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ORIGINAL ARTICLE

Targeting Interventions: Moderators of the Effects of Expressive Writing and Assertiveness Training on the Adjustment of International University Students

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Abstract Acculturative stress is a common experience for international students and is associated with psychological and physical problems. In a previous study (Tavakoli *et al. Journal of Counseling Psychology 56*:590-596, 2009), the authors reported that two stress reduction interventions—expressive writing (EW) and assertiveness training (AT)—had limited overall benefits among international students at an American University. The current analyses of data from that study investigated whether individual differences moderated the effects of EW and AT. Results indicate that greater acculturative stress at baseline predicted greater improvement from both interventions. Additionally, women benefited more from AT than EW, except that EW improved women's physical symptoms. Men benefited more from EW than AT. Students with limited emotional awareness and expression tended to benefit from both interventions. Finally, nation of origin cultural differences generally did not predict outcomes. It is concluded that the benefits of EW and AT can be enhanced by targeting these interventions to specific subgroups of international students.

Keywords assertiveness training · expressive writing · international students · acculturative stress · moderators

Introduction

The United States has recently experienced the highest percentage increase in international student enrollment since 1980, with an estimated 670,000 international students currently enrolled at American educational institutions (Institute for International Education 2009). Many international students experience acculturative stress, which is an emotional and

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physiological reaction to a new environment that has unfamiliar cultural values, customs, and expectations (Berry 2005), and which is associated with physical and mental health effects (Miranda and Matheny 2000). International students, however, tend to underutilize mental health services (Pines *et al*. 2003), which appears to be due to stigma concerns, different cultural norms, reluctance to acknowledge psychological difficulties, and a tendency to express psychological distress through somatic complaints. International students' increased risk of physical and psychological problems but reluctance to utilize mental health services underscores the importance of developing appropriate and culturally-relevant interventions.

Two interventions, expressive writing about stress (or written emotional disclosure) and group-based assertiveness training, are potentially beneficial stress management interventions. There is substantial literature demonstrating that writing privately about one's difficult life experiences and emotions for several sessions modestly improves health and functioning, at least in American college students (Frattaroli 2006; Smyth 1998). Preliminary findings in relation to Asian American, Mexican, and Korean bilingual students (Kim 2008; Lu and Stanton 2010) also suggest some benefit from expressive writing. Assertiveness training, in which people are taught norms and behaviors for appropriately expressing their needs or wishes while being considerate of the needs of others, is also effective in decreasing depression and anxiety and improving self-esteem among both Western (Rakos 1991) and non-Western samples (e.g., Lee and Crockett 1994; Shimizu *et al*. 2004). These two interventions may be well-suited for international students because both private expressive writing and group-based training experiences may be less intrusive and stigmatizing than personal counseling. Nonetheless, these two approaches have been rarely studied among international students.

The authors recently tested these two interventions in a sample of 108 international students (Tavakoli *et al*. 2009). It was found that assertiveness training led to rather modest benefits on stress, physical symptoms, and mood for the students, and expressive writing had inconsistent results. It is quite likely, however, that some subgroups might have benefited from each intervention, whereas others did not; that is, the effects of the interventions might have been moderated by various background factors. Therefore, the current set of analyses investigated whether factors of acculturative stress, gender, cultural differences, and emotional awareness and expression moderated the effects of expressive writing and assertiveness training in the same sample researched previously by Tavakoli *et al*. (2009).

With respect to baseline acculturative stress, it seems reasonable that interventions should be targeted to those who need it rather than simply being provided for a group of people in general, such as international students. That is, students with elevated stress should be the most likely to benefit from expressive writing and assertiveness training, in large part because they will find the interventions more relevant and also have scope for reductions in stress.

With respect to gender, the two interventions logically may well have different effects on men and women. Research suggests that men and women differ in their degree of emotional disclosure—women tend to be more disclosing of emotional problems than men (Fehr 2004), and cultural expectations about stoicism or vulnerability may inhibit men from being open about emotional struggles (Brannon 2004; Shields 2002). Thus, it might be argued that men might benefit more than women from expressive writing because it encourages the disclosure and processing of feelings, but provides a private context to do so, thus reducing the potential for perceived stigma (Epstein *et al*. 2005). Indeed, a meta-analysis of expressive writing studies found larger effect sizes in studies with a higher proportion of

men (Smyth 1998). However, only two studies have directly investigated gender as a moderator of the effects of expressive writing, and neither found that gender moderated the intervention's effects (Epstein *et al*. 2005; Sheese *et al*. 2004). Moreover, most studies of expressive writing have examined psychology students, but men in such classes may be more introspective and emotionally expressive than the broader male population (Greene 2000). In contrast, many international students come from Eastern and collective cultures with more traditional gender roles (Williams and Best 1990) and many male international students are in the traditionally male-dominated fields of sciences and engineering. Thus, expressive writing may be considered appropriate for male international students, and so we hypothesized that they would benefit more than women from this intervention.

With respect to gender and assertiveness training, research indicates that women report being less assertive than men across many cultures (Costa *et al*. 2001; Goldberg *et al*. 1998), with this being especially the case in collective or Eastern cultures. Developing assertive skills for use in the U.S. may be a useful aspect of bicultural competence. Thus, we anticipated that female international students would benefit more than male students from assertiveness training.

International students are a heterogeneous group, coming from many different countries and cultures. An important cross-cultural variable is individualism versus collectivism, with individualistic nations or cultures characterized by individuals seeking their own well-being and rights, whereas collectivistic cultures emphasize maintaining cohesive groups and extended families, which offer protection to members in exchange for allegiance (Hofstede 2001). The individualism-collectivism variable was seen as potentially moderating the interventions in the current study.

With respect to expressive writing, collectivist cultures, which discourage the social or public sharing of individual concerns or conflicts, may be more likely than individualistic cultures to benefit from a writing intervention that encourages the private disclosure and processing of concerns. Also, assertiveness is closely tied to individualistic values such as those espoused by European nations, whereas assertiveness is de-emphasized in cultures endorsing collectivism and group harmony (Eskin 2003; Niikura 1999; Rodriquez *et al*. 2001). Thus, students from individualistic cultures might be more open to assertiveness training and benefit more from an assertiveness intervention than would students from more collectivist cultures.

A fourth potential moderator in the study undertaken was alexithymia, which refers to a trait or style characterized by three features: (a) difficulty identifying feelings and distinguishing between feelings and bodily sensations of emotional arousal, (b) difficulty describing feelings to other people, and (c) an externally-oriented cognitive style (Taylor *et al*. 1997). People with alexithymia have difficulty recognizing and cognitively or behaviorally regulating stressful experiences and emotional reactions, which can contribute to mood problems, physiological arousal, and somatic complaints (Lumley 2004). Alexithymia usually predicts poorer outcomes of interventions that rely on insight and emotional processing (Lumley *et al*. 2007). Thus, one might expect that alexithymia would predict poorer outcomes of expressive writing, which requires introspection and emotional awareness (Lumley 2004); however, the few studies on this topic have been inconsistent (Paez *et al*. 1999; Solano *et al*. 2003). In contrast, alexithymia appears to predict better outcomes of structured, externally-focused interventions, such as relaxation training (Friedlander *et al*. 1997), or cognitive-behavioral therapy for substance abuse (Rosenblum *et al*. 2005). Because assertiveness training focuses on skills, behaviors, and beliefs, it was hypothesized that students with higher baseline alexithymia would experience better outcomes from assertiveness training.

In summary, given that the prior analyses showed only limited overall benefits of expressive writing and assertiveness training among international students at an American university (Tavakoli *et al*. 2009), we conducted further analyses of the data to determine likely moderators of the effects of these two interventions. Based on the reasoning outlined above, the following hypotheses were made. First, higher baseline acculturative stress would predict greater improvement from both interventions. Second, men would benefit more than women from expressive writing, but women would benefit more than men from assertiveness training. Third, students from more collectivist cultures would benefit more from expressive writing, whereas students from more individualistic cultures would benefit more from assertiveness training. Finally, higher levels of alexithymia would predict less improvement from expressive writing, but more improvement from assertiveness training.

Method

Participants

A sample of 108 international students at an urban university in the Midwest United States participated in the original study. Participants were 18 to 49 years old (M=25); 42% were female and 58% were male; 84% were graduate students and 16% were undergraduates. Regarding country of origin, 40% of the students were from India, 18% were from China, 15% were from various Middle East countries (e.g., Iran, Iraq, Saudi Arabia), and the rest were from 19 other countries. The majority of the students (77%) had been in the U.S. for 1 year or less—the sample median was two months.

Procedure

Participants were recruited from the University through international student orientations and email listservs. Interested students were invited to an information session and those wishing to participate signed the consent forms and completed the demographic questionnaires and measures, including potential moderator measures and baseline versions of the outcome measures. Next, participants received their intervention assignment. They were provided with a sealed envelope (to assure participant and experimenter blindness) that contained their computer-randomized group assignment and began the intervention assigned (see below) that same week. Participants returned approximately 2.5 months later (at the end of a semester) to complete the follow-up versions of the outcome measures, and they were given gift cards or course credit for participating in the assessments.

Interventions

Participants were assigned to expressive writing, assertiveness training, a combination (assertiveness training and expressive writing), or to neither (control condition) in a 2 x 2 design.

Expressive Writing

Students were instructed to write on 3 days over the following week, with each writing session lasting at least 20 minutes. On day 1, participants were instructed to write about stressors relating to their experience of being an international student or about other

stressors or traumas that still bothered them. On day 2, they were instructed to write about how these stressors changed their life, relationships, and view of themselves. On day 3, they were encouraged to evaluate their coping strategies in the past and how they would like to cope in the future. To facilitate uninhibited writing, participants were encouraged to write in their preferred language and not be concerned with grammar or spelling.

Assertiveness Training

Students participated in two 90-minute sessions held 1 week apart. The sessions involved groups of three to seven students and were led by two of three therapists, who were female clinical psychology or counseling graduate students and were natives of countries other than the U.S. Sessions presented information about cultural differences regarding assertiveness, frequently encountered difficulties in assertiveness in the U.S., and maladaptive beliefs that may interfere with assertive behavior. Sessions also utilized behavioral techniques such as modeling, role playing, and application to enhance the participants' skills.

Moderator Measures

The following variables were assessed in the original study (Tavakoli *et al*. 2009) but not at that time analyzed as potential moderators.

Acculturative Stress Scale for International Students (ASSIS; Sandhu and Asrabadi 1994)

Unlike the following two measures, this scale was used as both a potential moderator and an outcome measure. This 36-item scale was developed and validated for international students and has six subscales: (a) perceived discrimination, (b) homesickness, (c) perceived hate, (d) fear, (e) stress due to change/culture shock, and (f) guilt. Items are rated from 1 (strongly disagree) to 5 (strongly agree). The validity of the ASSIS is demonstrated by negative correlations with adjustment and positive correlations with depression among international students (Constantine *et al*. 2004; Wei *et al*. 2007). This sample's alphas at baseline and follow-up were: total scale .91/.94, perceived discrimination .85/.88, homesickness .62/.52, perceived hate .70/.79, fear .69/.71, change/culture shock .55/.59, and guilt .45/.60. The total score was used as a moderator, and the total and subscale scores were used as outcome measures.

Individualistic Versus Collectivist Cultural Affiliation

Hofstede (2001) developed and validated a system to classify countries according to their level of individualistic versus collectivist cultural norms by surveying hundreds of individuals in more than 70 countries. Hofstede then ranked the countries from 0 to 100 on this dimension, with higher rank values indicating that a country has a more individualistic culture, and lower values indicating greater collectivism. For example, Western countries such as the United States and Australia are among the highest ranking in individualism, whereas Latin American countries such as Ecuador and Guatemala and most countries from the East (e.g., China) are among the highest ranking in collectivism. In this study, each student was assigned the Hofstede rank for his or her country of origin, which was used as a moderator measure.

Toronto Alexithymia Scale-20 (TAS-20; Bagby et al. 1994)

This 20-item scale measures three facets of alexithymia: (a) difficulty identifying feelings, (b) difficulty describing feelings, and (c) externally-oriented thinking. Items are rated from 1 (strongly disagree) to 5 (strongly agree). The TAS-20 has a 3-factor structure that is congruent with the theoretical construct of alexithymia (Bagby *et al*. 1994), and this measure has been validated across many languages and cultures (Taylor *et al*. 2003). The internal consistency (alpha) of this moderator measure at baseline was .81.

Outcome Measures

Positive and Negative Affect Schedule (PANAS; Watson et al. 1988)

This 20-item scale assesses both positive affect, which is an engaged emotional experience (e.g., interested, excited, enthusiastic, alert), and negative affect (e.g., distressed, upset, guilty, scared, hostile, nervous) during the prior 4 weeks. Items are rated from 1 (very slightly or not at all) to 5 (extremely). These widely used scales have been validated against a number of criterion measures (Watson *et al*. 1988). This outcome measure's alphas at baseline and follow-up were: positive affect .85/.81; and negative affect .83/.78.

Patient Health Questionnaire (PHQ-15; Kroenke et al. 2002)

This 15-item scale assesses the severity of physical symptoms during the prior 4 weeks from 0 (not bothered at all) to 2 (bothered a lot). The scale has good convergent and discriminant validity, and this outcome measure had alphas at baseline and follow-up of.74/.76.

Center for Epidemiological Studies-Depression Scale (CES-D; Radloff 1977)

This 20-item scale measures depressive symptoms during the prior week from 0 (rarely or none of the time; less than 1 day) to 3 (most or all of the time; 5 to 7 days). The CES-D has excellent internal consistency and its validity has been widely demonstrated. This outcome measure's alphas at baseline and follow-up were both .88.

Data Analyses

Analyses pertaining to randomization, attrition, adherence, and the main effects of the interventions on outcomes were presented in Tavakoli *et al*. (2009) and are not repeated here. Each of the four potential moderators was tested using hierarchical regression analyses (Baron and Kenny 1986). Even though the design of the intervention was a 2 x 2 design, which included a combined condition, analyses were conducted on the "main effects" or main factors of expressive writing and of assertiveness training; that is, those who engaged in expressive writing (including the combination condition) were contrasted with those who did not (including those in the assertiveness only condition). Similarly, those who engaged in assertiveness training were contrasted with those who did not. Focusing on these larger groups allowed sufficient statistical power to test moderator effects.

The hierarchical regression models included a dummy code for the presence/absence of each of the interventions being tested (expressive writing vs. no expressive writing, or assertiveness training vs. no assertiveness training), the potential moderator variable (centered first to reduce collinearity), and then the term reflecting the interaction of

intervention and moderator. Outcome measures in these regressions were change scores (follow-up minus baseline) for each outcome. Significant interaction terms from the regression model indicated that there was a moderator effect. When the moderator was a continuous variable (i.e., acculturative stress, cultural differences, or alexithymia), we interpreted the interaction by determining the slope (standardized Beta) between the moderator and the outcome change score for each group (i.e., intervention vs. no intervention). For the categorical moderator of gender, significant interaction terms were interpreted with follow-up independent samples t-tests.

Results

Acculturative Stress as a Moderator of Expressive Writing

There was a significant interaction between baseline acculturative stress and the presence or absence of expressive writing in predicting positive affect at follow-up, β=.73, $t(103)$=2.50, p=.01. For expressive writing participants, higher acculturative stress tended to predict an increase in positive affect (β=.25,=.09), whereas for those who did not write, higher acculturative stress tended to predict a decrease in positive affect, β=-.24, p=.08.

Acculturative Stress as a Moderator of Assertiveness Training

Baseline acculturative stress interacted significantly with the presence or absence of assertiveness training in predicting changes in the homesickness component of acculturative stress, β=-.66, $t(104)$=-2.19, p=.03. Among those who engaged in assertiveness training, higher baseline acculturative stress predicted decreased homesickness, β=-.41, p=.003, but acculturative stress was unrelated to homesickness for students who did not engage in assertiveness training, β=.02, p=.89.

There were two marginally significant interactions between baseline stress and assertiveness training in the prediction of changes in positive affect, β=.60, $t(103)$=1.92, p=.058, and guilt, β=-.61, $t(104)$=-1.94, p=.055. Among those who engaged in assertiveness training, higher stress predicted increased positive affect, β=.16 p=.26, and decreased guilt, β=-.26, p=.06, compared with opposite trends for those who did not engage in assertiveness training (positive affect: β=-.21, p=.13; guilt: β=.12, p=.41).

Gender as a Moderator of Expressive Writing

Gender interacted significantly with expressive writing in predicting changes in positive affect, β=1.58, $t(103)$=2.73, p=.007. Among expressive writers, men tended to increase in positive affect (M=0.24, SD=0.66) more than women (M=0.04, SD=0.58), $t(48)$=-1.10, p=.28, but the opposite was seen among non-writers, where women increased in positive affect (M=0.26, SD=0.58) significantly more than men (M=-0.22, SD=.66), $t(56)$=2.78, p=.007. Gender also interacted with expressive writing in predicting physical symptoms, β=1.20, $t(104)$=2.06, p=.04. This pattern, however, was opposite to that above. Among expressive writers, women (M=-0.11, SD=0.26) tended to decrease in physical symptoms more than men (M=-0.01, SD=0.22), $t(48)$=-1.58, p=.13, whereas among those who did not write, men (M=-0.12, SD=0.20) tended to improve more than women (M=-0.04, SD=0.22), $t(56)$=1.33, p=.19.

Gender as a Moderator of Assertiveness Training

Gender significantly interacted with assertiveness training in predicting changes in depression, β=1.60, t(104)=2.77, p=.007. Among those who engaged in assertiveness training, women (M=-4.50, SD=13.53) tended to decrease in depression more than men (M=1.25, SD=9.01), t(51)=-1.45, p=.15, whereas among those not taking the assertiveness training, men (M=-2.66, SD=9.19) decreased in depression significantly more than women (M=1.96, SD=5.53), t(53)=2.15, p=.04. A similar trend was seen for changes in the culture shock component of acculturative stress, β=1.02, t(104)=1.74, p=.08. Among those who had assertiveness training, women (M=-0.34, SD=0.59) decreased in culture shock more than men (M=-0.21, SD=0.97), t(51)=-2.02, p=.049], whereas an opposite gender trend was seen among those who did not engage in assertiveness training (women: M=-0.12, SD=0.83; men: M=-0.21, SD=0.79), t(53)=.42, p=.68.

Cultural Difference as a Moderator of Expressive Writing

There was only one significant interaction for this variable. Individualism-collectivism interacted significantly with expressive writing in predicting changes in the fear component of acculturative stress, β=-.68, t(104)=-2.12, p=.03. Among expressive writers, higher individualism was unrelated to change in fear, β=-.01, p=.93, but individualism predicted increased fear among those who did not engage in expressive writing, β=.40, p=.002.

Cultural Difference as a Moderator of Assertiveness Training

The individualism vs. collectivism dimension did not moderate any outcomes related to engaging in assertiveness training.

Alexithymia as a Moderator of Expressive Writing

Baseline alexithymia interacted with expressive writing in predicting changes in positive affect, β=-.64, t(103)=- 2.21, p=.03. Among expressive writers, higher alexithymia tended to predict increased positive affect at follow up, β=.21, p=.14; whereas among non-writers, alexithymia predicted decreased positive affect, β=-.22, p=.10.

Alexithymia as a Moderator of Assertiveness Training

Baseline alexithymia moderated assertiveness training's effects on positive affect, β=.64, t(104)=2.13, p=.04. Among those who engaged in assertiveness training, higher alexithymia was associated with increased positive affect, β=.19, p=.18, but with a decrease in positive affect for those who did not have the assertiveness training, β= -.22, p=.10.

Discussion

A substantial number of students come to the United States for higher education, and these international students are at increased risk for various psychological and physical problems related to acculturative stress in the new environment. Interventions to reduce stress have been developed and tested, but it is both theoretically and pragmatically important to

identify which people are most likely to benefit from a given intervention. This study examined differences among international students in acculturative stress, gender, individualism vs. collectivism, and alexithymia as potential moderators of two stress management techniques—expressive writing about stress and assertiveness training.

Naturally, international students vary in the degree of experienced acculturative stress, and it would be expected that only those with elevated stress would benefit from stress management interventions; those with low or negligible stress would seem to have little need for stress management. Indeed, this is what was found. As hypothesized, students with higher baseline acculturative stress demonstrated increased positive affect after expressive writing (compared with not writing), and both increased positive affect and decreased homesickness and guilt after engaging in assertiveness training. This straightforward set of findings serves as a useful reminder that interventions designed to improve certain conditions—reduction of stress, improved time management, or enhanced study skills, for example—should screen for and intervene with those participants who are experiencing difficulties or limitations targeted by the intervention, rather than assume that generic groups like "international students" as a whole need such interventions.

Gender also appears to have predictive value for stress management interventions. As hypothesized, this study found that men demonstrated increases in positive affect when they engaged in the expressive writing intervention, whereas women increased in positive affect and decreased in depression and culture shock when they engaged in the assertiveness training intervention. Men's greater improvement from expressive writing is consistent with findings from Smyth's (1998) meta-analysis and with hypotheses that men benefit more from expressive writing because of its solitary nature, which allows them to overcome social and cultural barriers against disclosure and to engage in adaptive emotional expression. These results may differ from previous studies that found no gender moderation effect on expressive writing because those studies were primarily of American psychology students (e.g., Epstein *et al*. 2005; Sheese *et al*. 2004), whereas this sample came mostly from traditional cultures and with students typically studying sciences and engineering—characteristics that may have accentuated gender differences and the relative value of expressive writing.

Female international students appear to be more willing to acknowledge difficulties to other people than are their male counterparts (Komiya and Eells 2001). Thus, the female international students in this study may have been more receptive to the interpersonal nature of the assertiveness training and more willing to utilize it by disclosing and discussing their difficulties than were the male international students. Furthermore, because women are more likely to report higher levels of emotional disclosure and intimacy in interpersonal relationships than men, it is possible that assertiveness training was perceived by the women as a form of social support that enabled them to share their stressors and be empathically heard and supported. It should be noted, however, that this study might have had a gender matching effect, because it involved only female assertiveness trainers, who may have been viewed as role models by the women students.

One notable exception to these gender findings was that women who engaged in expressive writing reported decreases in physical symptoms, whereas the men did not. Although this seems inconsistent with the overall trend of men benefiting more than women from expressive writing, it is possible that any tendency to somatize emotional stress among women from other cultures was countered by expressive writing, and they benefited from the emotional expression facilitated by the experience, but also benefited from the psychoeducational and supportive elements in the assertiveness training, as did most of the other women in the sample.

The study also examined the potential moderator of cultural differences, as relating to an individualism/collectivism dimension. There was only one finding in this regard, which was not consistent with the hypotheses: higher individualism students who engaged in expressive writing did not show an increase in fear although non-writers did. Although it is likely that cultural differences in general moderate the effects of interventions, it is possible that the method of measuring cultural differences—classifying students according to an average cultural norm of their country of origin—did not adequately reflect the values of individual students. Also, because the majority of the students came from China or India, scores on the individualism vs. collectivism dimension were not evenly distributed.

Alexithymia is the fourth individual difference variable that was studied, and with respect to assertiveness training, the hypothesis was supported. Higher alexithymia predicted increased positive affect when participants engaged in assertiveness training, compared to no assertiveness training. Alexithymic students are likely to benefit from assertiveness training because it is more structured and focuses on changing specific and concrete thoughts and behaviors. These results are consistent with findings (Friedlander, 1997; Rosenblum *et al*. 2005) that structured interventions emphasizing external stimuli, in contrast to insight and emotional processing, are more fitting with the cognitive style and the emotional processing difficulties of people with alexithymia (Lumley 2004).

Students with higher alexithymia also increased in positive affect after expressive writing, compared with non-writing. We had hypothesized the opposite, that alexithymia would interfere with the benefits of expressive writing, but the finding is consistent with several other studies (Baikie 2008; Paez *et al*. 1999; Solano *et al*. 2003). Although the alexithymia scale that was used in this study has been tested in 19 different cultures (Taylor *et al*. 2003), psychological constructs are often confounded by culture-specific variables, and in this sample, the scale may have tapped a construct related more to suppression and inhibition of emotional expression rather than deficits in emotional processing, which is the classic definition of alexithymia. It is possible that the sample in this study may have been engaging in inhibition and benefited from being asked to openly identify, describe, and process feelings in expressive writing.

This study has several limitations. First, we recognize that the group comparisons were complicated by the fact that subsets of students also engaged in another intervention (e.g., the combined group). Although this complicates interpretation, it is not a true confound, because conditions were randomly assigned and, therefore, controlled. Second, the majority of the students were from India or China, which is representative of the international student population in the location drawn on and many other American universities, but which limits generalization to international students from other nations and cultures. Third, it is important to remember that moderator analyses are inherently correlational and, therefore, one cannot conclude that the individual differences investigated actually caused the outcomes of the interventions—they are only associated with those outcomes. Finally, each of the moderators tested in this study are themselves related to other variables that may be more important with respect to treatment outcomes. For example, gender is at best a convenient proxy measure for attributes that are probably more important, such as variation in emotional and behavioral variables.

Despite these limitations, the study represents an important step in understanding which international students are most likely to benefit from particular stress management interventions, especially in view of the greater adjustment difficulties typically experienced during initial transition into a foreign university (Van Oudenhoven and Van der Zee 2002). The findings suggest that it is optimal and efficient to target certain subgroups of international students for these interventions. Men and students with higher baseline levels

of acculturative stress and possibly alexithymia appear to respond best to expressive writing, and women and individuals with higher stress and alexithymia seem to respond best to assertiveness training. The findings also suggest the need for continued modification as well as tailoring of the interventions to be more culturally sensitive so that they can benefit a wider range of international students.

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