e., displays of negative affect by people in participants' social networks or behaviors that make it difficult to reach goals) did moderate the relationship between perceived discrimination and depression among international students in the United States (Jung, Hecht, & Wadsworth, 2007). Furthermore, social support also was found

not to moderate the negative relationship between ethnic density and depression (Jurcik, Ahmed, Yakobov, Solopieieva-Jurcikova, & Ryder, 2013). On the other hand, although results from research based on a cross-sectional survey of Asian students studying in Australia indicated that conational support did not buffer the relationship between the need for cognitive closure (NCC) and psychological adaptation, results indicated that host country ties did buffer the relationship between NCC and psychological adjustment among students high on NCC such that high NCC students with fewer host culture contacts experienced worse psychological adaptation outcomes (Kashima & Loh, 2006). At the same time, Kuo and Roysircar (2006) found that interpersonal competence moderated the relationship between perceived prejudice and acculturative stress for adolescent Taiwanese sojourners in Canada. Lee, Koeske, and Sales (2004) found that Korean international students who had high levels of practical and emotional social support were significantly less likely to report symptoms (e.g., depression, anxiety) even if they experienced higher levels of acculturative stress compared to students who had low levels of social support, although this buffering effect only occurred among students who were more acculturated to language and interpersonal associations in the United States. Also, Mallinckrodt and Leong (1992) found that social support from the graduate academic program had both direct and buffering effects on stress symptoms among international graduate students studying in the United States. The results of one longitudinal study featuring adolescent immigrants in New York City analyzed based on individual growth curve modeling indicated that more social support predicted better mental health and buffered against the negative effects of acculturative stress on specific

aspects of mental health (Sirin et al., 2013), while the results of research on Korean immigrants in the United States indicated that social connectedness to mainstream society partially mediated the relationship between acculturation and life satisfaction but social connectedness to ethnic community fully mediated the relationship between enculturation and life satisfaction (Yoon, Lee, & Goh, 2008).

Shortcomings of the research methods and methodologies used to conduct these studies include using purely self-report measures, cross-sectional designs, focusing on specific international student populations, not including a comparison group, and findings being culture specific. Some of these shortcomings were not improved in this research. Specifically, this research also was cross-sectional rather than longitudinal, based on survey research, and grounded in a particular cultural context rather than comparing how the same group may adapt across different cultural contexts. However, this research included a comparison group of host-culture students and did not single out a particular group of international students. Rather, the research examined how international students adapted to studying in the northern part of Cyprus as a group. However, previous research on international student adaptation also has been critiqued for basing analyses on aggregate groups that cannot illuminate culture-based intergroup differences (Rienties & Tempelaar, 2013). In support of this critique previous research has established country-based differences in cultural distance among both international students and immigrants (e.g., Briones, Verkuyten, Cosano, & Tabernero, 2012; Galchenko & van de Vijver, 2007; Nesdale & Mak, 2003).

Studies making intergroup comparisons of adaptation based on cultural differences, however, often have operationalized cultural distance in terms of broad dimensions of within-group cultural similarities (e.g., Hofstede & Bond, 1984). This dimension-based intergroup comparison approach does not match the aims of this research, which seeks to explore the role of perceived cultural distance as a source of acculturative stress in predicting adaptation among international students at the individual level (Ward & Geeraert, 2016). Rather than seeking to establish adaptation outcomes for specific *groups* of international students who experience cultural distance vis-à-vis a particular cultural context, the research seeks to investigate what happens when an *individual* international student experiences cultural distance—a finding that may generalize more readily to international students from other national groups in other host contexts. Therefore, it was more appropriate for the purpose of this research to administer a subjective measure of cultural distance to a mixed group of international students to capture snapshots of individual experiences of cultural distance, stress, and adaptation at a specific point of time in the acculturation process.

While previous research has examined the relationship between social support and stress, it explored either the direct effect of social support on stress as a psychological adaptation outcome (e.g., Berry et al., 1987; Park et al., 2014; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004) or if social support moderated the relationship between stress and adaptation outcomes (e.g., Crockett et al., 2007). According to the stress-buffering hypothesis, however, social support may play the role of moderator between stress and adaptation, as researched previously, or it may play the role of moderator between the

experience of a stressor and the perception of that experience as stressful (Cohen & Wills, 1985). This research followed the model of Ward and Geeraert (2016), which positioned cultural distance as a source of acculturative stress that affects psychological adaptation. But, in addition to examining social support as a possible moderator between acculturative stress and psychological adaptation, the research also examined if social support played a moderating role between the perception of cultural distance and the interpretation of cultural distance as stressful.

Finally, the inconsistent results of social support as a moderator may be due to the use of inappropriate social support measures. Cohen and Wills (1985) specified the types of measures that should be used to capture both buffering and main effects of social support. Specific structural (i.e., an important relationship), global structural (i.e., number of relations), and global functional (i.e., general availability of resources without assessing specific resources) measures should be used to investigate main effects but specific functional measures (i.e., the availability of particular types of social resources) should be used to investigate the buffering hypothesis. These specific functional measures may focus on different types of social support such as esteem support, informational support, social companionship, and instrumental support (Cohen & Wills, 1985). Therefore, this research used the ISSS Scale (Ong & Ward, 2005), which includes two specific functions of social support (i.e., socioemotional and instrumental) to capture moderation effects.

Covariates

There were nine covariates: gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources. These covariates were selected because they have been shown to have a relationship with psychological adaptation, although results have not always been consistent. Some studies have found no relationship between gender and psychological adaptation among sojourners (Crockett et al., 2007; Jurcik et al., 2013; Pan et al., 2008; Poyrazli, Arbona, Bullington, & Pisecco, 2001), while other studies have found a relationship (Dao et al., 2007; Mesidor & Sly, 2016; Misra, Crist, & Burant, 2003; Pantelidou & Craig, 2006; Sam et al., 2015; Zhang & Goodson, 2011). For instance, Demes and Geeraert (2015) found that male teenagers from over 40 different countries participating in an intercultural exchange in 51 different countries reported lower levels of stress while Cetinkaya-Yildiz et al. (2011) found that gender was not related to psychological distress among international students studying in Turkey.

Research featuring the relationship between age and psychological adaptation among sojourners also has produced unequivocal results with some studies indicating a relationship (e.g., Kuo & Tsai, 1986; Lee et al., 2004; Leung, 2001; Poyrazli et al., 2001; Poyrazli & Lopez, 2007; Zhang & Goodson, 2011). For instance, while Lee et al. (2004) found that younger Korean international students studying in the United States experienced less stress, Poyrazli and Lopez (2007) found that younger international students studying in the United States experienced more homesickness. Other research, however, has indicated no relationship between age and psychological adaptation (e.g.,

Al-Sharideh & Goe, 1998; Crockett et al., 2007; Jurcik et al., 2013; Pan et al., 2008; Pantelidou & Craig, 2006).

Research investigating the connection between relationship status and psychological adaptation also has not produced equivocal results. Some research has indicated no association with psychological distress (Al-Sharideh & Goe, 1998; Pan et al., 2008) while other research has linked relationship status to psychological adaptation (e.g., Lee et al., 2004). For instance, results of qualitative research suggested that the pressure of marriage and dating presented a significant source of personal stress for Chinese students studying in the United States (Yan & Berliner, 2013) although other results linked being single to more stress (Lee et al., 2004). On the other hand, marital status did not predict life satisfaction among Chinese students studying in Australia (Pan et al., 2008).

Research has linked different operationalizations of language proficiency to psychological adaptation among sojourners. A participant's degree of fluency may be measured in several ways (a) by asking self-report questions regarding speaking, reading, writing, and listening skills in the host-language (Baba & Hosoda, 2014; Cetinkaya-Yildiz, Cakir, & Kondakci, 2011; Mak, Bodycott, & Ramburuth, 2015); (b) by asking one general self-report item (e.g., James et al., 2004; Nesdale & Mak, 2003; Poyrazli & Lopez, 2007); (c) by administering a scale designed for that purpose (e.g., Chirkov, Lynch, & Niwa, 2005; Dao et al., 2007); (d) by examining the level of formal education in English (Rasmi, Safdar, & Lewis, 2010); (e) based on the participant's ability to participate in different English-medium activities (Karuppan & Barari, 2010); or (f) based

on a more objective measure such as a TOEFL English exam (e.g., Wang et al., 2012). In their review, Zhang and Goodson (2011) identified English proficiency as a predictor of psychological symptoms, acculturative stress, satisfaction with life, and sociocultural adaptation.

The current research included English proficiency because English was the language of instruction, but it also included Turkish proficiency because Turkish was necessary for day-to-day living and socializing with host nationals. In cases where the language in which international students study is different from the language used in the host society it is important to evaluate both because previous research has indicated that the local language may still pose problems even when international students are proficient in the language of study. For instance, Asian students in Belgium had to study in English, but Dutch language still posed a problem because some (academic) resources (e.g., books, signs on campus, web site) were available only in Dutch (Wang & Hannes, 2014).

It is further important to control for the effects of country of origin. Based on a review of sources of acculturative stress, Smith and Khawaja (2011) suggested that further research is necessary to discern if international students' cultural backgrounds influence the degree to which they perceive stressors (e.g., cultural distance) as actually being stressful versus, perhaps, as an adventure or an opportunity. At the same time, research has indicated that differences in the degree to which sojourners perceive differences between the home and host cultures are based on national identity (e.g., Briones et al., 2012; Suanet & van de Vijver, 2009; Swami, 2009). For example,

Galchenko and van de Vijver (2007) found that international students from different countries experienced various levels of cultural distance while studying in Russia. Moreover, previous research has linked country of origin to psychological adaptation (e.g., Leung, 2001; Pan et al., 2008; Poyrazli, Thukral, & Duru, 2010; Szabo et al., 2016). For instance, students from Asian countries experienced more acculturative stress than European students studying in the United States (Poyrazli et al., 2004), and European international students studying in the United States experienced less acculturative stress than their counterparts from Asia, Central and Latin America, and Africa (Yeh & Inose, 2003).

It is important to consider that amount of time in host country because previous research has linked time and psychological adaptation (e.g., Cetinkaya-Yildiz et al., 2011; Chapdelaine & Alexitch, 2004; Geeraert & Demoulin, 2013; Kashima & Loh, 2006; Leung, 2001; Li, Wang, & Xiao, 2014; Wang & Mallinckrodt, 2006). For instance, Briones et al. (2012) found that the relationship between psychological adaptation and length of residence was stronger for immigrants with higher cultural distance vis-à-vis the Spanish host society. Moreover, Kashima and Abu-Rayya (2014) found that the link between cultural distance and psychological adaptation was limited to earlier phases of settlement and diminished within three and a half years of arrival for Asian immigrants in Australia. Moreover, previous research has indicated both linear and non-linear patterns of adjustment (Hechanova-Alampay et al., 2002) with one study indicating five distinct patterns of change in stress experienced by sojourners over the course of their exchange:

a reverse J-curve, inverse U-curve, mild stress, minor relief, and resilience pattern (Demes & Geeraert, 2015).

Having unmet expectations has not only been found to be more prevalent among international students—it also has been linked to psychological adaptation among sojourners and appears to be a source of stress more so for them than for individuals from the home culture (e.g., Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Smith & Khawaja, 2011). For instance, international students experienced greater incongruence between their expectations and experiences than did domestic students (Khawaja & Dempsey, 2008; Sherry et al., 2004). Some research has indicated that international students may have unrealistic expectations because they are not informed adequately about the host culture prior to leaving their home countries. For instance, about half of adolescent Taiwanese sojourners attending secondary school in Canada reported not being prepared sufficiently for their international study experience (Kuo & Roysircar, 2006). Furthermore, knowledge about living in the United States negatively predicted adjustment difficulties (i.e., depression) among Chinese, Filipino, Japanese, and Korean immigrants in the United States such that those students who knew more experienced fewer adjustment problems (Kuo & Tsai, 1986).

Finally, financial resources (or lack thereof) have been established as a source of stress (e.g., Chen, 1999; Constantine et al., 2005; Fritz et al., 2008; Hwang & Ting, 2008; Smith & Khawaja, 2011; Yan & Berliner, 2013). Results of qualitative research have pointed to financial problems as a challenge to adjustment among international students from a variety of African countries as well as the United States, Germany, and Canada

studying in Botswana (Maundeni, Malinga, Kgwatalala, & Kasule, 2010). Moreover, financial debt to parents was a source of stress for Chinese students studying in Australia (Ang & Liamputtong, 2008), Asian students studying in the United States perceived financial difficulties as more severe than did American students (Fritz et al., 2008), and financial stress predicted psychological distress among Asian-American university students (Hwang & Ting, 2008). In addition to functioning as a source of stress, satisfaction with finances was identified as a significant predictor of subjective life satisfaction among international students from various countries studying in Norway (Sam, 2001; Sam et al., 2015).

Cultural Distance

The concept of perceived cultural distance was introduced by Babiker, Cox, and Miller (1980) to account for the distress experienced by sojourners during the acculturation process. These authors conceptualized cultural distance as a subjective individual difference variable representing perceived discrepancies between social and physical aspects of the home and host environments. The current research operationalized cultural distance according to this perceived standard rather than more objective standards such as cultural dimensions of attitudes or values, differences in GDP, or gross income inequality metrics (Babiker et al., 1980; Suanet & van de Vijver, 2009; Szabo et al., 2016). The project took the subjective, rather than the objective, approach to cultural distance keeping the variable at the individual level as originally conceptualized by Babiker et al. (1980) and as proposed in Berry's (1997) acculturation model. A perceived measure of cultural distance was appropriate because despite the fact that some

researchers have argued that objective measures produce more consistent results for psychological well-being among sojourners (Kashima & Abu-Rayya, 2014), other researchers have asserted that research produces mixed results if based on larger samples using more objective cultural distance measures but that cultural distance is linked to adaptation if measured as a continuous variable (Ward & Geeraert, 2016). It may be that some objective measures, such as cultural dimensions, are artifacts that describe cultural dimensions of a specific time period (Søndergaard, 1994). Furthermore, perceived measures of cultural distance actually may be more sensitive to differences in psychological adaptation than objective measures. For instance, perceived cultural distance predicted general mood disturbances while more objective measures did not among international students in New Zealand (Ward & Searle, 1991). With these arguments in mind, a subjective measure was more appropriate because the research sought to capture how individual perceptions of more or less cultural distance related to acculturative stress and psychological adaptation in light of social support in the current sociohistorical context.

The variety of operationalizations is but one measurement-related issue in research on cultural distance. Another issue is that previous studies may have produced a false positive result regarding the relationship between cultural distance and stress due to conflation between cultural distance and stress measures (Geeraert & Demoulin, 2013). Therefore, the proposed research considered the degree of overlap between the cultural distance and acculturative stress scales. Acculturative stress was measured using the ASSIS, which includes six subscales (i.e., perceived discrimination, perceived hatred,

homesickness, fear, guilt, and stress due to change) plus ten miscellaneous items that focus on psychological states or perceptions thereof (Sandhu & Asrabadi, 1994), while the BPCDS focuses on perceived degrees of difference between seemingly objective markers of the physical (e.g., climate, practicalities) and social (e.g., family life, social norms) environments in the home versus the host culture (Demes & Geeraert, 2014). These two scales appear to have different foci and do not measure the same construct, but rather should capture if, indeed, sojourners who perceive higher levels of cultural distance also experience more acculturative stress. Both measures also should be sensitive to whether or not the relationship is moderated by social support such that those sojourners who perceive higher levels of cultural distance, but who also have the right quality of social support, appraise that existing cultural distance as less stressful and experience less acculturative stress than do those who also have higher levels of perceived cultural distance but who do not experience the same quality of social support.

Despite these issues related to measurement, the literature on adaptation is rich in terms of the factors investigated. Previous research has not, however, focused enough on the role of cultural distance in international students' psychological adaptation (Bierwiaczonek & Waldzus, 2016; Li et al., 2014; Zhang & Goodson, 2011). Cultural distance has been selected because its role in international student adaptation has been under-researched compared to its role in the adaptation of migrants and expatriates, only being cited in 17% of studies on that population (Bierwiaczonek & Waldzus, 2016). Cultural distance was not even included as a variable in a review of research on factors affecting the psychological adaptation of Asian students studying abroad (Li et al., 2014).

Moreover, cultural distance was not explicitly mentioned in Zhang and Goodson's (2011) review of predictors of international students' psychosocial adjustment to life in the United States. This is surprising given that international students cited the inability to adjust to cultural differences as a primary reason for seeking psychological support services (Yakushko et al., 2008).

Cultural distance has further been selected because while Berry's (1997) framework positioned cultural distance as a possible moderator/mediator variable between stress and adaptation outcomes, Ward and Geeraert's (2016) process model of acculturation shifted its role to an instigating source of stress. According to this model cultural distance would influence intercultural contact, which would (eventually) affect psychological well-being and social functioning. It may be that existing differences in cultural norms create difficulties in forming friendships within the host culture, thereby reducing the quality of social support and resulting in negative psychological adaptation outcomes such as acculturative stress (Smith & Khawaja, 2011). These propositions, however, have not been examined simultaneously in terms of the stress-buffering hypothesis. Therefore, the first proposition examined was if sojourners who perceived more cultural distance and had less social support appraised cultural distance as more stressful in terms of acculturative stress compared to those who also perceived more cultural distance but enjoyed better social support (Cohen & Wills, 1985). The second proposition examined was if social support moderated the relationship between acculturative stress and psychological adaptation such that those sojourners who experienced more acculturative stress, but who had better social support, exhibited

significantly better psychological adaptation outcomes than did sojourners who experienced a higher level of cultural distance but who did not have the same quality of social support (Cohen & Wills, 1985).

In terms of the existing literature, cultural distance is rooted in the concept of culture shock. Although their own research investigated the relationship between cultural distance and sociocultural adaptation, Furnham and Bochner (1982) suggested that culture shock (as a form of psychological stress) depends on cultural differences, individual demographic and personality differences, and sojourner experience (e.g., social support, perceived discrimination). The current study investigated the stress reaction in relation to the degree of perceived cultural differences as well as social support and some common covariates, but did not measure personality. The role of cultural differences in producing culture shock has been supported by archival research illustrating that the inability to adapt to American culture was one presenting concern among international students utilizing counseling services at a college in the United States was (Yakushko et al., 2008). Results from other research based on ascribed cultural distance (i.e., cultural distance assumed based on membership in different national groups) also have supported cultural distance as a source of stress. For instance, higher cultural distance predicted more anxiety over time for Asian than Western international students studying in New Zealand (Szabo et al., 2016), European international students experienced less acculturative stress than their counterparts from Asia, Central and Latin America, and Africa studying in the United States (Yeh & Inose, 2003), Asian students experienced more acculturative stress than European students

studying in the United States (Poyrazli et al., 2004), and Asian students experienced more overall strain as well as higher levels of strain regarding their educational experiences, English, and personal psychological experiences (e.g., homesickness, feelings of depression) compared to international students from other countries (Poyrazli & Kavanaugh, 2006). Results based on objective measure, however, have not been so promising, although this may be an artifact of how cultural distance was conceptualized in those studies (Ward & Geeraert, 2016). For instance, Geeraert and Demoulin (2013) found that cultural distance did not predict stress or self-esteem when measured objectively based on cultural dimensions and cultural values, while Berry, Kim, Minde, and Mok (1987) found that greater differences on Hofstede's four dimensions (i.e., power distance, individualism, uncertainty avoidance, masculinity) correlated with greater stress, but not after controlling for language abilities. It may be that the cultural dimensions measured in these research studies represented artifacts of the time period during which they were conceptualized (1960s-1970s) or the population upon which they were formed (i.e., IBM employees), and therefore did not capture factors involved in current acculturation processes among other groups (Søndergaard, 1994).

When measured in terms of individual perceptions, Searle and Ward (1990) found that perceived cultural distance predicted social difficulty, which predicted depression. These findings, which illustrate an indirect relationship between cultural distance and psychological adaptation, may explain why cultural distance has been associated with sociocultural adaptation outcomes more often than with psychological adaptation (Church, 1982). That is, cultural distance has been associated with sociocultural

adaptation, which has been, in turn, associated with psychological adaptation (Cetinkaya-Yildiz et al., 2011; Ward & Kennedy, 1992, 1993a), and the association between psychological and sociocultural adaptation appears to grow stronger with increased integration and cultural proximity to the host culture (Ward & Rana-Deuba, 1999). The current study also investigated an indirect relationship between cultural distance and psychological adaptation by exploring the associations between perceived cultural distance and acculturative stress, and between acculturative stress and psychological adaptation.

In terms of results linking cultural distance directly to psychological adaptation (including measures of stress), Furukawa (1997) found a positive correlation between cultural distance and emotional distress with food as the most influential factor for Japanese students spending a year abroad in various countries, while Babiker et al. (1980) found that perceived cultural distance correlated with anxiety scores and number of consultations as measures of psychological distress among international students studying in Scotland. Galchenko and van de Vijver (2007) found that more perceived cultural distance between host and home cultures was associated with lower self-esteem, more stress, and more problems in terms of behavior in both the home (food/family) and host domains (social contacts and language), and although Suanet and van de Vijver (2009) found that cultural distance did not predict stress, it did predict homesickness (albeit negatively). Despite these significant findings, Cetinkaya-Yildiz et al. (2011) found no relationship between cultural distance and psychological distress among international students studying in Turkey, perhaps because the majority of the sample was from ex-

Soviet Turkic republics including Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, and Turkmenistan (40%), and Balkan countries (19%). Countries in these two regions have geographical, cultural, and national proximity; common history; and intense political ties with Turkey (Macfie, 1998, Ortayli, 1995, as cited in Cetinkaya-Yildiz et al., 2011). Therefore, these students may not have experienced adequate cultural distance to register as a stressor.

In conclusion, even though cultural distance has been established as a stressor in the acculturation process its role has not been researched adequately. Furthermore, although cultural distance has been commonly associated with indices of adjustment that correspond more to sociocultural than to psychological adaptation (Church, 1982), it may be that cultural distance affects sociocultural adaptation which, in turn, affects psychological adaptation (Rienties & Tempelaar, 2013; Ward & Kennedy, 1992, 1993a; Ward & Rana-Deuba, 1999; Wilson, Ward, & Fischer, 2013). Although previous research results regarding the relationship between cultural distance and psychological adaptation (including acculturative stress) have not been conclusive, the measure of cultural distance used in the research may have played a role in this inconsistency. Therefore, this project examined the indirect relationship between cultural distance and psychological adaptation by using a perceived cultural distance scale that did not overlap with what was measured by the acculturative stress scale, and by framing the relationship in terms of the stress-buffering hypothesis to test social support as a moderator between cultural distance and psychological adaptation.

Acculturative Stress

Stress has been one of the most frequently reported predictors of psychological adaptation among sojourners (Zhang & Goodson, 2011), and was a common presenting concern among international students seeking mental health services on campuses in the United States (Yakushko et al., 2008). Although Berry (1997) has specified five broad categories of stressors (i.e., physical environmental, biological, social, cultural, and psychological) and Ying (2005) has added functional stressors, some types of stressors may be more characteristic of the sojourner experience and produce a particular type of stress—acculturative. This form of stress results directly from the process of psychological and cultural changes initiated when members of different cultural groups come into contact (Berry et al., 2006; Zheng & Berry, 1991). Sojourners, such as international students, experience particular stressors associated with being in a foreign cultural context that may not affect host-culture nationals (Ang & Liamputtong, 2008; Hechanova-Alampay et al., 2002; Poyrazli & Lopez, 2007; Rajapaksa & Dundes, 2002; Sherry et al., 2010).

Among factors implicated in acculturative stress, perceived discrimination has been investigated most frequently among international students (Bierwiaczonek & Waldzus, 2016). At the same time, other factors stemming from exposure to a new cultural group also play a role. Based on a review of sources of acculturative stress, Smith and Khawaja (2011) identified language, the ability to make friends and interact with locals, education-related stressors, mismatch between expectations and realities (e.g., services, social life, teaching style), sociocultural stressors, practical stressors (e.g.,

financial problems, work restrictions, greater tuition fees), and loneliness as acculturative stressors. For instance, Sherry, Thomas, and Chui (2010) reported adapting to a new culture, English-language problems, financial problems, and a lack of understanding from the broader university community as stressors facing international students from 30 countries studying in Canada, while Chen (1999) also found that common stressors for international students included language concerns as well as educational and sociocultural stressors (e.g., culture shock, social isolation and alienation, financial concerns, and racial discrimination/prejudice). These results are mirrored by the results of qualitative research that explored concerns among 12 Kenyan, Nigerian, and Ghanaian students studying in the United States. Findings from this study revealed discriminatory treatment, loneliness and feeling isolated from others, and financial concerns as sources of stress (Constantine et al., 2005). In addition to these issues, Berry et al. (1987) reported that both "push" and "pull" factors related to higher stress: push factors may have led to poor attitudes and resentment whereas pull factors may have led to unrealistic expectations of the host context. Stress related to both push and pull factors could be exacerbated by the inability to interact with host nationals (or understand those interactions), language problems, culture clash, job opportunities, and financial pressure (Yan & Berliner, 2013).

Although many factors have been implicated as sources of acculturative stress, Smith and Khawaja (2011) suggested that further research is necessary to discern if international students' cultural backgrounds influence their cognitive appraisals of stressors as being stressful versus, perhaps, as adventures or as opportunities. While the

operationalization of cultural distance in the project did not directly capture specific cultural characteristics, it did measure the degree to which international students perceived their cultural backgrounds as different from the host culture. Previous research has ascribed cultural distance based on differences between cultural profiles derived from established cultural dimensions rather than measuring those differences in the actual research (e.g., Berry et al., 1987). Research results based on ascribing cultural distance indicated that cultural distance was a source of stress. For example, Yeh and Inose (2003) showed that students from countries assumed to be more culturally distant from the host society experienced more acculturative stress than their counterparts from countries assumed to be more similar to the host culture. Berry et al. (1987) reported that greater differences between the home and host cultures on Hofstede's four dimensions (i.e., power distance, individualism, uncertainty avoidance, and masculinity) correlated with greater stress. As supported by the literature, this research was designed based on the assumption that cultural distance, does, in fact, produce acculturative stress, which influences psychological adaptation.

Despite the relationship between ascribed measures of cultural distance and acculturative stress this project used the BPCDS (Geeraert, Demoulin, & Demes, 2014) to measure perceived cultural distance because homogeneity in the experience of acculturative stress among cultural groups should not be assumed. In fact, research has illustrated both inter and intragroup differences in sojourner acculturative stress at the national level. Kuo and Tsai (1986), for example, found that different sources of stress predicted depression among subgroups of Asian immigrants in the United States.

Moreover, the degree and timing of acculturative stress varied among sojourning groups. Berry et al. (1987) reported that student sojourners experienced less stress than involuntary sojourner groups (e.g., refugees) but more stress than voluntary immigrants and ethnic groups. Also, students from all countries may not experience acculturative stress. For instance, students from Asian countries experienced more acculturative stress than European students while studying in the United States (Poyrazli et al., 2004), and while there were not any differences in anxiety between American and international students in general, there were differences in the level of acculturative stress experienced by subgroups of international students studying in the United States (Fritz et al., 2008). This may be because difficulties such as not being able to work or make new friends, or being separated from family and friends, affected students with various cultural backgrounds differently (Fritz et al., 2008). These results indicate the importance of considering intra and intergroup differences at the national level.

In addition to being affected by the cultural group to which they belong, international students' acculturative stress scores may be influenced by how long they have been in the country as well as by patterns of change. It may be that stress simply decreases over time (Geeraert & Demoulin, 2013). For instance, Ying (2005) found that five factors linked to acculturative stress (i.e., homesickness, cultural difference, social isolation, academics, and unfamiliar climate) all decreased over time among Taiwanese graduate international students studying in the United States. These results supported a gradual linear decline of acculturative stressors with each stressor illustrating a different rate of decline and reaching a point of equilibrium independent of the others. Even if

stressors, in general, decrease over time, that does not guarantee that stress responses will be as uniform. In fact, Demes and Geeraert (2015) found five distinct patterns of change in stress experienced by 2,500 intercultural exchange students of 40 nationalities in 51 different countries: a reverse J-curve, inverse U-curve, mild stress, minor relief, and resilience pattern.

Although individual patterns of change are not the main focus of the current research project, Ward and Geeraert's (2016) process model of acculturation includes space for individual differences by specifying that significant episodes of acculturative stress only occur for a minority of individuals and that patterns of stress over time are highly varied. The model includes cultural distance as a stressor that produces acculturative stress and thereby affects psychological adaptation, but recognizes that responses to the stressor might vary. These ideas can be merged with Berry's (1997) model, which also positions acculturative stress as a more immediate effect in the acculturation process that is linked to long-term psychological adaptation. Berry's model addresses individual differences in patterns of change by including variables such as age, education, gender, and status. These theoretical frameworks describe general trends in acculturation, keeping individual differences in mind. One such trend is the dual role of acculturative stress as both a response and a predictor. Both frameworks point to acculturative stress as a midpoint response between the perception of cultural distance and a long-term predictor of psychological adaptation. Therefore, the project included acculturative stress as both a consequence of a stressor experienced due to changes necessitated by the acculturation process and as a predictor of psychological adaptation.

Much research has used general stress scores, although a sizeable literature also has focused specifically on acculturative stress, perceived discrimination and, to a lesser degree, homesickness as predictors of psychological adaptation. Results of research based on general stress scores have indicated that more stress results in worse psychological adaptation (e.g., Cheng, 1997; Crockett et al., 2007; Lee et al., 2004; Park et al., 2014). For example, Demes and Geeraert (2015) found that less stress was associated with higher levels of psychological adaptation among 2,500 teenage exchange students in 51 countries. Moreover, people with a strong tendency to perceive life events as stressful exhibited lower self-esteem (Geeraert & Demoulin, 2013) as well as lower life satisfaction (James et al., 2004) and more depression (Hwang & Ting, 2008; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008).

It is not, however, just the perception of stress but also the experience of a critical mass of weaker daily annoyances that can influence psychological adaptation. Safdar, Lay, and Struthers (2003) found that Iranian immigrants in Canada who experienced more general and acculturation-related daily hassles also experienced more difficulty maintaining their psychological and physical health while Searle and Ward (1990) found that the degree of life changes predicted psychological adaptation among Malaysian and Singaporean university and secondary school students in New Zealand. Yang and Clum (1994) further illustrated the relationship between life changes and depression as well as suicide ideation and intent among Asian students studying in the United States. Ward and Kennedy (1993a) found that both life changes and homesickness predicted mood disturbances but that only homesickness predicted psychological adjustment among field

service students from New Zealand in 23 countries.

Composite scores for acculturative stress have been the predictor of interest in some studies. These results have linked acculturative stress to more psychological distress (Wang et al., 2012; Wu & Mak, 2012), worse psychological adjustment (Yakunina et al., 2013), lower life satisfaction (Ye, 2005), as well as higher anxiety and depression (Sirin et al., 2013; Wei et al., 2007; Ying & Han, 2006; Zhang, 2012). Wu and Mak (2012) found that that participants reporting higher levels of acculturative stress also reported more psychological distress and somatic symptoms, and that stress was related to psychological distress more closely than other acculturation variables (e.g., attitudes).

The instrument used to measure acculturative stress—the Acculturative Stress Scale of International Students (ASSIS; Sandhu & Asrabadi, 1994)—includes a subscale of perceived discrimination as a specific source of stress, a concept that has been the focus of much research. Both qualitative and quantitative studies have investigated the role of prejudice in acculturation. Qualitative inquiry has suggested that attitudes of fear or negative feelings toward strangers in the host society present a significant challenge to adjustment among international students (e.g., Maundeni et al., 2010). Results of quantitative research focused specifically on perceived discrimination as a stressor experienced by sojourners has linked perceived discrimination to psychological adaptation. For example, perceived discrimination was linked with psychological adaptation defined in terms of life satisfaction, social support, and social self-efficacy among immigrants in Spain (Briones et al., 2012). Perceived discrimination also has been linked to mental health (Atri et al., 2007), psychological symptoms (Sam et al., 2015)

such as depression and anxiety (Jung et al., 2007; Jurcik et al., 2013; Lam, 2007; Prelow, Mosher, & Bowman, 2006; Rahman & Rollock, 2004; Wei et al., 2008), higher stress and lower self-esteem (Geeraert & Demoulin, 2013), as well as posttraumatic stress symptoms (Wei et al., 2012).

Acculturative stress and its components have not only been treated as predictors of psychological adaptation, however. Acculturative stress also has been treated as an indicator of psychological adaptation in and of itself. In fact, some studies conflate these two concepts by treating acculturative stress as a psychological adaptation outcome (e.g., Ait Ouarasse & van de Vijver, 2004; Berry et al., 1987; Demes & Geeraert, 2015; Galchenko & van de Vijver, 2007; Geeraert & Demoulin, 2013; James et al., 2004). Due to the dissolution of the conceptual autonomy of acculturative stress vis-à-vis psychological adaptation in some research, it is important to consider the degree of overlap between measures designed to capture stress and psychological adaptation more generally.

The research project used the BPAS to measure psychological adaptation (Demes & Geeraert, 2014). In creating the scale, strong correlation with a general stress scale was cited to indicate scale validity (Demes & Geeraert, 2014), illustrating conceptual commonality between stress and psychological adaptation. Therefore, the degree to which the ASSIS (Sandhu & Asrabadi, 1994) measured the same construct(s) as the BPAS became an issue. The ASSIS includes six subscales and ten miscellaneous items; the BPAS includes eight items, six of which overlap with the culture shock and homesickness subscales of the ASSIS. No items in the BPAS overlap with the

miscellaneous items on the ASSIS, which capture concern about the future, language difficulties, and negative emotional responses related to specific experiences of prejudice, racism, and discrimination. In terms of the ASSIS subscales, while limited research has linked homesickness with psychological adjustment problems (Ward & Kennedy, 1993a), general dysphoria (Pantelidou & Craig, 2006), and higher levels of stress (Geeraert & Demoulin, 2013) among sojourners, culture shock might share more commonality with psychological adaptation as a concept. Although it is not always related to psychological adjustment outcomes (Söldner, 2013), culture shock has a long history of being implicated in the acculturation process (Zhou et al., 2008).

In conclusion, stress has been established as a real source of difficulty among international students, one that is related to a range of psychological adaptation outcomes. This project goes beyond the relationship between stress and psychological adaptation, however, to examine the role of cultural distance in producing the acculturative stress, which may influence psychological adaptation. Cultural distance is one stressor faced by international students but not by students from the host culture, and there has been a call for more research examining the role of sojourners' cultural backgrounds as a source of acculturative stress. Moreover, while the relationship between acculturative stress and a range of psychological adaptation outcome variables has been well-established, the project disentangled acculturative stress from psychological adaptation as outcome variables.

Social Support

Zhang and Goodson (2011) noted that social support is one of the most frequently

reported predictors of psychological adaptation (including acculturative stress). Social support may play multiple roles, however, in psychological adaptation. It may have a direct relationship, or it may play a moderating role. This moderating role is represented in both Cohen and Wills's (1985) stress-buffering hypothesis and Berry's (1997) model. Berry's model suggests social support as a possible moderator or mediator in the acculturation process while the stress-buffering hypothesis proposes specific points at which social support could buffer against the effects of a stressor (e.g., cultural distance, acculturative stress). According to the stress-buffering hypothesis, even international students who experience a high level of cultural distance still may not experience high levels of acculturative stress if they have appropriate social support (Cohen & Wills, 1985). Social support could also act as a buffer for international students who have experienced a high level of acculturative stress, protecting them against the negative psychological adaptation outcomes in the long-term (Cohen & Wills, 1985). "A pure buffering effect" would occur if the average psychological adaptation for students low and high on social support was not significantly different under low stress but was very different under high stress, thus indicating that social support is only important for people under stress (Cohen & Wills, 1985, p. 10). Just as Stahl and Caligiuri (2005) found that problem-focused coping strategies were important only when needed by German expatriate managers in Japan and the United States, social support may become more valuable as a coping strategy only when cultural distance and acculturative stress are higher.

The buffering effect of social support is related to its capacity as a coping

strategy. Social support should be considered as a primary coping strategy, particularly when managing stressors encountered during cultural adaptation (Fontaine, 1986). In fact, according to Mallinckrodt and Leong (1992), social support functioned as an important coping resource for dealing with stress such as cultural adjustment among graduate international students studying in the United States. Furthermore, according to results of qualitative research, internationals students studying in the United States reported creating "surrogate families" as new social support systems to help them deal with adjustment problems such as homesickness, feeling isolated, and related emotional consequences (McLachlan & Justice, 2009, p. 30). This finding illustrated how sojourners may seek to compensate for the disruptions to social support caused by moving overseas (Fontaine, 1986).

Of course, social support is not the only means of coping, although it may be the preferred strategy for specific stressors or groups. For example, social support was more likely to be used for coping with some types of threat appraisals than with others (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986), while different sojourner groups in Canada reported using different types of support. These results indicated that particular manifestations of social support may be more or less useful for coping with different types of stressors, and that the preferred coping method for dealing with a particular stressor may vary among groups. There also are intergroup differences in the social support available to international versus domestic students, and in the degree to which social support is used as a coping strategy. According to the literature, the level of home and host domain resources available to different sojourner groups and the degree

to which groups draw on social support as a coping strategy differ between national groups (e.g., Galchenko & van de Vijver, 2007), international students have less social support than do home students (e.g., Khawaja & Dempsey, 2008; Poyrazli et al., 2004), and the amount of contact specific groups of sojourners have with others varies. For example, Swami (2009) found that Malays had less contact with both conationals and host nationals than did Chinese graduate students studying in Britain; Maundeni, Malinga, Kgwatalala, and Kasule (2010) found that international students in Botswana benefited from social support provided by relatives and conationals, but that they experienced the lack of contact with host nationals as a challenge to adaptation. Together, these results indicate that the source and role of social support as a buffer may vary based on national group.

Research examining social support as a coping resource among sojourners sometimes conceptualizes social support as social connectedness (i.e., a sense of closeness to mainstream society, ethnic community, or other sources of social support) and has found that social connectedness is related to psychological adaptation outcomes (Du & Wei, 2015; Hendrickson, Rosen, & Aune, 2011; Yeh & Inose, 2003; Yoon et al., 2008). This can be a direct relationship between social connectedness and psychological adaptation operationalized in terms of life satisfaction and affect (Du & Wei, 2015; Yoon et al., 2008), satisfaction and contentment (Hendrickson et al., 2011), and acculturative stress (Yeh & Inose, 2003). Research also has documented how social connectedness may play an indirect role between sources of stress and psychological adaptation outcomes. For instance, Du and Wei (2015) found that ethnic social connectedness

partially mediated the relationship between acculturation and subjective well-being while Wei, Wang, Heppner, and Du (2012) found that ethnic social connectedness moderated the relationship between racial discrimination and race-based traumatic stress among Chinese international students studying in the United States.

Although social connectedness can be interpreted as an indicator of social support, it has also been conceptualized and measured separately from social support in the same research project (e.g., Duru, 2008). For example, Lee and Robbins (1998) measured social connectedness in terms of interpersonal closeness between individuals and their social worlds as well as how difficult it was to maintain that sense of closeness, while social support was measured in terms of both number of contacts and how satisfactorily those contacts met individuals' needs. Results of this research indicated that social connectedness predicted anxiety beyond social support among undergraduate immigrant women in the United States. These findings illustrate the importance of how social support is measured in research as various operationalizations correspond differently to psychological adaptation outcomes.

There are so many ways to operationalize social support perhaps because social support is the most commonly studied social resource in research featuring international students (Bierwiaczonek & Waldzus, 2016). Despite its popularity, questions remain around the role of social support as a buffer between a stressor and long-term psychological adaptation. In fact, Smith and Khawaja (2011) emphasized the need to include social support in a buffer role as a predictor variable in acculturation models. Cohen and Wills (1985) proposed that the inconclusive findings may be due to using

inappropriate measures to capture main or moderator effects of social support. In addition to being operationalized as social connectedness, social support can be measured in terms of structure or function. Helgeson (2003) suggested that measures of structural social support correspond to mood, sense of identity, and companionship while functional measures of social support tap how social support alters appraisals of stressful events—particularly in terms of how informational support may diminish how bad the stressor appears. Functional and structural measures have been further classified into global and specific measures. Cohen and Wills (1985) recommended using measures that evaluate the specific structure (i.e., an important relationship), global structure (i.e., number of relations), and global function (i.e., that tap a general availability of resources without assessing specific resources) of social support for detecting main effects—the direct relationship between social support and acculturative stress or psychological adaptation. For investigating moderating effects, however, they recommended specific functional measures that evaluate if relationships serve particular purposes in terms of meeting individuals' needs. Since the research aimed to investigate the role of social support as a buffer, the measure employed evaluated the degree to which the social support available to participants met their needs for instrumental and socioemotional support. When social support is being investigated as a moderator the specific function of the social support should match the stressor being measured to ensure that social support has the potential to be an effective coping strategy that will minimize the degree to which that stressor is appraised as stressful, which is how social support takes on the buffer role (Cohen & Wills, 1985; Krohne, 2001).

Another explanation for inconclusive findings regarding the role of social support in psychological adjustment may rest in results indicating that having conationals as social support may also serve as a source of stress. In previous research conflict with conationals affected psychological well-being negatively, perhaps due a reduction in social support (Bodycott, 2015). In other cases more interaction with conationals was problematic, perhaps because some interactions were characterized by negative affect. For example, Maundeni (2001) reported that interaction with other African students served as a source of tension and stress among African students studying in Britain. These students reported decreased ability to improve English, pressure to associate with other African students and gossip if they did not, as well as domination from male to female students. This negative interaction could make existing problems worse. In fact, Jung, Hecht, and Wadsworth (2007) found that social undermining moderated the relationship between perceived discrimination (one aspect of acculturative stress) and depression among international students studying in the United States. Using inappropriate measures may help explain how negative effects of conational contact have been overlooked. If global structural measures are used all types of relationships and potential sources of social support are comingled making it impossible to distinguish constructive from destructive social contacts. Rather, having a high number of contacts within participants' social networks is interpreted purely as positive social support without considering the way being embedded in a conational network might affect sojourners negatively.

Social support: Structure and function. Social support can come from a variety of sources comprising the structure of the individual's social support network. For example, host nationals, conationals, friends and family back home, other international students (Smith & Khawaja, 2011), new friends, roommates, neighbors, and religious group members (Maundeni, 2001) all can serve as sources of social support. Qualitative research by Maundeni (2001) found that African international students studying in Britain received informational, instrumental, emotional, spiritual, and financial support from a range of different sources consisting mainly of other African students but also including family in the home culture, academic staff, medical personnel, counselors, and sponsors. This research finding illustrates how different social resources provide various types of support. It is not, however, necessarily the source of the social resource that is important; it is the fact that various sources are able to provide social support that meets specific needs. For example, rather than focusing on a specific source of social support, social interaction, with both international and American students, was cited as a need among international students studying in the United States (Poyrazli & Grahame, 2007), while missing family members was a source of stress among Asian graduate students (Swagler & Ellis, 2003), and relationship issues were the most prevalent concern cited when seeking psychological support services among international students studying in the United States (Yakushko et al., 2008)

Even though the availability of social support may be more important than the source of social support, international students still display preferences for who provides social support. Hendrickson, Rose, and Aune (2011) found that international students

studying in the United States who had the opportunity to form more conational friendships had more conational than host or multinational friends, but students from less populous groups did not show these differences in friendship networks and had more host-national friends. In fact, the literature reflected that international students tended to prefer social support from conationals over host nationals (e.g., Al-Sharideh & Goe, 1998; Ang & Liamputtong, 2008; Brisset, Safdar, Lewis, & Sabatier, 2010; Coles & Swami, 2012; Montgomery & McDowell, 2009). This preference for conational social support may be due to social dynamics between international students, their conationals, and host nationals. Maundeni (2001) characterized contact between host nationals and international students in Britain as limited and formal. Furnham and Bochner (1982) also found that international students' relationships with host nationals tended to be utilitarian or formal in nature and that they were most likely to have best friends who were conationals or from any country other than the host country. At the same time, despite this preference for social support from conationals, in their absence international students filled the gap with social support from alternate sources. These results indicate that having social support is more important than its source, even if international students do have distinct preferences. In fact, McLachlan and Justice (2009, p. 30) found that international students reported creating a surrogate family comprised of faculty mentors, "fast friends," and host nationals as a means of generating a new social support system when studying in the United States. It was this social support system upon which international students relied to navigate change overload problems (e.g., weather, food) that would otherwise have contributed to negative adjustment outcomes and emotional

consequences (McLachlan & Justice, 2009).

Not only does social support come from various sources, it also comes in different forms. These forms can serve specific purposes, or functions. For instance, Cohen and Wills (1985) proposed that social support serves four functions: building esteem, providing informational resources, social companionship, or instrumental resources, while Bartram (2008) identified three: practical, sociocultural, and academic. Qualitative research, on the other hand, concluded that African international students studying in Britain received informational, instrumental/tangible, emotional, and spiritual support from different sources (Maundeni, 2001). At the same time, other researchers also have focused on socioemotional or instrumental functions of social support (e.g., Chavajay, 2013; Podsiadlowski, Vauclair, Spiess, & Stroppa, 2013). For example, Ong and Ward (2005) found that instrumental support had a stronger relationship with depression than did emotional support for international students studying in New Zealand.

Social support measures. Different measures are more or less well-suited to detecting direct or moderating effects of both structural and functional social support (Cohen & Will, 1985). That is, Cohen and Wills (1985) specified that researchers should use specific structural, global structural, or global functional measures to capture main effects in the relationship between social support and psychological adaptation but that they should use specific functional measures to capture moderating effects.

Direct effects. Although research results have not always been consistent, results have indicated that the structure of social support (i.e., the number and general availability of social resources) has a direct relationship with psychological adaptation

outcomes, whether specific measures (Berry et al., 1987; Brisset et al., 2010; Geeraert & Demoulin, 2013; Hechanova-Alampay et al., 2002) or global measures (Furukawa, Sarason, & Sarason, 1998; Kuo & Tsai, 1986; Safdar, Lay, & Struthers, 2003; Safdar, Struthers, & van Oudenhoven, 2009; Sam et al., 2015; Wang et al., 2012) of social support are used. Results of some research using specific structural measures have illustrated a relationship between psychological adaptation and social support. For example, Brisset, Safdar, Lewis, and Sabatier (2010) found that Vietnamese students studying in France who were less satisfied with support provided by individuals from both their in and outgroups experienced more psychological distress while Berry et al. (1987) found that international students in Canada who spent more of their free time and developed close friendships with local students experienced less stress.

Results of research using global structural measures also have illustrated a relationship between social support and psychological adaptation. For instance, Berry and Sam (1997) reviewed research findings showing that Taiwanese students in the United States experienced a decline in emotional well-being, and that international students in Norway reported a decline in general state of health as well as a rise in the occurrence of syndrome-like tendencies resembling paranoia, anxiety, depression, and somatic complaints. The tendency in both groups toward worse psychological functioning was attributed to certain factors such as the number of interpersonal contacts with the host society and social contacts with other tenants in the hall of residence (Berry & Sam, 1997). Results of other research using global structural measures of social support showed that number of friends predicted life satisfaction positively, but predicted

psychological symptoms negatively among international students studying in Ghana (Sam et al., 2015).

Research featuring global functional measures also captured the direct relationship between social support and psychological adaptation (e.g., Ait Ouarasse & van de Vijver, 2004; Searle & Ward, 1990; Ward & Rana-Deuba, 2000; Ward & Searle, 1991; Yang & Clum, 1995; Yeh & Inose, 2003). Rasmi, Safdar, and Lewis (2010) found, for example, that ingroup social support predicted psychophysical distress negatively over time among international students in Canada. Moreover, Poyrazli, Kavanaugh, Baker, and Al-Timimi (2004) found that having more social support generally available was related to less acculturative stress among Asian and European students studying in the United States.

Buffer effects. To examine the role of social support as a moderator, research should use specific functional measures that focus on which needs are met by social support rather than global functional measures that do not differentiate among needs (Cohen & Wills, 1985). And while much of the research based on global functional measures has not indicated a moderating effect, minimal research using global functional measures has illustrated a buffering effect of social support. For instance, one study based on a sample of East German migrants in West Germany captured a buffering effect using a global functional measure of social support. Among this population social support moderated the relationship between stress and physical health (Schwarzer, Jerusalem, & Hah, 1994).

At the same time, research based on specific structural measures also has not

provided solid evidence of a moderating relationship because it has produced inconsistent findings. For instance, research by Jurcik et al. (2013) illustrated that social support did not mediate the relationship between ethnic density and depression among immigrant students in Canada. These unsupportive findings may be due to a mismatch between the stressor and its outcome. Other research has found support for social support as a moderator based on specific structural measures. For instance, the number of strong relationships with conationals (but not host nationals) moderated the relationship between perceived assimilation to American culture and self-esteem among international students in the United States (Al-Sharideh & Goe, 1998) while host country ties moderated the relationship between the need for cognitive closure (which could be a source of stress) and psychological adaptation among Asian students in Australia (Kashima & Loh, 2006).

While results of research using specific functional measures to investigate the buffering role of social support are more robust, they are also inconsistent. For example, Jung et al. (2007) found that assessment of spousal support did not moderate the relationship between perceived discrimination and depression among Asian international students in Australia while Prelow, Mosher, and Bowman (2006) found that social support only partially moderated the relationship between racial discrimination and depression or life satisfaction among African American college students studying at a predominantly White university in the United States such that those who experienced more discrimination had reduced social support and worse psychological outcomes.

On the other hand, many studies based on specific functional measures have indicated that social support buffers the effects of stress on psychological adaptation

outcomes. For instance, social support from parents moderated the relationship between acculturative stress and both anxiety and depression, while social support from peers moderated the relationship between acculturative stress and anxiety among Mexican American students born in the United States (Crockett et al., 2007). Moreover, Korean students in the United States with high levels of social support were significantly less likely to report symptoms (i.e., depression, anxiety, interpersonal concerns, somatization) with increasing levels of acculturative stress than were students with low levels of perceived social support (practical and emotional), although this buffering effect only occurred when students had a high level of acculturation to American language and interpersonal associations (Lee et al., 2004). Research by Sirin et al. (2013) also illustrated the buffering role of social support among immigrant high school students such that more academic and emotional social support buffered them against negative effects of acculturative stress on specific aspects of mental health. Furthermore, social support moderated the relationship between stressful life events and depression among Chinese adolescents in China (Cheng, 1997). It is these specific functional measures that have produced the most support for social support as a stress buffer. Therefore, the social support measure used in the study operationalized social support in terms of its specific functions by evaluating the degree to which participants reported receiving both instrumental and emotional social support, each of which meets specific types of needs (Ong & Ward, 2005).

In conclusion, the buffering effect of social support is related to its capacity as a coping strategy, particularly for international students who must manage stressors

encountered when adapting to a new cultural context (Fontaine, 1986; Mallinckrodt & Leong, 1992; McLachlan & Justice, 2009). And even though social support is the most commonly studied social resource in research investigating the adaptation of international students (Bierwiaczonek & Waldzus, 2016), questions still remain around its role as a buffer between a stressor and long-term psychological adaptation during the acculturation process (Smith & Khawaja, 2011). These questions may stem from using inappropriate measures to evaluate the role of social support as well as from discounting how contact may serve as a source of stress as well as a source of support, especially when using structural measures. In terms of using an appropriate measure, Cohen and Wills (1985) recommended using structural measures of social support (particularly global structural measures) as well as global functional measures to detect main effects. They recommend specific functional measures of social support, however, to investigate moderating effects because the type of support evaluated by these measures can be matched to the type of support needed to manage the stressful events being studied. Therefore, the ISSS Scale (Ong & Ward, 2005) was selected for this research because it evaluates two specific types of social support (i.e., instrumental and socioemotional), both of which may influence how stressful international students find perceived differences between the home and host cultures and how well they manage stressful experiences related to adapting to those differences.

Summary and Conclusions

The research included nine covariates: gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet

expectations, and financial resources. All covariates have been common features in research on sojourner adaptation, the results of which has indicated relationships between these variables and psychological adaptation (although results are more consistent for some than for others). Therefore, it was important to control for their influences in order to focus on the relationships among cultural distance, acculturative stress, social support, and psychological adaptation.

Perceived cultural distance has been linked to psychological adaptation both directly and indirectly. In terms of research linking cultural distance directly to psychological adaptation, results linked cultural distance to emotional distress, psychological distress (i.e., anxiety scores and number of consultations), lower self-esteem, more stress, and more behavioral problems in both the home and host domains (Babiker et al., 1980; Furukawa, 1997; Galchenko & van de Vijver, 2007). In terms of research linking cultural distance indirectly to psychological adaptation, it may be that cultural distance affects sociocultural adaptation which, in turn, affects psychological adaptation (e.g., Rienties & Tempelaar, 2013; Searle & Ward, 1990; Ward & Kennedy, 1992, 1993a; Ward & Rana-Deuba, 1999; Wilson et al., 2013). The study also investigated an indirect relationship between cultural distance and psychological adaptation by exploring the relationships between perceived cultural distance and acculturative stress, and between acculturative stress and psychological adaptation.

One trend in acculturation research has been for acculturative stress to play the role of predictor in some studies but to play the role of outcome variable as a means of operationalizing psychological adaptation in other studies. Findings on the role of

acculturative stress in psychological adaptation generally have not addressed the implications of treating it as a psychological adaptation outcome (e.g., Ait Ouarasse & van de Vijver, 2004; Berry et al., 1987; Demes & Geeraert, 2015; Galchenko & van de Vijver, 2007; Geeraert & Demoulin, 2013; James et al., 2004) versus as a predictor of psychological adaptation. Both Berry's (1997) acculturation framework and Ward and Geeraert's (2016) process model of acculturation point to acculturative stress as a mid-point response between the experience of intercultural contact and long-term of psychological adaptation, thereby supporting its position as a predictor rather than the embodiment of psychological adaptation. Composite scores for acculturative stress have, indeed, been the specific predictor of focus in some studies. These results have linked acculturative stress to more psychological distress (Wang et al., 2012; Wu & Mak, 2012), worse psychological adjustment (Yakunina et al., 2013), lower life satisfaction (Ye, 2005) as well as anxiety and depression (Sirin et al., 2013; Wei et al., 2007; Ying & Han, 2006; Zhang, 2012). Due to the dissolution of the conceptual autonomy of acculturative stress vis-à-vis psychological adaptation in other research, however, it is important to consider the degree of overlap between measures designed to capture stress and psychological adaptation more generally. Therefore, the project included acculturative stress as both the result of a stressor (i.e., cultural distance) and as a predictor of psychological adaptation, but also paid attention to disentangling acculturative stress from psychological adaptation as outcome variables.

Questions remain around the role of social support as a buffer between a stressor and long-term psychological adaptation during the acculturation process (Smith &

Khawaja, 2011), despite social support being the most commonly studied social resource in research investigating the adaptation of international students (Bierwiaczonek & Waldzus, 2016). These questions may stem from using inappropriate measures to evaluate the role of social support in psychological adaptation. To capture the effects of social support as a moderator Cohen and Wills (1985) recommended specific functional measures, which have produced the most evidence supporting the stress-buffering hypothesis. Therefore, because the research aimed to investigate the moderator role of social support, the measure used—the ISSS Scale (Ong & Ward, 2005)—evaluated two specific social support functions: instrumental and socioemotional.

Social support (instrumental and/or socioemotional) may provide a coping resource that moderates the relationship between cultural distance and acculturative stress earlier in the acculturation process, and between acculturative stress and psychological adaptation later in the process (Cohen & Wills, 1985). Social support may buffer the extent to which cultural distance predicts acculturative stress earlier in the acculturation process because it diminishes the extent to which a high level of cultural distance results in other stress-related experiences and responses (Krohne, 2001). That is, social support may mitigate the extent to which cultural distance results in appraisals of acculturation-related experiences and emotions linked as stressful. This reduction in the perception of stress may be because when individuals engage in secondary appraisal of the stressor (i.e., evaluate if the person can take action to manage the stressor), social support could function as a coping resource to help them meet certain needs related to overcoming the stressor (Folkman et al., 1986). Overall, social support has a positive influence on

perceptions of stress and adaptation outcomes, and this resource may become more valuable when cultural distance/acculturative stress are higher just as problem-focused coping strategies were most important when they were most needed by expatriate German managers working in Japan and the United States (Stahl & Caligiuri, 2005). Unfortunately, those students who experience the highest levels of cultural distance, and are therefore in the most need of social support, may not benefit from this coping resource. In fact, Zheng and Berry (1991) found that students who experienced more cultural distance struggled to establish adequate social support, which deprived them of a valuable social resource for managing stressors.

Later in the acculturation process social support could also play a moderator role between the experience of acculturative stress and psychological adaptation outcomes (Berry, 1997). According to a review by Smith and Khawaja (2011), social support from either hosts or conationals appeared to be an important buffer of acculturative stress that enhanced adaption and should be included as a predictor variable. It is, in fact, one of the most frequently reported predictors of psychological adjustment (Zhang & Goodson, 2011). And just as social support may buffer the extent to which cultural distance predicts stress, it could also buffer the extent to which acculturative stress is perceived as stressful by affecting the appraisal of acculturative stress (Krohne, 2001). For instance, social support mediated the relationship between life stress and physiological, behavioral, and emotional reactions to stressors among international students studying in the United States (Misra et al., 2003), between acculturative stress and both anxiety and depression among Mexican American students born in the United States (Crockett et al., 2007),

Korean students in the United States with higher levels of social support were significantly less likely to report symptoms (i.e., depression, anxiety, interpersonal concerns, somatization) with increasing levels of acculturative stress than were students with low levels of perceived practical and emotional social support (Lee et al., 2004), more social support buffered adolescent immigrants against the negative effects of acculturative stress in terms of specific aspects of mental health (Sirin et al., 2013), and social support buffered Chinese students in the United States against the negative effects of acculturative stress in terms of depression (Zhang, 2012).

Despite these findings, research into cultural distance, acculturative stress, and social support is lacking. There have been calls for more research into the role of cultural distance in the adaptation of international students, how culture is related to stress, and the buffering role of social support. To address this gap in the research literature, this project examined the role cultural distance in producing the acculturative stress experienced by international students. Examining the role of cultural distance in international student adaptation helped fill the gap in the literature on the role of cultural distance in adaptation among international students as well as to better understand the impact of cultural distance in relation to stress. Moreover, the project examined the role of social support at two key points in the acculturation process: early when it could have influenced the extent to which a high level of cultural distance predicted acculturative stress, and later, when it could have taken on a protective role after students had experienced acculturative stress. If social support did provide a buffering effect, students with appropriate social support would have experienced less acculturative stress even if

their level of cultural distance was high, and they would have experienced more positive psychological adaptation outcomes even if their level of acculturative stress was high compared to students who did not have the same social support.

Inconsistencies in research results on the roles of perceived cultural distance, acculturative stress, and social support in psychological adaptation may be due, in part, to problems in measurement. Cultural distance, for example, has been measured objectively or subjectively, with subjective measures capturing perceived discrepancies between the home and host cultures while objective measures evaluate cultural dimensions, differences in GDP, or gross income inequality metrics (Babiker et al., 1980; Suanet & van de Vijver, 2009; Szabo et al., 2016). Much research on stress has been based on general stress scores, although many studies have defined stress more specifically in terms of acculturative stress or focused on particular predictors of stress such as perceived discrimination and, to a lesser degree, homesickness (e.g., Cheng, 1997; Crockett et al., 2007; Lee et al., 2004; Park et al., 2014; Yakunina et al., 2013). Still, other measures focused on sources of stress rooted in intercultural competence or lack thereof (Rahman & Rollock, 2004). Social support also has taken on various manifestations including being defined in terms of social connectedness or its specific functions, global functions, specific structure, or global structure. A wide range of variables also have been used to operationalize psychological adaptation. Given the recommendations regarding the types of measures best suited for detecting specific relationships, particular attention was paid to operationalizing variables in ways amenable to detecting moderator or direct relationships among specific variables.

Chapter 3: Research Method

The purpose of the study was to investigate the moderating role of social support in the relationship between cultural distance and acculturative stress and between acculturative stress and psychological adaptation based on a sample of international students studying at a university in the northern part of Cyprus. This chapter describes the research design and rationale and the methodology used to examine social support as a moderator. Threats to validity, including external, internal, construct or statistical conclusion validity, are included, as is a discussion of ethical procedures implemented in the study.

Research Design and Rationale

The outcome variable of psychological adaptation was defined in terms of a range of positive and negative emotional responses both to living in the host culture and to being away from the home culture. According to the stress-buffering hypothesis (Cohen & Wills, 1985), cultural distance (as a stressor) should predict the experience of stress (i.e., acculturative stress), which should predict the response to that experience of stress (i.e., psychological adaptation). Here, cultural distance was defined as the degree to which individuals perceived their home culture as different from the host culture, acculturative stress was defined in terms of a range of stressors related to living in the host context, and social support was defined in terms of its functions, that is, how well it met socioemotional and instrumental needs. Covariates included gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources. Relationships among these

variables were examined using a cross-sectional, contrasted-groups quasi-experimental design.

This cross-sectional, quasi-experimental design was appropriate for answering both the first research question comparing the psychological adaptation of international and host-culture students and the second research question regarding the moderator role of social support at two points. In term so the second research question, the research first addressed whether appropriate social support would decrease the degree to which the experience of cultural distance predicted acculturative stress. Next, the research addressed whether social support would attenuate the extent to which acculturative stress predicted worse psychological adaptation. This design was necessary to investigate relationships among these variables for three reasons. First, as is characteristic in quasi-experimental designs, random assignment to groups was not possible (Frankfort-Nachmias & Nachmias, 2008). The predictors were carried within individuals—it was not possible to randomly assign participants to groups with home or international student status, or to groups *high* or *low* on cultural distance, acculturative stress, and social support. Second, neither the predictors (i.e., cultural distance, acculturative stress, and social support) nor the covariates (i.e., gender, age, relationship status, language proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources) were open to manipulation, making it impossible to conduct this study according to experimental methods (Frankfort-Nachmias & Nachmias, 2008). Moreover, examining these relationships required all groups to have some level of the predictor, meaning that there could not be a control group. Third, the research only

evaluated participants at one point in time (i.e., their psychological adaptation was measured after starting to study in the northern part of Cyprus), and no pretest was carried out to assess their adaptation prior to studying at university (Frankfort-Nachmias & Nachmias, 2008).

Methodology

Population

The study was carried out at a university in the northern part of Cyprus. The following statistics are available from the registrar's office. As of fall semester of the 2017-2018 academic year, students from 103 different countries were studying at the university. Of the approximately 18,500 students attending the university, 3,135 were from the host country in the northern part of Cyprus, 8,000 were from Turkey, and 7,970 were international students from other countries, with the largest national groups among them consisting of students from Iran (approximately 1,640 students) and Nigeria (approximately 1,400 students). The next most numerous groups of international students were those from Jordan (about 780 students) and Syria (about 550 students). About 40 other countries were represented by fewer than five students each. From the 2007-2008 to the 2016-2017 academic years, the number of students from Turkey decreased slightly (from about 9,000 to about 8,600), but the number of international students from countries other than Turkey increased from 1,800 to 7,800.

Sample and Sampling Procedures

Inclusion and exclusion criteria. Inclusion criteria for study participation included being enrolled in an undergraduate program taught in English. Exclusion criteria

included being enrolled as a graduate student, being enrolled in an undergraduate program taught in Turkish, and being a student in the psychology department. Graduate students were excluded because previous research on international students indicated that graduate students averaged 25-34 years of age (Chapdelaine & Alexitch, 2004; Ying, 2005), while undergraduate students were about 21 years old (Yusoff, 2012). This age difference was important because age has been implicated in international student adaptation (e.g., Kuo & Tsai, 1986; Lee et al., 2004; Leung, 2001; Poyrazli et al., 2001; Poyrazli & Lopez, 2007; Zhang & Goodson, 2011). Therefore, graduate students were excluded from the sample to maintain a more narrow age range and limit the influence of age on students' psychological adaptation as age was not a primary variable of interest.

Sampling strategy. Ideally, simple random sampling would have been performed to generate a random probability sample, which would have entailed compiling a comprehensive sampling frame including all sampling units (i.e., a list of all Turkish-Cypriot and other international students studying in English-language undergraduate programs), assigning each a number, and then using a table of random numbers to choose students for inclusion in the final sample (Frankfort-Nachmias & Nachmias, 2008). Once the list of students was generated, however, contacting these students would have been problematic because the university generally has home addresses rather than current local contact information.

One possibility could have been to contact students via the university email addresses issued upon registration. All research materials could have been emailed to potential participants, or they could have been provided via a web link, in the hope that

students would return completed surveys via email or complete the surveys online. Unfortunately, web-based surveys have a lower response rate than paper-and-pencil mailed surveys, which have a lower response rate than face-to-face surveys (Groves et al., 2009). Furthermore, the students' proclivity to use personal rather than university-provided email addresses would have further increased the nonresponse rate, which would have introduced nonresponse error to the analysis (Groves et al., 2009). Therefore, although analyses based on random probability samples allow researchers to estimate population parameters and make more valid intergroup comparisons as well as more reliable generalizations to the target population (Frankfort-Nachmias & Nachmias, 2008; Groves et al., 2009), it was not realistic to base the current project on a random probability sampling design or any derivation thereof (e.g., systematic, stratified, cluster).

Sampling procedures. As an alternative to a random probability sample, Groves and colleagues (2009) suggested using multiple modes of data collection to maximize response rates. Therefore, recruitment was planned to take a three-pronged approach targeting both Turkish-Cypriot and international students. Turkish-Cypriot participants were defined as any student with Turkish-Cypriot nationality; international students included students who did not have Turkish-Cypriot citizenship and were from any other country (e.g., Turkey, Iran, Nigeria). First, I visited English classes to recruit Turkish-Cypriot and international students as all students registered to English-medium programs were required to take the English courses. Second, I had planned to coordinate with student clubs representing specific national groups to recruit international students. I was unable to execute this step in data collection, however, because it was summer session

and the student clubs were not active. Therefore, the bulk of data collection relied on the third strategy: snowball sampling. I asked participants to refer their friends and classmates, and I also approached students in the common areas of the campus. Using these strategies achieved quota sampling, which ensured that the sample represented each subgroup in proportion with that subgroup's prevalence in the sampling population (Frankfort-Nachmias & Nachmias, 2008). Visiting classes and engaging in snowball sampling together ensured that sample sizes for Turkish-Cypriot and international students represented the proportions of those groups in the overall university population as I was able to target specific groups during the snowball sampling phase.

Sample size. G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was used to determine the appropriate sample size. Based on the predictive nature of the research questions, the *F*-tests test family and a linear multiple regression model were selected (i.e., fixed model, R^2 increase). I set power to .08 and alpha level at .05. The sample size necessary to establish a .80 value for power at the .05 significance level varies depending on whether or not the researcher expects a large, medium, or small effect size. Most previous research on social support as a buffer indicates a large effect size. For example, Misra, Crist, and Burant (2003) found an R^2 of .19 when social support mediated the relationship between life stress and academic stressors among international students studying in the United States. Crockett et al. (2007) found that the effect sizes for adding the interaction terms for acculturative stress and support from both parents and peers were R^2 = .25 for anxiety and R^2 =.16 for depression among Mexican American students born in the United States. Lee et al. (2004) found an R^2 of .05 after adding the stress by

social support interaction term to their model investigating psychological adaptation of Korean students in the United States. More recently, Zhang (2012) found an R^2 of .23 when investigating how social support buffered Chinese students in the United States against the negative effects of acculturative stress in terms of depression. For a regression analysis, R^2 indicates the strength of an association such that $R^2 < .06$ indicates a small effect size, R^2 between .06 and .14 indicates a medium effect size, and $R^2 > .14$ indicates a large effect size (Field, 2013). Although one of these studies indicated a small effect size, the others all indicated quite robust effect sizes. Therefore, based on these specifications, G*Power calculated 85 participants as sufficient to achieve 80% power. The research included many variables and interaction effects, however. Moreover, one of the previous studies indicated a small effect size. Therefore, to ensure that the test was sensitive enough to detect existing group differences, sample size was calculated based on a small effect size, indicating that 244 participants were necessary to sense group differences.

Procedures

IRB approval was obtained from Walden University and the university where data were collected; the university where data collection took place agreed to serve as the IRB of record for the data collection. Data collection was planned to take place in several stages. At each stage, students were asked the same questions and data regarding the same covariates were collected. Covariates included age, gender, country of origin, relationship status, time spent in host country, language proficiency in both Turkish and English, unmet expectations, and financial resources. In the first stage, I visited classes to

recruit participants; in the second phase, I planned to coordinate with student groups to recruit international students; and in the third phase, I used snowball sampling. Although all participants received the same packet of survey materials, Turkish-Cypriot students only completed Section I, which included the covariates and the BPAS, while participants from all other countries completed Section II with three additional surveys: the ASSIS, BPCDS, and ISSS Scale. Turkish-Cypriots were not requested to complete these additional materials because the questions were specific to those experiencing the acculturation process, which does not affect students from the host culture.

For students recruited in the classroom context, I visited classes to explain the study and distribute materials. Students used the privacy envelopes provided to return completed materials to their course teachers, who gave students the written debriefing and then delivered the materials to me. Although I had planned to collect data by coordinating with the student clubs, I was not able to do so as the research was carried out during summer term and the student clubs were not active. Therefore, much of the data were collected through snowball sampling and by approaching participants in public spaces on the university campus. I met with individuals or small groups and explained the study (including reviewing the informed consent form). Next, materials were distributed and completed by the participants. Following survey completion, participants received a written debriefing form.

In both data collection scenarios, informed consent was explained orally, and a written copy of the informed consent document was included in the survey packet. The form stated the purpose of the study (i.e., to explore student adaptation) and indicated

how the results of the study could benefit the student body. Additionally, it indicated that participation was not obligatory; stated the length of time that participation should require; indicated that there were no risks associated with participation but that if the students experienced any stress as a result of their participation they could visit the psychological counseling, guidance, and research center on campus free of charge; offered assurance that students' anonymity would be protected and that all data would be kept in a secure location for 5 years; and provided my contact information as the researcher. Upon submitting their materials, all participants received debriefing sheets that thanked them for participating; provided contact information for the psychological counseling, guidance, and research center; specified my contact information as the researcher should the participants have any questions; and provided contact information for the chair of the psychology department ethics subcommittee and the director of the ethics board at the university where the data were collected.

Instrumentation and Operationalization

There were nine covariates, two predictor variables (cultural distance and social support), one variable that served as both predictor and outcome (acculturative stress), and one outcome variable (psychological adaptation) in the research. Social support was hypothesized to be a moderator variable. Covariates were assessed within one questionnaire created specifically for this research project; existing instruments were selected to evaluate cultural distance, acculturative stress, social support, and psychological adaptation. This discussion focuses on why each of these surveys was selected for the current study. I also present published reliability and validity values,

previous populations and contexts in which the instruments have been used, and the data analysis plan.

Brief Perceived Cultural Distance Scale. Cultural distance was measured using the Brief Perceived Cultural Distance Scale (BPCDS; Demes & Geeraert, 2014), which includes 12 items evaluating perceived differences between home and host culture in 12 categories: climate, natural environment, social environment, living, practicalities, food, family, social norms, values, people, friends, and language (see Appendix A for permission from the scale developer). Participants are asked to "Think about [home country] and [host country]. In your opinion, how different or similar are these two countries in terms of . . ." Participants respond by rating each of the 12 categories on a 7-point Likert scale (1 = *very similar*, 7 = *very different*). Sample items include "How different or similar are these two countries in terms of living (hygiene, sleeping practices, how safe you feel)" and "How different or similar are these two countries in terms of practicalities (getting around, using public transport, shopping)?" Items are summed for a total score; no items are reverse scored. Lower scores indicate more perceived cultural similarity; higher scores indicate more perceived cultural distance. Data were entered into SPSS as a continuous variable.

This scale was selected because it fit the study's focus on individual differences for two reasons. First, it is a subjective measure. Previous research has either measured cultural distance explicitly (Babiker et al., 1980) or ascribed cultural distance based on evaluations of specific cultural characteristics established in previous research (e.g., Hofstede & Bond, 1984). When measured explicitly, objective or subjective tools have

been used with subjective measures capturing perceived discrepancies between the home and host cultures while objective measures focus on cultural dimensions, differences in GDP, or gross income inequality metrics (Babiker et al., 1980; Suanet & van de Vijver, 2009; Szabo et al., 2016).

Ascribed, dimension-based approaches may be appropriate for establishing adaptation outcomes for specific *groups* of international students experiencing higher or lower levels of cultural distance. In this research, however, I sought to investigate what happens when an *individual* international student experiences a higher or lower level of cultural distance—a finding that may generalize more readily to international students from other national groups in other host contexts. Therefore, it was more appropriate for the purpose of this research to administer a subjective measure of cultural distance to explore the role of perceived cultural distance as a source of acculturative stress in predicting adaptation among international students at the individual level (Ward & Geeraert, 2016).

Second, a perceived measure was preferable to an objective measure of cultural distance because an objective measure assumes similarities among participants from a particular cultural group while the perceived measure captures individual differences. Wang et al. (2012) referred to this as the "heterogeneity challenge" of studying international students because pooling them into one group ignores individual differences (p. 425). Given the relatively recent development of the BPCDS it has not been used extensively in research. Therefore, this research was an opportunity to further examine the scale's reliability. At the same it, the scale seemed appropriate for the current

population given that its construction was based on a mixed a group of international students. To develop the BPCDS Demes and Geeraert (2014) used both inductive and deductive methods. The process started by identifying concepts in similar measures. Next, they interviewed a sample of 23 people of 13 different nationalities from four continents who had lived, or were currently living, abroad. In these interviews Demes and Geeraert were interested in the primary differences these people had experienced between their home and host cultures. This process lends face validity to the measure. After compiling lists from both sources they analyzed the two for overlap and condensed similar items to generate the 12 final categories, which were pilot tested on a group on international students from a range of countries studying in the United Kingdom. Results indicated a good level of scale reliability (Cronbach's $\alpha = .79$) and corrected item-total correlations greater than .3.

As cultural distance has been implicated in both sociocultural and psychological adaptation outcomes (Berry, 1997; Galchenko & van de Vijver, 2007; Suanet & van de Vijver, 2009; Ward & Kennedy, 1993a), Demes and Geeraert (2014) were able to examine construct validity by establishing a modest correlation between the BPCDS and the two other scales: the Brief Sociocultural Adaptation Scale and the BPAS. Demes and Geeraert were further able to establish construct validity by examining correlations between the BPCDS and more established outcome measures such as stress and anxiety. Analyses by Demes and Geeraert revealed significant correlations between cultural distance and outcome measures in line with those predicted by the literature. That is, perceived cultural distance was negatively correlated with sociocultural adaptation (r = -

.35), psychological adaptation (r = -.14), self-esteem (r = -.15), and life satisfaction (r = -.16), but positively correlated with stress (r = .19) and anxiety (r = .19). One drawback, however, is that the BPCDS may only include dimensions of cultural difference experienced within the context of the United Kingdom, which is a threat to external validity.

Acculturative Stress Scale for International Students. The Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994) includes 36 items in Likert format that are designed to assess the acculturative stress of international students (see Appendix B for permission from the scale developer). This scale operationalizes acculturative stress in terms of different types of experiences that could result in stress. It includes six subscales—perceived discrimination (eight items), homesickness (four items), perceived hate (five items), fear (four items), stress due to change (three items), guilt (two items)—and 10 miscellaneous items, all of which are combined for an overall acculturative stress score. Sample items include "I feel nervous to communicate in English" and "I am treated differently because of my color." Factor loadings and commonalities were reported for each subscale, and the six subscales along with the miscellaneous items explained 69.7% of the total variance. The Likert items range from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores are calculated by summing individual items and range from 36 to 180, with higher scores indicating higher levels of acculturative stress (Sandhu & Asrabadi, 1994). Data were entered into SPSS as a continuous variable.

According to analyses by Sandhu and Asrabadi (1994) the ASSIS had very high reliability coefficients: Cronbach's alpha was 0.94 and Guttman split-half reliability was .96 for all 36 items. The alpha levels for subscales were variable, however. Some were excellent, such as perceived discrimination (0.90) and perceived hate (0.90), while others were good (i.e., homesickness [0.89] and fear [0.88], or miscellaneous [0.84]). Cronbach's alpha for stress due to change was acceptable (0.79) but for guilt it was quite poor (.44). Other research on the psychological adaptation of international students has also found high Cronbach's alphas for the ASSIS. For example, Park, Song, and Lee (2014) found that the ASSIS had a Cronbach's alpha of .88 in their study of acculturative stress in international students studying in the United States while Sullivan and Kashubeck-West (2015) found that the Cronbach's alpha for acculturative stress among international students in the United States using the ASSIS was .94. Wang et al. (2012) found that the ASSIS had a Cronbach's alpha of .96 in their study of acculturative stress among mainland Chinese and Chinese from Taiwan studying in the United States.

While much of the research using the ASSIS has been conducted in the United States, often with mixed groups or Chinese international students, one study examined the acculturative stress of Turkish students studying in the United States (Duru & Poyrazli, 2011). Results indicated that the perceived discrimination subscale of the ASSIS correlated with and predicted adjustment difficulties for Turkish students studying in the United States. In this research the ASSIS had a Cronbach's alpha of .84, indicating good scale reliability among Turkish students. Other research focused specifically on the perceived discrimination subscale also found high internal consistency values. For

example, Karuppan and Barari (2010) found that the perceived discrimination subscale had an internal consistency of .92 while Jung et al. (2007) found that it had a Cronbach's alpha of .90 in two different samples of undergraduate and graduate international students from predominantly Asian countries studying in the United States.

The overall ASSIS score does appear to adequately reflect acculturative stress based on the deductive (i.e., counseling literature related to international students) and inductive (i.e., interviews with 13 international students from different countries) methods used for scale construction. The scale was pilot tested with a random sample of graduate and undergraduate international students studying at universities throughout the United States. During pilot testing, the scale was also examined by three university professors who had experience working with international students to assess content validity. The fact that the scale was developed and tested within the United States, however, poses a threat to external validity in that it might be well-suited to measuring the perceived discrimination of international students studying within, but not outside of, the United States. The question of empirical validity, which is often established by correlating scores on a particular test with scores on external measures (Frankfort-Nachmias & Nachmias, 2008), was not examined during scale development.

Index of Sojourner Social Support Scale. The Index of Sojourner Social Support (ISSS) Scale (Ong & Ward, 2005) measures perceived availability of specific forms of functional social support (see Appendix C for permission from the scale developer). Ong and Ward (2005) developed the ISSS Scale in an effort to create a measure that is both rooted in evidence-based social support theories and representative

of the unique stressors that emerge during cross-cultural transitions. The ISSS Scale has 18 items, with nine items comprising socioemotional support and nine items comprising instrumental support. These items require participants to consider if they know any "locals" or anyone living abroad with whom they stayed in communication and who would be willing to provide certain forms of help (Ong & Ward, 2005). The ISSS Scale is based on the premise that locals include host nationals as well as conationals who have adequate experience to act as guides for cultural learning rather than trying to disentangle different sources of social support. Sample items include "Spend time chatting with you whenever you are bored," "Explain and help you understand the local culture and language," and "Reassure you that you are loved, supported, and cared for." These items were assessed using a 5-point Likert scale (1: *no one would do this*, 2: *someone would do this*; 3: *a few would do this*, 4: *several would do this*, and 5: *many would do this*). Composite scores as well as scores on each subscale were calculated by summing scores on individual items. Higher scores indicate the perceived availability of more supportive behaviors. Data were entered into SPSS as a continuous variable.

The ISSS Scale was appropriate for this research because it is a specific functional measure of social support. First, research indicates that what support *does* is more important than where support *comes from* (e.g., Ang & Liamputtong, 2008; Brisset et al., 2010; Coles & Swami, 2012; Sullivan & Kashubeck-West, 2015). Second, functional specific measures are more appropriate for capturing the moderating effects of social support (Cohen & Wills, 1985). And although there are several other well-known social support measures, those measures were not appropriate for capturing the

phenomenon or were developed based on sedentary rather than sojourning populations who have different experiences and needs (Ong & Ward, 2005). Therefore, Ong and Ward (2005) developed the ISSS Scale in an effort to create a measure rooted in evidence-based social support theories and representative of the unique stressors that emerge during cross-cultural transitions.

The ISSS Scale was developed based on inductive and deductive strategies. In the first phase of development, 54 participants working or studying in Singapore responded to open-ended questions about their social network in Singapore: differences in the purpose of social support received from locals versus those abroad, difficulties experienced in Singapore, and how others helped with those difficulties. They also assessed the relevancy of 43 literature-based items illustrating problems as well as forms of help for sojourners. Based on these results Ong and Ward (2005) developed a preliminary version of the ISSS Scale with 64 items representing four literature-based functions of social support: emotional, social, tangible, and informational. For the next phase of development the ISSS Scale was administered to a separate sample of sojourners working and studying in Singapore. Based on these results the four functions were collapsed into 18 items that comprised two factors: socioemotional support and instrumental support. This two-factor version of the ISSS Scale was then cross-validated with a separate sample of sojourners working and studying Singapore. Both of these analyses had Cronbach's alphas over .90 for the overall ASSIS as well as for each of the two subscales individually. Finally, in order to replicate these results in a different cultural context Ong and Ward (2005) conducted a third study in New Zealand based on

a mixed group of international students. Results further supported the two-factor fit to the model and produced similarly high Cronbach's alphas: .92 for both socioemotional and instrumental support, .95 for the overall ISSS Scale score.

Ong and Ward (2005) also established both construct and incremental validity for the ISSS Scale. Construct validity was established by asking participants in Singapore to respond to not only the ISSS Scale, but also to additional measures expected to be (or not to be) related to the ISSS Scale and its subscales during the cross-validation study. Results indicated that scores on the ISSS Scale were related to scores on received social support, interpersonal (dis)trust, sense of mastery, locus of control, and depression in the appropriate direction and magnitude to indicate construct validity. That is, perceived social support was positively related to received social support, a sense of mastery, and having an internal locus of control, but negatively related to interpersonal (dis)trust and depression. At the same time neither the ISSS Scale nor its subscales related to social desirability, which indicated discriminant validity (i.e., scores on the ISSS Scale did not correspond to scores on other measures designed to evaluate unrelated concepts). Incremental validity was established for the instrumental support subscale of the ISSS Scale. Results indicated that only instrumental support—not socioemotional support—predicted depression beyond the predictive power of another theoretically related concept: locus of control (Ong & Ward, 2005).

The ISSS Scale has been used in previous research. For instance, Chavajay (2013) used the ISSS Scale to examine differences in reported socioemotional and instrumental support received from different sources as well as age-based differences in perceived

social support among international students in the United States. Overall ISSS Scale scores had a Cronbach's alpha of .97 while the Cronbach's alpha for the socioemotional support subscale was .97 for support from Americans and .96 for support from non-Americans. Cronbach's alpha for the instrumental support scale was .96 for support from Americans and .95 for support from non-Americans. Sullivan and Kashubeck-West (2015) examined the role of social support in acculturative stress among a mixed group of international students studying in the United States. Cronbach's alpha for the ISSS Scale in this research was also quite high at .96. O'Reilly, Ryan, and Hickey (2010) also explored the role of social support, but this time in psychological distress among short-term international students in Ireland. They did not, however, provide Cronbach's alpha. Therefore, although Ong and Ward (2005) validated the ISSS Scale based on a sample outside the United States, much other research has focused on international students within the United States and a study focused on international students in the cultural context of the northern part of Cyprus is an opportunity to further establish scale reliability for the ISSS Scale when used with international students outside of the United States.

Brief Psychological Adaptation Scale. The Brief Psychological Adaptation Scale (BPAS; Demes & Geeraert, 2014) assesses psychological adaptation outcomes in terms of positive and negative emotional responses to the host culture environment. The BPAS includes a list of eight items preceded by the phrase "Think about living in [host country]. In the last 2 weeks, how often have you felt . . .?" The eight items include different positive and negative emotional experiences (e.g., excited, anxious, sad, lonely,

curious, homesick, etc.). Likert items are rated from 1 (*never*) to 7 (*always*) with higher scores indicating better psychological adaptation. Scores are summed for each item, and six items are reverse scored. Data were entered into SPSS as a continuous variable.

The BPAS (Demes & Geeraert, 2014) was an appropriate measure for this research project because it (a) addresses limitations of existing acculturation measures in terms of separating psychological from sociocultural adaptation, and (b) measures psychological adaptation as it relates cultural adaptation rather than measuring psychological adaptation more generally (Demes & Geeraert, 2014). The BPAS provides a composite measure of negative and positive psychological effects associated with operationalizing psychological adaptation. While previous research may have focused on one facet of psychological adaptation (e.g., depression, anxiety, stress), the BPAS includes a range of emotional responses related to the experience of moving to a new cultural context.

The BPAS also was appropriate for this research project because it is shorter than other scales available for evaluating psychological adaptation (Demes & Geeraert, 2014). Although a longer measure may not be problematic on its own, when administering multiple measures to examine relationships among variables completing the set of assessments may take too much time. This increase in time and effort compounds respondent burden and decreases the response rate, as well as the number of participants who elect to complete the survey materials thoughtfully and accurately (Porter, Whitcomb, & Weitzer, 2004).

The BPAS also does not strive to examine differences among subgroups of international student studying in the northern part of Cyprus. Rather, the aim was to compare the psychological adaptation of home and international students, and examine factors that predicted psychological adaptation among international students. The BPAS is designed to produce results that can be compared among sojourning groups in different locations (Demes & Geeraert, 2014). Therefore, the findings of this research can be applied to sojourners across different contexts.

Furthermore, the BPAS has been shown to have high reliability. Demes and Geeraert (2014) created the BPAS using a mix of inductive and deductive methods. Initial items were borrowed from existing scales measuring the same constructs; these items were compared with concepts identified during interviews with people from a range of countries who were living abroad. Scales were then pilot tested with a group of international students from different countries studying in the United Kingdom. Cronbach's alphas indicate good reliability ($\alpha_{BPAS} = .72$) and corrected item-total correlations were greater than .3 for all items except for two, which were ultimately removed as their removal increased Cronbach's alpha to .79. Subsequent longitudinal research by Demes and Geeraert (2015) comparing 2,480 high school intercultural exchange students to students studying in their home countries in 50 different countries further established reliability. Cronbach's alphas reported at different points in time were over .80.

In terms of validity, scores on the BPAS were correlated to scores on alternate scales that aim to measure similar constructs. Results indicated moderate correlations in

the expected direction with four different scales, indicating the construct validity of the BPAS. The strong correlation with a general stress scale was used as an indicator of scale validity (Demes & Geeraert, 2014). This indicates an underlying commonality between stress and psychological adaptation. Therefore, the degree to which the ASSIS (Sandhu & Asrabadi, 1994) measures the same construct(s) as the BPAS became an issue. The ASSIS includes six subscales and ten miscellaneous items. There are eight items included in the BPAS, six of which overlap with the culture shock and homesickness subscales of the ASSIS. None of the items in the BPAS overlap with the miscellaneous items on the ASSIS, which capture worry about the future, language difficulties, and negative emotional responses related to specific experiences of prejudice, racism, and discrimination. In terms of the ASSIS subscales, while limited research has linked homesickness with psychological adjustment problems (Ward & Kennedy, 1993), general dysphoria (Pantelidou & Craig, 2006), and higher levels of stress (Geeraert & Demoulin, 2013) among sojourners, culture shock might share more commonality as a concept. Although it is not always related to psychological adjustment outcomes (e.g., Söldner, 2013), culture shock has a long history of implication in the acculturation process (Zhou et al., 2008). Therefore, it was important to examine if any relationship between acculturative stress and psychological adaptation was an artifact of overlap between concepts measured by the two scales.

Subsequent to developing the scale, Demes and Geeraert (2015) used the BPAS to examine the psychological adaptation of 2,500 teenage intercultural exchange students from 40 countries who were sojourning in 51 different countries. Results indicated that

less stress was associated with higher levels of adaptation, but the relationship weakened over time. Given its recent development, the BPAS has not yet been used in many studies. Therefore, this research project is an opportunity to further examine the scale's reliability.

Covariates. Covariates included age, gender, country of origin, relationship status, amount of time spent in host country, language proficiency in both English and Turkish, unmet expectations, and (lack of) financial resources. Rationale for the inclusion of potential covariates and/or confounding variables was covered in Chapter 2 in more detail.

Age. Participants indicated their age in a fill-in-the-blank question (e.g., Poyrazli & Lopez, 2007; Poyrazli et al., 2010). Age was entered in SPSS in years as a continuous covariate.

Gender. Participants ticked their gender according to provided options of male, female, or other. Data were entered in SPSS as a categorical covariate.

Country of origin. Participants indicated their country of origin in a variation of the fill-in-the-blank question format used in previous research (e.g., Poyrazli & Lopez, 2007; Poyrazli et al., 2010). Participants were offered three options: (a) Northern Cyprus, (b) Turkey, and (c) Other countries: _____. Specific countries of origin were entered. Country of origin data were used for descriptive purposes while the analyses focused on comparing host and international students as a group. Data regarding participants' country of origin were entered in SPSS as a categorical covariate.

Amount of time spent in host country. Participants selected the period for which they had been studying in the northern part of Cyprus using the following scale: less than 6 months, 6 months to 1 year, 1–2 years, 2–3 years, 3–4 years, and longer than 4 years (Wang & Mallinckrodt, 2006). Data were entered in SPSS as a categorical covariate.

Relationship status. Participants indicated their relationship status according to three options: single, in a relationship, married (e.g., Zhang, 2012). Data were entered in SPSS as a categorical covariate.

Language proficiency. Participants indicated both their English and Turkish proficiencies for overall ability, which were scored as two 4-point Likert items (i.e., 1: *poor*, 2: *fair*, 3: *good*, 4: *excellent*), consistent with previous research (Wang & Mallinckrodt, 2006). Data were entered in SPSS as a continuous covariate.

Unmet expectations. The difference between students' expectations and perceptions of their actual experiences living and studying in northern Cyprus compared to the expectations they had prior to leaving their home countries was measured using one question (Swami, 2009; Swami, Arteche, Chamorro-Premuzic, & Furnham, 2010; Zlobina, Basabe, Paez, & Furnham, 2006). More specifically, participants indicated if their actual experiences were better than, the same as, or worse than expected on a 3-point Likert scale (1: *worse than expected*, 2: *the same as expected*, 3: *better than expected*). Data were entered in SPSS as a continuous variable.

Financial resources. Financial satisfaction was evaluated using one item that asked participants how they would evaluate their overall financial situation according to five options that ranged from very dissatisfied to very satisfied. Responses were scored

on a 5-point Likert item ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*), as used in previous research (Khawaja & Dempsey, 2008; Sam, 2001). Data were entered into SPSS as a continuous variable.

Data analysis plan. Data analysis was performed using IBM SPSS Statistics 24. A detailed data analysis plan was created in Word and updated throughout the data analysis process to document and explain analytic decisions and changes to the data throughout analysis. The data collected from Turkish-Cypriot students were used only for comparison purposes to answer the first research question and the hierarchical multiple regressions performed to answer the second research question only used data gathered from international students.

Data screening and cleaning. An initial consideration prior to starting analysis was missing data. If many respondents do not supply a particular piece of information this missing data should be examined for patterns by comparing the means of dichotomous dummy variables that represent groups of participants who did, and who did not, report that information (Mertler & Reinhart, 2016). If significant differences are found, steps must be taken to address them. If very little data are missing, however, it may be appropriate to delete problematic cases or variables (Mertler & Reinhart, 2016). Individual participants who did not submit completed materials could be dropped from the analysis as could variables to which participants had not responded if those variables were not central to the research questions (Mertler & Reinhart, 2016).

Deleting cases, however, could reduce power thereby obscuring relationships between variables in the data set as well as bias parameter estimates and other statistics

such as measures of central tendency (Mertler & Reinhart, 2016; Roth, 1994). Therefore, whether missing values are user missing values (i.e., absent from the data) or system missing values (i.e., excluded from the data; van den Berg, n.d.), it may be preferable to generate substitute values rather than remove cases. Missing values may be replaced based on the mean for each variable or the group mean if the analysis is comparative, as it is concerning differences between Turkish-Cypriot and international students (Mertler & Reinhart, 2016). Due to problems inherent in using mean substitution to manage missing data, however, alternate methods are often recommended (Roth, 1994). According to Roth (1994), expectation maximization imputation is an acceptable technique for replacing missing data whether data are missing completely at random, missing at random, or non-missing at random in data sets missing up to 20% of the data. Expectation maximization imputation is an iterative method performed by SPSS that makes inferences based on assumptions of a normal distribution (IBM Corporation, 2016), and is preferable to other techniques because it generates more accurate substitute values than other substitution methods such as listwise deletion, pairwise deletion, and mean substitution (Roth, 1994).

Another data cleaning consideration was outliers, which should be deleted or transformed depending on the cause of the outliers and how the outliers affect assumptions as well as results (Field, 2013). Univariate outliers can be identified based on *z*-scores for each variable (Mertler & Reinhart, 2016). Because the sample was greater than 100 participants, *z*-scores greater than +/- 4 were considered as outliers (Mertler & Reinhart, 2016). Standardized scores were created via the descriptives tab in SPSS, and

the frequencies of standardized scores for each variable were examined to identify univariate outliers. Multivariate outliers were identified by looking at Mahalanobis distance values that were significant beyond $p < .001$ (Mertler & Reinhart, 2016).

Other data screening and cleaning was based on the assumptions that accompany hierarchical multiple regression analyses. First, correlations between predictor variables (i.e., cultural distance, social support, and acculturative stress) were examined to assess multicollinearity (i.e., if any among them is a combination of other predictors). Multicollinearity can be examined based on the variance inflation factor (VIF), the largest of which should not be greater than 10 (Field, 2013). If these scores are within acceptable limits, the assumption of multicollinearity has been met (Hair, Black, Babbin, & Anderson, 1998) .

A second assumption is linearity. That is, outcome and predictor variables should have a linear relationship and the combined effect of all predictor variables on an outcome variable should be best described by their cumulative effect (Field, 2013), Scatterplots of the relationship between standardized predicted values and standardized residuals were examined to determine if the assumption of linearity had been met (Mertler & Reinhart, 2016). A curved pattern indicates that the assumption of linearity has been violated while a clustering of data points along the zero line indicates that it has been met (Mertler & Reinhart, 2016).

A third assumption, independent errors, is related to the assumption of linearity, which is assessed as discussed above (Mertler & Reinhart, 2016). Another assumption, homoscedasticity, seeks to establish that the variance of the residuals is the same at each

value of the predictor variables (Field, 2013). If this assumption is violated, model parameters should be estimated using weighted least squares regression or the data could be transformed (Field, 2013). Homoscedasticity may also be assessed by checking that scatterplots of the residuals are randomly scattered around zero (Mertler & Reinhart, 2016). Again, like violating the assumption of linearity, finding heteroscedasticity in the data may weaken the analysis but does not invalidate results (Mertler & Reinhart, 2016). Homoscedasticity can be further examined based on Box's M test for equality of variance-covariance matrices. If the significance level for this test is nonsignificant at the $p < .05$ level, the assumption has been met (Mertler & Reinhart, 2016).

The final assumption, normally distributed errors (i.e., residual terms generally have an average of 0) is also linked to linearity (Mertler & Reinhart, 2016). This assumption is more important in smaller samples for which violating the assumption can invalidate both confidence intervals and significance tests whereas for larger samples a violation does not have the same effects (Field, 2013; Mertler & Reinhart, 2016). Either way, if confidence intervals are bootstrapped this assumption can be ignored (Field, 2013). If, however, confidence intervals are not bootstrapped, there are multiple ways of evaluating both univariate and multivariate normality. Due to the high number of variables a statistical strategy was used to assess univariate normality: skewness and kurtosis values were examined for those that deviated from zero (Mertler & Reinhart, 2016). If data deviate from normal, specific types of transformations are appropriate depending on the degree to which the distribution deviates from normal. For distributions characterized by positive skewness a square root transformation should be used if data

deviate from normal only moderately, a log transformation should be used if there is more substantial deviation, and an inverse transformation should be used if there is severe deviation (Mertler & Reinhart, 2016). If the distribution is characterized by negative skewness, however, reflection must be performed prior to the above transformations (Mertler & Reinhart, 2016). Bivariate scatterplots were used to assess multivariate normality. If the assumption of normality has not been violated, the pattern depicted in the scatterplots should be approximately elliptical (Mertler & Reinhart, 2016).

Research questions, hypotheses, and statistical tests. There were two primary research questions. The first was comparative: Do international students experience worse psychological adaptation compared to Turkish-Cypriot students? The second concerned the moderating role of social support and had two subquestions: (a) Does the level of international students' socioemotional and instrumental social support moderate the relationship between how differently international students perceive their home and host cultures and their level of stress related to adapting to a new cultural context? and (b) Does the level of international students' socioemotional and instrumental social support moderate the relationship between their level of stress related to adapting to a new cultural context and their emotional state? In answering these research questions the project also explored independent relationships among variables of interest to investigate (a) if how differently international students perceived their home and host cultures predicted their level of stress related to adapting to a new cultural context, (b) if socioemotional and instrumental social support predicted their level of stress related to adapting to a new cultural context, (c) if international students' level of stress related to

adapting to a new cultural context predicted their emotional state, and (d) if the level of international students' socioemotional and instrumental social support predicted their emotional state. Three hypotheses were tested, the first of which was comparative:

H_1: International students will have lower psychological adaptation scores than Turkish-Cypriot students.

An ANOVA was performed to explore group differences in psychological adaptation of home students (i.e., students who indicated their country of origin as the northern part of Cyprus) and international students (i.e., students who indicated their country of origin as outside the northern part of Cyprus, including Turkey) (Mertler & Reinhart, 2016). Results were interpreted based on the *p*-value associated with the *F*-value to determine if there were significant differences between Turkish-Cypriot students' and international students' psychological adaptation as well as the adjusted R^2 to determine the percentage of variance in psychological adaptation accounted for by home or international student status.

The second two hypotheses focused on the moderating effects of social support:

H_2: Social support moderates the impact of cultural distance on acculturative stress. Specifically, I expect those students reporting higher cultural distance and higher social support to be somewhat protected from the effects of cultural distance and therefore to report less acculturative stress. In general, students reporting lower cultural distance are predicted to report lower levels of acculturative stress, regardless of levels of social support.

H_3: Social support moderates the impact of acculturative stress on psychological adaptation. Specifically, I expect those students reporting higher acculturative stress and higher social support to be somewhat protected from the effects of acculturative stress and therefore to report better psychological adaptation. In general, students reporting lower acculturative stress are predicted to report better psychological adaptation, regardless of levels of social support.

For Hypotheses 2 and 3, changes in outcome variables based on predictor variables were evaluated via hierarchical multiple regression analyses. These analyses were performed using only data collected from international students. Hierarchical multiple regression analyses examined the predictive value of each predictor variable (i.e., cultural distance, social support, and acculturative stress) for each outcome variable (i.e., acculturative stress and psychological adaptation) controlling for covariates (i.e., gender, age, relationship status, proficiency in both English and Turkish, country of origin, time in host country, unmet expectations, and financial resources), and tested for moderating effects of social support in the relationship between cultural distance and acculturative stress as well as in the relationship between acculturative stress and psychological adaptation. Variables were entered in stages to discern if predictor main effects explained more variance than the covariates, and if the interactions of predictor variables explained more variance than their main effects (Frankfort-Nachmias & Nachmias, 2008; Pelham, 2013). Covariates were entered in Set 1 of the models that were used to test both Hypothesis 2 and Hypothesis 3. For the Hypothesis 2 cultural distance and social support

main effects were entered in Set 2, and the interaction between cultural distance and social support was entered in Set 3. For Hypothesis 3 acculturative stress and social support main effects were entered in Set 2, and the interaction between acculturative stress and social support was entered in Set 3.

Main effects of covariates in tests of Hypothesis 2 and Hypothesis 3 were interpreted based on standardized regression coefficient beta. Main effects of cultural distance and social support (Hypothesis 2) as well as acculturative stress and social support (Hypothesis 3) were interpreted not only based on standardized regression coefficient beta but also on R^2, the goodness of fit statistic that indicates how well the regression line fits the data. The interaction terms (i.e., cultural distance × social support for Hypothesis 2 and acculturative stress × social support for Hypothesis 3) also were interpreted based on both standardized regression coefficient beta and R^2, the goodness of fit statistic.

Threats to Validity

Design validity is discussed in terms of external, internal, and construct validity. External validity refers to the degree of confidence in generalizing findings from the sample to the population while internal validity is an evaluation of how sure researches can be that changes in the dependent variable are the result of the independent variable, rather than some intervening third factor (Frankfort-Nachmias & Nachmias, 2008). Construct validity is established based on the degree to which results of a measure used to evaluate a specific construct a) relate to other measures designed to evaluate other indices of that same concept or other theoretically related concepts, as well b) do not

relate to other measures designed to evaluate indices of competing explanations for what that measure could indicate (Field, 2013; Guion, 1980).

External Validity

Experimental designs establish external validity (i.e., the degree of confidence in generalizing findings from the sample to the population) via random sampling (Frankfort-Nachmias & Nachmias, 2008). This study, however, had a quasi-experimental design and recruited a nonprobability sample rather than using a sampling design that would have produced a probability sample (Frankfort-Nachmias & Nachmias, 2008). A primary problem with a nonprobability sample is that there is no way to determine if it represents the population (Frankfort-Nachmias & Nachmias, 2008), which threatens population validity as part of external validity. To address this issue, quota and snowball sampling were used to ensure that the proportion of students from different national subgroups within the sample approximated that of the population.

Population validity also may have been threatened by the profile of students studying in the northern part of Cyprus, which may be influenced by external factors. For instance, the northern part of Cyprus may not have been the first choice as a study-abroad location for many international students but became more attractive after they were denied visas to Western or European countries. Therefore, there may be a difference between international students who are, and are not, able to procure visas. Furthermore, some Turkish students may have preferred to study in their home country but came to the northern part of Cyprus because they did not earn high enough scores on the university entrance exam to qualify for state universities in Turkey, or because they were offered

scholarships from universities in the northern part of Cyprus. Therefore, there also may have been a difference among the Turkish students studying in the northern part of Cyprus and those studying in Turkey. Finally, Turkish-Cypriot students may have preferred to leave their home country and study abroad but were not able to due to financial constraints. Therefore, there also may have been a difference between those who stayed in the northern part of Cyprus for undergraduate study and those who went abroad. These particularities may have limited the extent to which findings can be generalized to other student populations, although describing the sample in detail can help researchers and research consumers assess the degree to which findings should be applied to other populations (Slack & Draugalis, 2001).

External validity also includes ecological validity, which broadly refers to how widely findings can be applied across different settings. This generalizability could be threatened by idiosyncrasies of the cultural context in which the research took place such that results represent adaptation of students studying in the northern part of Cyprus rather than students coming from and studying in different sociohistorical contexts. Although the context-bound nature of the study cannot be mitigated, including more than one national subgroup of international students in the sample produced more comprehensive findings in terms of factors involved in adaptation of international students in general (Frankfort-Nachmias & Nachmias, 2008).

Internal Validity

Shadish, Cook, and Campbell (2002) detailed nine threats to internal validity. Six of these threats are avoided by having only one point of data collection: (a) attrition (i.e.,

the number of participants who start but do not complete the study), (b) testing (i.e., participants' experiences with study procedures and instruments), (c) instrumentation (i.e., measures changing during the course of the study), (d) regression artifacts (i.e., the tendency to move toward the average after an initially high or low score), (e) maturation (i.e., normal human growth and development that could explain any changes), and (f) history (i.e., how outcomes are influenced on pre and posttest measures by external or historical events). A seventh threat to internal validity, ambiguous temporal precedence (or temporal ambiguity), refers to the degree to which research results indicate directionality in terms of a cause and effect relationship between variables (Shadish, Cook, & Campbell, 2002). This threat to validity was not relevant because the research sought to establish predictive (or associative) rather than causal relationships.

The eighth threat to internal validity, selection, emanates from recruitment practices that result in systematic group differences, making it impossible to discern if one variable caused an effect on the other variable. This sample was a nonprobability sample because, as discussed previously, it was not feasible to recruit a random probability sample. A nonprobability sample, however, is likely to have higher coverage errors (especially undercoverage) because there is higher risk that all elements within a sampling framed will not be tapped (Groves et al., 2009). Therefore, specific data collection strategies (i.e., quota and snowball sampling) ensured that more elements within the sampling frame were, in fact, included in the sample in appropriate proportions. Of course, coverage bias includes not only undercoverage, but also overcoverage if ineligible units are included in the sampling frame (Groves et al., 2009).

Overcoverage was minimized by the screening process that identified suitable participants based on inclusion and exclusion criteria discussed previously in this chapter.

Who does, and who does not, participate also plays a role in internal validity. As participation was 100% voluntary, students were recruited in the classroom but completed the surveys outside of class time while those participants who were recruited via snowball sampling completed the survey materials during the meeting. What all participants had in common, despite how they came to participate, is that they self-selected into the research. Using a self-selected sample ran the risk of introducing bias into the research such that there could have been a significant different between those who did, and those who did not, elect to participate in the study (Cuddeback, Wilson, Orme, & Combs-Orme, 2004).

Construct Validity

Construct validity of an instrument designed to evaluate a theoretical concept is evaluated based on other measures with which it does, and does not, relate (Guion, 1980). That is, results of a measure for a specific construct should correlate with measures evaluating other indices of that same concept or other theoretically related concepts, but results should not correlate with measures evaluating indices of competing interpretations of what the measure could be evaluating (Guion, 1980). This research project included four measures for which construct validity needed to be determined: the BPCDS, ASSIS, ISSS Scale, and BPAS. Construct validity based on convergence with scores from measures of similar constructs was established for the BPCDS, ISSS Scale, and BPAS, but construct validity in terms of divergence was only established for the ISSS Scale.

Therefore, questions remained concerning the construct validity in terms of divergent validity for measures except the ISSS Scale, and for the ASSIS in terms of convergent validity as well. Moreover, construct validity of the study overall was threatened by mono-method bias (Trochim, 2006). That is, with only one measure used to evaluate each variable of interest, each variable may not have been fully captured (Trochim, 2006). Below I discuss the construct validity of each of the main scales used in the research project.

Brief Perceived Cultural Distance Scale. Demes and Geeraert (2014) examined correlations between results of the BPCDS and two other measures (i.e., the Brief Sociocultural Adaptation Scale [BSAS] and the BPAS) that they developed at the same time as the BPCDS to establish the scale's construct validity. Previous research has established that cultural distance plays a role in both sociocultural and psychological adaptation outcomes (Berry, 1997; Galchenko & van de Vijver, 2007; Suanet & van de Vijver, 2009; Ward & Kennedy, 1993a). Therefore, Demes and Geeraert (2014) were able to establish construct validity based on a modest correlation between the BPCDS and these two other scales (i.e., sociocultural adaptation: r = -.35, psychological adaptation: r = -.14). Demes and Geeraert (2014) further verified construct validity by examining correlations between the BPCDS and more established outcome measures related to cultural distance; analyses revealed significant correlations in line with those predicted by the literature such that perceived cultural distance was negatively correlated with self-esteem (r = -.15) and life satisfaction (r = -.16), but positively correlated with stress (r = .19) and anxiety (r = .19).

Acculturative Stress Scale for International Students. Sandhu and Asrabadi (1994) did not build construct validity verification into the construction of the ASSIS by examining if results of the measure correlated with results of measures evaluating theoretically linked concepts in the predicted direction. The current research project, therefore, provided an opportunity to examine the construct validity of the ASSIS by examining how its scores correlated with scores of measures evaluating indices of theoretically and empirically related concepts (i.e., cultural distance, social support, and psychological adaptation). This is discussed in more detail in Chapter 4.

Specifically, Ward and Geeraert's (2016) model suggests that intercultural contact, and its resulting perception of cultural distance, can be a source of stress. Results of both qualitative (Ang & Liamputtong, 2008; McLachlan & Justice, 2009; Yakushko et al., 2008; Yan & Berliner, 2009) and quantitative (Galchenko & van de Vijver, 2007; Poyrazli et al., 2010; Szabo et al., 2016) research reinforce this link between cultural distance and stress. Moreover, according to the stress-buffering hypothesis, social support should reduce the experience of stress among people who are exposed to a stressor but who enjoy a higher level of appropriate social support (Cohen & Wills, 1985). And although results have not been consistent, some research indicates both main and moderating effects of social support on acculturative stress (e.g., Kuo & Roysircar, 2006; Mallinckrodt & Leong, 1992). Finally, Berry's (1997) framework positions acculturative stress as a short-term outcome linked to the long-term outcome of psychological adaptation in the acculturation process. Indeed, research results have linked acculturative stress to a range of psychological adaptation indices including distress (Wang et al.,

2012; Wu & Mak, 2012), adjustment (Yakunina et al., 2013), life satisfaction (Ye, 2005), as well as anxiety and depression (Sirin et al., 2013; Wei et al., 2007; Ying & Han, 2006; Zhang, 2012). Therefore, based on theoretical links and previous research findings, results were expected to reflect correlations between acculturative stress and cultural distance, social support, and psychological adaptation, all of which would indicate construct validity of the ASSIS by linking its results to those of measures designed to evaluate theoretically and empirically linked constructs.

Index of Sojourner Social Support Scale. Ong and Ward (2005) established construct validity for the ISSS Scale by examining correlations between overall scores on the ISSS Scale as well as its subscales and scores on other measures evaluating variables expected to be (or not to be) related to the ISSS Scale and its subscales. Based on a literature review, Ong and Ward selected measures of received social support, interpersonal (dis)trust, sense of mastery, locus of control, and depression as theoretically linked concepts and social desirability as a variable that should not be related to social support. Results indicated that scores on the ISSS socioemotional and instrumental support subscales were related to scores on received social support (r = .61 and r = .57, respectively), interpersonal (dis)trust (r = –.18 and r = –.l9, respectively), sense of mastery (r = .11 and r = .14, respectively), locus of control (r = –.22 and r = –.14, respectively), and depression (r = –.18 and r = –.25, respectively) in the appropriate direction and magnitude (Ong & Ward, 2005). At the same time, neither the ISSS Scale nor its subscales related to social desirability, indicating that the measure was not related to scores on measures of theoretically unrelated concepts.

Brief Perceived Psychological Adaptation Scale. To establish construct validity, Demes and Geeraert (2014) examined correlations between scores on the BPAS and the BSAS as well as four other scales measuring similar constructs. Overall, results indicated moderate correlations in the expected direction with these measures. First, Demes and Geeraert (2014) examined the correlation between the BPAS and the BSAS as previous research results have indicated that these two concepts are related (e.g., Al-Sharideh & Goe, 1998; Shupe, 2007; Wu & Mak, 2012; Ye, 2006). Results illustrated a positive correlation between these measures (r = .55). In addition, participants' scores on four well-being measures were recorded. Correlations showed that the BPAS was moderately related to all four measures: levels of perceived stress (r = −.64), state anxiety (r = −.71), self-esteem (r = .44), and satisfaction with life (r = .40).

Ethical Procedures

Agreements

IRB approval was obtained from both Walden University and from the university where data were collected (ethical approval from the university where data were collected: meeting number 2017/50-02; Walden IRB approval number: 02-26-18-0347204).

Treatment of Human Participants

Three fundamental ethical principles that guide human subjects research are delineated in the Belmont Report (Department of Health, Education, and Welfare, 1979): respect for persons, beneficence, and justice. The principle of respect for persons requires researchers to treat participants as if they have autonomy (i.e., participants must be free to

make their own decisions—and capable of making such decisions—regarding their participation in light of their own personal goals and desires), and if participants lack autonomy it is the researcher's responsibility to protect these participants (Department of Health, Education, and Welfare, 1979). The principle of beneficence reflects researchers' obligation to not harm their participants and to maximize the ways in which participants may benefit from the research (Department of Health, Education, and Welfare, 1979). The third principle of justice requires researchers to ensure that participants receive what they deserve (i.e., benefits are not denied to any participant who should be a recipient) and that no participant, or group of participants, bears too great of a burden in the research process or is locked out of the research process and its potential benefits (Department of Health, Education, and Welfare, 1979).

To preserve the principle of respect for persons coercive data gathering methods were avoided. Therefore, I acknowledged my role as a faculty member at the university, but emphasized that I was not there in a professional capacity but rather in an academic capacity as a doctoral student conducting research on psychological adaptation. I further emphasized that their participation was in no way tied to their status at the university or any course grade. This introduction helped minimize power differentials and perceived coercion. To ensure beneficence, only non-academic time was used for research. Although I visited classrooms, I only used a brief amount of time to introduce the research project, invite students to participate, distribute materials, and provide instructions on returning sealed envelopes to their course teachers. Furthermore, to respect the principle of justice, rather than targeting specific groups, all students studying

in English-medium undergraduate academic programs were included in the research. These measures ensured that only those who truly wanted to participate in the research participated without trapping students into participation, that students' class time was not being exploited, and that no group bore an unfair research burden.

Ethical concerns related to data collection included participants refusing participation or withdrawing early from the study. In these cases no participant who hesitated to complete the questionnaires was talked into participating. Furthermore, participants who were unwilling to finish the complete battery of questionnaires submitted partially completed questionnaires. Had any participant expressed a stress response to completing the questionnaires, they would have been referred to the Psychological Guidance and Counseling Center to speak with a mental health professional.

Treatment of Data

Data were gathered in a paper and pencil format; informed consent sheets remained with the participants, which helped preserve their anonymity. Confidentiality was preserved by keeping hardcopy data in a locked cabinet and softcopy data (i.e., data entered into SPSS) on a password-protected personal computer, and by not associating the data with participant names. Only the primary researcher had immediate access to the hard or softcopy data, although it can be made available to the committee chair or other committee members upon request. Paper documents will be shredded and recycled after a period of five years.

Other Ethical Concerns

Other ethical concerns related to the study included articulating a specific plan to share research results with participants and community stakeholders, collecting data in a non-coercive way that ensured privacy in a group setting, conducting research in an international location, conducting research in an educational context, and collecting data at my own workplace. Stakeholders included the participants (i.e., students) and the academic and administrative community at the university, as well as at other universities in the northern part of Cyprus. A research summary was provided to both the director of public relations and the international affairs and promotion coordinator, who presented it to the vice-rector of international affairs and promotion at the university where the research was conducted. Results also were provided to a non-governmental community-based activist group Voices of International Students Cyprus that advocates for the well-being of international students in the northern part of Cyprus.

Concerning the research context, it was appropriate to collect data in my own professional setting because the university is large enough that many of the pitfalls of collecting data at one's own work site (e.g., social desirability, biased responses, perceived coercion, confidentiality breaches) were avoided by not collecting data from my own students or those students with whom I interact regularly (Walden University Center for Research and Support, 2015a). Rather, after obtaining ethical approval, I engaged in snowball sampling and contacted other departments, in other faculties, to gain access to classrooms from which students were recruited. Collecting data only from students who were not studying in the department where I teach also avoided potential

conflicts of interest or exploitive, multiple relationships by entering into a dual scientific-professional relationship with students (American Psychological Association, 2010). Collecting data at this university, however, benefited the university because the university can use the results to develop programs and policies that address the needs of its students, specifically.

The research context was not only my own workplace it was an educational context, which comes with its own ethical considerations. Most of the ethical concerns do not apply to this project, however, because data were not collected from my own students or subordinates, and the students who participated were adults (Walden University Center for Research and Support, 2015a). Moreover, an instructional approach or an educational program was not the focus of the study and the research neither included a control group nor did it target any one ethnic group (Walden University Center for Research and Support, 2015a). A final ethical concern related to collecting data in an educational setting is the use of class time during the school day (Walden University Center for Research and Support, 2015a). Class time was not used for data collection. Teachers were approached individually and asked if they were willing to allow approximately 15 minutes of class time to introduce the study. Each chose the time and date of my visit. There were also specific ethical concerns related to conducting research in an international context. Within this context research must minimize safety and privacy risks and ensure that any other risks do not invalidate the utility of the results, ensure that both the load and advantages associated with participation in the research are shared amongst the population, obtain and document informed consent, minimize perceived coercion, and

have research oversight (Walden University Center for Research and Support, 2015b). This project was supervised as part of a dissertation research project. Furthermore, procedures in place for data collection and storage obtained informed consent, ensured participants' privacy, and minimized perceived coercion. Perceived coercion was further minimized by separating my teacher and researcher roles such that participants did not believe that participating was related to my role as an educator. No immediate safety risks were associated with participation, although thinking about psychological adaptation and the stress of adapting to a new cultural context may have made some students anxious. Debriefing included information regarding resources participants could access to help them with any adverse psychological results associated with participation. Finally, the burden of research was shared by all student stakeholders in the population, that is, university students enrolled in undergraduate English-medium academic programs. Although international students with worse psychological adaptation may benefit most directly from any policies designed to ameliorate their adaptation based on the results of this research, all students can benefit indirectly from attending a university with a happier, healthier student body.

Furthermore, when conducting international research, it is preferable to use existing measures rather than to create new ones (Walden University Center for Research and Support, 2015b). This research featured four existing measures used more or less widely in previous research. Moreover, using these measures in an international context provided the opportunity to further validate the measures. Establishing validity in another cultural context adds to the generalizability of research results based on these measures.

Summary

The research study used a cross-sectional, contrasted-groups, quasi-experimental design to collect survey data. Quota sampling was used to recruit both host national and international students from among students enrolled in English-medium undergraduate programs at a university in the northern part of Cyprus. Data collection took place in classroom environments and via snowball sampling. The research featured nine covariates, two predictor variables (cultural distance and social support), one variable that served as both predictor and outcome (acculturative stress), and one outcome variable (psychological adaptation). Covariates were measured using a questionnaire designed specifically for this project and established survey measures were used to evaluate cultural distance, acculturative stress, social support, and psychological adaptation. The primary research questions examined differences among host and international students in terms of overall psychological adaptation and the role of social support as a buffer between a stressor (i.e., cultural distance) and the experience of (acculturative) stress, as well as between the experience of (acculturative) stress and overall psychological adaptation. The subsequent chapter describes data collection procedures and presents sample characteristics as well as overall study results to document the picture of psychological adaptation and relations among these variables within this student population at one moment in time.

Chapter 4: Results

This study investigated potential predictors of psychological adaptation among international students studying at a university in the northern part of Cyprus. Two primary research questions guided the research. The first question addressed whether international students experienced worse psychological adaptation compared to Turkish-Cypriot students from the host society. The second research question was divided into two subquestions regarding the moderating role of social support: (a) Did the level of international students' socioemotional and instrumental social support moderate the relationship between how differently international students perceived their home and host cultures and their level of stress related to adapting to a new cultural context? and (b) Did the level of international students' socioemotional and instrumental social support moderate the relationship between their level of stress related to adapting to a new cultural context and their emotional state? Three hypotheses were tested: (a) International students have lower psychological adaptation scores than Turkish-Cypriot students, (b) Social support moderates the impact of cultural distance on acculturative stress, and (c) Social support moderates the impact of acculturative stress on psychological adaptation. This chapter provides an overview of the data collection process carried out to investigate these hypotheses, as well as results from the subsequent ANOVA and hierarchical multiple regression analyses.

Data Collection

Data collection commenced at the end of May 2018 and concluded in early September 2018. Multiple modes of data collection were employed to maximize response

rates (Groves et al., 2009). I visited English courses to recruit international and Turkish-Cypriot students. There were not many sections of the course open, however, as the research was conducted mainly during the summer term. It was not possible to collect data from some otherwise eligible students in these courses because they were registered to the department where I was an instructor. Furthermore, it was not possible to collaborate with student clubs to collect data from specific nationality groups as proposed because data collection took place during the summer term. Thus, the bulk of data collection occurred via snowball sampling as well as by approaching students in common areas of the campus and asking them to complete the questionnaire.

Potential participants were screened for student status (i.e., undergraduate or graduate) and the program language (i.e., English) to discern whether they met the study's eligibility requirements prior to being given the questionnaire. The questionnaire also included a screening question reconfirming the participant's student status (i.e., undergraduate or graduate). Of the 299 questionnaires collected, 15 participants either indicated graduate status (n = 13) or did not respond to the student status question (n = 2). These participants were excluded. Of the 284 remaining participants, 13 were excluded based on subsequent analyses. Twelve of these were eliminated based on missing values analyses and suspicious response patterns. Participants who were missing more than 50% of the data on a single scale (n = 8), participants with suspicious response patterns (n = 3), and one respondent who indicated that s/he was not reading the scales while completing the questionnaire were excluded from the analysis.

One final participant was eliminated as an outlier. Standardized scores on each scale were created in SPSS, and the frequencies of standardized scores for each variable were examined to identify univariate outliers. No participant had a *z*-score greater than +/- 4 on any scale, indicating that there were not any univariate outliers (Mertler & Reinhart, 2016). Univariate outliers were further examined separately among Turkish-Cypriot and international students. First, Mahalanobis distance scores for each scale were calculated and then tested to determine if any score was significant beyond $p < .001$ according to chi-square test results (Mertler & Reinhart, 2016). Results confirmed the absence of univariate outliers among Turkish-Cypriot and international students (all *p*s > .002). Data were then examined for multivariate outliers among international students only based on the same procedure, but this time Mahalanobis distance values were created for the four scales together. Based on these analyses one participant exceeded the χ^2 criteria, χ^2 (1, $N = 104$) = 20.61, $p < .001$, and was subsequently dropped from the analysis as a multivariate outlier.

Therefore, the final sample included 271 undergraduate students from 25 countries (see Table 1) studying in English-medium programs at a university in the northern part of Cyprus. The proportion of Turkish-Cypriot and international students in the sample approximated the number of Turkish-Cypriot and international students attending the university at which data were gathered. According to statistics provided by the university's registrar's office, as of fall semester of the 2017-2018 academic year, 3,135 (17%) students attending the university were from the host country (i.e., Northern Cyprus), 8,000 (43%) were from Turkey, and 7,365 (40%) were from a variety of other

countries. Within the research sample, about 23% were from the host country, 39% were from Turkey, and 39% were from other countries. Concerning students from other countries, the largest national groups at the university were from Nigeria (1,400 students) and Iran (about 1,640 students). The next largest national groups were from Jordan (781 students), Syria (557 students), Palestine (359 students), Libya (286 students), Egypt (251 students), Pakistan (225 students), and Iraq (201 students). National groups from all other countries were smaller than 200 students and about 40 of these countries were represented by fewer than five students each. This general order was reflected in the study sample, with the highest number of international students from countries other than Turkey indicating Nigeria or Iran as their countries of origin.

Table 1

Participants by Country of Origin (n = 271)

Country of origin	*n*	%
Turkey	105	38.70
North Cyprus	62	22.90
Nigeria	26	9.60
Iran	14	5.20
Zimbabwe	12	4.40
Libya	11	4.10
Palestinian	5	1.80
Jordan	4	1.50
Iraq	3	1.10
Kyrgyzstan	3	1.10
Algeria	2	0.70
Syria	2	0.70
Uzbekistan	2	0.70
Brazil	1	0.40
Chad	1	0.40
Egypt	1	0.40
Eritrea	1	0.40
Kazakhstan	1	0.40
Mauritius	1	0.40
Mongolia	1	0.40
Pakistan	1	0.40
Senegal & Nigeria	1	0.40
South Africa	1	0.40
Tajikistan	1	0.40
Tunisia	1	0.40
Uganda	1	0.40
“Other” country of origin not specified	7	2.60

Participants ranged in age from 18 to 31 years (M = 22.20 , SD = 2.41) and provided information on covariates including age, gender, country of origin, relationship status, time in the northern part of Cyprus, proficiency in both English and Turkish, unmet expectations, and financial satisfaction. The 62 Turkish-Cypriot participants ranged in age from 18 to 25 years (M = 21.26, SD = 1.89). See Table 2 for a breakdown of Turkish-Cypriot students' responses to items measuring covariates. The 209 international participants ranged in age from 18 to 32 (M = 22.48, SD = 2.49). See Table 3 for a breakdown of international students' responses to items measuring covariates.

Table 2

Turkish-Cypriot Students' Responses to Covariates (n = 62)

Variable	*n*	%
Gender		
Male	34	54.80
Female	28	45.20
Other	0	0.00
Relationship		
Single	32	51.60
In a relationship	28	45.20
Married	1	1.60
Time in Northern Cyprus		
Less than 6 months	0	0.00
6 months-1 year	0	0.00
1-2 years	0	0.00
2-3 years	1	1.60
3-4 years	1	1.60
Longer than 4 years	60	96.80
English proficiency		
Poor	0	0.00
Fair	3	4.80
Good	35	56.50
Excellent	24	38.70
Turkish proficiency		
Poor	0	0.00
Fair	3	4.80
Good	16	25.80
Excellent	42	67.70
Expectations of Northern Cyprus		
Worse than expected	11	17.70
Same as expected	35	56.50
Better than expected	14	22.60
Financial satisfaction		
Very dissatisfied	0	0.00
Dissatisfied	4	6.50
Neutral	22	35.50
Satisfied	33	53.20
Very satisfied	3	4.80

Table 3

International Students' Responses to Covariates (n = 209)

Variable	*n*	%
Gender		
Male	115	55.00
Female	93	44.50
Other	1	0.50
Relationship		
Single	131	62.70
In a relationship	69	33.00
Married	4	1.90
Time in Northern Cyprus		
Less than 6 months	1	0.50
6 months-1 year	16	7.70
1-2 years	28	13.40
2-3 years	51	24.40
3-4 years	66	31.60
Longer than 4 years	46	22.00
English proficiency		
Poor	6	2.90
Fair	37	17.70
Good	93	44.50
Excellent	72	34.40
Turkish proficiency		
Poor	54	25.80
Fair	29	13.90
Good	24	11.50
Excellent	96	45.90
Expectations of Northern Cyprus		
Worse than expected	67	32.10
Same as expected	95	45.50
Better than expected	47	22.50
Financial satisfaction		
Very dissatisfied	7	3.30
Dissatisfied	20	9.60
Neutral	84	40.20
Satisfied	82	39.20
Very satisfied	15	7.20

Results

Scale Analyses

One issue regarding the scales that required further investigation was the degree of overlap between the ASSIS and BPAS, in that six items from the BPAS were similar to the constructs evaluated by the homesickness and culture shock subscales of the ASSIS. Therefore, correlations between participants' scores on the homesickness and culture shock subscales of the ASSIS and their overall BPAS scores were examined. Results indicated significant yet low correlations: BPAS and ASSIS homesickness subscale, $r = -.18$, $p < .01$; BPAS and ASSIS culture shock subscale, $r = -.21$, $p < .01$. These low correlation coefficients indicated that although the BPAS and ASSIS were related, these two scales did not measure the same concepts.

Scale reliability also was examined because these scales had not been validated previously in this research context. The BPAS does not include subscales. Therefore, one Cronbach's alpha was calculated, taking the reverse-scored items into account (Field, 2013). Cronbach's alphas for the BPAS were calculated for all participants together as well as for Turkish-Cypriot and international students separately because these two groups were compared in the ANOVA. Results indicated that the BPAS had acceptable reliability for all participants together ($\alpha_{BPAS} = .72$), as well as for Turkish-Cypriot and international students separately ($\alpha_{TC} = .68$, $\alpha_{INTL} = .69$). The BPCDS, ASSIS, and ISSS Scale were administered to international students only. Therefore, Cronbach's alpha was calculated for international students only. One Cronbach's alpha was calculated for the BPCDS because this scale does not have any subscales ($\alpha_{BPCDS} = .83$). This alpha value

indicated good scale reliability for the measure of cultural distance. The ISSS Scale includes two subscales: socioemotional and instrumental support. Therefore, three Cronbach's alphas were calculated: one for the overall scale and one for each subscale (Field, 2013). Results indicated excellent scale reliability for the overall scale ($\alpha = .93$) as well as good reliability for each subscale ($\alpha_{SOCIOEMO} = .87$, $\alpha_{INSTR} = .87$). The ASSIS includes six subscales (perceived discrimination, homesickness, perceived hate, fear, stress due to change/culture shock, and guilt) as well as 10 miscellaneous items. Therefore, eight Cronbach's alphas were calculated: one for the overall scale, one for each subscale, and one for the miscellaneous items (Field, 2013). Cronbach's alpha for the overall scale was excellent ($\alpha_{ASSIS} = .94$). Alpha values for the subscales varied, however. Values for perceived discrimination ($\alpha = 0.88$) and miscellaneous ($\alpha = 0.79$) were good, while values for perceived hate ($\alpha = 0.75$) and fear ($\alpha = 0.70$) were acceptable. Alpha values for stress due to change/culture shock ($\alpha = 0.60$), homesickness ($\alpha = 0.54$), and guilt ($\alpha = 0.47$), however, were borderline acceptable to quite poor.

ANOVA Test

Descriptive statistics associated with psychological adaptation of Turkish-Cypriot compared to international students are reported in Table 4. It can be seen that Turkish-Cypriot students had numerically higher average psychological adaptation ($M = 40.54$, $SD = 7.99$) than did international students ($M = 33.91$, $SD = 7.48$). A one-way between-subjects ANOVA was performed to test the hypothesis that international students would have worse psychological adaptation than Turkish-Cypriot students. Prior to conducting the ANOVA, I evaluated the assumption of normality and determined it to be satisfied as

both groups' distributions were associated with skew and kurtosis less than |1| (Mertler & Reinhart, 2016; see Table 4). Further, the assumption of and homogeneity of variances was tested and satisfied based on Levene's *F*-test, F (1, 227) = 2.32, p = .13.

The one-way, between-subjects ANOVA yielded a statistically significant effect at the $p < .05$ level, F (1, 227) = 34.23, p = .000, adjusted R^2 = .13. Thus, the null hypothesis of international students not having worse psychological adaptation than home students was rejected and 13% of the variance in psychological adaptation was accounted for by home or international student status. Results showed that home students scored higher than international students on psychological adaptation.

Table 4

Descriptive Statistics for Psychological Adaptation of Turkish-Cypriot and International Students

	N	*M*	*SD*	95% confidence interval for mean		Skew	Kurtosis
				Lower bound	Upper bound		
Turkish-Cypriot students	62	40.54	7.99	38.51	42.57	-0.16	-0.70
International students	167	33.91	7.48	32.77	35.05	-0.55	-0.60

Hierarchical Multiple Regression Analyses

Two hierarchical multiple regressions were performed using the Enter method to test the hypotheses that social support moderates the impact of cultural distance on acculturative stress and that social support moderates the impact of acculturative stress on psychological adaptation. Descriptive statistics associated with psychological adaptation,

cultural distance, acculturative stress, and social support are reported in Table 5. Regression assumptions were evaluated prior to running the analyses. These analyses were based on international student data only. The assumption of univariate normality was met for all scales as skew and kurtosis scores were less than |1| (see Table 5; Mertler & Reinhart, 2016). The assumption of multivariate normality was evaluated to have been met based on an examination of the bivariate scatterplots showing correlations among variables and the residuals plot showing the relationship between standardized predicted values of the dependent variable (i.e., psychological adaptation) and the standardized residuals (Mertler & Reinhart, 2016). Although some were more circular than elliptical, the bivariate scatterplots approximated the appropriate elliptical patterns without showing any curvilinear relationships (see Figure 1), while the residuals plot showed an acceptable rectangular pattern with data points clustered along the zero line despite a slight concentration of data points above the zero line (see Figure 2).

The second assumption of linearity also was assessed through both the bivariate scatterplots (see Figure 1) and the residuals plot (see Figure 2). These plots showed the appropriate patterns; the bivariate scatterplots approximated elliptical patterns and data points in the residuals plot clustered along the zero line and also illustrated a straight-line relationship among residuals (Mertler & Reinhart, 2016). Therefore, the assumption of linearity was evaluated as having been met. The third and fourth assumptions of independent and normally distributed errors are related to the assumption of linearity, and therefore also were evaluated as having been met (Mertler & Reinhart, 2016). The fifth assumption of homoscedasticity also was assessed by examining the residuals scatterplot

(see Figure 2), which showed the appropriate rectangular pattern of data points clustered along the horizontal line with the data points evenly distributed along the line (Mertler & Reinhart, 2016). Homoscedasticity was further assessed based on Box's M test for equality of variance-covariance matrices. The observed significance value for this test was $p = .172$ indicating that the assumption of homoscedasticity had been met (Mertler & Reinhart, 2016). The final assumption of no multicollinearity among predictor variables was examined based on VIF values and evaluated as having been met as no value was higher than 10 (Field, 2013; Mertler & Reinhart, 2016).

Table 5

Descriptive Statistics for Cultural Distance, Acculturative Stress, Social Support, and Psychological Adaptation

	M	*SD*	Skew	Kurtosis
Psychological adaptation	28.75	12.46	-0.55	-0.60
Cultural distance	56.17	13.02	-0.54	-0.11
Social support	53.50	13.54	0.11	-0.25
Acculturative stress	70.80	20.26	-0.11	-0.71

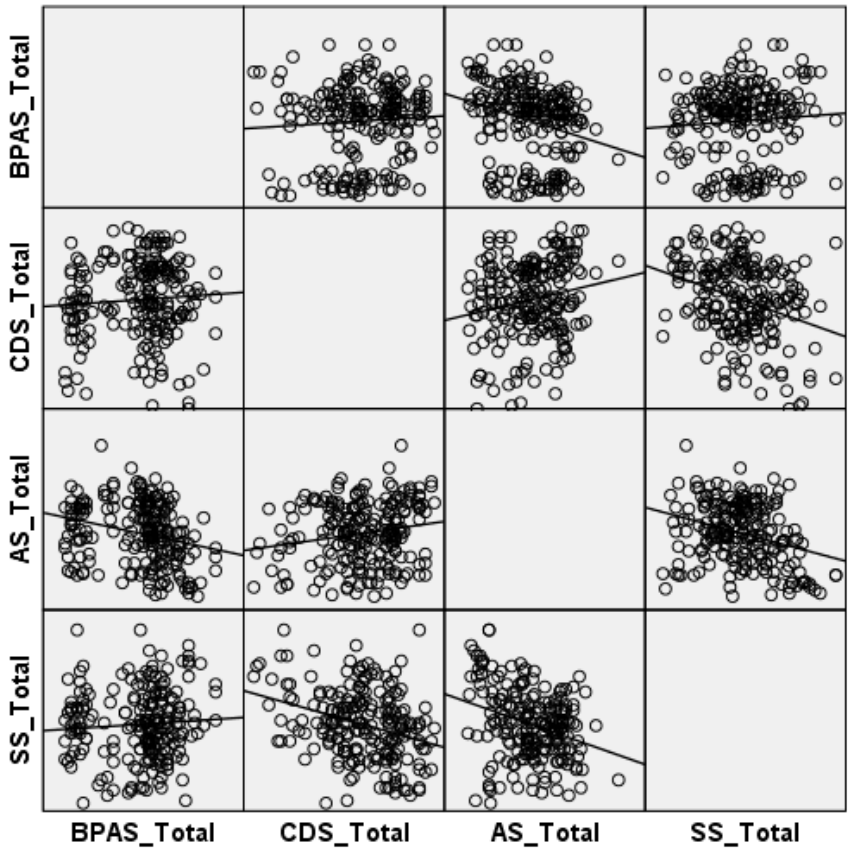


Figure 1. Bivariate scatterplots of the relationships among dependent and independent scale variables.

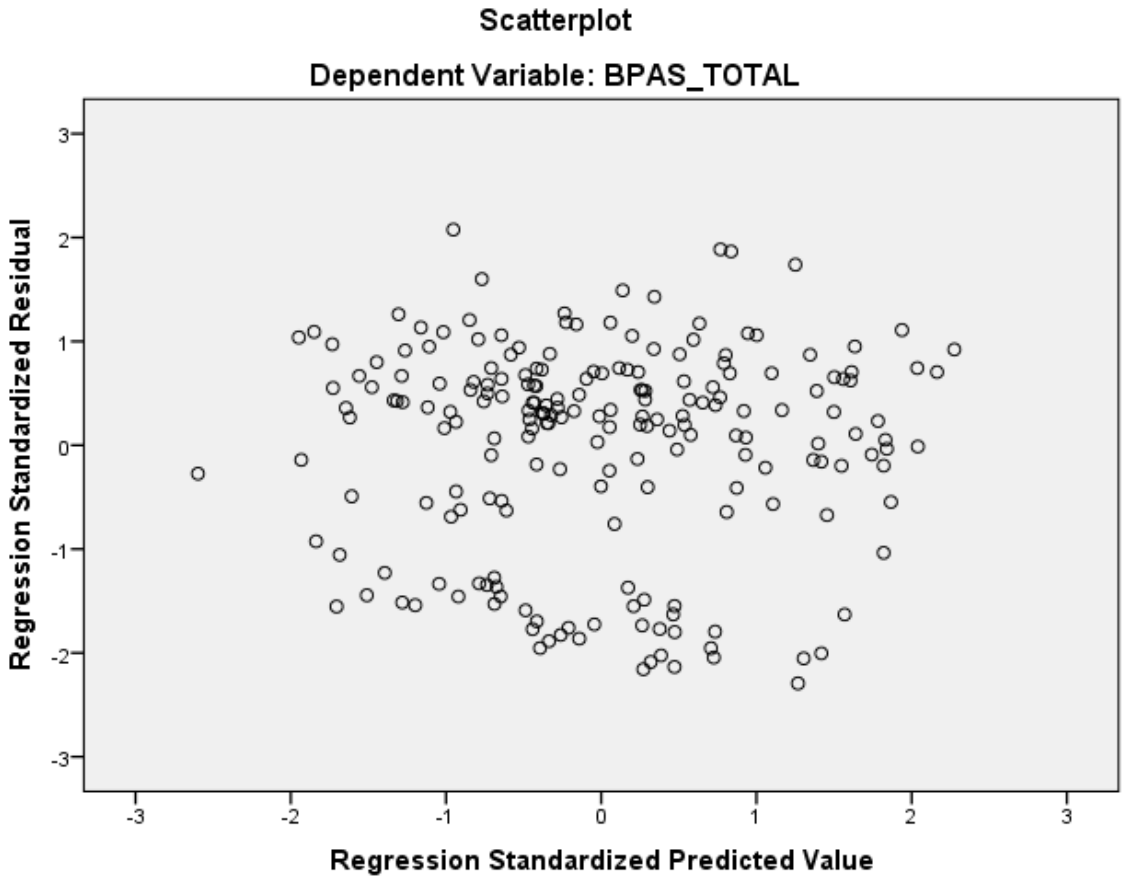


Figure 2. Residuals plot of standardized residuals versus standardized predicted values.

Table 6 provides the results of the moderation model testing the hypothesis that social support moderated the relationship between cultural distance and acculturative stress among international students.

Table 6

Hierarchical Multiple Regression Analyses With Acculturative Stress as the Dependent Variable (n = 209)

Predictor	β	*p*	R^2	Change statistics		
				ΔR^2	ΔF	*p*
Set 1			0.18	0.18	5.93	0.000
Gender	-0.05	0.521				
Relationship	-0.03	0.636				
Time	-0.08	0.271				
English proficiency	0.10	0.209				
Turkish proficiency	-0.14	0.084				
Expectations	-0.21	0.006				
Financial satisfaction	-0.18	0.016				
Set 2			0.21	0.03	3.37	0.036
Gender	-0.05	0.525				
Relationship	-0.02	0.784				
Time	-0.06	0.438				
English proficiency	0.10	0.198				
Turkish proficiency	-0.09	0.269				
Expectations	-0.17	0.028				
Financial satisfaction	-0.16	0.023				
Cultural distance	0.03	0.661				
Social support	-0.18	0.017				
Set 3			0.21	0.003	0.64	0.424
Gender	-0.04	0.556				
Relationship	-0.01	0.897				
Time	-0.06	0.414				
English proficiency	0.10	0.205				
Turkish proficiency	-0.09	0.270				
Expectations	-0.17	0.029				
Financial satisfaction	-0.17	0.021				
Cultural distance	0.02	0.787				
Social support	-0.18	0.016				
Cultural distance x social support	0.06	0.424				

Set 1 included all covariates (i.e., age, country of origin, gender, relationship status, time spent in the northern part of Cyprus, English and Turkish proficiency, financial satisfaction, and expectations). Initial results showed that age (p = .36) and country of origin (p = .45) were significant at greater than .25 in the bivariate correlations when covariates only were entered into the model. Therefore, these covariates were removed from the model. Set 1 of the model was rerun with the remaining seven covariates. Together, these variables accounted for a significant amount of variance in psychological adaptation, R^2 = .18, $F_{7,188}$ = 5.93, p = .000. Only two predicted acculturative stress significantly, however: expectations (β = -.21, p = .006) and financial satisfaction (β = -.18, p = .016). Set 2 introduced main effects of cultural distance and social support to the model. The variables were centered to avoid potentially problematic high multicollinearity with the interaction term, and an interaction term based on these centered variables was created. Adding these variables increased the amount of variance in acculturative stress accounted for by the model significantly, ΔR^2 = .21, $\Delta F_{2,186}$ = 3.37, p = .036. Both of the covariates significant in Set 1 continued to predict acculturative stress significantly (expectations, β = -.17, p = .028; financial satisfaction, β = -.16, p = .023), but of the two predictor variables added in Step 2 only social support predicted acculturative stress (β = -.18, p = .017) while cultural distance did not (β = .03, p = .661). Set 3 tested the effect of the interaction term (cultural distance x social support). Results indicated that social support did not moderate the relationship between cultural distance and acculturative stress as hypothesized (p = .424), nor did the model account for significantly more variance in acculturative stress than what was accounted for in Set 2 (p

= .424). However, both of the covariates significant in Sets 1 and 2 continued to predict acculturative stress significantly (expectations, β = -.17, *p* = .029; financial satisfaction, β = -.17, *p* = .021), as did the main effect of acculturative stress added in Step 2 (β = -.18, *p* = .017). Overall, results of the final model indicated that expectations, financial satisfaction, and social support predicted acculturative stress while neither cultural distance nor the interaction between cultural distance and social support predicted acculturative stress. Students whose experiences living in northern part of Cyprus were worse than expected and students with lower financial satisfaction experienced more acculturative stress while students with more social support experienced less acculturative stress. These results partially supported the construct validity of the ASSIS as they showed that the ASSIS was related to measures of social support as expected, but not to cultural distance as expected (Sandhu & Asrabadi, 1994).

Table 7 provides results of the moderation model testing the hypothesis that social support moderates the relationship between acculturative stress and psychological adaptation among international students.

Table 7

Hierarchical Multiple Regression Analyses With Psychological Adaptation as the Dependent Variable (n = 209)

				Change statistics		
Predictor	β	*p*	R^2	ΔR^2	ΔF	*p*
Set 1			0.17	0.17	4.90	0.000
Country of origin	0.01	0.885				
Gender	0.04	0.560				
Relationship	-0.15	0.030				
Time	-0.03	0.722				
English proficiency	-0.05	0.552				
Turkish proficiency	-0.22	0.011				
Expectations	0.29	0.000				
Financial satisfaction	0.15	0.040				
Set 2			0.21	0.04	4.74	0.010
Country of origin	-0.02	0.782				
Gender	0.03	0.691				
Relationship	-0.16	0.018				
Time	-0.05	0.506				
English proficiency	-0.02	0.775				
Turkish proficiency	-0.27	0.002				
Expectations	0.24	0.001				
Financial satisfaction	0.12	0.116				
Social support	0.02	0.759				
Acculturative stress	-0.22	0.004				
Set 3			0.21	0.00	0.08	0.776
Country of origin	-0.02	0.815				
Gender	0.03	0.706				
Relationship	-0.16	0.019				
Time	-0.05	0.528				
English proficiency	-0.02	0.757				
Turkish proficiency	-0.27	0.003				
Expectations	0.24	0.001				
Financial satisfaction	0.12	0.112				
Social support	0.01	0.861				
Acculturative stress	-0.22	0.004				
Acculturative stress x social support	-0.02	0.776				

As discussed in Chapter 3, six of the eight items in the BPAS overlapped with the culture shock and homesickness subscales of the ASSIS. Therefore, analyses both including and excluding these subscales from the ASSIS were conducted. Results did not reveal any significant differences in final model results; results from analyses including all ASSIS subscales are reported. Set 1 included all covariates (i.e., age, country of origin, gender, relationship status, time spent in the northern part of Cyprus, English and Turkish proficiency, financial satisfaction, and expectations). Initial results showed that age was significant at greater than .25 in the bivariate correlations (p = .44) when covariates only were entered into the model. Therefore, age was removed from the model. Set 1 of the model was rerun with the remaining eight covariates. Together the covariates accounted for a significant amount of variance in psychological adaptation, R^2 = .17, $F_{8,187}$ = 4.90, p = .000. Relationship status (β = -.15, p = .030), Turkish proficiency (β = -.22, p = .011), expectations (β = .29, p = .000), and financial satisfaction (β = .15, p = .040) were statistically significant predictors of psychological adaptation. Set 2 introduced main effects of acculturative stress and social support to the model. These variables were also centered and an interaction term based on these centered variables was created. Adding these variables increased the amount of variance in psychological adaptation accounted for by the model significantly, ΔR^2 = .04, $\Delta F_{2,185}$ = 4.74, p = .001. Three of the four covariates significant in Set 1 continued to predict psychological adaptation in Set 2 (relationship status, β = -.16, p = .018; Turkish proficiency, β = -.27, p = .002; expectations β = .24, p = .001), although financial satisfaction did not (β = .12, p = .116). In terms of the main effects introduced in Set 2, only acculturative stress (β = -

.22, p = .004) predicted psychological adaptation while social support did not (β = .02, p = .759). Set 3 tested the effect of the interaction term (acculturative stress x social support). Results indicated that social support did not moderate the relationship between acculturative stress and psychological adaptation as hypothesized (p = .776), nor did the model account for significantly more variance in acculturative stress than what was accounted for in Set 2 (p = .776). The three predictors significant in Set 2 continued to predict psychological adaptation in Set 3 (relationship status, β = -.16, p = .019; Turkish proficiency, β = -.27, p = .003; expectations β = .24, p = .001). In terms of main effects acculturative stress continued to predict psychological adaptation (β = -.22, p = .004) while social support did not (β = .01, p = .861). Overall, results of the final model indicated that relationship status, Turkish proficiency, expectations, and acculturative stress predicted psychological adaptation while neither social support nor the interaction between social support and acculturative stress predicted psychological adaptation. Students who were single reported better psychological adaptation than students in relationships or who were married, as did students whose experiences of the northern part of Cyprus matched their expectations. Students who had lower levels of Turkish proficiency and acculturative stress also experienced more positive emotional responses to being in the host culture. These results supported the construct validity of the ASSIS because they showed that the ASSIS was related to measures psychological adaptation as expected (Sandhu & Asrabadi, 1994).

In this analysis the finding that social support did not relate to psychological adaptation was particularly surprising. Therefore, I conducted an exploratory follow-up

analysis to investigate factors influencing social support. Results of a stepwise regression confirmed that psychological adaptation was not related to social support but also showed that Turkish proficiency, cultural distance, and acculturative stress predicted social support. Turkish proficiency appeared to be the strongest predictor ($\beta = .20$, $p = .004$; $R^2 = .09$, $\Delta F_{1,190} = 19.19$, $p = .000$), accounting for 9% of the variance in social support. Cultural distance entered the model as the second strongest predictor ($\beta = -.21$, $p = .002$; $R^2 = .14$; $\Delta R^2 = .05$, $\Delta F_{1,189} = 11.63$, $p = .001$). Together these two variables accounted for 14% of the variance in social support, and adding cultural distance to the model accounted for 5% more of the variance in social support than was accounted for by Turkish proficiency by itself. Acculturative stress entered the model as the least influential, yet still significant, predictor of social support ($\beta = -.19$, $p = .006$; $R^2 = .18$, $\Delta R^2 = .03$, $\Delta F_{1,188} = 7.88$, $p = .006$). These three variables accounted for 18% of the variance in social support, and adding acculturative stress to the model accounted for 3% more of the variance in social support than was accounted for by the combination of Turkish proficiency and cultural distance. Overall, higher levels of Turkish proficiency, less cultural distance, and lower acculturative stress predicted more social support. These results further underscored disconnect between social support and psychological adaptation found in the previous analysis: not only was there a lack of relationship between social support and psychological adaptation, but Turkish proficiency was related to each variable in a different direction. That is, higher Turkish proficiency predicted worse psychological adaptation in the previous analysis while higher Turkish proficiency predicted more social support in the follow-up analysis.

Summary

The first hypothesis regarding differences in home and international student adaptation was supported. Specifically, international students experienced worse psychological adaptation that did home students from the northern part of Cyprus. The moderation hypotheses were not supported, however. More specifically, social support moderated neither the relationship between cultural distance and acculturative stress nor the relationship between acculturative stress and psychological adaptation. A stepwise regression was performed as an exploratory follow-up analysis to investigate predictors of social support. Results identified Turkish proficiency, cultural distance, and acculturative stress as predictors of social support among international students. Specific findings regarding cultural distance, acculturative stress, social support, and psychological adaptation are summarized further and discussed in more detail in Chapter 5, as are study limitations and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

This quantitative, survey research study investigated predictors of psychological adaptation among international students studying in the northern part of Cyprus, focusing on the role of social support as a buffer to diminish the experience of acculturative stress and to ameliorate psychological adaptation. The number of students studying abroad has been increasing globally (OECD, 2015, 2017) as well as at the university in the northern part of Cyprus where the research was conducted. International students experience negative psychological consequences beyond those experienced by both students from the host culture and students who study in their home cultures (e.g., O'Reilly et al., 2010; Pan et al., 2008; Sherry et al., 2010; Zheng & Berry, 1991). Therefore, this study investigated factors that predict psychological adaptation in an attempt to provide a foundation for designing strategies and resources with the potential to improve psychological adaptation outcomes among international students. Such strategies can benefit both students and universities alike by improving study-abroad experiences for international students and potentially facilitating student retention (Berry et al., 1987; Chirkov et al., 2008; Chirkov et al., 2007; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013).

The first hypothesis regarding differences in home and international student adaptation was supported. Specifically, international students experienced worse psychological adaptation than did home students from the northern part of Cyprus. The moderation (second and third) hypotheses were not supported, however. More specifically, social support moderated neither the relationship between cultural distance

and acculturative stress, nor the relationship between acculturative stress and psychological adaptation. Results for Hypothesis 2 indicated that having unmet expectations of the northern part of Cyprus, being less satisfied financially, and having less social support predicted higher levels of acculturative stress. Cultural distance did not predict acculturative stress, however. Results for Hypothesis 3 indicated that not being in a relationship, having lower Turkish proficiency, meeting or exceeding one's expectations of the northern part of Cyprus, and experiencing less acculturative stress predicted better psychological adaptation. Social support did not predict psychological adaptation, however.

Interpretation of the Findings

This discussion addresses how study results confirm, disconfirm, and extend knowledge of psychological adaptation among international students in terms of previous findings as well as Berry's (1997) framework for acculturation, Ward and Geeraert's (2016) process model of acculturation, and the stress-buffering hypothesis (Cohen & Wills, 1985).

Hypothesis 1: Psychological Adaptation Among International and Turkish-Cypriot Students

Results confirmed worse psychological adaptation among international students than among students from the host culture. Previous researchers have suggested that international students experience additional negative stressors and psychological consequences compared to both students from the host culture and students who choose to study in their home countries (e.g., O'Reilly et al., 2010; Pan et al., 2008; Sherry et al.,

2010; Zheng & Berry, 1991), and the current research explored this difference in terms of differences in emotional responses to being in the host culture. The BPAS (Demes & Geeraert, 2014) is a relatively new measure of psychological adaptation and has not been used extensively in previous research. Despite this lack of use, however, the measure appeared to have good reliability in the current population based on Cronbach's alpha. The definition of psychological adaptation in the BPAS differs from the range of operationalizations used in previous research, which have included acculturative stress, disappointment, anxiety, fear, nervousness, sadness, anger, loneliness, homesickness, anger, depression, helplessness, identity confusion, loss of self-confidence, lowered self-esteem and self-confidence, social isolation, and psychosomatic issues (Smith & Khawaja, 2011; Zheng & Berry, 1991). Therefore, these findings extend the range of ways in which psychological adaptation outcomes manifest differently between international and home students and help to establish the BPAS as a reliable measure of this construct.

Hypotheses 2 and 3: Social Support as a Moderator

Covariates included in both moderation analyses were drawn from Berry's (1997) framework for acculturation research as well as previous research. The moderation tested in Hypothesis 2 was proposed based on Ward and Geeraert's (2016) process model of acculturation and the stress buffering hypothesis (Cohen & Wills, 1985), while the moderation tested in Hypothesis 3 was proposed based on Berry's acculturation framework in addition to the process model and stress buffering hypothesis.

Covariates. Covariates represented group-level (i.e., country of origin) and individual-level (i.e., age, gender, relationship status, expectations, language, finances, time) factors proposed to play a moderating or mediating role in Berry's (1997) acculturation framework, and have been investigated in previous research. These covariates were controlled for as influences on both the short-term acculturation outcome of acculturative stress and the long-term acculturation outcome of psychological adaptation as proposed in Berry's framework. The following results confirmed the role of some covariates in acculturative stress and/or psychological adaptation.

Gender, age, time spent in the northern part of Cyprus, country of origin, and English proficiency were not related to acculturative stress or psychological adaptation. Previous findings relating gender and age to acculturative stress and psychological adaptation have been mixed. Some studies have indicated that women experience more stress, adjustment problems, and depression than men (Berry et al., 1987; Church, 1982; Dao et al., 2007; Demes & Geeraert, 2015), some studies have indicated that men experience more stress and poorer psychological well-being than women (Chen, Wong, Ran, & Gilson, 2009), and other studies have indicated no relationship between gender and stress, depression, or life satisfaction (Cetinkaya-Yildiz et al., 2011; Crockett et al., 2007; Jurcik et al., 2013; Pan et al., 2008; Poyrazli et al., 2001). Results of the current study are in line with those reporting no relationship between gender and stress or psychological adaptation.

Findings regarding the role of age in psychological adaptation have not been more definitive. Some studies have indicated that younger students experience higher levels of

homesickness and worse psychological adaptation (Poyrazli & Lopez, 2007; Vulić-Prtorić & Oetjen, 2018), others have indicated that younger students experience fewer adjustment problems (Poyrazli et al., 2001) and older students experience more anxiety (Sümer, Poyrazli, & Grahame, 2008), and some have indicated no relationship between age and life satisfaction, psychological adaptation, or acculturative stress (Sam, 2001; Ye, 2005; Yeh & Inose, 2003; Zhang, 2012). Results of the current study support those indicating no relationship between age and stress or psychological adaptation.

Time spent in the northern part of Cyprus predicted neither acculturative stress nor psychological adaptation, which contradicted previous findings that linked amount of time in the host culture to psychological outcomes (e.g., Cetinkaya-Yildiz et al., 2011; Chapdelaine & Alexitch, 2004; Geeraert & Demoulin, 2013; Kashima & Loh, 2006; Leung, 2001; Li et al., 2014; Wang & Mallinckrodt, 2006). One explanation may involve the amount of time that these students had spent in northern Cyprus. Previous research found that the experience of stress decreased over time for international students (Geeraert & Demoulin, 2013). As over half of the participants in the current study had been in the northern part of Cyprus for more than 3 years, these students might no longer have been experiencing acculturative stress. Another explanation may be the relatively low level of cultural distance experienced by participants in this study, whose average response for how different they found the host culture vis-à-vis their home cultures was between *neither similar nor different* and *somewhat similar*. Previous research found a stronger relationship between psychological adaptation and length of residence for participants with higher levels of cultural distance (Briones et al., 2012). It may have

been that participants in the current study did not experience a high enough level of cultural distance for time in the host country to relate to psychological adaptation. Another explanation for why time in the host country did not relate to psychological adaptation may be that the measure of psychological adaptation did not tap the manifestation of adaptation outcomes at that point in time. Previous research has linked increased time in the host country to psychophysical (health) outcomes (Rasmi, Safdar, & Lewis, 2010), while the measure of psychological adaptation in the current study focused on positive and negative emotional experiences.

Although previous research has linked country of origin to psychological adaptation (Leung, 2001) and acculturative stress (Yeh & Inose, 2003), findings of the current research did not replicate this result. This nonsignificant relationship may be due to the use of an aggregate sample. Critiques of previous research on international student adaptation have focused on the inability of aggregate-level analyses to detect culture-based intergroup differences (Rienties & Tempelaar, 2013). International students from 24 countries participated in the research. It may be that relationships existed between psychological adaptation or acculturative stress and country of origin for students from some of these countries, but that these relationships were obscured when all of the countries were pooled. Previous research has identified country-based differences in anxiety among international students (Fritz et al., 2008). Therefore, future researchers should recruit representative samples from multiple subgroups of international students to examine psychological outcomes for each group separately.

English proficiency (i.e., proficiency in the language of academic instruction) was not identified as a predictor of either acculturative stress or psychological adaptation as widely reported in previous research (Smith & Khawaja, 2011; Zhang & Goodson, 2011). This may be due to the fact that data collection was carried out in English even though many participants spoke English as a second language. Participants with truly low levels of English, which may have been more strongly related to experiences of stress and psychological adaptation, might have self-selected out of the study. Moreover, English proficiency was relevant only for the academic context and not the context of daily living. Although relationships between language proficiency and a variety of psychological outcomes were identified in previous studies, these studies were conducted in countries where proficiency in the language measured was important for both the academic context and daily living (Berry et al., 1987; Cetinkaya-Yildiz et al., 2011; Dao et al., 2007; Kashima & Loh, 2006; Li et al., 2014; Park et al., 2014; Poyrazli & Kavanaugh, 2006; Poyrazli & Lopez, 2007).

Financial dissatisfaction did predict acculturative stress, however. Results from the current study that linked financial dissatisfaction to acculturative stress are in line with previous research that has established a lack of financial resources as a source of stress (e.g., Chen, 1999; Constantine et al., 2005; Fritz et al., 2008; Hwang & Ting, 2008; Smith & Khawaja, 2011; Yan & Berliner, 2013) and satisfaction with finances as a significant predictor of increased subjective life satisfaction (Sam, 2001; Sam et al., 2015).

Expectations were related to both acculturative stress and psychological adaptation. Previous research has linked unmet expectations to worse psychological adaptation and higher stress among international students (e.g., Constantine et al., 2005; Smith & Khawaja, 2011). Having unmet expectations of the northern part of Cyprus predicted higher stress and worse psychological adaptation among international students. Previous research has pointed to a lack of information about the host culture as the reason for this mismatch between expectations and reality (Kuo & Roysircar, 2006; Kuo & Tsai, 1986). Therefore, universities such as the one where the research was conducted that use third-party agents to recruit students abroad should control how the university is being represented to potential students and provide agents with resources that provide accurate, detailed information about the university and the county in which it is located.

Even though English proficiency did not predict acculturative stress or psychological adaptation as discussed previously, Turkish proficiency also emerged as a predictor of psychological adaptation. It may be the case that academic language skills are not linked to psychological adaptation, whereas language skills related to day-to-day functioning are, as found in the current study. Results of previous research linking English proficiency to psychological adaptation outcomes may have been due to confounding the effects of proficiency in the academic language with those of the language needed for daily living as these studies were carried out in contexts where these languages were one in the same (Berry et al., 1987; Cetinkaya-Yildiz et al., 2011; Dao et al., 2007; Kashima & Loh, 2006; Li et al., 2014; Park et al., 2014; Poyrazli & Kavanaugh, 2006; Poyrazli & Lopez, 2007).

Research conducted in contexts where the academic language was different from the language needed for daily living has produced mixed results, however. Some studies have linked higher proficiency in the language needed for daily living to fewer adaptation problems (Maundeni et al., 2010; Wang & Hannes, 2014) instead of more negative responses as indicated by the current research. Rather, the negative relationship between proficiency and psychological adaptation identified in the current study is in line with previous research that indicated a relationship between higher levels of proficiency and worse psychological adaptation (Sam et al., 2015). This previous research also found that higher proficiency predicted perceived discrimination, and that perceived discrimination mediated the relationship between language proficiency and psychological outcomes. When considering that higher proficiency is correlated with more interaction with host nationals (Church, 1982), it may be that a higher level of Turkish proficiency leads to more contact with host nationals and more perceived discrimination, which influences psychological adaptation negatively. Future research should examine relationships among host-culture language proficiency, contact with host nationals, perceived discrimination, and psychological adaptation.

Relationship status also was identified as a predictor of psychological adaptation. Results in the literature have not only been mixed in terms of indicating the presence or absence of a relationship between relationship status and psychological adaptation, they have also been contradictory. Findings of previous studies have associated being single with more stress (Lee et al., 2004), being in a relationship with more stress (Yan & Berliner, 2013), or they have indicated no connection between relationship status and

psychological adaptation (Pan et al., 2008). Results of the current study, however, are in line with findings associating relationships with increased levels of stress. It may be that the pressure of being in a long-distance relationship (or its demise) created a significant source of stress, as in a study by Yan and Berliner (2013). Findings not only linked being in a relationship with more stress, but results of the follow-up analysis ruled out being in a relationship as a source of social support. Further research is needed, however, to investigate why relationships may be a source of stress rather than a source of support within this cultural context when other findings have associated being in a relationship with positive outcomes such as increased life satisfaction (Zhang, Mandl, & Wang, 2010).

Results of covariates in terms of Berry's (1997) acculturation framework indicated that the group-level variable of country of origin was not linked to either acculturative stress or psychological adaptation, and neither were the individual-level variables of gender, age, time spent in the northern part of Cyprus, or English proficiency. Interestingly, Turkish proficiency and relationship status predicted the long-term acculturation outcome of psychological adaptation, but not in the expected direction. Having unmet expectations of the host country was the only covariate that predicted both the short-term acculturation outcome of acculturative stress and the long-term acculturation outcome of psychological adaptation, while financial satisfaction predicted only acculturative stress.

Hypothesis 2: Cultural distance and social support. Social support did not moderate the relationship between cultural distance and acculturative stress, nor did

cultural distance predict acculturative stress. While previous research has identified cultural distance as a source of stress (Ang & Liamputtong, 2008; McLachlan & Justice, 2009; Yan & Berliner, 2013), participants may not have experienced a high enough level of cultural distance to result in stress, as participants' average response for how different they found the host culture vis-à-vis their home cultures was between *neither similar nor different* and *somewhat similar*.

While some research using perceived measures of cultural distance have found significant relationships between cultural distance and psychological adaptation outcomes (Babiker et al., 1980; Furukawa, 1997; Galchenko & van de Vijver, 2007), others have found no relationship between cultural distance and a variety of psychological adaptation outcomes (Cetinkaya-Yildiz et al., 2011; Hechanova-Alampay et al., 2002; Nesdale & Mak, 2003; Ward & Kennedy, 1992, 1993a; Ward & Rana-Deuba, 1999; Ward & Searle, 1991), including stress (Geeraert & Demoulin, 2013; Suanet & van de Vijver, 2009). It may be that cultural distance is linked to sociocultural adaptation more often than psychological adaptation (Church, 1982), but that sociocultural adaptation then predicts psychological adaptation (Cetinkaya-Yildiz et al., 2011; Ward & Kennedy, 1992, 1993a).

Moreover, as discussed previously, cultural distance may not have predicted acculturative stress due to the length of time many participants had spent in the northern part of Cyprus as previous research has indicated multiple patterns of change in stress experienced by sojourners (Demes & Geeraert, 2015) as well as a diminishing relationship between cultural distance and psychological adaptation over time (Kashima & Abu-Rayya, 2014). Therefore, while cultural distance may have predicted acculturative

stress during international students' earlier years of study, this relationship may have dissipated by the time it was measured in the current research. A second explanation for this lack of relationship may lie in the use of an overall scored from a global measure of cultural distance that did not tap the relationship between cultural distance and acculturative stress illustrated in previous research. For instance, previous research based on a dimensional rather than global measure of cultural distance identified a negative relationship between specific dimensions of cultural distance and psychological adaptation outcomes (Chirkov et al., 2005). Moreover, research using a global measure of cultural distance found that, when examined separately, the only influential factor creating a positive correlation with emotional distress was food (Furukawa, 1997).

Social support predicted acculturative stress such that students with more social support reported less acculturative stress. Previous studies have reported a negative relationship between both global and specific measures of functional social support and stress among international students (Lee et al., 2004; Poyrazli et al., 2004; Solberg et al., 1994; Sullivan & Kashubeck-West, 2015). Significant results regarding the predictive value of social support for acculturative stress coincided with the conclusion that social support is one of the most frequently reported predictors of psychological adaptation outcomes, including acculturative stress (see review by Zhang & Goodson, 2011).

Social support did not moderate the relationship between cultural distance and acculturative stress, however. Although literature regarding the moderating role of social support reports mixed results, results of some research using specific and global functional social support measures support the stress-buffering hypothesis for a range of

psychological adaptation outcomes (Cheng, 1997; Lee et al., 2004; Yang & Clum, 1994; Zhang, 2012) including acculturative stress (Kuo & Roysircar, 2006). The lack of moderation in the current study may be due to the measure used to evaluate social support. Cohen and Wills (1985) recommended using specific functional social support measures that evaluate the purpose of relationships to capture moderating effects. And while the composite score on the ISSS Scale (Ong & Ward, 2005) measured two specific functions of social support (i.e., socioemotional and instrumental), it may still have been too general of a measure to capture the moderating effects of social support. What the measure lacks is evaluating function(s) of specific relationships, as suggested by Cohen and Wills (1985). Cohen and Wills suggest using global functional social support measures to evaluate direct relationships between social support and psychological outcomes, which is what was captured in the current study (i.e., social support predicted acculturative stress).

A second explanation for the lack of moderation is the type of stressor examined. Cultural distance has not been investigated in terms of the stress-buffering hypothesis in previous research, and has been neglected in international students' psychological adaptation in general (Bierwiaczonek & Waldzus, 2016; Li et al., 2014; Zhang & Goodson, 2011). Although not universally, cultural distance has been supported as a stressor in previous research (Poyrazli & Kavanaugh, 2006; Poyrazli et al., 2004; Szabo et al., 2016; Yakushko et al., 2008; Yeh & Inose, 2003), and, as suggested by Mallinckrodt and Leong (1992), social support functions as a coping resource for managing stress. It may have been, however, that cultural distance did not elicit enough

stress to activate social support as a coping response considering the generally low level of cultural distance reported by participants in this study.

In terms of the theoretical models, results did not support the role of cultural distance as an instigating source of stress as proposed in Ward and Geeraert's (2016) process model of acculturation as cultural distance did not predict acculturative stress. Results partially supported the stress-buffering hypothesis (Cohen & Wills, 1985), however. Social support predicted acculturative stress such that students with more social support reported less acculturative stress even though social support did not moderate the relationship between cultural distance and acculturative stress.

Hypothesis 3: Acculturative stress and social support. The second moderation hypothesis also was not supported. Specifically, social support did not moderate the relationship between acculturative stress and psychological adaptation, nor did it predict psychological adaptation although higher acculturative stress did predict worse psychological adaptation.

The finding that acculturative stress predicted psychological adaptation is in line with previous research linking general measures of stress to a range of psychological adaptation outcomes (Demes & Geeraert, 2015; Geeraert & Demoulin, 2013; Hwang & Ting, 2008; James et al., 2004; Lee et al., 2004; Pan et al., 2008; Park et al., 2014; Wei et al., 2007, 2008; Wu & Mak, 2012; Yakunina et al., 2013; Zhang, 2012). Previous research operationalized psychological adaptation in terms of mental health outcomes and life satisfaction whereas the current research operationalized psychological adaptation in terms of positive and negative emotional responses to the host culture thereby expanding

the range of psychological outcomes predicted by (acculturative) stress.

The finding that social support did not predict psychological adaptation was surprising, however, given the extensive support for the relationship between social support and a variety of psychological adaptation outcomes among different groups of international students (Atri et al., 2007; Bektaş, Demir, & Bowden, 2009; Chirkov et al., 2008; Lee et al., 2004; Poyrazli et al., 2004; Searle & Ward, 1990; Sullivan & Kashubeck-West, 2015; Sümer et al., 2008; Yang & Clum, 1994; Yeh & Inose, 2003). This lack of relationship may have been due to the operationalization of psychological adaptation. Most previous research on the stress-buffering hypothesis (Cohen & Wills, 1985) has defined psychological adaptation in terms of physical health (Schwarzer et al., 1994), acculturative stress (Kuo & Roysircar, 2006), suicide ideation (Yang & Clum, 1994), or mental health outcomes such as anxiety and depression (Cheng, 1997; Lee et al., 2004; Zhang, 2012). The current research study operationalized psychological adaption in terms of positive and negative emotional responses to the host culture, which may not be influenced by social support.

While a problematic psychological adaptation operationalization may explain the lack of moderation, another explanation lies in the operationalization of social support. Although results of previous research on the buffering effects of social support among different groups for a range of stressors (Cheng, 1997; Kuo & Roysircar, 2006; Lee et al., 2004; Yang & Clum, 1994), including acculturative stress (Crockett et al., 2007; Sirin et al., 2013; Zhang, 2012), supported the stress-buffering hypothesis, the nonsignificant finding may be an artifact of using an inappropriate social support measure to capture that

relationship (i.e., using a functional social support measure that was too general [Cohen & Wills, 1985]). Results of the follow-up analysis further supported disconnect between social support and psychological adaptation in that Turkish proficiency predicted psychological adaptation negatively but social support positively.

Results both confirmed and disconfirmed aspects of Berry's (1997) and Ward and Geeraert's (2016) models. The results that higher acculturative stress predicted worse psychological adaptation confirmed these models while the finding that social support did not play a role in psychological adaptation contradicted these models. Overall, the stress-buffering hypothesis (Cohen & Wills, 1985) was not supported, however, as social support neither predicted psychological adaptation nor did it moderate the relationship between acculturative stress and psychological adaptation.

Study Limitations

Shortcomings of the current study included threats to both validity and generalizability of the research findings. Threats to validity stemmed from the measurement tools and study design. First, questionnaires were administered in English despite this being the first language of only some participants, which may have resulted in misunderstanding some items. Second, although careful consideration was made in selecting the measurement tools, the measure of social support may have been too global to detect the moderation effect of social support for acculturative stress and psychological adaptation. Furthermore, the measure of psychological adaption may not have captured dimensions of the phenomena related to social support. Finally, none of these measures had been validated within the northern part of Cyprus and may not have captured the

phenomena as they manifest in that social and cultural context. While the BPAS, BPCDS, and ISSS Scale all exhibited acceptable to good reliability based on Cronbach's alphas, the ASSIS had poor reliability on two of the subscales. Specifically, the Cronbach's alpha for homesickness was borderline acceptable and Cronbach's alphas for stress due to change/culture shock and guilt were quite low. In terms of the study design, pooling all international students may have obscured relationships that existed between the variables of interest within specific national groups. Furthermore, collecting data during the summer term may have affected the participant profile and biased the results such that the research was unable to capture the relationships between cultural distance, social support, acculturative, and psychological adaptation for the average student.

Threats to generalizability also stemmed from the study design as well as sample characteristics. The cross-sectional, quasi-experimental nature of the design prohibited drawing conclusions regarding any cause-effect relationships and only provided a snapshot of the relationships between cultural distance, social support, acculturative stress, and psychological adaption at a specific point in time. Moreover, data were collected from one university in a specific cultural context, which poses challenges to generalizing findings to other universities within or beyond the northern part of Cyprus. Finally, the sample itself posed challenges for generalizability as it was a convenience sample that may only represent how these variables interact among students with a certain level of English proficiency (i.e., enough to read and complete the questionnaire). Students with lower levels of English proficiency may have self-selected out of the study, thus challenging if the sample represented all international students studying at the

university. Furthermore, the student profile may have been affected by the students who chose to study in northern Cyprus such that it represents international students unable to get visas to study in Western or European countries, Turkish students unable to qualify for universities in Turkey, and Turkish-Cypriot students without the resources or academic record to study abroad. Together, these factors may limit the extent to which findings can be generalized to other student populations.

Recommendations and Social Change Implications

Recommendations for future research include collecting data from multiple universities both within and beyond the northern part of Cyprus during the normal academic year. This data should include groups of students from different countries large enough to be compared so that differences in how these variables interact in subgroups may be analyzed. Ideally future research should employ a longitudinal design to capture how these relationships may change over time. Furthermore, future research could examine these relationships by operationalizing social support with a more specific and less global measure of functional social support (or a specific structural measure) to capture moderation relationships (Cohen & Wills, 1985) and by operationalizing psychological adaptation based on mental or physical health.

Recommendations for future research based on study results include investigating the dual role of host-culture language proficiency, as this was related to more social support but worse psychological adaptation. These relationships could be researched in conjunction with the role of perceived discrimination to determine if better Turkish language abilities provide more access to social support from host nationals but also

expose international students to higher levels of perceived discrimination, which influences psychological adaptation negatively as in research by Sam, Tetteh, and Amponsah (2015). Furthermore, future research should explore the disconnect between social support and psychological adaptation reflected in the current study results by investigating the degree to which operationalizing social support as specific structural, global structural, specific functional, or global functional relates to a variety of psychological adaptation outcome measures including physical health, mental health, life satisfaction, psychological well-being, as well as emotional responses to the host culture.

Results of the current research have the potential to create positive social change by providing a foundation for designing strategies and resources to improve psychological outcomes among international students, which may, in turn, benefit universities socially by creating a healthier student body as well as financially by increasing student retention. Based on the study results, specific recommendations include creating realistic expectations of the university and the study-abroad context before international students arrive, providing advanced Turkish language education for non-Turkish speaking international students, offering different forms of financial support, providing more mental health resources, and providing mental health resources in multiple languages.

Students may experience less acculturative stress and better psychological adaptation if they arrive with more realistic expectations. This can be achieved by providing third-party agents who recruit students abroad with a greater variety of detailed resources describing life in the northern part of Cyprus, and by requiring agents to hold

orientation sessions introducing prospective students to Cypriot culture. Furthermore, although all international students are required to take an introductory Turkish language course, more advanced Turkish language university elective courses could be offered to allow foreign students to become proficient in Turkish as a means of increasing their social support and reducing their acculturative stress, which would improve psychological adaptation. The university also might provide different forms of financial support by organizing work-study programs or extending the social aid and scholarships programs already in place to decrease international students' acculturative stress. Finally, although the university does provide limited mental health services in English and Turkish, these services could be expanded in terms of the types of services offered, the number of mental health professionals offering these services, and the languages in which these services are accessible. As pointed out by previous researchers, students from different cultural backgrounds do not have the same needs and expectations (Cetinkaya-Yildiz et al., 2011; Khawaja & Dempsey, 2008; Leung, 2001). Therefore, mental health providers must be equipped both in terms of training and resources to meet the diverse set of needs and expectations presented by students on a multicultural campus. Doing so could benefit students by providing more social support, reducing acculturative stress, and improving psychological adaptation.

Conclusion

This study investigated the roles of cultural distance, acculturative stress, and social support in international students' psychological adaptation in the northern part of Cyprus. Results confirmed that international students do experience worse psychological

adaptation than do home students and that additional resources should be dedicated to their psychological well-being to improve international students' overall study-abroad experience as well as to improve student retention.

References

Ait Ouarasse, O., & van de Vijver, F. J. R. (2004). Structure and function of the perceived acculturation context of young Moroccans in the Netherlands. *International Journal of Psychology*, *39*(3), 190–204. https://doi.org/10.1080/00207590344000367

Al-Sharideh, K. A., & Goe, W. R. (1998). Ethnic communities within the university: An examination of factors influencing the personal adjustment of international students. *Research in Higher Education*, *39*(6), 699–725.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). *Trends in global higher education: Tracking an academic revolution*. Retrieved from http://unesdoc.unesco.org/images/0018/001832/183219e.pdf

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

Ang, P. L. D., & Liamputtong, P. (2008). "Out of the circle": International students and the use of university counselling services. *Australian Journal of Adult Learning*, *48*(1), 108–130.

Atri, A., Sharma, M., & Cottrell, R. (2007). Role of social support, hardiness, and acculturation as predictors of mental health among international students of Asian Indian origin. *International Quarterly of Community Health Education*, *27*(1), 59–73. https://doi.org/10.2190/IQ.27.1.e

Baba, Y., & Hosoda, M. (2014). Home away home: Better understanding of the role of social support in predicting cross-cultural adjustment among international students. *College Student Journal*, *48*(1), 1–15.

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*, *15*(3), 109–116. https://doi.org/10.1007/BF00578141

Bartram, B. (2008). Supporting international students in higher education: Constructions, cultures and clashes. *Teaching in Higher Education*, *13*(6), 657–668. https://doi.org/10.1080/13562510802452384

Bektaş, D. Y. (2004). *Psychological adaptation and acculturation of the Turkish students in the United States* (Doctoral dissertation). Available from Middle East Technical University E-thesis database.

Bektaş, D. Y., Demir, A., & Bowden, R. (2009). Psychological adaptation of Turkish students at U.S. campuses. *International Journal for the Advancement of Counselling*, *31*(2), 130–143. https://doi.org/10.1007/s10447-009-9073-5

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review*, *21*(3), 491-511. https://doi.org/10.2307/2546607

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology*, *46*(1), 5–34. https://doi.org/10.1111/j.1464-0597.1997.tb01087.x

Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006). Immigrant youth: Acculturation, identity, and adaptation. *Applied Psychology*, *55*(3), 303–332. https://doi.org/10.1111/j.1464-0597.2006.00256.x

Berry, J. W., & Sam, D. L. (1997). Acculturation and adaptation. In J. W. Berry, Y. H. Poortinga, M. H. Segall, J. Pandey, & C. Kagitcibasi (Eds.), *Handbook of cross-cultural psychology: Social behavior and applications* (2nd ed., Vol. 3, pp. 291–326). Needham Heights, MA: Allyn & Bacon.

Bierwiaczonek, K., & Waldzus, S. (2016). Socio-cultural factors as antecedents of cross-cultural adaptation in expatriates, international students, and migrants: A review. *Journal of Cross-Cultural Psychology*, *47*(6), 767–817. https://doi.org/10.1177/0022022116644526

Bodycott, P. (2015). Intragroup conflict during study abroad. *Journal of International Students, 5*(3), 244-259.

Briones, E., Verkuyten, M., Cosano, J., & Tabernero, C. (2012). Psychological adaptation of Moroccan and Ecuadorean immigrant adolescents in Spain. *International Journal of Psychology*, *47*(1), 28–38. https://doi.org/10.1080/00207594.2011.569722

Brisset, C., Safdar, S., Lewis, J. R., & Sabatier, C. (2010). Psychological and sociocultural adaptation of university students in France: The case of Vietnamese international students. *International Journal of Intercultural Relations*, *34*(4), 413–426. https://doi.org/10.1016/j.ijintrel.2010.02.009

Cetinkaya-Yildiz, E., Cakir, S. G., & Kondakci, Y. (2011). Psychological distress among international students in Turkey. *International Journal of Intercultural Relations, 35*(5), 534–539. https://doi.org/10.1016/j.ijintrel.2011.04.001

Chapdelaine, R. F., & Alexitch, L. R. (2004). Social skills difficulty: Model of culture shock for international graduate students. *Journal of College Student Development, 45*(2), 167–184. https://doi.org/10.1353/csd.2004.0021

Chavajay, P. (2013). Perceived social support among international students at a U.S. university. *Psychological Reports, 112*(2), 667–677. https://doi.org/10.2466/17.21.PR0.112.2.667-677

Chen, C. P. (1999). Professional issues: Common stressors among international college students: Research and counseling implications. *Journal of College Counseling, 2*(1), 49–65. https://doi.org/10.1002/j.2161-1882.1999.tb00142.x

Chen, H., Wong, Y. C., Ran, M. S., & Gilson, C. (2009). Stress among Shanghai university students: The need for social work support. *Journal of Social Work, 9*(3), 323–344. https://doi.org/10.1177/1468017309334845

Cheng, C. (1997). Role of perceived social support on depression in Chinese adolescents: A prospective study examining the buffering model. *Journal of Applied Social Psychology, 27*(9), 800–820. https://doi.org/10.1111/j.1559-1816.1997.tb00660.x

Chirkov, V. I., Lynch, M., & Niwa, S. (2005). Application of the scenario questionnaire of horizontal and vertical individualism and collectivism to the assessment of cultural distance and cultural fit. *International Journal of Intercultural Relations, 29*(4), 469–490. https://doi.org/10.1016/j.ijintrel. 2005.05.014

Chirkov, V. I., Safdar, S., de Guzman, J., & Playford, K. (2008). Further examining the role motivation to study abroad plays in the adaptation of international students in Canada. *International Journal of Intercultural Relations*, *32*(5), 427–440. https://doi.org/10.1016/j.ijintrel.2007.12.001

Chirkov, V., Vansteenkiste, M., Tao, R., & Lynch, M. (2007). The role of self-determined motivation and goals for study abroad in the adaptation of international students. *International Journal of Intercultural Relations*, *31*(2), 199–222. https://doi.org/10.1016/j.ijintrel.2006.03.002

Church, A. T. (1982). Sojourner adjustment. *Psychological Bulletin*, *91*(3), 540–572. https://doi.org/10.1037/0033-2909.91.3.540

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310–357.

Coles, R., & Swami, V. (2012). The sociocultural adjustment trajectory of international university students and the role of university structures: A qualitative investigation. *Journal of Research in International Education*, *11*(1), 87–100. https://doi.org/10.1177/1475240911435867

Constantine, M. G., Anderson, G. M., Berkel, L. A., Caldwell, L. D., & Utsey, S. O. (2005). Examining the cultural adjustment experiences of African international college students: A qualitative analysis. *Journal of Counseling Psychology*, *52*(1), 57–66. https://doi.org/10.1037/0022-0167.52.1.57

Crockett, L. J., Iturbide, M. I., Torres Stone, R. A., McGinley, M., Raffaelli, M., & Carlo, G. (2007). Acculturative stress, social support, and coping: Relations to

psychological adjustment among Mexican American college students. *Cultural Diversity and Ethnic Minority Psychology*, *13*(4), 347–355. https://doi.org/10.1037/1099-9809.13.4.347

Cuddeback, G., Wilson, E., Orme, J. G., & Combs-Orme, T. (2004). Detecting and statistically correcting sample selection bias. *Journal of Social Service Research*, *30*(3), 19–33. https://doi.org/10.1300/J079v30n03_02

Dao, T. K., Lee, D., & Chang, H. L. (2007). Acculturation level, perceived english fluency, perceived social support level, and depression among Taiwanese international students. *College Student Journal*, *41*(2), 287–295.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 182–185. https://doi.org/10.1037/a0012801

Demes, K. A., & Geeraert, N. (2014). Measures matter: Scales for adaptation, cultural distance, and acculturation orientation revisited. *Journal of Cross-Cultural Psychology*, *45*(1), 91–109. https://doi.org/10.1177/0022022113487590

Demes, K. A., & Geeraert, N. (2015). The highs and lows of a cultural transition: A longitudinal analysis of sojourner stress and adaptation across 50 countries. *Journal of Personality and Social Psychology*, *109*(2), 316–337. https://doi.org/10.1037/pspp0000046

Department of Health, Education, and Welfare. (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human participants of research*. Retrieved from https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html

Du, Y., & Wei, M. (2015). Acculturation, enculturation, social connectedness, and subjective well-being among Chinese international students. *The Counseling Psychologist*, *43*(2), 299–325. https://doi.org/10.1177/0011000014565712

Duru, E. (2008). The predictive analysis of adjustment difficulties from loneliness, social support, and social connectedness. *Educational Sciences: Theory & Practice*, *8*(3), 849–856.

Duru, E., & Poyrazli, S. (2011). Perceived discrimination, social connectedness, and other predictors of adjustment difficulties among Turkish international students. *International Journal of Psychology*, *46*(6), 446–454. https://doi.org/10.1080/00207594.2011.585158

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand Oaks, CA: Sage Publications.

Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter

outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992–1003. https://doi.org/10.1037/0022-3514.50.5.992

Fontaine, G. (1986). Roles of social support systems in overseas relocation: Implications for intercultural training. *International Journal of Intercultural Relations*, *10*(3), 361–378.

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: Worth Publishers.

Fritz, M. V., Chin, D., & DeMarinis, V. (2008). Stressors, anxiety, acculturation and adjustment among international and North American students. *International Journal of Intercultural Relations*, *32*(3), 244–259. https://doi.org/10.1016/j.ijintrel.2008.01.001

Furnham, A., & Bochner, S. (1982). Social difficulty in a foreign culture: An empirical analysis of culture shock. In S. Bochner (Ed.) *Cultures in contact: Studies in cross-cultural interaction* (pp. 161–198). Elmsford, NY: Pergamon Press. doi.org/10.1016/B978-0-08-025805-8.50016-0

Furukawa, T. (1997). Cultural distance and its relationship to psychological adjustment of international exchange students. *Psychiatry and Clinical Neurosciences*, *51*(3), 87–91. https://doi.org/10.1111/j.1440-1819.1997.tb02367.x

Furukawa, T., Sarason, I. G., & Sarason, B. R. (1998). Social support and adjustment to a novel social environment, social support and adjustment to a novel social environment. *International Journal of Social Psychiatry*, *44*(1), 56–70. https://doi.org/10.1177/002076409804400106

Galchenko, I., & van de Vijver, F. J. R. (2007). The role of perceived cultural distance in the acculturation of exchange students in Russia. *International Journal of Intercultural Relations*, *31*(2), 181–197. https://doi.org/10.1016/j.ijintrel.2006.03.004

Geeraert, N., & Demoulin, S. (2013). Acculturative stress or resilience? A longitudinal multilevel analysis of sojourners' stress and self-esteem. *Journal of Cross-Cultural Psychology*, *44*(8), 1241–1262. https://doi.org/10.1177/0022022113478656

Geeraert, N., Demoulin, S., & Demes, K. A. (2014). Choose your (international) contacts wisely: A multilevel analysis on the impact of intergroup contact while living abroad. *International Journal of Intercultural Relations*, *38*, 86–96. https://doi.org/10.1016/j.ijintrel.2013.08.001

Groves, R. M., Fowler, F. J., Jr., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Guion, R. M. (1980). On Trinitarian doctrines of validity. *Professional Psychology*, *11*(3), 385–398. https://doi.org/10.1037/0735-7028.11.3.385

Hair, J. F., Black, B., Babbin, B., & Anderson, R. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hechanova-Alampay, R., Beehr, T. A., Christiansen, N. D., & Van Horn, R. K. (2002). Adjustment and strain among domestic and international student sojourners: A

longitudinal study. *School Psychology International*, *23*(4), 458–474. https://doi.org/10.1177/0143034302234007

Helgeson, V. S. (2003). Social support and quality of life. *Quality of Life Research*, *12*(1), 25–31. https://doi.org/10.1023/A:1023509117524

Hendrickson, B., Rosen, D., & Aune, R. K. (2011). An analysis of friendship networks, social connectedness, homesickness, and satisfaction levels of international students. *International Journal of Intercultural Relations*, *35*(3), 281–295. https://doi.org/10.1016/j.ijintrel.2010.08.001

Hofstede, G., & Bond, M. H. (1984). Hofstede's culture dimensions: An independent validation using Rokeach's value survey. *Journal of Cross-Cultural Psychology*, *15*(4), 417–433. https://doi.org/10.1177/0022002184015004003

Hwang, W. C., & Ting, J. Y. (2008). Disaggregating the effects of acculturation and acculturative stress on the mental health of Asian Americans. *Cultural Diversity and Ethnic Minority Psychology*, *14*(2), 147–154. https://doi.org/10.1037/1099-9809.14.2.147

IBM Corporation. (2016). *IBM SPSS missing values 24*. Retrieved from ftp://public.dhe.ibm.com/software/analytics/spss/documentation/statistics/24.0/en/client/Manuals/IBM_SPSS_Missing_Values.pdf

ICEF Monitor. (2016, November 1). Four megatrends that are changing the competitive landscape of international education. Retrieved from http://monitor.icef.com/2016/11/four-megatrends-changing-competitive-landscape-international-education/

James, S., Hunsley, J., Navara, G. S., & Alles, M. (2004). Marital, psychological, and sociocultural aspects of sojourner adjustment: Expanding the field of enquiry. *International Journal of Intercultural Relations*, *28*(2), 111–126. https://doi.org/10.1016/j.ijintrel.2004.03.003

Jung, E., Hecht, M. L., & Wadsworth, B. C. (2007). The role of identity in international students' psychological well-being in the United States: A model of depression level, identity gaps, discrimination, and acculturation. *International Journal of Intercultural Relations*, *31*(5), 605–624. https://doi.org/10.1016/j.ijintrel.2007.04.001

Jurcik, T., Ahmed, R., Yakobov, E., Solopieieva-Jurcikova, I., & Ryder, A. G. (2013). Understanding the role of the ethnic density effect: Issues of acculturation, discrimination and social support. *Journal of Community Psychology*, *41*(6), 662–678. https://doi.org/10.1002/jcop.21563

Karuppan, C. M., & Barari, M. (2010). Perceived discrimination and international students' learning: an empirical investigation. *Journal of Higher Education Policy and Management*, *33*(1), 67–83. https://doi.org/10.1080/1360080X.2011.537013

Kashima, E. S., & Abu-Rayya, H. M. (2014). Longitudinal associations of cultural distance with psychological well-being among Australian immigrants from 49 countries. *Journal of Cross-Cultural Psychology*, *45*(4), 587–600. https://doi.org/10.1177/0022022113519857

Kashima, E. S., & Loh, E. (2006). International students' acculturation: Effects of international, conational, and local ties and need for closure. *International*

Journal of Intercultural Relations, *30*(4), 471–485. https://doi.org/10.1016/j.ijintrel.2005.12.003

Khawaja, N. G., & Dempsey, J. (2008). A comparison of international and domestic tertiary students in Australia. *Australian Journal of Guidance and Counselling*, *18*(01), 30–46. https://doi.org/10.1375/ajgc.18.1.30

Krohne, H. W. (2001). Stress and coping theories. In N. J. Smelser & P. B. Baltes (Eds.), *International encyclopedia of the social & behavioral sciences* (Vol. 3, pp. 15163–15170). Oxford, England: Elsevier. https://doi.org/10.1016/B0-08-043076-7/03817-1

Kuo, B. C. H., & Roysircar, G. (2006). An exploratory study of cross-cultural adaptation of adolescent Taiwanese unaccompanied sojourners in Canada. *International Journal of Intercultural Relations*, *30*(2), 159–183. https://doi.org/10.1016/j.ijintrel.2005.07.007

Kuo, W. H., & Tsai, Y.-M. (1986). Social networking, hardiness and immigrant's mental health. *Journal of Health and Social Behavior, 27*(2), 133-149. https://doi.org/10.2307/2136312

Lam, B. T. (2007). Impact of perceived racial discrimination and collective self-esteem on psychological distress among Vietnamese-American college students: Sense of coherence as mediator. *American Journal of Orthopsychiatry*, *77*(3), 370–376. https://doi.org/10.1037/0002-9432.77.3.370

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer Publishing Company.

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*(5), 399–414. https://doi.org/10.1016/j.ijintrel.2004.08.005

Lee, R. M., & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem, and social identity. *Journal of Counseling Psychology*, *45*(3), 338–345. https://doi.org/10.1037/0022-0167.45.3.338

Leung, C. (2001). The psychological adaptation of overseas and migrant students in Australia. *International Journal of Psychology*, *36*(4), 251–259. https://doi.org/10.1080/00207590143000018

Li, J., Wang, Y., & Xiao, F. (2014). East Asian international students and psychological well-being: A systematic review. *Journal of International Students, 4*(4), 301-313.

Mak, A. S., Bodycott, P., & Ramburuth, P. (2015). Beyond host language proficiency, beyond host language proficiency: Coping resources predicting international students' satisfaction. *Journal of Studies in International Education*, *19*(5), 460–475. https://doi.org/10.1177/1028315315587109

Mallinckrodt, B., & Leong, F. T. (1992). International graduate students, stress, and social support. *Journal of College Student Development*, *33*(1), 71–78.

Maundeni, T. (2001). The role of social networks in the adjustment of African students to British society: Students' perceptions. *Race Ethnicity and Education*, *4*(3), 253–276. https://doi.org/10.1080/13613320120073576

Maundeni, T., Malinga, T., Kgwatalala, D., & Kasule, I. (2010). Cultural adjustment of international students at an African university. *Journal of Psychology in Africa*, *20*(1), 79–84. https://doi.org/10.1080/14330237.2010.10820345

McLachlan, D. A., & Justice, J. (2009). A grounded theory of international student well-being. *Journal of Theory Construction & Testing, 13*(1), 27–32.

Mertler, C. A., & Reinhart, R. V. (2016). *Advanced and multivariate statistical methods: Practical application and interpretation* (6th ed.). New York, NY: Routledge.

Mesidor, J. K., & Sly, K. F. (2016). Factors that contribute to the adjustment of international students. *Journal of International Students*, *6*(1), 262–282.

Misra, R., Crist, M., & Burant, C. J. (2003). Relationships among life stress, social support, academic stressors, and reactions to stressors of international students in the United States. *International Journal of Stress Management*, *10*(2), 137–157. https://doi.org/10.1037/1072-5245.10.2.137

Montgomery, C., & McDowell, L. (2009). Social networks and the international student experience: An international community of practice? *Journal of Studies in International Education*, *13*(4), 455–466. https://.org/10.1177/1028315308321994

Mori, S. C. (2000). Addressing the mental health concerns of international students. *Journal of Counseling & Development*, *78*(2), 137–144. https://doi.org/10.1002/j.1556-6676.2000.tb02571.x

Nesdale, D., & Mak, A. S. (2003). Ethnic identification, self-esteem and immigrant psychological health. *International Journal of Intercultural Relations*, *27*(1), 23–40.

North Cyprus Economy. (2013). Retrieved from http://www.cypnet.com/north_cyprus_about_cyprus_economy.php

Ong, A. S. J., & Ward, C. (2005). The construction and validation of a social support measure for sojourners: The index of sojourner social support (ISSS) scale. *Journal of Cross-Cultural Psychology, 36*(6), 637–661. https://doi.org/10.1177/0022022105280508

O'Reilly, A., Ryan, D., & Hickey, T. (2010). The psychological well-being and sociocultural adaptation of short-term international students in Ireland. *Journal of College Student Development, 51*(5), 584–598.

Organisation for Economic Co-operation and Development. (2015). *Education at a glance 2015: OECD indicators.* Paris, France: OECD Publishing. Retrieved from http://dx.doi.org/ 10.1787/eag-2015-en

Organisation for Economic Co-operation and Development. (2016). *Education at a glance 2016: OECD indicators.* Paris, France: OECD Publishing. Retrieved from http://dx.doi.org/10.1787/eag-2016-en

Organisation for Economic Co-operation and Development. (2017). *Education at a Glance 2017: OECD Indicators*. Paris, France: OECD Publishing. Retrieved from http://dx.doi.org/10.1787/eag-2017-en

Pan, J. Y., Wong, D. F. K., Joubert, L., & Chan, C. L. W. (2008). The protective function of meaning of life on life satisfaction among Chinese students in Australia and Hong Kong: A cross-cultural comparative study. *Journal of American College Health, 57*(2), 221–232. https://doi.org/10.3200/JACH.57.2.221-232

Pantelidou, S., & Craig, T. K. J. (2006). Culture shock and social support: A survey in Greek migrant students. *Social Psychiatry and Psychiatric Epidemiology*, *41*(10), 777–781. https://doi.org/10.1007/s00127-006-0096-5

Park, N., Song, H., & Lee, K. M. (2014). Social networking sites and other media use, acculturation stress, and psychological well-being among East Asian college students in the United States. *Computers in Human Behavior*, *36*, 138–146. https://doi.org/10.1016/j.chb.2014.03.037

Pelham, B. W. (2013). *Intermediate statistics*. Thousand Oaks, CA: Sage Publications. Retrieved from https://us.sagepub.com/en-us/nam/intermediate-statistics/book235825

Podsiadlowski, A., Vauclair, C. M., Spiess, E., & Stroppa, C. (2013). Social support on international assignments: The relevance of socioemotional support from locals. *International Journal of Psychology*, *48*(4), 563–573. https://doi.org/10.1080/00207594.2012.669042

Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students and survey fatigue. *New Directions for Institutional Research*, *121*, 63–73.

Poyrazli, S., Arbona, C., Bullington, R., & Pisecco, S. (2001). Adjustment issues of Turkish college students studying in the United States. *College Student Journal*, *35*(1), 52-62.

Poyrazli, S., & Grahame, K. M. (2007). Barriers to adjustment: Needs of international students within a semi-urban campus community. *Journal of Instructional Psychology*, *34*(1), 28–45.

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

Poyrazli, S., Kavanaugh, P. R., Baker, A., & Al-Timimi, N. (2004). Social support and demographic correlates of acculturative stress in international students. *Journal of College Counseling, 7*(1), 73–82. https://doi.org/10.1002/j.2161-1882.2004.tb00261.x

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*(3), 263–280. https://doi.org/10.3200/JRLP.141.3.263-280

Poyrazli, S., Thukral, R. K., & Duru, E. (2010). International students' race-ethnicity, personality and acculturative stress. *International Journal of Psychology and Counselling*, *2*(2), 25–32.

Prelow, H. M., Mosher, C. E., & Bowman, M. A. (2006). Perceived racial discrimination, social support, and psychological adjustment among African American college students. *Journal of Black Psychology*, *32*(4), 442–454. https://doi.org/10.1177/0095798406292677

Rahman, O., & Rollock, D. (2004). Acculturation, competence, and mental health among South Asian students in the United States. *Journal of Multicultural Counseling and Development*, *32*(3), 130–142.

Rajapaksa, S., & Dundes, L. (2002). It's a long way home: International student adjustment to living in the United States. *Journal of College Student Retention: Research, Theory & Practice, 4*(1), 15–28. https://doi.org/10.2190/5HCY-U2Q9-KVGL-8M3K

Rasmi, S., Safdar, S., & Lewis, J. R. (2010). A longitudinal examination of the MIDA model with international students. In *Culture & gender: An intimate relation* (pp. 42–57). Gdansk, Poland: Gdanskie Wydawnictwo Psychologiczne. Retrieved from http://atrium.lib.uoguelph.ca/xmlui/handle/10214/3926?show=full

Rienties, B., & Tempelaar, D. (2013). The role of cultural dimensions of international and Dutch students on academic and social integration and academic performance in the Netherlands. *International Journal of Intercultural Relations*, *37*(2), 188–201. https://doi.org/10.1016/j.ijintrel.2012.11.004

Roth, P. L. (1994). Missing data: A conceptual review for applied psychologists. *Personnel Psychology*, *47*(3), 537–560. https://doi.org/10.1111/j.1744-6570.1994.tb01736.x

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020

Safdar, S., Lay, C., & Struthers, W. (2003). The process of acculturation and basic goals: Testing a multidimensional individual difference acculturation model with Iranian immigrants in Canada. *Applied Psychology*, *52*(4), 555–579. https://doi.org/10.1111/1464-0597.00151

Safdar, S., Struthers, W., & van Oudenhoven, J. P. (2009). Acculturation of Iranians in the United States, the United Kingdom, and the Netherlands: A test of the multidimensional individual difference acculturation (MIDA) model. *Journal of Cross-Cultural Psychology*, *40*(3), 468–491. https://doi.org/10.1177/0022022108330990

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

Sam, D. L., Tetteh, D. K., & Amponsah, B. (2015). Satisfaction with life and psychological symptoms among international students in Ghana and their correlates. *International Journal of Intercultural Relations*, *49*, 156–167. https://doi.org/10.1016/j.ijintrel.2015.09.001

Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an acculturative stress scale for international students: Preliminary findings. *Psychological Reports*, *75*(1), 435–448. https://doi.org/10.2466/pr0.1994.75.1.435

Schwarzer, R., Jerusalem, M., & Hahn, A. (1994). Unemployment, social support and health complaints: A longitudinal study of stress in East German refugees. *Journal of Community & Applied Social Psychology*, *4*(1), 31–45. https://doi.org/10.1002/casp.2450040109

Searle, W., & Ward, C. (1990). The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International Journal of Intercultural Relations*, *14*(4), 449–464. https://doi.org/10.1016/0147-1767(90)90030-Z

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton, Mifflin and Company.

Sherry, C., Bhat, R., Beaver, B., & Ling, A. (2004). Students as customers: The expectations and perceptions of local and international students. In *Transforming knowledge into wisdom: Proceedings of the 27th HERDSA Annual Conference* (pp. 309-323). Milperra, Australia: Higher Education Research and Development Society of Australasia, Inc. https://doi.org/10.13140/rg.2.1.4984.6808

Sherry, M., Thomas, P., & Chui, W. H. (2010). International students: A vulnerable student population. *Higher Education*, *60*(1), 33–46. https://doi.org/10.1007/s10734-009-9284-z

Shupe, E. I. (2007). Clashing cultures: A model of international student conflict. *Journal of Cross-Cultural Psychology*, *38*(6), 750–771. https://doi.org/10.1177/0022022107308996

Sirin, S. R., Gupta, T., Ryce, P., Katsiaficas, D., Suárez-Orozco, C., & Rogers-Sirin, L. (2013). Understanding the role of social support in trajectories of mental health symptoms for immigrant adolescents. *Journal of Applied Developmental Psychology*, *34*(5), 199–207. https://doi.org/10.1016/j.appdev.2013.04.004

Slack, M. K., & Draugalis, J. R. (2001). Establishing the internal and external validity of experimental studies. *American Journal of Health-System Pharmacy, 58*(22), 2173-2181.

Smith, R. A., & Khawaja, N. G. (2011). A review of the acculturation experiences of international students. *International Journal of Intercultural Relations*, *35*(6), 699–713. https://doi.org/10.1016/j.ijintrel.2011.08.004

Solberg, V. S., Valdez, J., & Villarreal, P. (1994). Social support, stress, and hispanic college adjustment: Test of a diathesis-stress model. *Hispanic Journal of Behavioral Sciences*, *16*(3), 230–239. https://doi.org/10.1177/07399863940163002

Söldner, T. M. L. (2013). *Personality, values, and cultural perceptions in the sojourner context : A new perspective on acculturation in Germany, Japan, and the US* (Unpublished doctoral dissertation). Humboldt University of Berlin, Berlin, Germany.

Søndergaard, M. (1994). Research note: Hofstede's consequences: A study of reviews, citations and replications. *Organization Studies*, *15*(3), 447–456. https://doi.org/10.1177/017084069401500307

Stahl, G. K., & Caligiuri, P. (2005). The effectiveness of expatriate coping strategies: The moderating role of cultural distance, position level, and time on the international assignment. *Journal of Applied Psychology*, *90*(4), 603–615. https://doi.org/10.1037/0021-9010.90.4.603

Study in North Cyprus. (2013). Quick facts. Retrieved from http://www.studyinnorthcyprus.org/?page_id=3446

Suanet, I., & van de Vijver, F. J. R. (2009). Perceived cultural distance and acculturation among exchange students in Russia. *Journal of Community & Applied Social Psychology*, *19*(3), 182–197. https://doi.org/10.1002/casp.989

Sullivan, C., & Kashubeck-West, S. (2015). The interplay of international students' acculturative stress, social support, and acculturation modes. *Journal of International Students, 5*(1), 1-11.

Sümer, S., Poyrazli, S., & Grahame, K. (2008). Predictors of depression and anxiety among international students. *Journal of Counseling & Development, 86*(4), 429–437. https://doi.org/10.1002/j.1556-6678.2008.tb00531.x

Swagler, M. A., & Ellis, M. V. (2003). Crossing the distance: Adjustment of Taiwanese graduate students in the United States. *Journal of Counseling Psychology, 50*(4), 420–437. https://doi.org/10.1037/0022-0167.50.4.420

Swami, V. (2009). Predictors of sociocultural adjustment among sojourning Malaysian students in Britain. *International Journal of Psychology, 44*(4), 266–273. https://doi.org/10.1080/00207590801888745

Swami, V., Arteche, A., Chamorro-Premuzic, T., & Furnham, A. (2010). Sociocultural adjustment among sojourning Malaysian students in Britain: A replication and path analytic extension. *Social Psychiatry and Psychiatric Epidemiology*, *45*(1), 57–65. https://doi.org/10.1007/s00127-009-0042-4

Szabo, A., Ward, C., & Jose, P. E. (2016). Uprooting stress, coping, and anxiety: A longitudinal study of international students. *International Journal of Stress Management, 23*(2), 190–208. https://doi.org/10.1037/a0039771

Trochim, W. M. K. (2006). Threats to construct validity. Retrieved October 6, 2018, from https://www.socialresearchmethods.net/kb/consthre.php

van den Berg, R. G. (n.d.). SPSS missing values functions. Retrieved October 8, 2013, from https://www.spss-tutorials.com/spss-missing-values-functions/

Vulić-Prtorić, A., & Oetjen, N. (2018). Adaptation and acculturation of international students in Croatia. *Collegium Antropologicum*, *41*(4). Retrieved from http://collantr.lin30.host25.com/antropo/article/view/1567

Walden University Center for Research and Support. (2015a, October 20). Research ethics FAQS for doctoral students in the field of education: Practical tips for avoiding delays and problems in the research approval process. Retrieved from http://researchcenter.waldenu.edu/

Walden University Center for Research and Support. (2015b, October 20). Research ethics FAQs for international research. Retrieved from http://researchcenter. waldenu.edu/

Wang, C. C. D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology*, *53*(4), 422–433. https://doi.org/10.1037/0022-0167.53.4.422

Wang, K. T., Heppner, P. P., Fu, C. C., Zhao, R., Li, F., & Chuang, C. C. (2012). Profiles of acculturative adjustment patterns among Chinese international students. *Journal of Counseling Psychology*, *59*(3), 424–436. https://doi.org/10.1037/ a0028532

Wang, Q., & Hannes, K. (2014). Academic and socio-cultural adjustment among Asian international students in the Flemish community of Belgium: A photovoice project. *International Journal of Intercultural Relations*, *39*, 66–81. https://doi.org/10.1016/j.ijintrel.2013.09.013

Ward, C, & Rana-Deuba, A. (2000). Home and host culture influences on sojourner adjustment. *International Journal of Intercultural Relations*, *24*, 291–306.

Ward, C., & Geeraert, N. (2016). Advancing acculturation theory and research: The acculturation process in its ecological context. *Current Opinion in Psychology*, *8*, 98–104. https://doi.org/10.1016/j.copsyc.2015.09.021

Ward, C., & Kennedy, A. (1992). Locus of control, mood disturbance, and social difficulty during cross-cultural transitions. *International Journal of Intercultural Relations*, *16*(2), 175–194. https://doi.org/10.1016/0147-1767(92)90017-O

Ward, C., & Kennedy, A. (1993a). Psychological and socio-cultural adjustment during cross-cultural transitions: A comparison of secondary students overseas and at home. *International Journal of Psychology*, *28*(2), 129–147. https://doi.org/10.1080/00207599308247181

Ward, C., & Kennedy, A. (1993b). Where's the "culture" in cross-cultural transition?: Comparative studies of sojourner adjustment. *Journal of Cross-Cultural Psychology*, *24*(2), 221–249. https://doi.org/10.1177/0022022193242006

Ward, C., & Kennedy, A. (1999). The measurement of sociocultural adaptation. *International Journal of Intercultural Relations*, *23*(4), 659–677. https://doi.org/10.1016/S0147-1767(99)00014-0

Ward, C., & Rana-Deuba, A. (1999). Acculturation and adaptation revisited. *Journal of Cross-Cultural Psychology, 30*(4), 422–442. https://doi.org/10.1177/0022022199030004003

Ward, C., & Searle, W. (1991). The impact of value discrepancies and cultural identity on psychological and sociocultural adjustment of sojourners. *International Journal of Intercultural Relations, 15*(2), 209–224. https://doi.org/10.1016/0147-1767(91)90030-K

Waxin, M. F. (2004). Expatriates' interaction adjustment: the direct and moderator effects of culture of origin. *International Journal of Intercultural Relations, 28*(1), 61–79. https://doi.org/10.1016/j.ijintrel.2003.12.006

Wei, M., Heppner, P. P., Mallen, M. J., Ku, T. Y., Liao, K. Y. H., & Wu, T. F. (2007). Acculturative stress, perfectionism, years in the United States, and depression among Chinese international students. *Journal of Counseling Psychology, 54*(4), 385–394. https://doi.org/10.1037/0022-0167.54.4.385

Wei, M., Ku, T. Y., Russell, D. W., Mallinckrodt, B., & Liao, K. Y. H. (2008). Moderating effects of three coping strategies and self-esteem on perceived discrimination and depressive symptoms: A minority stress model for Asian international students. *Journal of Counseling Psychology, 55*(4), 451–462. https://doi.org/10.1037/a0012511

Wei, M., Wang, K. T., Heppner, P. P., & Du, Y. (2012). Ethnic and mainstream social connectedness, perceived racial discrimination, and posttraumatic stress

symptoms. *Journal of Counseling Psychology, 59*(3), 486–493. https://doi.org/10.1037/a0028000

Wilson, J., Ward, C., & Fischer, R. (2013). Beyond culture learning theory: What can personality tell us about cultural competence? *Journal of Cross-Cultural Psychology*, *44*(6), 900–927. https://doi.org/10.1177/0022022113492889

Wu, E. K. Y., & Mak, W. W. S. (2012). Acculturation process and distress: Mediating roles of sociocultural adaptation and acculturative stress. *The Counseling Psychologist*, *40*(1), 66–92. https://doi.org/10.1177/0011000011410893

Yakunina, E. S., Weigold, I. K., Weigold, A., Hercegovac, S., & Elsayed, N. (2013). International students' personal and multicultural strengths: Reducing acculturative stress and promoting adjustment. *Journal of Counseling and Development, 91*(2), 216–223.

Yakushko, O., Davidson, M. M., & Sanford-Martens, T. C. (2008). Seeking help in a foreign land: International students' use patterns for a U.S. university counseling center. *Journal of College Counseling*, *11*(1), 6–18. https://doi.org/10.1002/j.2161-1882.2008.tb00020.x

Yan, K., & Berliner, D. C. (2013). Chinese international students' personal and sociocultural stressors in the United States. *Journal of College Student Development*, *54*(1), 62–84. https://doi.org/10.1353/csd.2013.0010

Yang, B., & Clum, G. A. (1994). Life stress, social support, and problem-solving skills predictive of depressive symptoms, hopelessness, and suicide ideation in an Asian

student population: A test of a model. *Suicide and Life-Threatening Behavior*, *24*(2), 127–139. https://doi.org/10.1111/j.1943-278X.1994.tb00797.x

Yang, B., & Clum, G. A. (1995). Measures of life stress and social support specific to an Asian student population. *Journal of Psychopathology and Behavioral Assessment*, *17*(1), 51–67. https://doi.org/10.1007/BF02229203

Ye, J. (2005). Acculturative stress and use of the internet among East Asian international students in the United States. *CyberPsychology & Behavior*, *8*(2), 154–161. https://doi.org/10.1089/cpb.2005.8.154

Ye, J. (2006). Traditional and online support networks in the cross-cultural adaptation of Chinese international students in the United States. *Journal of Computer-Mediated Communication*, *11*(3), 863–876. https://doi.org/10.1111/j.1083-6101.2006.00039.x

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*(1), 15–28. https://doi.org/10.1080/0951507031000114058

Ying, Y. W. (2005). Variation in acculturative stressors over time: A study of Taiwanese students in the United States. *International Journal of Intercultural Relations*, *29*(1), 59–71. https://doi.org/10.1016/j.ijintrel.2005.04.003

Ying, Y. W., & Han, M. (2006). The contribution of personality, acculturative stressors, and social affiliation to adjustment: A longitudinal study of Taiwanese students in

the United States. *International Journal of Intercultural Relations*, *30*(5), 623–635. https://doi.org/10.1016/j.ijintrel.2006.02.001

Yoon, E., Lee, R. M., & Goh, M. (2008). Acculturation, social connectedness, and subjective well-being. *Cultural Diversity and Ethnic Minority Psychology*, *14*(3), 246–255. https://doi.org/10.1037/1099-9809.14.3.246

Yusoff, Y. M. (2012). Self-efficacy, perceived social support, and psychological adjustment in international undergraduate students in a public higher education institution in Malaysia. *Journal of Studies in International Education*, *16*(4), 353–371. https://doi.org/10.1177/1028315311408914

Zhang, J., & Goodson, P. (2011). Predictors of international students' psychosocial adjustment to life in the United States: A systematic review. *International Journal of Intercultural Relations, 35*(2), 139–162. https://doi.org/10.1016/j.ijintrel.2010.11.011

Zhang, J., Mandl, H., & Wang, E. (2010). Personality, acculturation, and psychosocial adjustment of Chinese international students in Germany. *Psychological Reports*, *107*(2), 511–525. https://doi.org/10.2466/07.09.11.17.PR0.107.5.511-525

Zhang, Y. (2012). *An examination of acculturative stress, perceived social support and depression among Chinese international students* (Unpublished doctoral dissertation). Syracuse University, Syracuse, NY.

Zheng, X., & Berry, J. W. (1991). Psychological adaptation of Chinese sojourners in Canada. *International Journal of Psychology*, *26*(4), 451–470. https://doi.org/10.1080/00207599108247134

Zhou, Y., Jindal-Snape, D., Topping, K., & Todman, J. (2008). Theoretical models of culture shock and adaptation in international students in higher education. *Studies in Higher Education*, *33*(1), 63–75. https://doi.org/10.1080/03075070701794833

Zlobina, A., Basabe, N., Paez, D., & Furnham, A. (2006). Sociocultural adjustment of immigrants: Universal and group-specific predictors. *International Journal of Intercultural Relations*, *30*(2), 195–211. https://doi.org/10.1016/j.ijintrel.2005.07.005

Appendix A: Permission to Use the Brief Perceived Cultural Distance Scale

Reply all | Delete Junk | •••

Re: FW: Brief Perceived Cultural Distance and Brief Psychological Adaptation Scales

NG Nicolas Geeraert [redacted] Reply all |
Wed 9/20, 11:02 PM
Ariel Ladum

Inbox

Action Items

Dear Ariel,

Thank you for contacting us with regards to the Brief Perceived Cultural Distance Scale and the Brief Psychological Adaptation Scale. We are very happy for you to use our scale. You can find the English version in the original manuscript. Do let me know if you need the scale in one of the other languages available.

Best,
Nicolas

From: Ariel Ladum [redacted]
Sent: 19 September 2017 22:18

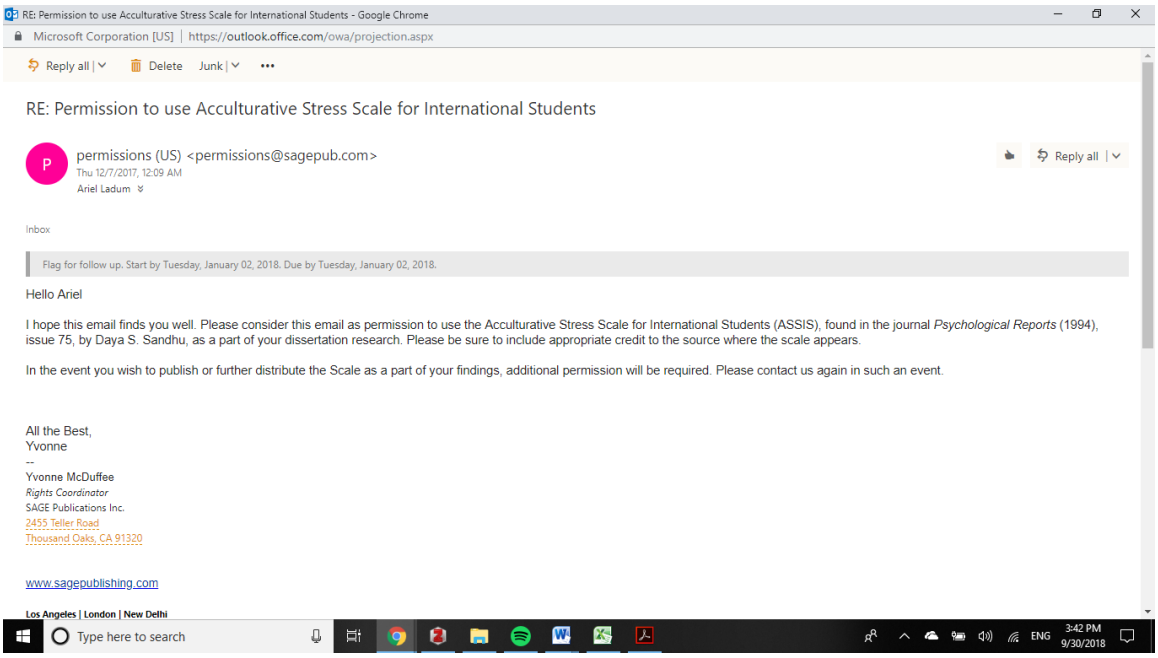
Dear Dr. Demes,
I am writing to request permission to use the Brief Perceived Cultural Distance Scale and the Brief Psychological Adaptation Scale in my dissertation research investigating the stress-buffering hypothesis among students in northern Cyprus. Here, cultural distance is a stressor while psychological adaptation is the outcome variable. Please contact me with any questions you may have about the research project.

Best wishes,

Ariel

Ariel M. Ladum
Senior Instructor
[redacted]
Famagusta, North Cyprus

Appendix B: Permission to Use the Acculturative Stress Scale for International Students



RE: Permission to use Acculturative Stress Scale for International Students - Google Chrome

Microsoft Corporation [US] | https://outlook.office.com/owa/projection.aspx

Reply all | Delete Junk | •••

RE: Permission to use Acculturative Stress Scale for International Students

P permissions (US) <permissions@sagepub.com>
Thu 12/7/2017, 12:09 AM
Ariel Ladum

Reply all

Inbox

Flag for follow up. Start by Tuesday, January 02, 2018. Due by Tuesday, January 02, 2018.

Hello Ariel

I hope this email finds you well. Please consider this email as permission to use the Acculturative Stress Scale for International Students (ASSIS), found in the journal *Psychological Reports* (1994), issue 75, by Daya S. Sandhu, as a part of your dissertation research. Please be sure to include appropriate credit to the source where the scale appears.

In the event you wish to publish or further distribute the Scale as a part of your findings, additional permission will be required. Please contact us again in such an event.

All the Best,
Yvonne
--
Yvonne McDuffee
Rights Coordinator
SAGE Publications Inc.
2455 Teller Road
Thousand Oaks, CA 91320

www.sagepublishing.com

Los Angeles | London | New Delhi

Type here to search

ENG 3:42 PM 9/30/2018

Appendix C: Permission to Use the Index of Sojourner Social Support Scale

Reply all | Delete Junk | •••

Re: Index of Sojourner Social Support

CW Colleen Ward <[redacted]> Reply all |
Wed 9/20, 6:50 AM
Ariel Ladum

Inbox

I am happy for you to use this instrument- which is in the public domain- merely cite the source. Good luck with your research.

Colleen

From: Ariel Ladum [redacted]
Date: Tuesday, 19 September 2017 at 11:35 AM
To: Colleen Ward [redacted]
Subject: Index of Sojourner Social Support

Dear Dr. Ward,
I am writing to request permission to use the Index of Sojourner Social Support in my dissertation research investigating the stress-buffering hypothesis among students in northern Cyprus. Here, I will investigate the point at which social support has a buffering effect: before or after the experience of stress. Please contact me with any questions you may have about the research project.

Best wishes,
Ariel

Ariel M. Ladum
Senior Instructor
[redacted]
Famagusta, North Cyprus

Appendix D: Permission to Use the Brief Psychological Adaptation Scale

Reply all | Delete Junk | ...

Re: FW: Brief Perceived Cultural Distance and Brief Psychological Adaptation Scales

NG Nicolas Geeraert [redacted]
Wed 9/20, 11:02 PM
Ariel Ladum

Reply all |

Inbox

Action Items

Dear Ariel,

Thank you for contacting us with regards to the Brief Perceived Cultural Distance Scale and the Brief Psychological Adaptation Scale. We are very happy for you to use our scale. You can find the English version in the original manuscript. Do let me know if you need the scale in one of the other languages available.

Best,
Nicolas

From: Ariel Ladum [redacted]
Sent: 19 September 2017 22:18

Dear Dr. Demes,
I am writing to request permission to use the Brief Perceived Cultural Distance Scale and the Brief Psychological Adaptation Scale in my dissertation research investigating the stress-buffering hypothesis among students in northern Cyprus. Here, cultural distance is a stressor while psychological adaptation is the outcome variable. Please contact me with any questions you may have about the research project.

Best wishes,

Ariel

Ariel M. Ladum
Senior Instructor
[redacted]
Famagusta, North Cyprus