

Effects of Assertiveness Training and Expressive Writing on Acculturative Stress in International Students: A Randomized Trial

Shedeh Tavakoli, Mark A. Lumley, Alaa M. Hijazi, Olga M. Slavin-Spenney, and George P. Parris
Wayne State University

International university students often experience acculturative stress, and culturally appropriate techniques to manage stress are needed. This randomized trial tested the effects of group assertiveness training, private expressive writing, their combination, and a wait-list control on the acculturative stress, affect, and health of 118 international students at an urban North American university. Interventions were conducted at the start of a semester, and assessments were conducted at baseline and at the end of the semester. Group assertiveness training was rated positively by students and led to lower negative affect, whereas expressive writing was less well received and led to higher homesickness and fear, but also to higher positive affect. The combined intervention had no effects, perhaps because the 2 components negated each other. It is concluded that group assertiveness training improves emotional adjustment of international students but that expressive writing has mixed effects and needs further development and study.

Keywords: assertiveness training, expressive writing, international students, acculturative stress, randomized clinical trial

Undergraduate or graduate education can be stressful, particularly for international students who sojourn to study in another country. Unlike native students, international students need to develop bicultural competence, or second-culture acquisition, as they maintain their own values while adjusting to the practical, interpersonal, and emotional challenges encountered in the host country (Mori, 2000; Noh & Kaspar, 2003; Poyrazli & Grahame, 2007; Zahi, 2002). As a result, many international students experience acculturative stress, which is a physiological and emotional reaction to a new environment that has unfamiliar cultural values, customs, and expectations (Berry, 2005), and such stress may contribute to the increased incidence of mental and physical health problems found among international students (Ryan & Twibell, 2000).

Increasing numbers of international students in the United States are coming from cultures that espouse communal or interdependent goals, such as India and China, rather than individuality, which is more commonly found in the West. As a result, many international students tend to avoid openly acknowledging psycho-

logical difficulties and to underutilize university counseling services (Russell, Thomson, & Rosenthal, 2008; Yakushko, Davidson, & Sanford-Martens, 2008). The higher risk for stress and lower acceptance of counseling services suggest the importance of developing alternative interventions for international students. Although methods to make counseling more culturally acceptable have been offered (e.g., Singaravelu & Pope, 2007), stress management interventions might be more successful if approaches other than the traditional counseling format are used. Two such alternatives are group-based assertiveness training to address interpersonal or communication challenges and private expressive writing to deal with emotional concerns.

Research indicates that international students are particularly concerned about certain aspects of U.S. culture, such as appropriate communication (Parr, Bradley, & Bingi, 1992), particularly in universities, which call for interactions that may be difficult for students from other cultures (Aubrey, 1991). For example, students in North American universities are expected to question authority, criticize others' work, express differing opinions, negotiate roles in teaching or research, decline excessive requests, and decide what personal concerns can be shared and with whom. These challenging situations call for assertive communication, which is defined as the legitimate and honest expression of one's rights, thoughts, and feelings while not aggressing, violating, or denying the rights of others (Rakos, 1991). Training in assertive communication may be ideal for international students because it does not assume the presence of mental health problems and is optimally presented in a class or workshop, which may be more acceptable than might an individual format (Arthur, 2004). One might be concerned that teaching assertiveness is in conflict with the values of students from collectivist cultures. Yet, developing such skills for use in the United States may be a useful aspect of bicultural competence. Moreover, assertiveness training is well received, improves self-

Shedeh Tavakoli and George P. Parris, Department of Counselor Education, Wayne State University; Mark A. Lumley, Alaa M. Hijazi, and Olga M. Slavin-Spenney, Department of Psychology, Wayne State University.

Shedeh Tavakoli is now at Argosy University.

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Correspondence concerning this article should be addressed to Mark A. Lumley, Department of Psychology, Wayne State University, 5057 Woodward, 7th Floor, Detroit, MI 48202. E-mail: mlumley@wayne.edu

esteem, and lessens stress among East Asians in their own countries; such has been the case for Japanese and Taiwanese nurses (Lee & Crockett, 1994; Shimizu, Kubota, Mishima, & Nagata, 2004). There has not, however, been controlled research on assertiveness training for international students.

International students also experience a range of emotional stressors. These include not only typical developmental challenges faced by most students (autonomy, intimacy, evaluation of belief systems), but also difficulties associated with their international status, such as being a great distance from loved ones, guilt, discrimination, and intense pressure from families and the home culture to excel academically (Mori, 2000; Zahi, 2002). How should students cope with this emotional stress? There is a substantial literature, developed almost exclusively in the United States and Europe, showing that expressive writing (also known as written emotional disclosure)—privately writing for three or four sessions about one's thoughts and feelings about difficult experiences—modestly reduces stress and improves health (Fratraro, 2006; Smyth, 1998). But will this work for international students? Research shows that people from East Asia—the home of many international students—are less emotionally expressive than are Westerners (Gross & John, 1998; Okazaki, Liu, Longworth, & Minn, 2002), which suggests that encouraging such students to write about their negative emotions may counter cultural display rules about not expressing emotions and result in no benefit or perhaps a worsening of stress. Importantly, however, such cultural differences occur mostly in interpersonal or social situations. When alone, people from the West and the East do not differ in the experience and expression of emotions (Tsai, Chentsova-Dutton, Freire-Bebeau, & Przymus, 2002; Tsai, Levenson, & Carstensen, 2000), and the physiological manifestations of emotion do not differ among cultures, even when outward expression is attenuated (Tsai & Levenson, 1997). More generally, basic emotions appear to be universal (Izard, 1994), and the awareness, experience, and processing of emotions appear to be evolutionarily adaptive across cultures because they provide vital information about the person–environment relationship and motivation for action (Lazarus, 1991). Finally, two recent studies have found that native students in Japan responded positively to expressive writing, with improved immune function and working memory (Takagi & Ohira, 2004; Yogo & Fujihara, 2008), suggesting that the potential benefits of this technique may be worldwide. Thus, expressive writing conducted in a private, nonsocial setting may confer benefits for international students, but this has not been researched.

This study, therefore, tested the hypotheses that both group assertiveness training and private expressive writing would improve the acculturative stress, affect, and physical symptoms of international students attending a North American university, compared with a no-intervention control condition. We also hypothesized that the combination of these two interventions would improve adjustment more than either one alone because the stressful experiences disclosed in expressive writing often involve problematic relationships, which might respond well to training that targets communication difficulties. This study also directly compared the two interventions with each other, although no literature was available to guide hypotheses about their comparative efficacy. Finally, data were collected on participants' attitudes toward the interventions to illuminate their acceptance among international students.

Method

Participants

Participants were 118 students enrolled at an urban university in the midwestern United States who were classified as *international* in the university system. Students who were raised with English as their first language were excluded so that the sample would be likely to experience more acculturative stress. (This criterion also excluded the large number of English-speaking Canadians who attend this university.) All students, however, had adequate English language proficiency as a prerequisite for admission to the university.

Participants were 18 to 49 years old ($M = 25$); 40% were women and 60% were men; 20% were undergraduates, whereas 80% were graduate students (47% master's and 33% doctoral students). Most students (86%) were single, and most (87%) were living with roommate(s) or family, whereas 13% were living alone. Regarding country of origin, 44% of the students were from India, 16% were from China, 10% were from Middle Eastern countries (e.g., Iran, Iraq, Saudi Arabia), and the rest were from 22 other countries. The majority of the students (78%) had been in the United States for 1 year or less, and the sample median was 2 months; however, 22% of the sample had been in the United States longer than 1 year, ranging up to 10 years.

Procedure

Recruitment and consent. Recruitment occurred in the Fall 2006 and the Winter and Fall 2007 semesters. Announcements about the study were made at new-student orientations for international students and through electronic mailing lists for international students. Interested students were invited to a group information session about 2 weeks into the semester. Participants signed consent forms approved by the institutional review board and completed a demographic survey and the baseline set of the outcome measures. They then began the assigned intervention (described below), which was completed over the following week. Students returned at the end of the semester to complete the follow-up outcome measures (approximately 2.5 months after baseline), and they were given \$20.00 in gift cards for completing the assessments or course credit, if applicable.

Experimental groups and interventions. Using a computer, we randomized students in blocks of four and placed instructions for each condition in sealed envelopes to keep researchers and students blind to condition until they opened the envelopes. After completing baseline measures, students and researchers opened the next randomized envelope, read the instructions together, and started the intervention. Participants were assigned to an assertiveness training condition, an expressive writing condition, a combination condition (assertiveness training and expressive writing), or to a waiting-list control condition.

Assertiveness training. Students assigned to this condition participated in two 90-min sessions, held in small groups of 3–5 students, at convenient times on campus. The first session was usually held right after the baseline measures were completed, and the second session was 1 week later. Three female graduate students in counselor education or clinical psychology (all of whom were raised in non-English-speaking countries) were trained and supervised by a psychologist, and groups were run by two of these

graduate students. The training sessions presented culturally sensitive information about making and declining requests, disagreeing, and sharing personal information, which was followed by practicing the assertive communications via modeling, role-playing, feedback, and application. The participants were encouraged to practice between sessions. At the second session, held 1 week later, students' efforts and outcomes during the week were reviewed; their questions or fears about assertive communication in this new culture were answered, explored, and challenged when indicated; and additional teaching and role playing were done.

Expressive writing. Students assigned to expressive writing were asked to write in private at home for three 20-min sessions during the week after baseline. Students were instructed to write about stressful issues related to being an international student or any other stressful or traumatic experience that still bothered them, and to write on the same topic on Days 2 and 3. On Day 2, they were asked to include how the stress has affected them and changed their view of themselves, their relationships with others, their beliefs, or their health. On Day 3, they were asked to include in their writing how they have coped with stressful experiences in the past, how successful their coping attempts were, and how they might cope with the problems now or in the future. They were instructed to write freely, to not be concerned about grammar or spelling, and to write in whichever language they preferred, which was anticipated to facilitate disclosure and processing of emotions. Writings were identified by a unique number rather than name, and students were given stamped envelopes to mail their writings back to the psychologist.

Combined assertiveness training and expressive writing. Students in this condition participated in the assertiveness training classes (along with those students who were assigned to assertiveness training only), and they engaged in the expressive writing at home during the week between the two sessions of assertiveness training. They also mailed in their writings.

Waiting-list control condition. Students in this condition had neither assertiveness training nor expressive writing but returned for the follow-up assessment and were then offered the option to participate in the next semester's assertiveness classes or expressive writing, if they wished.

Outcome Measures

All of the measures were assessed at both baseline and follow-up, except for the measure of intervention perceptions, which was completed only at follow-up.

Acculturative Stress Scale for International Students (ASSIS). The 36-item ASSIS (Sandhu & Asrabadi, 1994) was developed and validated for international students and has six subscales: Perceived Discrimination, Homesickness, Perceived Hate, Fear, Stress Due to Change/Culture Shock, and Guilt. Items are rated from 1 (*strongly disagree*) to 5 (*strongly agree*). The validity of the ASSIS was demonstrated by negative correlations with adjustment and positive correlations with depression among international students (Constantine, Okazaki, & Utsey, 2004; Wei et al., 2007). Internal consistency reliabilities in this sample at baseline/follow-up were as follows: total scale, $\alpha = .91/.94$; Perceived Discrimination, $.85/.88$; Homesickness, $.62/.52$; Perceived Hate, $.70/.79$; Fear, $.69/.71$; Change/Culture Shock, $.55/.59$; and Guilt, $.45/.60$.

Positive and Negative Affect Schedule (PANAS). The 20-item PANAS (Watson, Clark, & Tellegen, 1988) 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). Items were rated from 1 (*very slightly or not at all*) to 5 (*extremely*) with respect to the previous 4 weeks. This widely used scale was developed on Western samples and validated against a number of criterion measures (Watson et al., 1988). This sample's alphas at baseline/follow-up were the following: positive affect, $.85/.81$; and negative affect, $.83/.78$.

Patient Health Questionnaire (PHQ-15). The 15-item PHQ (Kroenke, Spitzer, & Williams, 2002) assesses the severity of physical symptoms during the prior 4 weeks, from 0 (*not bothered at all*) to 2 (*bothered a lot*). In Western samples, the scale has good convergent and discriminant validity, and the baseline/follow-up alphas were $.74/.76$.

Perceptions of the interventions. Students who engaged in either of the interventions rated on a 5-point scale, from 1 (*strongly disagree*) to 5 (*strongly agree*), how much they had enjoyed the intervention and how helpful or useful it had been to them.

Results

Comparison of Experimental Groups at Baseline

Analyses determined whether randomization of the 118 students yielded equivalent groups. The four groups did not differ on age, education, and living situation but were marginally significantly different on gender, $\chi^2(3, N = 118) = 6.65, p = .084$; expressive writing tended to have a larger percentage of men (75.9%) than did the other groups, particularly the combination group (51.7%) and the control group (46.7%). There were no group differences on baseline levels of the outcome variables (all $p > .18$; see baseline row of Table 1).

Attrition and Adherence Analyses

Of the 118 students, 10 did not complete the study. These 10 noncompleters did not differ from the 108 completers on baseline measures and most demographics, although noncompleters were younger, $t(116) = 4.95, p = .03$. Also, the four conditions tended to differ in the number of noncompleters: combined ($n = 5$), expressive writing alone ($n = 3$), assertiveness training alone ($n = 2$), control ($n = 0$); although these differences were not significant, $\chi^2(3, N = 118) = 5.91, p = .12$. Participation in assigned conditions was quite good. Of the 108 completers, 52 had been randomized to assertiveness training (either alone or in combination with writing), and of these, only 2 students (3.8%) did not attend an assertiveness class. Of the 50 students randomized to expressive writing (either alone or in combination with assertiveness training), only 5 students (10%) did not complete at least two of the three assigned writings.

Only six of the students' expressive writings were not in English, and research team members who were fluent in those languages translated four of them. The stressors written about were family and relationship difficulties (23% of all writings), adjusting to the new culture or missing home (18%), academic stress (18%), mental health difficulties (e.g., depression or anxiety; 14%), finan-

Table 1
Baseline, Follow-Up, and Change Scores on Outcomes for the Four Conditions

Outcome measure	Assertiveness training alone ^a	Expressive writing alone ^b	Combination ^c	Control ^d
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
ASSIS: Total score				
Baseline	2.48 (0.62)	2.51 (0.54)	2.42 (0.62)	2.49 (0.60)
Follow-up	2.29 (0.66)	2.48 (0.68)	2.37 (0.58)	2.37 (0.57)
Change	-0.19 (0.54)	-0.03 (0.47)	-0.05 (0.50)	-0.12 (0.33)
ASSIS-Discrimination				
Baseline	2.21 (0.81)	2.53 (0.76)	2.22 (0.76)	2.34 (0.80)
Follow-up	2.10 (0.78)	2.46 (0.93)	2.26 (0.76)	2.17 (0.73)
Change	-0.11 (0.69)	-0.07 (0.62)	0.03 (0.62)	-0.17 (0.60)
ASSIS-Homesickness				
Baseline	3.10 (0.77)	2.95 (0.79)	3.25 (0.91)	3.12 (0.96)
Follow-up	2.82 (0.16)	3.13 (0.81)	2.92 (0.70)	2.91 (0.82)
Change	-0.27 (1.01)	0.17 (0.88)	-0.33 (0.75)	-0.21 (0.80)
ASSIS-Perceived Hate				
Baseline	2.24 (0.74)	2.08 (0.52)	2.08 (0.77)	2.29 (0.85)
Follow-up	2.11 (0.78)	2.20 (0.81)	2.15 (0.76)	2.25 (0.81)
Change	-0.13 (0.87)	0.12 (0.56)	0.07 (0.60)	-0.05 (0.70)
ASSIS-Fear				
Baseline	2.28 (0.94)	2.15 (0.81)	2.29 (0.72)	2.28 (0.84)
Follow-up	1.93 (0.75)	2.18 (0.93)	2.03 (0.77)	2.15 (0.79)
Change	-0.35 (0.84)	0.03 (0.83)	-0.26 (0.86)	-0.13 (0.67)
ASSIS-Culture Shock				
Baseline	2.74 (0.90)	2.77 (0.86)	2.97 (0.86)	2.60 (0.83)
Follow-up	2.60 (1.04)	2.54 (0.92)	2.76 (0.66)	2.46 (0.76)
Change	-0.14 (0.88)	-0.23 (0.81)	-0.21 (0.82)	-0.14 (0.81)
ASSIS-Guilt				
Baseline	2.25 (1.06)	2.13 (0.94)	2.29 (1.00)	2.00 (1.03)
Follow-up	2.14 (0.96)	2.31 (0.91)	2.58 (1.08)	2.07 (1.08)
Change	-0.11 (0.90)	0.17 (0.80)	0.29 (0.17)	0.07 (0.89)
Positive affect				
Baseline	3.28 (0.65)	3.19 (0.66)	3.52 (0.79)	3.48 (0.69)
Follow-up	3.32 (0.55)	3.54 (0.62)	3.48 (0.74)	3.42 (0.65)
Change	0.05 (0.54)	0.35 (0.51)	-0.04 (0.69)	-0.06 (0.76)
Negative affect				
Baseline	2.23 (0.78)	1.83 (0.56)	1.97 (0.67)	2.02 (0.69)
Follow-up	2.00 (0.56)	2.10 (0.66)	2.12 (0.64)	2.18 (0.59)
Change	-0.23 (0.64)	0.27 (0.79)	0.15 (0.70)	0.16 (0.80)
Physical symptoms				
Baseline	7.25 (4.35)	6.84 (3.72)	6.44 (4.61)	6.52 (5.12)
Follow-up	5.62 (3.52)	6.19 (3.64)	5.43 (4.65)	5.59 (4.28)
Change	-1.63 (3.07)	-0.65 (2.66)	-1.01 (4.39)	-0.92 (3.22)

Note. $N = 108$. ASSIS = Acculturative Stress Scale for International Students.

^a $n = 28$. ^b $n = 26$. ^c $n = 24$. ^d $n = 30$.

cial problems (12%), physical health problems (8%), communication difficulties (4%), childhood problems (2%), and coping with loss/death (1%).

Analyses of Perceptions of the Interventions

Based on the 1-to-5-point scale of agreement, assertiveness training alone was rated as more enjoyable ($M = 4.61$, $SD = 0.50$) than was expressive writing alone ($M = 3.17$, $SD = 1.07$), $t(49) = 7.20$, $p = .01$, and more helpful ($M = 4.11$, $SD = 0.57$) than was expressive writing alone ($M = 3.26$, $SD = 1.21$), $t(49) = 20.86$, $p < .001$. Expressive writing in the combination condition was more helpful ($M = 3.86$, $SD = 0.85$) than was expressive writing alone, $t(42) = 4.68$, $p = .04$. These ratings indicate that participants agreed quite strongly that assertiveness training was enjoy-

able and helpful, whereas participants viewed expressive writing more neutrally.

Primary Analyses of the Completer Sample

Primary analyses were conducted on students with outcome data ($n = 108$). Pairs of groups were compared with repeated measures analyses of variance, with time (baseline and follow-up) as the repeated measure. Time \times Condition interactions were examined, which indicated whether the groups being compared had different changes across time. Effect sizes are presented, in this case, partial eta squared (η^2), which is the proportion of variance in change scores (baseline to outcome) accounted for by group. Values of η^2 of .01, .06, and .14 are considered to be small, medium, and large, respectively. Below, the results for the various group com-

parisons for each outcome measure are presented separately. Table 1 presents the mean (and standard deviation) of each measure for each of the four groups at baseline and follow-up, as well as the change over time (follow-up minus baseline).

Analyses were first directed toward the ASSIS. Although groups did not differ on the total score, there were differences for the Homesickness and Fear subscales. Homesickness was significantly higher in the expressive writing group than in the combination group, $\text{Group} \times \text{Time } F(1, 49) = 4.70, p = .035, \text{p}\eta^2 = .088$, and marginally significantly higher than in the assertiveness group, $F(1, 52) = 2.92, p = .094, \text{p}\eta^2 = .053$, and in the control group, $F(1, 54) = 2.91, p = .094, \text{p}\eta^2 = .051$. Homesickness tended nonsignificantly to increase over the semester for the expressive writing alone condition, whereas Homesickness tended to decrease for the other three conditions, although this decrease was significant only in the combination group, paired-samples $t(23) = 2.18, p = .04$. For Fear, expressive writing was marginally significantly higher than was assertiveness training, $\text{Group} \times \text{Time}$ interaction, $F(1, 52) = 2.74, p = .10, \text{p}\eta^2 = .05$. Fear slightly increased in the expressive writing group but decreased significantly in the assertiveness training group, $t(27) = 2.187, p = .038$. Fear also tended to decrease nonsignificantly in the combination and control groups.

There also were some group differences on the affect measures. For negative affect, there were significant $\text{Time} \times \text{Group}$ effects when assertiveness training was compared with all three other groups: expressive writing, $F(1, 52) = 6.49, p = .014, \text{p}\eta^2 = .11$; combination, $F(1, 50) = 4.20, p = .046, \text{p}\eta^2 = .078$; and control, $F(1, 56) = 4.17, p = .046, \text{p}\eta^2 = .069$. Negative Affect decreased marginally significantly over the semester for the assertiveness training group, $t(27) = 1.87, p = .07$, whereas it increased marginally significantly for the other groups, particularly expressive writing, $t(25) = -1.74, p = .09$.

For positive affect, there were significant $\text{Time} \times \text{Group}$ effects when expressive writing was compared with all three other groups: combination, $F(1, 48) = 5.11, p = .028, \text{p}\eta^2 = .096$; assertiveness training, $F(1, 52) = 4.32, p = .043, \text{p}\eta^2 = .077$; and control, $F(1, 54) = 5.19, p = .027, \text{p}\eta^2 = .088$. Positive affect increased significantly from baseline to follow-up for the expressive writing group, $t(25) = -3.43, p = .002$, compared with little or no change for the other three groups.

Finally, the groups did not differ on change in Physical Symptoms. Although the assertiveness training group decreased in symptoms the most, this was not significantly different from the other three groups.

Intent-to-Treat and Control Analyses

The above analyses were done on 108 completers, but recommended practice is to analyze all randomized participants (intent-to-treat analyses). To do this, missing follow-up values of the 10 noncompleting students we replaced with each student's own baseline values. Analyses on this randomized sample revealed the same or slightly stronger findings than for the completer sample. For example, Homesickness remained significantly higher in the expressive writing condition than in the assertiveness training ($p = .03$) condition and marginally significantly higher than in the combination ($p = .059$) or control ($p = .08$) conditions. Also, negative affect continued to be lower in the assertiveness training condition

than in the other conditions, and positive affect continued to be higher in the expressive writing group than in the other three conditions. A new finding in the intent-to-treat sample is that Guilt was marginally significantly lower for the assertiveness group than for the combination group ($p = .057$), which is consistent with the other benefits found for assertiveness training.

Finally, because there was a nonsignificant trend toward different proportions of the two genders among the four groups at baseline, gender was controlled in the primary analyses. The results were unchanged from those presented above.

Discussion

This study was motivated by the observation that many international students experience acculturative stress as they face the communication and emotional challenges of adjusting to academic life and U.S. culture. Mental health or counseling services at universities are not widely used by many international students, particularly by the growing number of students from relatively collectivist societies such as India, China, and the Middle East (Russell et al., 2008; Yakushko et al., 2008), perhaps because seeking mental health services and disclosing emotional problems face to face are not consistent with the cultural values of many students. Therefore, this study tested whether two interventions—group assertiveness training and private expressive writing—along with their combination could reduce the acculturative stress and improve the affect and health of international students attending a North American university. The results suggest that assertiveness training had some benefits and was well received by the students, whereas expressive writing was less well received and had mixed effects. The combination of conditions had no effects.

The premise of the potential value of teaching assertive communication skills was based on the observation that acculturative stress stems, in part, from difficulties in communicating one's needs, disagreeing, declining requests, and determining with whom to share personal information, particularly in the North American academic setting. It was anticipated that assertiveness training would be acceptable to international students because it does not require acknowledging emotional problems to others and is presented in a workshop format. Assertiveness training was rated very positively by the students, suggesting that the design, content, and culturally sensitive manner of its presentation were highly valued. Assertiveness training also led to less-pronounced negative affect than did the other three conditions. These findings are consistent with studies of assertiveness training among other groups, including people in East Asian countries, that have found that assertiveness skills are linked to increased self-esteem and personal power, and decreased anxiety, depression, and negative thoughts (Lee & Crockett, 1994; Shimizu et al., 2004).

The premise underlying the second intervention, expressive writing, was that stress is reduced when one enhances awareness and the experience of one's inhibited, negative feelings. It was anticipated that the ability to express one's conflicts and feelings privately in writing rather than interpersonally would be acceptable to people whose cultural values may encourage emotional nonexpressiveness in social contexts. Indeed, this study found that international students were quite revealing in their writings, sharing emotionally difficult experiences related to families and relationships, academic stress, finances, and mental health difficulties.

This suggests that this private technique accomplished its goal of eliciting emotional disclosure. Yet, with respect to outcomes, expressive writing had mixed and generally negative effects. Writing about stress led to greater homesickness than did the other conditions and to increased fear, compared with the combination group. Although expressive writing typically creates a transient negative mood (Smyth, 1998), the negative effects in this study lasted at least 2–3 months and paralleled participants' ratings of expressive writing, which were much lower in enjoyment and helpfulness than were ratings for assertiveness training. It is likely that paying attention to one's negative feelings about being an international student made homesickness more salient, whereas the focus on relationships in the other conditions may have prevented this. It is also possible that many international students, particularly those from collectivistic cultures, are not accustomed to techniques that enhance emotional awareness and expression, and are unsure about what to do with their experience. Perhaps giving such students postwriting direction or feedback would be of value. Yet, null or even iatrogenic effects of expressive writing have been found in other samples. Studies of North American college students also found that writing increased homesickness (Pennebaker, Colder, & Sharp, 1990) and fatigue and avoidance (Greenberg, Wortman, & Stone, 1996). Although expressive writing has rarely been tested in ethnic minorities, negative immune effects were found after African Americans wrote about racism (Stetler, Chen, & Miller, 2006), suggesting that expressive writing may have unexpected and undesirable effects in some ethnic nonmajority samples—a caution that has been noted previously (Wellenkamp, 1995).

It is interesting to note that expressive writing also increased positive affect more than did the other three conditions. Positive affect, which refers to the state of being active, energetic, interested, determined, and the like, is theoretically independent of negative affect. Thus, it is possible that expressive writing created not only negative emotions but positive engagement as well, which could ultimately enhance adjustment by supporting open thinking about intercultural experiences (Matsumoto, Hirayama, & LeRoux, 2006). Alternatively, expressive writing may have led to a generalized increase in awareness of all emotions, which is reflected by higher positive as well as negative affect scores.

The combination of expressive writing and assertiveness training was not effective. The most likely explanation is that the positive effects of assertiveness training were nullified by the negative effects of expressive writing. Yet, it should be acknowledged that the two conditions were not integrated as optimally as possible. Writing was done in the week between the two sessions of assertiveness training and dealt with a wide range of stressors, and each assertiveness class contained some students assigned to the combination condition (who engaged in writing) and other students assigned to assertiveness training only (who did not write). Thus, the class did not discuss or directly target any of the topics that students wrote about. Future research might better test the integration of expressive writing and assertiveness training by having the writing deal specifically with stress related to relationships, completing the writing before assertiveness training, and applying the assertiveness training to the communication difficulties written about.

There are other limitations to this study. First, the majority of our students were from India or China. Even though they were

representative of the international student population at this university, one should be cautious in generalizing the findings to samples composed largely of students from other countries. Second, this study also had students from 28 countries other than India and China, which vary greatly in the value their cultures place on assertiveness and emotional expression, and such heterogeneity limits understanding of specific nationalities or cultures (Hofstede, 2001). Future research should examine interventions among more homogeneous samples of international students, which will permit one to study the effects of matches and mismatches between cultural attitudes and interventions (Bagozzi, Wong, & Yi, 1999). Third, although most of the students were recent sojourners, some had been in the United States for a longer duration. This variability also likely reduced the need for interventions to reduce acculturative stress, and future research might select only newly arrived students. Fourth, this study relied on self-reported outcomes, which, except for the ASSIS, were not developed for or validated on international students, and the reliability of some of the measures, particularly the subscales of Homesickness, Guilt, and Culture Shock, was rather low. Furthermore, self-report measures present only a partial picture of functioning; nonsubjective outcomes, such as immunologic status and medical center visits, have been found to be more responsive to expressive writing than have been outcomes such as mood and symptoms (Smyth, 1998), and assertiveness training may have improved actual interpersonal behavior or academic functioning. Therefore, future research should use measures validated on international students, as well as non-self-report measures when possible.

Despite these limitations, we conclude that group assertiveness training is viewed positively by international students and has some emotional and stress benefits for them, and we recommend its implementation. Expressive writing, in contrast, is viewed more negatively and has shown mixed outcomes, and we urge caution in its use until we can identify those people who might benefit from it and how expressive writing might be modified to be more helpful. Finally, we encourage further research on the factors that contribute to adjustment difficulties of international students, and the creative development and testing of interventions to reduce their acculturative stress.

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