Psychological Adaptation of International Students in the Northern Part of Cyprus

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Abstract

This study examined how cultural distance, acculturative stress, and social support interacted to influence emotional responses among international students studying in the northern part of Cyprus. Acculturation models and the stress-buffering hypothesis served as theoretical frameworks. The 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 examined differences in emotional reactions between domestic and international students, whereas hierarchical multiple regression was used to examine the moderation hypotheses. Analysis of variance results indicated that domestic students had more positive emotional responses than international students to being in the northern part of Cyprus. Results did not show social support as a moderator for either international students' acculturative stress or their emotional responses to being in the host culture. However, results suggested that having unmet expectations, low financial satisfaction, and low social support predicted acculturative stress, whereas being in a relationship, having higher Turkish proficiency, having unmet expectations, and experiencing higher acculturative stress predicted more negative emotional responses. These results may help universities design programs to support psychological adaptation among international students, which could ultimately facilitate student retention.

Keywords: international students, psychological adaptation, social support, cultural distance, acculturative stress

Introduction

The number of students leaving their home countries to pursue education at the postsecondary school level worldwide has increased from 2 million students in 1999 to 5 million as of 2016 (The Organisation for Economic Co-Operation and Development, 2018). Although all students may face different types of stressors, international students experience more difficulty than they would have experienced had they remained in their cultures of origin (Chapdelaine & Alexitch, 2004; Pan, Wong, Joubert, & Chan, 2008). They also face stressors associated with being a sojourner that students from the host culture do not experience (Poyrazli & Lopez, 2007; Sherry, Thomas, & Chui, 2010). Overall, international students experience more stress (Zheng & Berry, 1991; Zhou, Jindal-Snape, Topping, & Todman, 2008), as well as more adjustment problems (O'Reilly, Ryan, & Hickey, 2010), than students studying in their home countries.

Psychological adaptation among international students has been studied in relation to a range of antecedent factors, many of which have been linked to negative outcomes that manifest in symptoms such as higher stress, lower self-esteem, worse mental health (e.g., depression,

anxiety), lower life satisfaction, and more physiological complaints (see Smith & Khawaja, 2011; J. Zhang & Goodson, 2011). To the extent that international students experience more negative adaptation outcomes, they are more likely to terminate their studies and return home early (Berry, Kim, Minde, & Mok, 1987; Chirkov, Safdar, de Guzman, & Playford, 2008; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013). International students' early return may impact economies reliant on the education sector negatively in terms of lost revenue for universities and local economies (The Organisation for Economic Co-Operation and Development, 2018).

Literature Review

Theoretical framework. The current study drew on acculturation models by Berry (1997) and Ward and Geeraert (2016), as well as the stress-buffering hypothesis (Cohen & Wills, 1985). Berry's framework includes group-level situational variables (e.g., characteristics of the societies of origin and settlement) that influence the immediate acculturation experience. The immediate acculturation experience is the first of five successive acculturation phenomena that also include the appraisal of life events as stressors, the strategies used to cope with stressors, the experience of stress, and long-term adaptation outcomes. 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) act as moderators or mediators to influence how individuals pass through the succession of acculturation phenomena. Within Berry's framework, cultural distance is a potential moderator/mediator that exists prior to intercultural contact. Sojourners who experience more cultural distance may also experience more stress and worse subsequent psychological adaptation.

Ward and Geeraert's (2016) model of acculturation, however, shifts the role of cultural distance from an intervening to an instigating variable. Cultural distance is the result of intercultural contact that occurs when the sojourner arrives in the host culture. Within this model, intercultural contact, and its resulting perception of cultural distance, can be a source of stress that requires coping as well as growth in cultural awareness, both of which the sojourner must manage (Ward & Geeraert, 2016).

The stress-buffering hypothesis explores the protective role of interpersonal relationships against the negative consequences of stress (Cohen & Wills, 1985). Social support may play a buffering role at two points: diminishing the extent to which an event is perceived as stressful and protecting against negative psychological consequences of events that have been perceived as stressful (Cohen & Wills, 1985). Although 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 (Park, Song, & Lee, 2014; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004) or social support as a moderator between stress and adaptation outcomes (Y. Zhang, 2012). In terms of Berry's (1997) and Ward and Geeraert's (2016) models, social support could be a moderating factor affecting cognitive appraisal of life events (e.g., perceived cultural distance) as stressful in the short-term (and thereby impacting the experience of acculturative stress), and it could also provide a coping resource to reduce the long-term impact of cultural distance to the extent that cultural distance has, indeed, been perceived as stressful. The current study examined the role of social support at both these points.

Cultural distance. Cultural distance is the perceived discrepancy between social and physical aspects of the home and host environments (Babiker, Cox, & Miller, 1980). Perceived cultural distance has been linked to psychological adaptation in terms of emotional distress, psychological distress, lower self-esteem, more stress, and more behavioral problems (Babiker et al., 1980; Galchenko & van de Vijver, 2007). For instance, Galchenko and van de Vijver found

that more perceived cultural distance between host and home cultures was associated with lower self-esteem and more stress. However, other studies indicated no relationship between cultural distance and psychological adaptation (Cetinkaya-Yildiz, Cakir, & Kondakci, 2011; Suanet & Van de Vijver, 2009). For example, 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 and Balkan countries and may not have experienced adequate cultural distance to register as a stressor.

The role of cultural distance as a stressor in acculturation has not been researched adequately (Bierwiaczonek & Waldzus, 2016; Li, Wang, & Xiao, 2014). Furthermore, previous results regarding the relationship between cultural distance and psychological adaptation (including acculturative stress) have not been consistent. Using different types of cultural distance measures may have played a role in producing inconsistent findings. Previous research has used perceived measures of cultural distance as well as objective standards such as cultural dimensions of attitudes or values, differences in gross domestic product, or gross income inequality metrics (Suanet & van de Vijver, 2009; Szabo, Ward, & Jose, 2016).

Acculturative stress. Acculturative stress results from the process of psychological and cultural changes initiated when members of different cultural groups come into contact (Berry, Phinney, Sam, & Vedder, 2006; Zheng & Berry, 1991) and is the most common stressor among international students discussed in the acculturation literature (Alharbi & Smith, 2018). Acculturative stressors include language difficulties, the inability to make friends and interact with locals, education-related stressors, mismatch between expectations and realities, sociocultural stressors, practical stressors, and loneliness (Smith & Khawaja, 2011). Studies have linked acculturative stress to more somatic symptoms (Wu & Mak, 2012), more psychological distress (K. T. Wang et al., 2012; Wu & Mak, 2012), worse psychological adjustment (Yakunina, Weigold, Weigold, Hercegovac, & Elsayed, 2013), and lower life satisfaction (Ye, 2005), as well as higher anxiety and depression (Sirin et al., 2013; Y. Zhang, 2012). In fact, Wu and Mak (2012) found that stress was more closely related to psychological distress than other acculturation variables such as attitudes.

One trend in acculturation research has been for acculturative stress to play the role of predictor in some studies but the role of outcome variable in others. Findings on the role of acculturative stress in psychological adaptation have not addressed implications of treating it as an outcome (Demes & Geeraert, 2015; Galchenko & van de Vijver, 2007; Geeraert & Demoulin, 2013; Yeh, 2003) 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 midpoint response between intercultural contact and psychological adaptation, thereby supporting its position as a predictor rather than a psychological adaptation outcome.

Social support. Social support is the most commonly studied social resource in research focused on international students (Bierwiaczonek & Waldzus, 2016) and is one of the most frequently reported predictors of psychological adaptation outcomes, including acculturative stress (J. Zhang & Goodson, 2011). In terms of Berry's (1997) acculturation framework, social support may serve as a moderator at different points in the acculturation process as people move through the five acculturation phenomena. Social support may buffer the extent to which the cultural distance that characterizes acculturation experiences is appraised as stressful earlier in the acculturation process, thereby reducing the immediate effects of stress and ameliorating long-term adaptation outcomes (Krohne, 2001). Having broader social support networks, such as those built via social networking sites, has indeed been linked to better adaptation outcomes among

international students (Forbush & Foucault-Welles, 2016; Mesidor & Sly, 2016; Pang, 2018; Park et al., 2014; Sullivan & Kashubeck-West, 2015). Unfortunately, international students who experience the highest levels of cultural distance and are therefore in the most need of social support may struggle to establish adequate social support, which deprives them of a valuable social resource for managing stressors (Zheng & Berry, 1991).

Social support also could moderate the relationship between acculturative stress and psychological adaptation outcomes later in the acculturation process (Berry, 1997). According to a review of international students' acculturation experiences by Smith and Khawaja (2011), social support is an important acculturative stress buffer that enhances adaption. For instance, social support mediated the relationship between life stress and reactions to stressors among international students studying in the United States (Misra, Crist, & Burant, 2003). Korean students in the United States with higher levels of social support were significantly less likely to report physical and psychological symptoms with increasing levels of acculturative stress than students with lower levels of social support (Lee, Koeske, & Sales 2004). In another study, social support buffered the negative effects of acculturative stress in terms of depression among Chinese students in the United States (Y. Zhang, 2012).

Despite the popularity of social support in research investigating psychological adaptation among international students, questions remain around its role as a buffer between a stressor and psychological adaptation. Cohen and Wills (1985) proposed that the inconclusive findings may be due to using inappropriate social support measures to capture main or moderator effects. They recommended measures that evaluate specific structural (i.e., an important relationship), global structural (i.e., number of relationships), and global functional (i.e., the general availability of resources) forms of social support for detecting main effects. At the same time global measures may be problematic for detecting main effects because global measures comingle all potential sources of social support, and some studies have indicated that conational contact may serve as a source of stress rather than social support when there is conflict (Bodycott, 2015; Maundeni, 2001).

To investigate the protective, buffering effects of social support, Cohen and Wills (1985) recommended using specific functional measures that evaluate if relationships serve particular purposes in terms of meeting individuals' needs. Although results of research using specific functional measures to investigate the buffering role of social support are more robust than those of studies using other types of social support measures, they also are inconsistent. These studies have indicated that social support does not play the role of moderator (Jung, Hecht, & Wadsworth, 2007), that it partially moderates the relationship between a stressor and psychological adaptation (Prelow, Mosher, & Bowman, 2006), and that it does buffer against the negative psychological consequences of stressors (Lee et al., 2004; Sirin et al., 2013).

Covariates

Gender. Some studies have found no relationship between gender and psychological adaptation among sojourners (Jurcik, Ahmed, Yakobov, Solopieieva-Jurcikova, & Ryder, 2013; Pan et al., 2008). Other studies have found a difference between male and female students in terms of various psychological adaptation outcomes (Mesidor & Sly, 2016; Sam, Tetteh, & Amponsah, 2015). Studies conducted in the United States that found a gender difference generally indicated worse mental health outcomes for female than male students (Alharbi & Smith, 2018).

Age. Research investigating the relationship between age and psychological adaptation among international students also has produced unequivocal results. Some studies have

indicated a relationship (Lee et al., 2004; Poyrazli & Lopez, 2007). Studies finding a relationship have generally revealed that younger students adapted better (Alharbi & Smith, 2018; Sümer, Poyrazli, & Grahame, 2008). Other research, however, has indicated no relationship between age and psychological adaptation (Jurcik et al., 2013; Pan et al., 2008).

Relationship status. Research investigating the connection between relationship status and psychological adaptation also has not produced consistent results. For instance, qualitative research results suggested that the pressure of long-distance relationships produced significant stress for Chinese students studying in the United States (Yan & Berliner, 2013). Other results, however, linked being single to more stress (Lee et al., 2004) or found that marital status did not predict life satisfaction (Pan et al., 2008).

Language proficiency. Research has consistently linked language proficiency to psychological adaptation outcomes among international students (Bodycott, 2015; Demes & Geeraert, 2015; Hansen, Shneyderman, McNamara, & Grace, 2018; Li et al., 2014; Luo, Wu, Fang, & Brunsting, 2019; Sümer et al., 2008). J. Zhang and Goodson (2011) identified English proficiency as a predictor of psychological symptoms, acculturative stress, satisfaction with life, and sociocultural adaptation, whereas Alharbi and Smith (2018) concluded that English proficiency was linked to academic achievement as well as the ability to access social support and mental health resources. The current research included Turkish (i.e., local language) and English (i.e., academic language) proficiency because previous research indicated that the local language may create adjustment problems even if international students are proficient in the academic language (Q. Wang & Hannes, 2014).

Country of origin and amount of time in host country. Country of origin (Poyrazli, Thukral, & Duru, 2010; Szabo et al., 2016) and amount of time in host country (Briones, Verkuyten, Cosano, & Tabernero, 2012; Li et al., 2014) also have been linked to psychological adaptation among international students. Students from various countries may experience different types and intensities of adjustment problems, just as their adaptation outcomes may vary based on time in the host country.

Expectations and financial satisfaction. Having unmet expectations of and being ill-prepared to study in the host society also have been related to worse psychological adaptation among international students (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Khawaja & Dempsey, 2008; B. C. H. Kuo & Roysircar, 2006; W. H. Kuo & Tsai, 1986). Financial satisfaction has been investigated in both domestic and international students. In fact, Fritz, Chin, and DeMarinis (2008) found that both groups experienced financial issues. Financial stress has been studied more extensively among international students, however. Financial dissatisfaction has been identified as a stressor (Baba & Hosoda, 2014; Smith & Khawaja, 2011), and dissatisfaction with finances has been linked to worse psychological adaptation outcomes (Hwang & Ting, 2008; Maundeni, Malinga, Kgwatalala, & Kasule, 2010; Sam et al., 2015) among international students. Specific aspects of studying abroad may contribute to international students' financial dissatisfaction. For instance, international students worried about the debt incurred to parents due to the expense of studying abroad (Ang & Liamputtong, 2008), higher tuition fees paid due to international status (Chen, 1999), and the inability to work in a foreign county (Fritz et al., 2008; Yan & Berliner, 2013). Moreover, domestic students are more likely to live with and be supported by parents, whereas international students rely more often on employment to support themselves (Khawaja & Dempsey, 2008).

Summary

The purpose of the present study was to investigate factors that predict psychological adaptation of international students based on a sample of international students studying at a university in the northern part of Cyprus. The project was unique not only because it examined cultural distance, which has not been adequately studied among international students (Bierwiaczonek & Waldzus, 2016), but also because it shifted the role of cultural distance from an intervening to an instigating variable. Moreover, the project examined the buffering role of social support at two points (i.e., diminishing the experience of acculturative stress and the psychological consequences once acculturative stress has been experienced) rather than conflating acculturative stress and psychological adaptation outcomes.

The first research question was comparative:

Research Question 1: Do international students experience worse psychological adaptation compared to Turkish-Cypriot students?

It was hypothesized that international students would experience more negative emotional responses than domestic students to being in the northern part of Cyprus. The second research question concerned the moderating role of social support and had two parts:

Research Question 2: (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? (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?

It was hypothesized that international students with higher cultural distance and more social support would experience less acculturative stress than international students with higher cultural distance and lower social support and that international students who experience more acculturative stress but also more social support would have more positive emotional responses to being in the host country than international students who experience more acculturative stress but who have less social support.

Method

Participants

Data were collected from undergraduate students attending a university in the northern part of Cyprus during summer session. All participants were registered to academic programs taught in English. Ethical approval was granted by the university from which data were collected. Participants were recruited in English-language courses by approaching them in public areas both on and off the university campus and via snowball sampling. All participants received the same packet of survey materials. Turkish-Cypriot students only completed the first section that included the covariates and the psychological adaptation measure; participants from all other countries completed the first and second section, which included measures of acculturative stress, cultural distance, and social support.

Design

Students recruited in the classroom used privacy envelopes to return completed materials to their course teachers, who provided written debriefing. Participants recruited via snowball sampling or in public areas completed the survey individually or in small groups and returned the survey materials in privacy envelopes. Following survey completion, participants received written debriefing.

Instrumentation

Covariates. Participants reported their age, gender, and country of origin. Relationship status was measured in three categories: single, in a relationship, or married. Time in host country was measured by categorical options: *less than 1 year*, *1 year*, *2 years*, *3 years*, or *4 or more years*. Language proficiency in both English and Turkish was assessed with two 4-point Likert items (1 = *poor* to 4 = *excellent*). 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 (1 = *very dissatisfied* to 5 = *very satisfied*). 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 = *worse than expected*, 2 = *same as expected*, 3 = *better than expected*).

Cultural distance. Cultural distance was measured using the Brief Perceived Cultural Distance Scale (BPCDS; Demes & Geeraert, 2014). The BPCDS 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. 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 rate each of the 12 categories on a 7-point Likert scale (1 = *very similar* to 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)?" In the current study, Cronbach's alpha indicated good scale reliability (α = .83).

Acculturative stress. Acculturative stress was measured using the Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994). The ASSIS includes 36 items that assess stressors producing acculturative stress. Participants indicate the degree to which they agree with each item on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). The ASSIS includes six subscales—Perceived Discrimination, Homesickness, Perceived Hate, Fear, Stress due to Change/Culture Shock, Guilt—and 10 miscellaneous items. All items 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." In the current study, Cronbach's alpha for the overall ASSIS was excellent (α = .94). Alpha values for the subscales varied, however. Values for Perceived Discrimination (α = 0.88) and miscellaneous items (α = 0.79) were good, whereas values for Perceived Hate (α = 0.75) and Fear (α = 0.70) were acceptable. Alpha values for Stress due to Change/Culture Shock (α = 0.60), Homesickness (α = 0.54), and Guilt (α = 0.47), however, were borderline acceptable to quite poor.

Social support. The Index of Sojourner Social Support (ISSS) Scale (Ong & Ward, 2005) was used to measure specific functions of social support. The ISSS Scale includes Socioemotional and Instrumental Support subscales and has 18 items. These items require participants to consider if they know any "locals" (i.e., host nationals as well as co-nationals who have adequate experience to act as guides for cultural learning) or anyone living abroad with whom they stayed in communication and who would be willing to provide certain forms of help

(Ong & Ward, 2005). Participants indicate how many people would engage in specific support activities on a 5-point Likert scale (1 = *no one would do this* to 5 = *many would do this*). Sample items include "reassure you that you are loved, supported, and cared for" and "explain and help you understand the local culture and language." In the current study, Cronbach's alpha indicated excellent reliability for the overall scale (α = .93) and good reliability for each subscale (Socioemotional, α = .87; Instrumental Support, α = .87).

Psychological adaptation. The Brief Psychological Adaptation Scale (BPAS; Demes & Geeraert, 2014) assessed psychological adaptation in terms of positive and negative emotional responses to the host culture. The BPAS includes eight items. Participants are asked to "Think about living in [host country]. In the last 2 weeks, how often have you felt . . .?" and to indicate how frequently they have experienced specific positive and negative emotional responses to being in the host culture (e.g., excited, anxious, sad, lonely, curious) on a 7-point Likert scale (1 = *never* to 7 = *always*). In the current study, Cronbach's alpha indicated acceptable scale reliability for all participants together (α = .72), as well as for Turkish-Cypriot (α = .68) and international students (α = .69) separately.

Statistical Analysis

Data analysis was performed using IBM SPSS Statistics Version 24. Missing data for scale values were estimated using expectation maximization (see Roth, 1994). The first hypothesis proposing that international students would have worse psychological adaptation than Turkish-Cypriot students was tested using a one-way, between-subjects analysis of variance (ANOVA). There also were two moderation hypotheses: The first proposed that social support moderated the relationship between cultural distance and acculturative stress among international students, and the second proposed that social support moderated the relationship between acculturative stress and psychological adaptation among international students. Hierarchical multiple regression using the Enter method was performed to examine each hypothesis. Stage 1 of both hierarchical multiple regressions included covariates. Stage 2 of the first hierarchical multiple regression included cultural distance and social support main effects, whereas Stage 3 included the main effects interaction term. Stage 2 of the second hierarchical multiple regression included acculturative stress and social support main effects, whereas Stage 3 included the main effects interaction term. Main effects variables were centered to avoid potentially problematic high multicollinearity with the interaction term, and an interaction term was created based on these centered variables. Assumptions for the ANOVA as well as the hierarchical multiple regression analyses were met (see Mertler & Reinhart, 2016).

Results

Demographic Information

Of the 299 questionnaires collected, 15 participants were excluded because they either indicated graduate status (*n* = 13) or did not respond to the student status question (*n* = 2). Of the 284 remaining participants, 13 were excluded based on subsequent analyses. 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 admitted to not reading the scales while completing the questionnaire were excluded from the analysis. One final international participant was eliminated as a multivariate outlier based on the χ^2 criteria applied to Mahalanobis distance values, χ^2(1, *N* = 104) = 20.61, *p* < .001 (Mertler & Reinhart, 2016).

The final sample included 271 undergraduate students from 25 countries studying in English-medium programs at a university in the northern part of Cyprus. The percentage 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: 23% from the host country (62 students), 39% from Turkey (105 students), and 39% from other countries (104 students). Among international students from countries other than Turkey, nine were from Asian countries, 15 were from Eastern African countries, one was from a country in Middle Africa, one was from a country in Southern Africa, 15 were from Northern African countries, 27 were from Western African countries, 28 were from the Middle East, one was from a country in South America, and seven did not specify their country of origin. Participants in the overall sample ranged in age from 18 to 32 years ($M = 22.20$, $SD = 2.41$). Turkish-Cypriot participants ranged in age from 18 to 25 years, and international participants ranged in age from 18 to 32 years. Additional covariate and scale descriptive statistics among Turkish-Cypriot and international students are presented in Table 1.

Table 1. *Covariate and Scale Descriptive Statistics*

Variables	Turkish-Cypriot, $n = 62$	International, $n = 209$
Age (years)	21.26 (1.89)	22.48 (2.49)
Female gender, *n (%)*	28 (45.20)	93 (44.50)
Single relationship status, *n (%)*	32 (51.60)	131 (62.70)
Time in host country, *n (%)*	—	4.46* (1.22)
English proficiency	3.34 (0.57)	3.11 (0.79)
Turkish proficiency	3.64 (0.58)	2.80 (1.28)
Expectations	2.10 (0.65)	1.90 (1.28)
Financial satisfaction	3.65 (0.69)	3.38 (0.88)
BPCDS	—	56.17 (13.02)
ASSIS	—	70.80 (20.26)
ISSS Scale	—	53.50 (13.54)
BPAS	40.54 (7.99)	28.72 (12.38)

Note. BPCDS = Brief Perceived Cultural Distance Scale; ASSIS = Acculturative Stress Scale for International Students; ISSS = Index of Sojourner Social Support; BPAS = Brief Psychological Adaptation Scale. * Mean corresponds to an average of approximately 3 years. Data are presented as *M* (*SD*) except where otherwise indicated.

ANOVA Test

Results of the ANOVA yielded a statistically significant effect at the $p < .05$ level, $F(1, 227) = 34.23$, $p = .000$, adjusted $R^2 = .13$, indicating that domestic students experienced significantly better psychological adaptation (i.e., more positive emotional responses to being in the northern part of Cyprus) than international students.

Hierarchical Multiple Regression Analyses

Table 2 provides the results of the model testing social support as a moderator between cultural distance and acculturative stress.

Table 2. *Hierarchical Multiple Regression Analyses With Acculturative Stress as the Dependent Variable (n = 209)*

Predictor	β	R^2	ΔR^2
Step 1 (covariates)		0.18	0.18***

	β	R²	ΔR²
Gender	–0.05		
Relationship	–0.03		
Time	–0.08		
English proficiency	0.10		
Turkish proficiency	–0.14		
Expectations	–0.21**		
Financial satisfaction	–0.18*		
Step 2 (main effects)		0.21	0.03*
Cultural distance	0.03		
Social support	–0.18*		
Step 3 (interaction)		0.21	0.003
Cultural Distance × Social Support	0.06		

* p < .05. ** p < .01. *** p < .001.

Age and country of origin were significant at >.25 in the covariates-only model. Therefore, these covariates were removed. Remaining covariates accounted for a significant amount of variance in psychological adaptation, R^2 = .18, F (7,188) = 5.93, p = .000. Expectations (β = −.21, p = .006) and financial satisfaction (β = −.18, p = .016) predicted acculturative stress at a statistically significant level in Step 1. Adding the main effects in Step 2 significantly increased the amount of variance in acculturative stress accounted for, ΔR^2 = .21, ΔF (2,186) = 3.37, p = .036, but only social support predicted acculturative stress (β = −.18, p = .017). In Step 3, the interaction term was not statistically significant, indicating that social support did not moderate the relationship between cultural distance and acculturative stress as hypothesized. Thus, students whose experiences living in northern part of Cyprus were worse than expected, students with lower financial satisfaction, and students with less social support experienced more acculturative stress.

Table 3 provides results of the model testing social support as a moderator between acculturative stress and psychological adaptation among international students. Age was significantly correlated to the outcome at >.25 when covariates only were entered into the model. Therefore, age was removed. Remaining 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 = .03), Turkish proficiency (β = −.22, p = .01), expectations (β = .29, p = .00), and financial satisfaction (β = .15, p = .04) were statistically significant predictors of psychological adaptation. Adding the main effects in Step 2 significantly increased the amount of variance in psychological adaptation accounted for, ΔR^2 = .04, ΔF (2,185) = 4.74, p = .001, but only acculturative stress (β = −.22, p = .004) predicted psychological adaptation. In Step 3, the interaction term was not statistically significant, indicating that social support did not moderate the relationship between acculturative stress and psychological adaptation as hypothesized. Thus, 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 country.

Table 3. *Hierarchical Multiple Regression Analyses With Psychological Adaptation as the Dependent Variable (n = 209)*

Predictor	β	R²	ΔR²

Step 1 (covariates)		0.173	0.173***
Country of origin	0.01		
Gender	0.04		
Relationship	−0.15*		
Time	−0.03		
English proficiency	−0.05		
Turkish proficiency	−0.22*		
Expectation	0.291***		
Financial satisfaction	0.15*		
Step 2 (main effects)		0.214	0.04*
Social support	0.02		
Acculturative stress	−0.22**		
Set 3 (interaction)		0.214	0
Acculturative Stress × Social Support	−0.02		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The comparative hypothesis regarding differences in domestic and international student adaptation was supported; international students experienced more negative emotional responses to being in the northern part of Cyprus than did domestic students. Worse psychological adaptation among international students fits within previous research indicating that international students experience additional negative psychological consequences compared to both students from the host culture and co-nationals who study in their home countries (Pan et al., 2008; Sherry et al., 2010; Zheng & Berry, 1991). Defining psychological adaptation in terms of emotional responses to the host society differs from previous operationalizations, however. Therefore, identifying differences in international and domestic student psychological adaptation using the BPAS extends how psychological adaptation outcomes manifest and helps establish the BPAS as a reliable measure of this construct based on Cronbach's alpha.

The moderation hypotheses were not supported. Results for Hypothesis 2 indicated that social support did not moderate the relationship between cultural distance and acculturative stress, nor did cultural distance predict acculturative stress. Being less satisfied financially, having unmet expectations of the northern part of Cyprus, and having less social support predicted higher levels of acculturative stress, however. Results from the current study linking financial dissatisfaction to acculturative stress are in line with previous research that establish a lack of financial resources as a source of stress (Hwang & Ting, 2008; Smith & Khawaja, 2011; Yan & Berliner, 2013) and as a predictor of decreased life satisfaction (Sam, 2001; Sam et al., 2015). Future research may investigate the degree to which financial dissatisfaction negatively impacts international students versus domestic students. Furthermore, results linking unmet expectations to acculturative stress support the relationship established by Smith and Khawaja (2011) in their review of acculturation experiences of international students. Moreover, social support predicted acculturative stress such that students with more social support reported less acculturative stress, which fits well within a large body of research linking the two variables among international students (Baba & Hosoda, 2014; Park et al., 2014; Sullivan & Kashubeck-West, 2015; J. Zhang & Goodson, 2011; Y. Zhang, 2012). Future research may further explore the role of social

networking sites as tools for broadening students' existing social support networks and helping them establish a social support network in the host country prior to arrival as a means of facilitating adaptation (Forbush & Foucault-Welles, 2016; Pang, 2018), as well as the efficacy of different types of social networking sites to accomplish this purpose (Park et al., 2014). Research on social networking sites may be combined with research investigating the source of international students' social support. That is, research using a structural approach to measuring social support could contribute to existing literature by examining if international students feel more connected and supported by their home networks, co-nationals studying abroad, or host social circles.

In terms of nonsignificant findings, although previous research has identified cultural distance as a source of stress (McLachlan & Justice, 2009; Yan & Berliner, 2013), as a group, participants in the current study may not have experienced a high enough level of cultural distance to result in stress. The average response for how different international students found the host culture vis-à-vis their home cultures was between "neither similar nor different" and "somewhat similar." As a group participants in this research may have experienced low average cultural distance because the sample included a high number of Turkish students who share cultural, historical, linguistic, and religious ties to the host culture, as well as close geographic proximity.

Moreover, the lack of moderation by social support may be due to the social support measure. Although the ISSS Scale (Ong & Ward, 2005) measured two specific functions of social support (i.e., socioemotional and instrumental), it still may have been too general to capture moderating effects. What the measure lacks is evaluating function(s) of specific relationships, as suggested by Cohen and Wills (1985). Cohen and Wills recommended 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), further supporting the claim that the ISSS Scale is a more global functional than a specific functional measure of social support.

Hypothesis 3 also was not supported. Specifically, social support did not moderate the relationship between acculturative stress and psychological adaptation, nor did it predict psychological adaptation. 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 all predicted better psychological adaptation, however. The literature regarding relationship status and psychological adaptation is not only mixed in terms of indicating the presence or absence of a link between these two variables, but it is also contradictory regarding how relationships may influence psychological adaptation. Whereas some studies have associated being in a relationship with better psychological adaptation (Lee et al., 2004; J. Zhang, Mandl, & Wang, 2010), other studies have associated being in a relationship with worse psychological adaptation (Yan & Berliner, 2013) or have not identified a link between relationship status and psychological adaptation (Pan et al., 2008). Results of the current study are in line with findings associating relationships with worse psychological adaptation outcomes defined in terms of an increased level 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). Further research is needed to investigate why relationships may be a source of stress rather than a source of support within the study context.

Turkish proficiency also emerged as a predictor of psychological adaptation. Previous research in contexts where the academic language differed from the local language has produced mixed results. For instance, some studies have linked higher proficiency in the local language to fewer adaptation problems (Maundeni et al., 2010; Q. Wang & Hannes, 2014). The negative relationship between proficiency and psychological adaptation identified in the current study,

however, is in line with previous research linking higher levels of proficiency to worse psychological adaptation (Sam et al., 2015). Moreover, Sam et al. (2015) also found that higher proficiency predicted more perceived discrimination and that perceived discrimination mediated the relationship between language proficiency and psychological outcomes. When considering that higher proficiency correlates 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.

Having unmet expectations also was related to worse psychological adaptation, as indicated in the review of factors influencing international student acculturation by Smith and Khawaja (2011). Moreover, 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; Park et al., 2014; Wu & Mak, 2012; Yakunina et al., 2013; Y. Zhang, 2012).

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 international students (Chirkov et al., 2008; Lee et al., 2004; Poyrazli et al., 2004; Searle & Ward, 1990; Sullivan & Kashubeck-West, 2015; Yang & Clum, 1994). The absence of a relationship between social support and psychological adaptation may be explained by the operationalization of psychological adaptation. Most research investigating the stress-buffering hypothesis has defined psychological adaptation in terms of physical health (Schwarzer, Jerusalem, & Hahn, 1994), acculturative stress (B. C. H. Kuo & Roysircar, 2006), suicide ideation (Yang & Clum, 1994), or mental health outcomes such as anxiety and depression (Lee et al., 2004; Y. Zhang, 2012). The current study operationalized psychological adaption in terms of positive and negative emotional responses to the host culture, however, which may not be influenced by functional social support.

Although 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 (B. C. H. Kuo & Roysircar, 2006; Lee et al., 2004), including acculturative stress (Park et al., 2014; Sullivan & Kashubeck-West, 2015; Y. Zhang, 2012), supported the stress-buffering hypothesis, the nonsignificant finding may be an artifact of using a functional social support measure that was too general to capture that relationship (Cohen & Wills, 1985).

Practical Implications

These results provide a foundation for designing strategies and resources to improve psychological adaptation among international students, which would benefit students and universities alike by improving study-abroad experiences for international students and potentially facilitating student retention (Chirkov et al., 2008; Demes & Geeraert, 2015; Geeraert & Demoulin, 2013). Specific recommendations include creating realistic expectations of the university and the northern part of Cyprus as the study-abroad context among international students before they arrive. Previous 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 (B. C. H. Kuo & Roysircar, 2006; W. H. Kuo & Tsai, 1986). Universities that use third-party agents to recruit students abroad may create more realistic expectations among potential students by providing agents with a greater variety of accurate and detailed information

resources about the university and life in the host context and by requiring agents to hold orientation sessions introducing prospective students to the culture and laws (e.g., employment laws) of the host society. Moreover, a host family system and peer programs could be instituted to facilitate international student adaptation to the new cultural environment (Sümer et al., 2008). To address financial dissatisfaction, universities could provide different forms of financial support by organizing work–study programs, providing job placement services, or extending aid and scholarships programs already in place to decrease international students' financial stress. Furthermore, universities must provide mental health resources to help international students manage acculturative stress and improve psychological adaptation. At the same time, students from different cultural backgrounds do not have the same needs and expectations (Cetinkaya-Yildiz et al., 2011; Khawaja & Dempsey, 2008). Therefore, mental health providers at universities must be equipped in terms of training and resources to meet the diverse needs and expectations of students on a multicultural campus. Universities could make additional culturally and linguistically appropriate mental health resources available to international students (Sümer et al., 2008).

Theoretical Implications

Results both confirmed and disconfirmed aspects of Berry's (1997) acculturation framework. Some covariates predicted the immediate effect of acculturative stress as well as the long-term psychological adaptation outcome and the immediate experience of acculturative stress predicted the long-term outcome of psychological adaptation. At the same time, other covariates failed to predict acculturative stress or psychological adaptation. Moreover, social support was not related to psychological adaptation, nor did it play the role of moderator. These results imply that Berry's comprehensive framework provides a useful guide for selecting variables that could play a role in international student adaptation, but that significant factors vary based on the interaction between the international student population and the host society.

Nonsignificant findings regarding the predictive power of cultural distance for acculturative stress and of social support for psychological adaptation are problematic for Ward and Geeraert's (2016) model of acculturation. Future research using objective cultural distance measures or focusing on more homogenous cultural groups should further investigate the role of cultural distance as a stress-inducing variable rooted in the initial experience of intercultural contact among international students.

Results did not support the stress-buffering hypothesis (Cohen & Wills, 1985). Although social support predicted acculturative stress, it did not predict psychological adaptation. Furthermore, social support did not moderate the relationship between cultural distance and acculturative stress or the relationship between acculturative stress and psychological adaptation. These findings imply that social support may be more important for relationships between other stressors and psychological adaptation outcomes than for those in the current study.

Study Limitations

The ISSS Scale may have been too global to detect the moderation effect of social support for acculturative stress and psychological adaptation. Furthermore, the BPAS may not have measured dimensions of psychological adaptation related to social support. Finally, none of the 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. Although the BPAS, BPCDS, and ISSS Scale all exhibited acceptable to good reliability based on Cronbach's alphas, the Homesickness subscale of the ASSIS had borderline acceptability and Cronbach's alphas for the Stress due to Change/Culture Shock subscale as well as the Guilt subscale were quite low.

Moreover, pooling international students may have created a "heterogeneity challenge" that obscured relationships between variables within specific national groups and ignored individual differences (K. T. Wang et al., 2012, p. 425). Finally, collecting data during the summer may have affected the participant profile and biased the results such that the research was unable to capture relationships between cultural distance, social support, acculturative stress, and psychological adaptation for the typical student.

Conclusion

Although the results do not rule out cultural distance as a source of stress or social support as a buffer between a stressor and the experience of stress or between the experience of stress and negative adaptation outcomes, the results also do not support these variables in these roles. Despite these nonsignificant findings, the results do point to a number of factors influencing acculturative stress (i.e., expectations, financial satisfaction, and social support) and psychological adaptation (i.e., being in a relationship, local language proficiency, expectations, and acculturative stress) among international students in the northern part of Cyprus. Moreover, the results provide a basis for future research in terms of examining different forms of psychological adaptation (e.g., mental health outcomes), additional predictors of psychological adaptation (e.g., discrimination), the role of specific predictors in more detail (e.g., local language proficiency, relationship status), and the role of other forms of both structural and functional social support in this population as well as in specific subgroups of international students.

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