Forbearance Coping, Identification With Heritage Culture, Acculturative Stress, and Psychological Distress Among Chinese International Students

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Based on Berry's (1997) theoretical framework for acculturation, our goal in this study was to examine whether the use of a culturally relevant coping strategy (i.e., forbearance coping, a predictor) would be associated with a lower level of psychological distress (a psychological outcome), for whom (i.e., those with weaker vs. stronger identification with heritage culture, a moderator), and under what situations (i.e., lower vs. higher acculturative stress, a moderator). A total of 188 Chinese international students completed an online survey. Results from a hierarchical regression indicated a significant 3-way interaction of forbearance coping, identification with heritage culture, and acculturative stress on psychological distress. For those with a weaker identification with their heritage culture, when acculturative stress was higher, the use of forbearance coping was positively associated with psychological distress. However, this was not the case when acculturative stress was lower. In other words, the use of forbearance coping was not significantly associated with psychological distress when acculturative stress was lower. Moreover, for those with a stronger cultural heritage identification, the use of forbearance coping was not significantly associated with psychological distress regardless of whether acculturative stress was high or low. Future research and implications are discussed.

Keywords: forbearance coping, acculturative stress, identification with heritage culture, enculturation, Chinese/Taiwanese international students

Acculturative stress is a type of stress associated with the process of adapting to a new culture (Berry, 1997, 2005, 2006; Berry, Kim, Minde, & Mok, 1987). International students with Chinese cultural heritages (referred to as Chinese international students in this paper) often experience stress related to the challenges of adjusting to a new culture, the rigorous academic demands (Li & Gasser, 2005), and the use of their nonnative language. In the current study, we focused on Chinese international students from China, Taiwan, and Hong Kong because, as a group,

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they are often the largest international student group on U.S. college campuses (Institute of International Education, 2010) and because they have similar cultural values and characteristics. Moreover, due to significant cultural differences between European American and Chinese/Asian cultures, studies have consistently shown that Asian international students tend to report greater acculturative stress than European international students studying in the United States (e.g., Abe, Talbot, & Geelhoed, 1998; Sodowsky & Plake, 1992).

Berry (1997) developed a theoretical framework on acculturation, which depicted the process of acculturative adjustment and adaptation (i.e., acculturation experiences \rightarrow appraisal of experiences \rightarrow coping strategies \rightarrow immediate effects or outcomes \rightarrow long-term outcomes). Moreover, he proposed that several moderating factors could impact the process of acculturation, such as factors prior to acculturation (e.g., sex, personality, language differences, or migration motivation) and factors during acculturation (e.g., acculturation modes, discrimination, or social support). These factors could moderate any associations (e.g., coping strategies \rightarrow outcomes) outlined in the process of acculturation adjustment and adaptation.

In this study, in line with Berry's (1997) theoretical framework on acculturation, we specifically examined whether or not the association between a culturally relevant coping strategy (i.e., forbearance coping; see more detail below) and outcomes (i.e., psychological distress) might be moderated by acculturation mode (i.e., identification with one's heritage culture) and acculturative

stress for Chinese international students' cross-cultural adjustment in a predominantly White university environment. This research question matches well with a call for examining culturally relevant coping strategies for acculturation (e.g., Heppner, 2008; Wong, Wong, & Scott, 2006; Yeh, Arora, & Wu, 2006). Moreover, it is consistent with a long-standing goal in counseling psychology, which is to determine which strategies (e.g., forbearance coping) maintain well-being (e.g., low levels of psychological distress), for whom (e.g., those with weaker vs. stronger identification with heritage culture), and under what situations (e.g., lower vs. higher acculturative stress; Paul, 1967). Surprisingly, only two published studies (Cross, 1995; Wei, Ku, Russell, Mallinckrodt, & Liao, 2008) and one dissertation (Lau, 2007) were found that explored the role of coping in Chinese international students, and only a few studies explored the role of identification with the home and host cultures (e.g., Cemalcilar, Falbo, & Stapleton, 2005; Wang & Mallinckrodt, 2006; Ward & Rena-Deuba, 1999) in international students' adjustment. More studies in the above areas are clearly needed.

Forbearance Coping as a Predictor of Psychological Distress

Forbearance coping is a common Chinese coping strategy that refers to the minimization or concealment of problems or concerns in order to maintain social harmony and not trouble or burden others (Moore & Constantine, 2005; Yeh, Arora, & Wu, 2006). In collectivistic cultures, people are often encouraged to sacrifice themselves, endure their distress, and put others' needs first (Marsella, 1993). As such, Chinese individuals may be reluctant to share personal problems with others because this may create interpersonal conflicts, burden others, or cause others to worry about them (Lee, 1997; Moore & Constantine, 2005; Yeh, Arora, & Wu, 2006; Yeh, Inman, Kim, & Okubo, 2006). In a review of a series of empirical studies, Kim, Sherman, and Taylor (2008) confirmed this coping strategy and described that people with Asian cultural heritages are more reluctant to explicitly ask for support from close others than are European Americans because they are more concerned about the potentially negative relational consequences of such behaviors.

Kim et al. (2008) further suggested two reasons why people in collectivistic cultures may be relatively more cautious about bringing personal problems to the attention of others for the purpose of enlisting their help. First, their collectivistic cultural assumption is that individuals should not burden their social networks. Second, individuals in collectivistic cultures have the social obligation to be sensitive to others' needs. Thus, good friends and family will often sense others' needs, especially in times of distress. Conversely, people in individualistic cultures may ask for social support more frequently with relatively less caution. The reasons are related to their individualistic cultural assumption that individuals should proactively pursue their well-being and that others have the freedom to choose to help or not.

In Berry's (1997) theoretical framework on acculturation, he indicated that it is important to examine whether or not individuals' life skills (e.g., a culturally relevant forbearance coping) developed in their heritage culture would work effectively to maintain low levels of psychological distress when they move to a new cultural context (i.e., U.S.). Based on our review, the associ-

ation between forbearance coping and depressive symptoms is inconsistent and complicated, at least in the context of discrimination (a part of acculturative stress). For example, Noh, Beiser, Kaspar, Hou, and Rummens (1999) found that the use of forbearance coping predicted fewer depressive symptoms among Southeast Asian refugees faced with high racial discrimination. Later, Noh and Kaspar (2003) further explored whether forbearance coping would still predict fewer depressive symptoms among Korean immigrants (who have more social resources and were more acculturated) in the face of discrimination. Noh and Kaspar (2003) did not replicate the previous results. Instead, they found that forbearance coping predicted greater (rather than fewer) depressive symptoms among Korean immigrants who reported a higher level of perceived discrimination.

Based on Berry's (1997) framework on acculturation, the inconsistent results on the link between forbearance coping (a predictor) and depressive symptoms (outcomes) might imply a need to examine potential moderators (e.g., acculturation modes, discrimination, or social support) for this link. Noh and Kaspar (2003) did subsequently examine whether the reasons for the inconsistent association between forbearance coping and depressive symptoms could be explained by ethnic social support (i.e., feeling well connected to and supported by the members of their ethnic communities). Consistent with Berry's theory, the results revealed a significant three-way interaction for ethnic social support. Specifically, in the face of discrimination, when Korean immigrants were not well connected with and supported by their cultural communities, forbearance coping was positively associated with depressive symptoms. However, when they were well connected with and supported by their cultural communities, forbearance coping was not significantly associated with depressive symptoms. Noh and Kaspar interpreted their results as indicating that strong ethnic support may compensate or offset the negative effects of forbearance coping on depression in the face of high discrimination. Alternatively, these results may suggest that when strong ethnic support is available, the use of a culturally congruent coping strategy such as forbearance coping is functional would be associated with relatively lower levels of depression in the face of high discrimination. That is, forbearance coping is an effective coping strategy when others in individuals' support systems can recognize that they are stressed and need support, even though they may not verbally express their needs. In short, the association between forbearance coping and depression may vary depending on the types of social support available (i.e., a moderating variable in Berry's model), in this case, levels of ethnic social support in the context of discrimination.

Forbearance Coping, Identification With Heritage Culture, and Acculturative Stress

The present study was theoretically based on Berry's (1997) framework for acculturation to further explore potential moderating variables. In terms of methodology, we expanded Noh and colleagues' (Noh et al., 1999; Noh & Kaspar, 2003) studies on racial discrimination to acculturative stress among Chinese international students. Because Chinese international students are living in the intersection of collectivistic and individualistic cultures, we specifically examined for whom (e.g., those with weaker/stronger identification with heritage culture) and under what situ-

ations (e.g., lower/higher acculturative stress) would a culturally relevant forbearance coping have a weak association with psychological distress. That is, the association between forbearance coping (a predictor) and psychological distress (an outcome) might depend on one's level of identification with heritage culture and one's level of acculturative stress (two moderators). Thus, we were most interested in examining a three-way interaction of Forbearance Coping \times Identification With Heritage Culture \times Acculturative Stress on psychological distress.

We hypothesized that for those having weaker identification with their heritage culture, the use of forbearance coping might put them in the vulnerable situation for psychological distress when acculturative stress was higher. This is because they are less likely to be around people from their heritage culture who are sensitive to their needs and subsequently provide support for them. Therefore, we anticipated that for those who hold a weaker identification with their heritage culture, forbearance coping would be significantly and positively associated with psychological distress when acculturative stress is higher. In contrast, the use of forbearance coping might not put them in the vulnerable position for psychological distress when acculturative stress was lower. Perhaps the lower acculturative stress itself might decrease the likelihood of having greater psychological distress. In addition, saving face (Sheu & Fukuyama, 2007) and taking care of others first (Kim, Atkinson, & Yang, 1999) are important in Chinese culture. When acculturative stress is lower, forbearance coping to keep their problems to themselves or not let others to worry about them may help them to save face and feel good for not burdening others, thus maintaining a relatively lower level of psychological distress. Thus, we anticipated that, for those who hold a weaker identification with their heritage, forbearance coping would have a weak negative association or a close to zero association with psychological distress when acculturative stress was lower.

Furthermore, we hypothesized that for those Chinese international students who hold a stronger identification with their heritage culture, forbearance coping would have a weak negative association or a close to zero association with psychological distress regardless of whether acculturative stress was higher or lower. This is because forbearance coping matches well (i.e., is culturally congruent) with these students' acculturation mode of a stronger identification with their heritage culture. For instance, when such students encounter acculturative stress, they may habitually use culturally relevant forbearance coping to minimize their problems in order not to let others to worry about them. Concordantly, in Asian cultural norms, "there may be a belief that one should not have to ask for support because people should anticipate close others' needs for support and provide it before support is explicitly sought" (Kim et al., 2008, p. 520). Hence, it is unnecessary for people to express their own needs verbally because Asian cultural values emphasize sensitivity to other's needs for support. Not asking for help can also reduce the appearance of being demanding or selfish to others (Uba, 1994). For these reasons, even though Chinese international students do not request help, people from their ethnic communities are likely to be sensitive to their needs for support and provide it to them (Kim et al., 2008; Uba, 1994). In such situations, this culturally relevant forbearance coping can function well within these students' ethnic communities as long as everyone understands the cultural norms (e.g., not letting others worry about them) and respective behaviors

(e.g., being sensitive to other's needs for support and providing it to them). Thus, we anticipated that, for those holding a stronger identification with heritage culture, forbearance coping would have a weak negative association or a close to zero association with psychological distress regardless of whether acculturative stress was higher and lower.

Current Study

In sum, based on Berry's (1997) framework for acculturation and the above reasoning, we hypothesized a significant three-way interaction of forbearance coping, identification with one's heritage culture, and acculturative stress in predicting psychological distress. In particular, we expected forbearance coping (a predictor variable) to be significantly and positively associated with psychological distress (an outcome variable) only for those who hold a weaker identification with their heritage culture in a higher level of acculturative stress (two moderators).

Moreover, in the literature on international students' adjustment, some demographic variables have been found to be associated with the index of psychological distress. For example, those who have greater English proficiency (Wang & Mallinckrodt, 2006) and who have been in the United States longer (Ye, 2005) reported fewer psychological symptoms. Younger international students experienced better adjustment than did older students (Ying & Liese, 1990). Therefore, these person variables were used as covariates to control for their impact on psychological distress.

Method

Participants

A total of 188 Chinese international students from a large public midwestern university participated in this study. The participants' countries of origin were China/Hong Kong (n=166; 88%) and Taiwan (n=21; 11%); one person did not respond to this question. Participants consisted of 92 (49%) men and 94 (51%) women (two persons did not indicate their sex). The mean age was 26.6 years (SD=4.4; range = 18–39 years). Participants reported being in the United States for an average of 2.6 years (SD=2.0). The mean score of perceived English proficiency (a sum of English proficiency on listening, speaking, reading, writing, and overall; see more details below) was 3.4 on a 1–5 scale, with 5 indicating a high proficiency (SD=0.7; range = 1.4–5.0). The majority of participants (82%) were graduate students. Two thirds of the participants were either in a dating relationship or married, and one third were single.

Procedure

A list that contained the contact information of international students from China/Hong Kong and Taiwan was obtained from the registrar's office. Working from this list, a research assistant initially called a group of 410 randomly selected students to see whether they were interested in a study related to Asian international students' adaptation; 392 students agreed to participate, and 18 students were not interested in this study. A total of 258 students actually participated in this study. However, 21 students had incomplete data, and 48 students inaccurately responded to a

validity item (i.e., "please click #1 [Strongly Disagree] for this item" on a 1–5 Likert scale. Forty-eight participants were removed from the data analyses because they clicked a number other than 1). Thus, the complete data for 188 participants were used in the analyses, which is 46% of the initial pool of 410 participants.

For those who agreed to participate, an invitation e-mail with a website link was sent to them. Participants were informed that the goal of the study was to identify factors that might help reduce Asian international students' stress and facilitate their adaptation to the United States. In the online survey, it was indicated to the participants that by completing the survey, they had consented to participate in the study. Two follow-up reminder e-mails were sent to encourage individuals to participate. After the survey was completed, a debriefing form was provided. Also, participants could provide their contact information, which would be stored in a separate data file, to enter a drawing for one of ten \$20 cash prizes. Participants were given the option of completing the survey in Simplified Mandarin Chinese, Traditional Mandarin Chinese, or English. There were 114 participants (61%) who completed the Simplified Mandarin Chinese version, 40 participants (21%) who completed the Traditional Mandarin Chinese version, and 34 participants (18%) who completed the English version.

Instruments

All the measures chosen for this study were translated from English to Traditional Mandarin Chinese and Simplified Mandarin Chinese. Both of these are two standard forms of the Mandarin Chinese written language. The former is used in Taiwan, and the latter is used in Mainland China. The translation process involved three steps (Brislin, 1970, 1980). First, two doctoral students (one English/Chinese bilingual and familiar with Traditional Mandarin Chinese and the other English/Chinese bilingual and familiar with Simplified Mandarin Chinese) translated the measures from English to Traditional Mandarin Chinese and Simplified Mandarin Chinese versions, respectively. The consistency between these two Chinese translation versions was thoroughly examined by a team of three authors and a third Asian bilingual student. Second, a bilingual doctoral student in psychology who was blind to the purpose of the study and was unfamiliar with the measures performed back translation of the measures from Traditional or Simplified Mandarin Chinese to English. Third, two native English speakers who were senior undergraduate students in psychology (also blind to the purpose of this study) examined the original English items and the back-translated items for their semantic equivalency and accuracy.

English proficiency. The English proficiency scale was created for this study to assess participant's self-perception about their own English proficiency in listening, speaking, reading, writing, and overall English ability. This scale includes five items. Sample items are "How good would you rate your English conversation ability?" and "How good are you in writing a paper in English?" Participants were asked to rate their English proficiency on a 5-point scale of 1 (*very poor*) to 5 (*very good*). The total scores can range from 5 to 25, with higher scores indicating a higher level of perceived English proficiency. Coefficient alpha was .86 for Chinese international students (Liao, 2011). In this study, coefficient alphas were .89 (total sample), .88 (Chinese version), and .90 (English version), respectively. Validity evidence

was provided by a positive association with positive affect and negative associations with academic stress and shame among Chinese international students (Liao, 2011).

Length of time in U.S. The length of time in the United States was assessed by directly asking the participants "How long have you been in the United States?" Participants responded how many years and how many months they had stayed in the United States. The responses on months and years were combined to create a year variable. The average year was computed to indicate the length of time in the United States for each participant.

Forbearance coping. Forbearance coping was measured by the forbearance subscale of the Collectivistic Coping Styles Measure (CCSM; Moore & Constantine, 2005). Forbearance was measured to assess international students' tendency to refrain from sharing their problems with important others for fear of burdening them (Moore & Constantine, 2005). Sample items are "I keep the problem or concern to myself in order not to worry others" and "I told myself that I could overcome the problem or concern." The forbearance scale (four items) is rated on a 5-point Likert scale ranging from 1 (not used) to 5 (used often). Higher scores suggest greater endorsement of forbearance as a coping strategy. Participants were asked to indicate the extent to which they had used forbearance as a coping strategy to cope with a stressful situation related to being an international student within the past 2 to 3 months. The scale has a coefficient alpha of .95 and a 2-week test-retest reliability of .80 (Moore & Constantine, 2005) among a sample of international students from Africa, Asia, and Latin America. In this study, coefficient alphas were .76 (total sample), .76 (Chinese version), and .75 (English version), respectively. Validity of the forbearance scale was supported by a negative association with seeking professional mental health and a positive association with utilizing avoidance coping strategies among international students (Moore & Constantine, 2005).

Identification with heritage culture. The Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000) was used to measure identification with heritage culture. The VIA includes the Heritage and Mainstream subscales, but only the Heritage subscale was used for this study. The Heritage subscale has 10 items that assess adherence to one's heritage cultural values and behaviors. Sample items are "I am interested in having friends from my heritage culture" and "I believe in the values of my heritage culture." The items are rated on a 9-point Likert scale ranging from 1 (strongly disagree) to 9 (strongly agree). Higher scores represent higher levels of identification with one's heritage culture. The coefficient alpha was .92 among college students with a Chinese heritage (Ryder et al., 2000). In this study, coefficient alpha was .87 for the total sample, .86 for the Chinese version, and .90 for the English version. Among Asian immigrants and Asian Americans, the score on the Heritage subscale was positively associated with the score on a measure of perceived stress, but the score on the Mainstream subscale was not (Hwang & Ting, 2008), providing support for the discriminant validity of the VIA. Among Asian international students from China, Japan, and Korea, the score on the Mainstream subscale but not on the Heritage subscale was positively associated with the score on a scale of intrinsic motivation for learning English. This finding provides support for the discriminant validity of the VIA (Rubenfeld, Sinclair, & Clément, 2007).

The Acculturative Scale for Interna-Acculturative stress. tional Students (ASSIS; Sandhu & Asrabadi, 1994) was used to measure participants' level of acculturative stress. This scale consists of 36 items and measures acculturative stress experienced by international students. The ASSIS includes seven factors: Perceived Discrimination (eight items), Perceived Hate (five items), Homesickness (four items), Fear (four items), Stress Due to Change/Cultural Shock (three items), Guilt (two items), and Nonspecific Concerns (10 items). Sample items are "I am treated differently in social situations" and "I feel uncomfortable to adjust to new cultural values." Each item is rated on a 5-point Likert-type scale ranging from (1) strongly disagree to (5) strongly agree. The total scores can range from 36 to 180, with higher scores indicating higher levels of acculturative stress. The coefficient alpha of the scale ranged from .92 to .94 among international students in general (Constantine, Okazaki, & Utsey, 2004; Poyrazli, Kavanaugh, Baker, & Al-Timimi, 2004; Yeh & Inose, 2003) and Chinese international students specifically (Wei et al., 2007). In this study, coefficient alphas were .94 (total sample), .94 (Chinese version), and .94 (English version), respectively. Validity of the scale scores was evidenced by a negative association with social connectedness among international students (Yeh & Inose, 2003) and a positive association with depressive symptoms among international students in general (Constantine et al., 2004) and Chinese international students specifically (Wei et al., 2007).

Psychological distress. Psychological distress was measured by the Hopkins Symptom Checklist–21-item version (HSC; Green, Walkey, McCormick, & Taylor, 1988). It consists of general distress, somatic distress, and performance distress subscales. Sample items are "your feelings being easily hurt" and "feeling blue." Each subscale comprises seven items that are rated on a 4-point Likert scale ranging from 1 (not at all) to 4 (extremely). A total score was used in the present study. Higher scores indicate higher levels of psychological distress. The coefficient alpha for the total HSC-21 was .87 among international students (including Asian international students; Komiya & Eells, 2001) and .86 among Asian American students (Christopher & Skillman, 2009). In this study, coefficient alphas were .85 (total sample), .86 (Chinese version), and .82 (English version), respectively. Validity for the HSC-21 was established through a negative association with social support among Vietnamese students (Chung, Bemak, & Wong, 2000).

Results

Preliminary Analyses and Descriptive Statistics

Because multiple regression analyses can be adversely affected by substantial departures from normality, it is important that the data meet regression assumptions of linearity, homoscedasticity, and normality (see Cohen, Cohen, West, & Aiken, 2003, pp. 117–141, for a discussion). We conducted a hierarchical regression for the three-way interaction effect (i.e., Forbearance Coping × Identification With Heritage Culture × Acculturative Stress) on psychological distress. Our analysis showed there was no violation of the assumption of linearity or residual homoscedasticity. The skewness in the residual was 0.38 (Z=2.08, p=.04) and the kurtosis of the residual was -0.17 (Z=-0.48, p=.63). The results indicated a slightly significant departure from normality. Thus, a square-root

transformation of the dependent variable (i.e., psychological distress) was used (Cohen et al., 2003). When the transformed psychological distress variable was employed in the regression model, it resulted in a decrease in the skewness of the residual score to 0.21 (Z=1.17, p=2.4) and a decrease in the kurtosis of the residual score to -0.38 (Z=-1.07, p=2.8). These results implied that Z values were not significantly different from zero, which met the regression assumption of normality. When we used the transformed variable in analyzing the data, the pattern of results for the regression analysis was identical to that found using the original psychological distress variable. For this reason, the original psychological distress variable was used in the present analysis because it is easier to interpret regression coefficients based on the untransformed dependent variable.

Moreover, a series of analyses of variance were conducted to examine whether each of the four main variables were different among those who took the English, Traditional Chinese, and Simplified Chinese versions. No differences were found; all F(2, 185) = 0.12 to 1.73 and ps = .18 to .89. Means, standard deviations, ranges of scores, and zero-order intercorrelations are presented in Table 1. Forbearance coping was not significantly associated with identification with heritage culture, acculturative stress, and psychological distress. Next, identification with heritage culture was not significantly associated with acculturative stress but was negatively and weakly (r = -.15, p < .05) associated with psychological distress. Finally, acculturative stress was positively and moderately (r = .50, p < .001) associated with psychological distress.

A Three-Way Interaction

Before examining the moderation effects, all covariates and predictors were standardized in order to reduce multicollinearity (Aiken & West, 1991; Frazier, Tix, & Barron, 2004). A hierarchical multiple regression analysis was performed. In Step 1, we entered the covariate variables (i.e., perceived English proficiency, length of time in United States, and age). In Step 2, we entered one predictor (i.e., forbearance coping) and two moderators (i.e., identification with heritage culture and acculturative stress) to test the main effects. In Step 3, we entered all possible combinations of two-way interactions. Finally, in Step 4, we entered a three-way interaction (Forbearance Coping × Identification With Heritage Culture × Acculturative Stress) to test the three-way interaction hypothesis (see Table 2). The increment in \mathbb{R}^2 provides the significance test for the interaction effect. Several scholars indicated that interaction effects in social science literature typically account for approximately 1–3% of the variance (Champoux & Peters, 1987; Chaplin, 1991). According to Cohen (1992), an \mathbb{R}^2 value of .01 to .03 (i.e., 1-3% of the variance) indicates a small effect size; we thus expected a small effect size for the interaction effect in the current study.

As depicted in Table 2, in Step 1, the overall covariate variables were significant in predicting psychological distress. Perceived English proficiency uniquely predicted psychological distress. In Step 2, the overall main effects of forbearance coping, identification with heritage culture, and acculturative stress added an incremental 29% of the variance in predicting psychological distress. The main effects of acculturative stress and identification with heritage culture were significant. In Step 3, the overall two-way

Table 1 Correlations, Means, Standard Deviations, and Ranges Between the Variables

Variable	1	2	3	4	5	6	7
1. English proficiency	_						
2. Length of time in U.S.	.25***	_					
3. Age	.14	.67***	_				
4. Forbearance coping	.10	02	08	_			
5. Identification with heritage culture	.04	.07	.11	.02	_		
6. Acculturative stress	24**	.15*	.16*	07	.02	_	
7. Psychological distress	17^{*}	07	09	.04	15^{*}	.50***	
M	3.43	2.57	26.55	12.45	67.24	89.96	32.96
SD	0.66	1.98	4.38	3.51	10.89	18.90	9.05
Possible range	5-25			4-20	10-90	36-180	21-84
Sample range	7–25	0.08-9.58	18-39	5-20	34–90	39-145	21-60

Note. N = 188-182. Higher scores on English proficiency, length of time in U.S., age, forbearance coping, acculturative stress, identification with heritage culture, and psychological distress indicated a higher level on each of the variables. p < .05. p < .01. p < .01. p < .01.

interactions were not significant. In Step 4, the three-way interaction was significant and contributed an incremental 3% of the variance in predicting psychological distress (a small effect size). The three-way interaction of Forbearance Coping \times Identification With Heritage Culture \times Acculturative Stress was thus significant in predicting psychological distress.

Because of the significant three-way interaction, a simple effect analysis was conducted to examine if the regression slope was significantly different from zero (Aiken & West, 1991; Frazier et al., 2004). We also plotted regression slopes of the significant three-way interaction by using the value of high (1 SD) and low (-1 SD) for forbearance coping, identification with heritage culture, and acculturative stress. The results indicated that, for those holding a weaker identification with heritage culture (see Panel A in Figure 1), forbearance coping significantly predicted greater psychological distress when acculturative stress was high (b=4.49, $\beta=.51$, p<.001). However, this was not a case when acculturative stress was low. That is, the association between forbearance coping and psychological distress was not significant

when acculturative stress was low (b = -1.11, $\beta = -.13$, p = .30). Similarly, for those holding a stronger identification with heritage culture (see Panel B in Figure 1), the association between forbearance coping and psychological distress was still not significant when acculturative stress was high (b = 0.75, $\beta = .08$, p = .41) or low (b = 0.40, $\beta = .04$, p = .68).

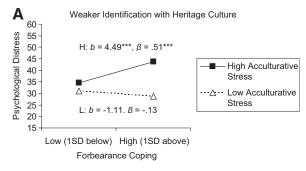
Discussion

As expected, our results indicated there was a significant three-way interaction of forbearance coping, identification with heritage culture, and acculturative stress in predicting psychological distress. For those holding a weaker identification with heritage culture, the association between forbearance coping and psychological distress was significant and positive when acculturative stress was high (see the solid line on Panel A in Figure 1). These results suggest that the frequent use of forbearance coping can put Chinese international students holding a weaker identification with heritage culture at risk for psychological distress when faced with

Table 2 Three-Way Interaction of Forbearance Coping \times Identification With Heritage Culture \times Acculturative Stress on Psychological Distress

Predictor	b	SE b	β	ΔR^2	$\Delta F\left(df\right)$		
Step 1 (covariates)					3.41* (3, 178)		
Perceived English proficiency	-2.00	.69	22**				
Length of time in U.S.	0.70	.90	.08				
Age	-1.04	.88	12				
Step 2 (main effects)				.29	25.90*** (3, 175)		
Forbearance coping	0.85	.55	.10				
Identification with heritage culture (Heritage)	-1.50	.55	17**				
Acculturative stress (AS)	4.82	.58	.54***				
Step 3 (2-way interactions)				.02	2.01 (3, 172)		
Forbearance Coping × Heritage	-0.48	.53	06				
Forbearance Coping × AS	1.21	.54	.14*				
Heritage × AS	-0.18	.52	02				
Step 3 (3-way interactions)				.03	7.60**(1, 171)		
Forbearance Coping \times Heritage \times AS	-1.31	.48	17**				

Note. N = 182. * p < .05. ** p < .01. *** p < .001.



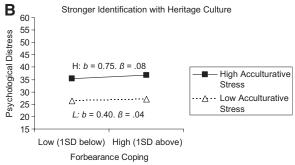


Figure 1. The interaction effects of forbearance coping and acculturative stress on psychological distress for those who hold a weaker (Panel A) and stronger (Panel B) identification with heritage culture. ***p < .001.

higher levels of acculturative stress. The results are similar to Noh and Kaspar's (2003) findings that in the face of discrimination, when Korean immigrants were not well connected with and supported by members from their cultural communities, forbearance coping was positively associated with depressive symptoms. Perhaps Chinese international students who use forbearance coping tell themselves that they can overcome their problems and difficulties. However, acculturative stress may be related to factors (e.g., perceived discrimination or perceived hate) that are beyond their own personal capacity (e.g., endurance) to handle. In addition, those with a weaker identification with heritage culture may be less likely to have connections with people from their heritage culture. Therefore, they are less likely to have people who can be sensitive to their difficulties and provide support for them when they conceal their difficulties. For these reasons, concealment of problems, lack of cultural resources to support them, and high acculturative stress might put such students in a vulnerable position for psychological distress.

Conversely, for those holding a weaker identification with heritage culture, the association between forbearance coping and psychological distress was weak and in a negative direction when acculturative stress was low (see the dashed line on Panel A of Figure 1). There are some possible interpretations for this finding. First, the lower acculturative stress itself might keep psychological distress lower because these Chinese international students are likely able to cope without the assistance of others. Second, at lower levels of acculturative stress, concealing their difficulties in order not to burden others may prevent Chinese international students from feeling selfish, demanding (Uba, 1994), or guilty, thus helping to keep psychological distress lower. Finally, keeping problems to themselves may allow these students to save face

(Sheu & Fukuyama, 2007) and maintain interpersonal harmony (Kim et al., 1999; Kim, Li, & Ng, 2005), which are important Chinese cultural values.

Moreover, for those holding a stronger identification with their cultural heritage, the associations between forbearance coping and psychological distress were weak and close to zero regardless of whether acculturative stress was high or low (see the solid and dashed lines in Panel B of Figure 1). These results confirm Berry's (1997) theoretical framework on acculturation and respond to the call for examining the moderating variables. These results are also consistent with Noh and Kaspar's (2003) finding. Both studies imply the importance of taking into account collectivistic ways of coping (e.g., forbearance coping), cultural identification (e.g., stronger identification with heritage culture or ethnic social support), and acculturative stress/racial discrimination in studying the mental health of people with Asian heritage. Equally important, these results imply that forbearance coping is an effective coping strategy when people from their ethnic groups can recognize their need for support even if they do not verbally express those needs. As addressed earlier, in Asian cultural norms, it is a virtue to be sensitive to others' needs and provide support to them before they request it (Kim et al., 2008; Uba, 1994). Those with a stronger identification with their heritage culture may be more likely to have friends from their cultural heritage and enjoy social activities with those friends. These friends may be likely to be aware of each others' difficulties and provide comfort and support even though these Chinese international students may conceal their problems in order not to burden others. These available cultural resources may prevent these students from being overly vulnerable to psychological distress when they face acculturative stress. Finally, these results suggest that it is an oversimplification to simply examine the main effects of forbearance coping because forbearance coping is related in more complex ways to psychological stress.

Even though our study focused mainly on the three-way interaction, the significant main effects deserve our attention. First, the significant and positive association between acculturative stress and psychological distress found in this study is consistent with the previous results among Asian international students (e.g., Constantine et al., 2004; Wei et al., 2007; Yang & Clum, 1995; Ying & Han, 2006). Second, this study found the association between identification with heritage culture and psychological distress was significantly negative. In the literature, the results are mixed regarding the role that identification with home culture plays on psychological distress among international students. Some studies indicated that those with stronger identification with home culture had fewer psychological adjustment problems (Ward & Kennedy, 1994) and better psychological well-being (Ward & Rena-Deuba, 1999). However, other studies found that identification with home culture was not significantly related to psychological distress (Wang & Mallinckrodt, 2006) and psychological adaptation (Cemalcilar et al., 2005). Because identification with home culture was not consistently associated with psychological distress, it appears that these associations may be more complex (e.g., the third variables may serve as moderators) than the direct associations. Clearly, more research studies are needed to examine the role of identification with home culture on psychological distress for international students in general and Chinese international students in particular.

Limitations, Future Research Directions, and Implications

There are several limitations to this study. First, because this study attempted to examine a subgroup of international students, the findings are limited to international students with Chinese cultural heritages. Hence, the study's findings may or may not generalize to other international students, especially if they are not rooted in Asian cultures. If we had been able to recruit sufficient participants from other subgroups of international students as well, it would have been possible to examine both within-group differences and the generalizability of our findings. Also, our study sample is limited to Chinese international students in the Midwest region. Therefore, our results may or may not apply to different regions of the United States. Second, even though all scales selected for use in the current study were either developed from or used in international student samples, some of them (e.g., VIA and HSC-21) still have limited psychometric information for Chinese international students.

Third, the cross-sectional design is another limitation, and alternative explanations for our three-way interaction effect are possible. For example, it is possible that students with a weak heritage culture and a higher level of psychological distress are more likely to perceive higher acculturative stress when engaging in higher forbearance coping. However, as we know, research on forbearance coping and Chinese international students is limited. In the early stage of research development for a specific area, it is a common practice for researchers to collect cross-sectional data before engaging in more rigorous and time-consuming longitudinal studies or intervention studies. Our cross-sectional study provides important information for future investigations. Finally, it is important to note that the current results are limited to the context of cross-cultural adjustment to the American host culture. Such findings cannot generalize to coping with other types of stress that occur in Chinese students' home culture.

How the role of coping works in maintaining Chinese international students' well-being in the face of acculturative stress or discrimination is a complicated issue. A small but growing number of research studies have begun to address this complicated issue by going beyond a two-way interaction of coping and acculturative stress (or discrimination) on mental health outcomes by adding other third variables (e.g., self-esteem, ethnic identity, ethnic social support, and acculturation). Lee, Koeske, and Sales (2004) found that among Korean international students, the two-way interaction effect of acculturative stress and social support on psychological distress depended on students' acculturation levels. Wei et al. (2007) found that among Asian international students, the two-way interaction effect of racial discrimination (a part of acculturative stress) and reactive coping on depression depended on students' self-esteem levels. These results, including the current results, strongly imply a need for future research studies to continue to untangle the complicated issues of the acculturation process. Following Berry's (1997) theoretical framework for acculturation, future studies might examine which specific culturally relevant coping strategies work for those holding one of four modes of acculturation (i.e., assimilation, integration, separation, or marginalization) among different acculturation groups (e.g., Asian Americans) in which societies (e.g., predominantly White environment). Finally, the current study focused on general psychological distress. Future studies can expand to specific types of distress (e.g., anxiety). In a recent meta-analysis, the average effect size for ethnic identity on self-esteem or personal well-being was twice as large as effect sizes of ethnic identity on personal distress for people of color (Smith & Silva, 2011). Future studies can expand to positive outcomes (e.g., relationship harmony, emotional self-control, or personal well-being) and explore potential moderators to increase international students' well-being while they study in the United States.

The implications for practice are tentative at this point and need additional empirical investigations. If these findings can be further replicated by future studies, clinicians would be first encouraged to pay attention to forbearance coping used by Chinese international students. For example, clinicians might benefit from knowing the meaning of forbearance coping in Chinese cultural values and the reasons underlying Chinese international students' use of the forbearance coping strategy (e.g., maintaining relationship harmony). In addition, our results demonstrated that forbearance coping was significantly associated with psychological distress for those who hold a weaker identification with heritage culture when acculturative stress is higher. However, it is not the case for those who hold a stronger identification with heritage culture or when acculturative stress is lower. It could thus be helpful for clinicians to know Chinese international students' levels of identification with their heritage culture.

In addition, it is reasonable to expect that overcoming acculturative stress is a process that naturally would require much help from others. Through understanding the process of acculturation, Chinese international students might be less worried about bothering or burdening others when they request assistance. At the same time, clinicians might help these students to connect with culturally relevant resources (e.g., mentors from the same or similar culture) or culturally relevant student associations (e.g., Chinese international student association). Clinicians might also help these students to find other resources and services (e.g., English editing services or English conversation partners) on campus that are designed to help international students. Students might find such opportunities from these resources or services to be more acceptable and might not worry about "bothering people" when utilizing such services. Finally, educators (e.g., faculty members, advisors, or staff members who work in an international student office) can help Chinese international students by being sensitive to their needs even if they may not request help. These educators can be aware not to practice individualistic cultural norms or biases by assuming that Chinese international students are fine when no needs are expressed or help is requested.

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