CROSS-CULTURAL DIFFERENCES IN THE PRESENTATION OF DEPRESSIVE SYMPTOMS

Pui San Tse, M.A.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2015

APPROVED:

Sharon R. Jenkins, Major Professor
Camilo Ruggero, Committee Member
Chiachih DC Wang, Committee Member
Vicki, L. Campbell, Chair of the Department of Psychology
Costas Tsatsoulis, Interim Dean of the Toulouse Graduate School

Epidemiological studies show that China has a lower prevalence rate of major depression than that of Western countries. The disparity in prevalence is commonly attributed to the tendency of Chinese to somatize depression. Empirical evidence of Chinese somatization has yielded mixed results. The present study thus aimed to 1) examine differences in somatic and psychological symptom reporting between Chinese from Macau and Americans in America and 2) identify cultural and psychological variables that would predict somatization. Independent and interdependent self-construals, sociotropy, and emotional approach coping were hypothesized to predict somatization of depression. Participants included 353 Chinese and 491 American college students who completed self-report measures online. Contrary to prediction, results indicated that Americans endorsed a higher proportion of somatic symptoms than Chinese did. Sociotropy predicted both relative endorsement and severity of somatic symptoms for the American sample, whereas emotional expression coping was related to somatization in the Chinese sample. The findings challenge the common assumption of greater Chinese somatization and highlight the importance of context in understanding the relationships between somatization and cultural and psychological variables. Implications of the present study and future directions are discussed.
Copyright 2015

by

Pui San Tse
ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my advisor, Dr. Jenkins, for her guidance and support. Her meticulousness and patience inspires me to continue to work hard and learn. I also thank my committee members, Dr. Ruggero and Dr. Wang, for their suggestions and assistance.

I am especially grateful to Dr. Gertina Johanna Van Schalkwyk for giving me the permission to recruit students from the University of Macau so that this project can be completed. I am also indebted to Ms. Wen Wen Chong, Ms. Vanessa van Drunen, Ms. Lucy Lin, Ms. Jennifer Ong, and Ms. Gloriana Yip for their assistance in translating the measures used in this project. Much appreciation is expressed for the helpful suggestions of Ms. Gift Wahiwe.

I wish to express appreciation to Dr. David Clark, Dr. Zheng Huang, Dr. Ching-I Hung, Dr. Tak Fai Joseph Lau, Dr. Eugenie Leung, Dr. Nan Lin, Dr. Ted Singelis, Dr. Annette Stanton, X. Q. Wang, and Dr. Dong Xie for allowing me to use their measures.

Lastly, I cannot thank enough my family and friends in Macau for their love and constant support.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>CHAPTER I INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Explanations for the Low Prevalence Rate in China</td>
<td>2</td>
</tr>
<tr>
<td>Definitions of Somatization</td>
<td>7</td>
</tr>
<tr>
<td>Theories of Chinese Somatization</td>
<td>8</td>
</tr>
<tr>
<td>Evidence for Somatization</td>
<td>14</td>
</tr>
<tr>
<td>Cultural Variables Associated with Depression</td>
<td>23</td>
</tr>
<tr>
<td>Personality and Cognitive Factors Associated with Depression</td>
<td>30</td>
</tr>
<tr>
<td>The Present Study</td>
<td>46</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>52</td>
</tr>
<tr>
<td>CHAPTER II METHOD</td>
<td>54</td>
</tr>
<tr>
<td>Participants</td>
<td>54</td>
</tr>
<tr>
<td>Measures</td>
<td>58</td>
</tr>
<tr>
<td>Procedure</td>
<td>67</td>
</tr>
<tr>
<td>Data Analysis Plan</td>
<td>69</td>
</tr>
<tr>
<td>CHAPTER III RESULTS</td>
<td>71</td>
</tr>
<tr>
<td>Descriptive Analyses</td>
<td>71</td>
</tr>
<tr>
<td>Sample Differences on Demographic and Possible Control Variables</td>
<td>72</td>
</tr>
<tr>
<td>Analyses of Scales</td>
<td>76</td>
</tr>
<tr>
<td>Validation of Scales</td>
<td>79</td>
</tr>
<tr>
<td>Bivariate Correlations</td>
<td>93</td>
</tr>
<tr>
<td>Hypotheses Testing</td>
<td>101</td>
</tr>
<tr>
<td>CHAPTER IV DISCUSSION</td>
<td>118</td>
</tr>
<tr>
<td>Limitations and Future Directions</td>
<td>127</td>
</tr>
<tr>
<td>APPENDIX: INFORMED CONSENT NOTICE</td>
<td>191</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>194</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1 Frequencies for Demographic and Possible Control Variables for the Final Samples .... 133
Table 2 Descriptive Statistics for the American Sample ................................................................. 139
Table 3 Descriptive Statistics for the Chinese Sample ................................................................. 140
Table 4 Item Statistics of Measures for the Final Samples .......................................................... 141
Table 5 Component Loadings With Varimax Rotation of the 26-Item Center for Epidemiological Studies Depression Scale (CES-D) for the Final American Sample .............................................. 146
Table 6 Component Loadings With Varimax Rotation of the 26-Item Chinese Depression Scale (CDS) for the Final Chinese Sample ........................................................................................................ 147
Table 7 Component Loadings With Varimax Rotation of the 20-Item Center for Epidemiological Studies Depression Scale (CES-D) for the Final American Sample .............................................. 149
Table 8 Component Loadings With Varimax Rotation of the 20-item Chinese Depression Scale (CDS) for the Final Chinese Sample ........................................................................................................ 152
Table 9 Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Depression and Somatic Symptoms Scale (DSSS) for the Final Samples .................................................. 153
Table 10 Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Emotional Approach Coping Scales (EAC) for the Final American Sample .................................................. 156
Table 11 Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Emotional Approach Coping Scales (EAC) for the Final Chinese Sample .................................................. 162
Table 12 Summary of Results of Analyses of Scales .................................................................... 167
Table 13 Intercorrelations Among Demographic Variables for the Final American Sample ...... 169
Table 14 Intercorrelations Among Demographic Variables for the Final Chinese Sample ....... 170
Table 15 Intercorrelations Among Possible Control Variables for the Final American Sample .. 171
Table 16 Intercorrelations Among Possible Control Variables for the Final Chinese Sample ..... 172
Table 17 Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic and Possible Control Variables for the Final American Sample ................................................................. 173
Table 18 Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic and Possible Control Variables for the Final Chinese Sample ................................................................. 174

Table 19 Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic Variables, Possible Control Variables, Independent, and Dependent Variables for the Final American Sample ...... 175

Table 20 Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic Variables, Possible Control Variables, Independent, and Dependent Variables for the Final Chinese Sample........ 177

Table 21 Intercorrelations Among Independent and Dependent Variables for the Final American and Chinese Samples............................................................................................................. 179

Table 22 MANCOVA Results for Independent and Dependent Variables ............................................. 180

Table 23 Summary of Regression Analyses for Variables Predicting the Mean DSSS Somatic Scores .................................................................................................................................................................................. 181

Table 24 Summary of Regression Analyses for Variables Predicting the Somatic Factor Ratio Scores .................................................................................................................................................................................. 182

Table 25 Summary of Hierarchical Regression Analyses for Variables Predicting the DSSS Somatic Subscale Scores for the Final American Sample................................................................. 183

Table 26 Summary of Hierarchical Regression Analyses for Variables Predicting the DSSS Somatic Subscale Scores for the Final Chinese Sample............................................................................................................. 186

Table 27 Summary of Hierarchical Regression Analyses for Variables Predicting Somatic Factor Ratio Score for the Final American Sample ............................................................................................................. 188

Table 28 Summary of Hierarchical Regression Analyses for Variables Predicting Somatic Factor Ratio Score for the Final Chinese Sample............................................................................................................. 189
CHAPTER I

INTRODUCTION

China is reported to have a lower prevalence rate of depression than that of Western countries. The apparent rarity of depression in Chinese cultures has been noted as far back as the 1970s (Ryder, Yang, & Heine, 2002). By the early 1980s, a psychiatric survey of psychopathology was conducted in 12 regions of China and replicated in seven regions in 1993 (Zhang, Shen, & Li, 1998). The 1993 data reported a 0.08% lifetime depression rate, indicating that the community rate of depression in China was several hundred times lower than that in the United States. In addition, several national community studies undertaken in Taiwan reported a low rate of depression compared to that in other countries (Parker, Gladstone, & Chee, 2001). These lower rates are still observed to this date as a recent cross-national epidemiological study indicated that the lifetime prevalence rate of major depressive episodes in China is 6.5% as compared to 19.2% in the US (Bromet et al., 2011).

In what follows, I review the different theories for the low prevalence rates in Chinese cultures, focusing particularly on one popular explanation, namely, somatization. In the second section, I discuss the conceptualization of Chinese somatization and examine the empirical evidence which will demonstrate that there is not yet a definite conclusion. The equivocal findings leave it unclear whether it is Chinese who express depressive symptoms in primarily somatic terms or if it is Westerners who express predominantly affective symptoms. It was the purpose of this study to examine cross-cultural differences in the phenomena of somatization and psychologization and to investigate the cultural and psychological factors that are associated with somatization in the Chinese and American samples.
Explanations for the Low Prevalence Rate in China

The finding of a low rate of depression in Chinese cultures can be interpreted in a number of ways. It may indicate a true rarity of depression, a low level of reporting of depressive symptoms, culturally based differences in the expression of symptoms of depression, and issues in definition, sampling, and methodology (Parker, Gladstone, et al., 2001). Regarding the latter explanation, though cultural biases in assessment have been noted, studies using standardized sampling and assessment procedures consistently report widely different prevalence rates of depression across countries (Simon, Goldberg, Von Korff, & Ustün, 2002). Therefore, the national differences in prevalence rates cannot be entirely attributed to factors such as methodological issues.

Nevertheless, detecting and diagnosing depression in China may pose specific challenges which can complicate the epidemiological estimates of prevalence rates. One such difficulty is the high rate of neurasthenia diagnosed in China, which shares similar symptoms of clinical depression described in the West (Kleinman, 1982). Neurasthenia or shenjing shuairuo is a diagnostic category in the Chinese Classification of Mental Diseases, 3rd Edition-Revised (CCMD-3; Chinese Psychiatric Society, 2001) and the International Statistical Classification of Diseases and Related Health Problems (ICD-10; WHO, 1992). Derived from Greek, this culture-bound syndrome literally translates as “weakness of nerves” and is classified under neurotic disorder in the CCMD-3. It requires three of the following groups of symptoms: physical or mental fatigue or weakness, irritability or worry, excitability, “nervous pain,” and sleep disturbances. In addition, a recent recommendation requires the exclusion of mood and anxiety disorders. Neurasthenia is believed to be caused by inadequate physical energy in the
central nervous system and is commonly known by the Chinese to mean “neurological weakness” (Lee, 1999). The concept of neurasthenia fits well with the Chinese traditional epistemology of disease causation which conceptualizes illnesses as a consequence of an imbalance of energy and disharmony of vital organs (Lee & Wong, 1995). It is thus a more socially acceptable diagnosis and is less stigmatizing than psychiatric labels.

Since the introduction of the concept of neurasthenia to China in the early 1990s, it became widely diagnosed by psychiatrists and other medical practitioners (Lee, 1999). By the 1980s, 80% of psychiatric outpatients in mainland China received this diagnosis (Kleinman, 1982). Kleinman’s (1986) early study established that only 1% of those attending a psychiatric outpatient clinic in China during a 1-week period were diagnosed with depression, as compared to 30% being diagnosed with neurasthenia. In 1980, Kleinman (1982) reassessed 100 patients suffering from neurasthenia in an outpatient psychiatric clinic in China using both anthropological and psychiatric methods and found that 87% of them could be diagnosed as suffering from depression. He concluded that neurasthenia was a Chinese-specific way of expressing depression resulting from somatization. Subsequent studies also confirmed that many patients diagnosed with neurasthenia could be reclassified as having a Diagnostic and Statistical Manual of Mental Disorders (3rd ed.; DSM-III; American Psychiatric Association, 1980) diagnosis of depression or other mental illnesses (Yan, 1989; Young, Tu, & Liu, 1984; Zhang, 1989). These findings raise the question of whether this cultural bound syndrome is in fact depression or mixed anxiety-depressive disorder.

On the other hand, some reports argued that neurasthenia is a distinct form of distress which is independent from the Western diagnostic categories (Mak & Chen, 2010). For instance,
according to the findings of the Chinese American Epidemiological Study (CAPES), Chinese Americans residing in Los Angeles had a 6.4% prevalence rate of neurasthenia, as defined by the *ICD-10* (Zheng et al., 1997). Among these individuals, 43.7% also met *DSM* diagnoses of mood and anxiety disorders. This suggests that the majority of them did not meet any current or lifetime *DSM* diagnoses. Similarly, in another study of patients in China, among those who were diagnosed with *CCMD-2-R* shenjing shuairuo, 19.4% were also diagnosed as having *ICD-10* neurasthenia, but 44.9% did not meet *DSM-IV* (1994) diagnoses (Chang et al., 2005). Findings of these studies suggest that neurasthenia or shenjing shuairuo is a distinct condition that does not essentially overlap with Western diagnostic categories. Due to the conflicting evidence, it cannot be refuted that neurasthenia is a unique clinical condition which may be accountable for the phenomenon of somatization.

Another possible explanation for a low prevalence rate is that Chinese may be less susceptible to depression due to their socially reinforced character traits and coping mechanisms (Parker, Gladstone, et al., 2001). As Xu (1987) suggested, certain Chinese socio-cultural features such as family cohesiveness, social support, a high tolerance for distressing situations, and a sense of determination and purpose may serve as protective factors against becoming depressed. Further, Song (as cited in Parker, Gladstone, et al., 2001) suggested that character traits such as quiescence and stoicism, and the traditional concept of fatalism may also contribute to their acceptance of depression as Chinese are prepared to face a predetermined life of suffering. Because of these characteristics, Chinese may view emotional illnesses as a part of life and apply a higher threshold than the Westerners for considering responses to life’s stressors as pathological (Chan & Parker, 2004). These socio-cultural factors
not only may serve as coping repertoires to prevent or to minimize depression but may also influence help-seeking and reporting. Although it seems plausible that the low rate of depression is due to the protective effects of Chinese cultures, research in this area is sparse, and there does not seem to be much empirical evidence to support such a claim.

The low prevalence rate in China may in fact reflect a low level of reporting of depression due to social stigma and differences in help-seeking behavior (Parker, Gladstone, et al., 2001). Mental illnesses are stigmatized in traditional Chinese cultures (Chan & Parker, 2004). It is often considered as a weakness of character and a cause for family shame to have mental health problems. Evidently, learning of a history of mental illness in a future-in-law can be a sufficient reason for a Chinese family to cancel a wedding (Kleinman, 1977). Because of social stigma, Chinese may be reluctant to admit to mental illnesses and seek mental health services. This negative connotation of mental illness may further influence help-seeking behavior. Chinese tend to seek help from their social networks for psychological problems as they will only confide “private” matters to their family members or closest friends (Chan & Parker, 2004). There is a well-known Chinese idiom saying “report the good news, hide the bad news” which illustrates the importance of the value of face-saving. As long as mental illnesses are stigmatized, they may not disclose details of emotional states to outsiders, and families then become the sole source of emotional comfort.

As confirmed by Ying’s (1990) study of help-seeking behaviors among migrant Chinese-American women, women who presented psychological symptoms were found to seek help from self or their families, whereas those who presented somatic symptoms turned to medical help. Further evidence that individuals seek help according to the interpretation of their
symptoms comes from F. Cheung and Lin’s (1987) study of the conceptualization of psychiatric illness of Chinese patients in Hong Kong. Accordingly, 39% of Chinese patients turned to families or friends for help because they interpreted their problems as purely psychological, 22% sought Western medical facilities as they presented purely somatic symptoms, and 39% approached professional help including psychiatric services because they experienced mixed symptoms. Hence, the observed low rate of depression may be misleading as Chinese may not disclose their symptoms and seek help from mental health professionals.

Additionally, somatization not only spares an individual from being stigmatized but also may provide the additional benefit of secondary gains as physical complaints are considered legitimate ways to obtain care, love, and sympathy (Katon, Kleinman, & Rosen, 1982a). Accordingly, somatization is construed as a socially acceptable and culturally appropriate means of coping with depression which can elicit nurturance and caring from families. Moreover, Chinese may seek social support or advice from a family member, elder, spiritual or community leader for other reasons. In Chinese cultures, emotional distress such as depression and anxiety may often be understood as social or moral problems rather than as mental health issues (Kirmayer, 1989). Negative affects, rightfully or not, are seen as a lack of personal strength or as undesirable and a threat to social harmony. As such, seeking help from authority figures is deemed more appropriate than from mental health professionals.

As noted, the low reported rates of depression in China could reflect symptom patterns that are different from those emphasized in the West (Parker, Gladstone, et al., 2001). In their study of psychiatric patients in Hong Kong, D. W. Chan and Lai (1993) found that only 10% of psychiatric patients who presented with anxiety and depression had the symptom
constellations consistent with the classical patterns of Western depression such as depressed mood, feelings of worthlessness and guilt, and psychomotor retardation. Instead of presenting psychological and affective symptoms, Chinese are said to express their distress in predominantly physical ways (Parker, Gladstone, et al., 2001). Somatization becomes a common explanation for the low rates found in Chinese cultures, and this phenomenon has been a central focus in cultural psychopathology. However, research in this area is clouded by the various definitions of somatization used in the literature.

Definitions of Somatization

One commonly used definition emphasizes a fundamental difference in the way in which depressive symptoms are experienced (Bridges & Goldberg, 1985). That is, individuals experience predominantly somatic symptoms, sometime to the exclusion of psychological symptoms. Other definitions, besides a focus on actual experience, have been proposed. For instance, somatization can also be defined according to the salience of the somatic symptoms to the patients. In this case, patients will initially report somatic concerns but may eventually present psychological symptoms upon further evaluation even though they may continue to perceive that the physical symptoms are their major concerns. Whereas the previous two definitions emphasize differences between physical and psychological symptoms experienced by individuals, somatization can also be conceptualized as a strategy of symptom presentation in which somatic symptoms are emphasized and psychological symptoms are concealed. Patients are aware of their psychological symptoms but present only the somatic symptoms or somatic components of psychological symptoms when seeking help.
Katon, Ries, and Kleinman (1984) further proposed that somatization in patients with depression reflects an idiom of distress in which patients with psychosocial and emotional problems express their distress through physical symptoms. Accordingly, these individuals either have no discernible organic pathology but recurrently present with somatic complaints or have verifiable diseases but amplify their symptoms. Somatization is thus defined as “the selective perception and focus on the somatic manifestations of depression with denial or minimization of the affective and cognitive changes” (p. 127). Based on his extensive work on mental illness in Chinese cultures, Kleinman (1982) conceptualized somatization differently and concluded that somatization is an idiom of bodily complaints which allows Chinese to express negative emotions and social distress.

Rather than viewing somatization as a defense mechanism whereby emotional or psychological distress is experienced but expressed as physical symptoms that replace repressed emotions, this study focused on examining somatic symptom reporting which may reflect a culturally prescribed mode of communication, thus allowing for comparability with most other studies in the literature.

Theories of Chinese Somatization

Researchers explain somatization in terms of illness behavior factors. Illness behavior refers to the way people experience, interpret, and cope with their illnesses. This model asserts that symptom expression and help-seeking are a result of psychosocial processes rather than a direct expression of pathobiology or the natural history of disease (Mechanic, 1962). Several researchers such as Robbins and Kirmayer (1986) and Katon and colleagues (1982a, 1982b) respectively proposed cognitive models of illness behavior to explain somatization. The former
discussed selective attention and attribution to bodily sensations or mental states. This consistent bias in cognition leads to a tendency to somatize or psychologize distress. The model delineated by Katon and his colleagues also emphasized the role of cognition in determining an individual’s perception of his or her subjective experience of depression which is being influenced by culture, childhood experience, cognitive coping mechanisms, and current environment systems such as family, medical systems, and social network support.

There is a wealth of literature investigating the impact of culture on different aspects of illness behavior of people with depression. Individuals experience and interpret their physical and psychological states based on their cultural experiences (Tseng, 1997). Which aspect is expressed may depend on their socio-cultural norms. As such, researchers commonly attribute the emphasis on somatic features of depression among Chinese to their cultural values, language, and their perception of mind and body (Kleinman, 1997, 1986; Parker, Cheah, & Roy, 2001).

Chinese cultures, perpetuated by beliefs conveyed by Buddhism, Confucianism, and Taoism, encourage the suppression of emotions, and this cultural practice may possibly contribute to Chinese’s tendency to somatize depression. They are socialized to have emotional restraint and self-control (Hwang, Wood, Lin, & Cheung, 2006). For example, Buddhism may teach that life is suffering and that one needs to endure life’s hardship, whereas Taoism principles emphasize emotions should be expressed in moderation. Chinese are encouraged to inhibit emotional expressions or to express them in moderation for the purposes of maintaining interpersonal harmony and face-saving. In addition, individuals are expected to suppress their emotional problems or place little importance to them (Tracey, Leong, & Gidden,
The Buddhist practice of meditation negates negative affects by facilitating the individual to detach from them and to transcend them into mindfulness state (Yeung & Kam, 2005). Therefore, they may consciously or unconsciously suppress emotional expression and use somatic symptoms to express their emotional distress instead. This approach is in contrast with the Western psychological view, which promotes emotional expression and processing.

Emotion suppression has consistently been linked to a number of adverse outcomes such as increased experiences of negative emotions and depressed moods among European Americans (Gross & John, 2003). A recent study investigated whether culture moderated the relationship between suppression and psychological well-being by comparing European American and Hong Kong students on measures of emotion regulation and psychological functioning (Soto, Perez, Kim, Lee, & Minnick, 2011). Results confirmed the researchers’ hypothesis that Hong Kong students reported using suppression more frequently than their European counterparts. More importantly, their moderation analysis showed that the association between emotion suppression and negative psychological functioning was found among the European American sample but not among the Hong Kong sample, thereby corroborating the assumptions that use of suppression is consistent with traditional Asian values regarding emotion moderation but is less consistent with the emotional norms in the Western cultures. Interestingly, these researchers also compared both groups on the use of another emotion regulation strategy, namely, reappraisal and its relationship to psychological functioning. As expected, no differences were found between the two groups with regard to reappraisal. The researchers explained the lack of a moderating effect of culture in this case was that the hypothesized underlying mediating mechanism, that is, the normative values
regarding expression of emotions, does not affect reappraisal. Added to this, the finding of a lack of relationship, rather than a positive relationship between suppression and psychological functioning, further implies that Chinese may not place much importance on emotional display. Similarly, in another study, Raskin, Chien, and Lin (1992) reported that Chinese American elderly showed greater moderation in expression of both positive and negative emotions and feelings than their Caucasian-American counterparts. These studies thus confirm that there are cultural differences in emotional expression between Chinese and Americans.

Some researchers further suggested that Chinese lack a working vocabulary on emotion (Leff, 1981). However, this claim has received little support (Chang, 1985). Furthermore, Chinese tend to use symbols, gestures, and metaphors to communicate emotions (Chentsova-Dutton & Tsai, 2009). Kleinman (1977) described somatic symptoms as an alternative “idiom of distress” which is common in cultures where psychiatric disorders are stigmatized. Zheng, Leyi, and Qijie (1986) asked Chinese depressed and control participants to verbally express symptom terms from Western depression inventories and found that they often explained depression using somatic terms. In a study that examined Chinese’s experiences of depressive disorders (Lee, Kleinman, & Kleinman, 2007), patients used expressions that combined both psychological and bodily experiences to describe their distress. Examples of such embodied expressions reported include xintong (heart pain) which can mean both physical and mental pain and xinlei (heart exhausted) which can serve as shared metaphors for somatic and affective states conveying tiredness and hurt. In addition to the indigenous affective lexicons and embodied emotional language of depression, Chinese patients were found to convey their sadness and depressed moods contextually without explicit verbal articulation. As D. T. S. Lee and his
colleagues noted, these patients did not directly report low moods in the ethnographic interviews. Instead, they assumed that their sadness was understood given their social predicaments.

Interestingly, a comparative study that examined somatization between South Korean and American community samples to test the idiom of distress hypothesis found empirical evidence (Keyes & Ryff, 2003). In this study, somatization was defined as the expression of physical symptoms in the absence of medically explained physical illnesses. The idiom of distress hypothesis predicts that the association of somatization and mental health should be weaker in cultures such as South Korean than in the US, as somatization is a functional response that allows individuals from a collectivistic society to disclose distress and thereby relieve distress. Accordingly, individuals channel emotional distress into specific physical symptoms in order to maintain social harmony, and these physical symptoms are often understood by recipients as distress. In contrast, somatization is considered maladaptive in an individualistic society which values direct expression of feelings. As such, Keyes and Ryff hypothesized that the number of somatized symptoms should correlate positively with the level of depressive symptoms and negatively with the level of psychological well-being in the U.S. By contrast, the number of somatized symptoms should not correlate with depressive symptoms or psychological well-being or it should correlate negatively with depressive symptoms and positively with psychological well-being in Korea. Additionally, they predicted that among adults who did not somatize, the American adults should report fewer depressive symptoms and higher psychological well-being than South Korean adults. Conversely, among adults who somatized a lot, both groups would report similar levels of depression and well-being. Their
results showed that increased somatization was associated with depression and lower well-being in the U.S. sample, whereas no correlations were found between the number of physical symptoms and depression or well-being for the South Korean sample. Moreover, the significant relationships were only found among US somatizers, and as somatization increased, both groups showed similar levels of depression and well-being. Their findings suggest that culture may play a role in moderating the relationships between somatization and depression or psychological well-being and that somatization reflects a culturally acceptable way to express distress.

Eastern and Western cultures conceptualize the relationship between mind and body differently. The Western medicine concept of mental illness is based on the Cartesian dichotomy of mind and body (Chan & Parker, 2004). Hence, body and mind are considered to be dualistic and separable (Ying, Tsai, Yeh, & Huang, 2000). Accordingly, distress is supposedly displayed by psychological symptoms, whereas physical problems are caused by genetic factors or germs (Dwairy, 1997). By contrast, the Chinese yin-yang theory is the bedrock of the traditional Chinese medicine (TCM) (Yeung & Kam, 2005). The yin-yang cosmology represents a complementary balance between these two forces (Chan & Parker, 2004). Chinese’s holistic conception of mind and body may lead them to present their psychological problems as physical complaints since they do not differentiate the functions between the two systems (Chaplin, 1997). Consequently, they may turn to traditional Chinese herbal remedies to restore the equilibrium of the forces (Chan & Parker, 2004). Given the salience of the physical aspect to the Chinese, it is also not surprising for them to employ mostly bodily metaphors in their idioms of distress.
The above mentioned explanations commonly assume that the presentation of somatic symptoms is an expression of emotional or social distress rather than being a symptom of a true physical condition. Somatization represents a culturally sanctioned way of coping. Hence, the somatic or vegetative component of depression is highlighted while the affective component is minimized or denied. Culture influences the perception and expression of depression by affecting individuals’ illness beliefs, influencing their views about how their bodies work, and governing the metaphors and idioms that organize individuals’ interpretation of bodily change (Katon et al., 1982b). In the next section, empirical evidence of this phenomenon is reviewed.

Evidence for Somatization

Somatization is a key finding of ethnographic studies (Kleinman, 1988). Some early studies (Cheung, Lau, & Waldmann, 1981; Kleinman, 1977; Tseng, 1975) confirm that Chinese tend to report somatic symptoms. For example, Tseng found that over 70% of psychiatric Chinese patients in Taiwan reported mostly physical symptoms. In another study, Tsoi (1985) asked anxious and depressed Chinese patients attending a Singapore psychiatric outpatient clinic to complete a checklist of symptoms. These patients reported “general discomfort” as the most frequently response, followed by “pain,” “insomnia,” “anxiety,” “depression,” and “autonomic symptoms.”

These results nevertheless are far from unequivocal, and conclusions about cross-cultural differences cannot be made as some of these previous studies fail to include a Western comparison group (Ryder et al., 2002). Even when researchers included different cultural groups, their findings are largely based on comparing people in different health care systems
which may have produced confounding results (Kawanishi, 1992). Early studies on somatization compared Chinese patients in the community, seen by healers or primary care providers, with patients in the US seen in mental health clinics (Kleinman, 1977, 1980). Evidently, the latter were likely to be more open about their emotional distress. The results thus cast doubts on the conclusion that Chinese are more prone to somatize than Americans. Kirmayer, Robbins, Dworkind, and Yaffe (1993) conducted a series of studies to examine somatization in a Canadian primary care sample. They reported that most of the patients, irrespective of their backgrounds, presented exclusively somatic symptoms to their physicians. Only 15% of patients with major depression or panic disorder disclosed psychosocial complaints. However, half of those somatic presenters admitted a potential psychosocial cause (e.g., stress, emotional stress, problems at home or at work) when asked for the cause of their somatic complaints. Of those who did not report a psychosocial cause, half, upon prompt, admitted that nerves or worries could have contributed to their symptoms. This study as well as others conducted in several countries (e.g., Simon, Von Korff, Piccinelli, Fullerton, & Ormel, 1999), indicate that somatization of depression is common in primary care settings and is not a characteristic of a specific ethno-cultural group.

Due to problems with some of these studies, empirical evidence for the claim that Chinese tend to express depression somatically is still inconclusive. Some studies have demonstrated the preference of depressed Chinese to report somatic symptoms, whether studied in Asian or Western regions. In contrast to psychological symptoms such as feelings of guilt and worthlessness and suicidal ideation, which are common among Western cultures, Chinese are more likely to report somatic symptoms of depression, such as headache, poor
appetite, and sleep disturbances (Marsella, Sartorius, Jablensky, & Fenton, 1985). W. C. Chang (1985) examined patterns of depressive symptoms on the Zung Self-Rating Depression Scale among European and African American college students as well as overseas Chinese students. While African American students tended to report a mixture of affective and somatic items and European Americans’ responses were characterized by existential and cognitive concerns, Chinese students were found to present predominantly somatic complaints. In a comparative study conducted by Marsella, Kinzie, and Gordon (1973), they also showed that Chinese students with depression reported more somatic complaints relative to their Caucasian American counterparts.

Findings from recent studies challenge the notion that Chinese somatize as they failed to demonstrate evidence of any greater somatization in Chinese than in Caucasian-Americans (e.g., Yen, Robins, & Lin, 2000). In their study that compared Chinese outpatients with the general Chinese population in two metropolitan areas in China, Yen and colleagues found that Chinese students seeking counseling reported more somatic symptoms than the Chinese student control group on the Chinese Depression Scale (CDS) which was translated from the Center for Epidemiological Studies-Depression Scale (CES-D). However, contrary to their hypotheses, findings of their second study showed that Chinese college students had the lowest level of somatic depressive symptoms when compared with Chinese American and Caucasian students from two American universities on the CDS and CES-D. These results taken together suggest that the rate of somatic symptom reporting among Chinese populations is not greater than that among Western populations. Rather, the higher endorsement of somatic symptoms among Chinese outpatients than the general Chinese populations may be due to the patient
role in the Chinese health care system or to the help seeking behavior in China where expression of physical sufferings and pains seems to be acceptable and adaptive. Yen and colleagues concluded, “Chinese patients experiencing depression would initially report to their primary care physician with somatic symptoms but would report affective symptoms if directly assessed” (p. 998).

There is further evidence that Chinese may report different types of symptoms as a function of assessment modalities and contexts. Chan and Parker (2004) reported that for Chinese people in Australia who turned to general practitioners, the common somatic complaints presented include insomnia, epigastric discomfort, dizziness, headaches, and general malaise, while those seeking psychiatric services commonly nominated insomnia, concentration problems, worries, and somatic complaints as their concerns. Yet, Chinese psychiatric patients were found to be able to acknowledge their affective symptoms when they were directly asked (Cheung, 1982). Similarly, using open-ended questioning, Kleinman (1982) found that Chinese eventually endorsed dysphoria, anhedonia, and loss of self-esteem with further questioning. In another study of Chinese Americans in a primary care setting, a significantly higher percentage of patients spontaneously reported somatic symptoms than psychological symptoms. However, 93% endorsed depressive moods on a questionnaire even though no participant spontaneously reported this symptom (Yeung, Chang, Gresham, Nierenberg, & Fava, 2004). Thus, it appears that there is an initial reluctance to report affective and cognitive symptoms, but they are acknowledged when probed or assessed in a different modality.
Additionally, research findings indicate that somatization may be a function of help-seeking rather than depressive symptom manifestation (Chang, 2007). A recent study of depressive symptoms among Taiwanese college students showed that they expressed more somatic complaints than cognitive-affective symptoms. Nevertheless, this finding was influenced by the level of depression. When compared to non-depressed participants, those who expressed depressive symptoms reported fewer somatic complaints but more cognitive-affective symptoms. Thus, it indicated that Chinese college students do not mask their depressive symptoms somatically as those with more depressive symptoms readily acknowledged and expressed cognitive-affective symptoms. H. Chang’s findings also revealed that neither somatic symptom nor cognitive-affective symptom reporting was related to participants’ attitudes towards seeking help from mental health professionals but that those with higher levels of depression were less likely to seek psychological help. These findings call into question the assumption that somatic complaints contribute to Chinese’s reluctance to seek psychological help.

Lin (1989) noted that the format of questions also influenced the type of responses obtained with open-ended questions yielding somatic complaints and structured questions leading to responses about psychological symptoms. Based on the above findings and the observation that Chinese present psychological symptoms in response to direct questioning, it is argued that rather than shaping or distorting illness presentation, culture is more likely to influence the nomination of symptoms to a health practitioner. Instead of replacing their psychological distress with somatic symptoms, Chinese are reporting different types of
symptoms depending on the situation and their routes of help-seeking that are consistent with their cultural norms.

Taken together, these findings seem to run counter to the assumption that Chinese tend to suppress their negative emotions. Moreover, they challenge the psychodynamic explanation that somatization is the substitution of somatic preoccupation for dysphoric affect, as individuals can acknowledge their mood symptoms. Cumulative evidence confirms that Chinese do not simply deny or minimize their affective and cognitive symptoms and selectively focus on the somatic manifestations of depression as some researchers have theorized. Consequently, rather than as an alternative to expression of emotional distress, somatization may be more appropriately seen as an accompaniment (Kirmayer, 1989).

Moreover, given the negative findings of greater somatization in non-Western than Western cultures and the findings of strong relationships between somatization, anxiety, and depression, some researchers propose the somatosensory amplification model as an explanation of somatization (e.g., Mak & Zane, 2004; Parker, Cheah, et al., 2001). Somatosensory amplification refers to the tendency to experience a somatic sensation as intense and disturbing and to appraise the sensation as symptoms of disease (Barsky, 1992). Although this concept was originally developed to explain the symptom reporting of patients with hypochondriasis (Barsky & Wyshak, 1990), some researchers speculate that this phenomenon may be associated with general processes of somatic symptom reporting (Barsky, Cleary, & Klerman, 1992). Barsky (1992) further suggested that depression may lower individuals’ threshold of becoming aware of problems with their physical functioning or of their depressive symptoms, leading to their experiencing of physical symptoms. In other words,
depression amplifies bodily complaints. Although somatosensory amplification has generally been found to be associated to somatic symptom reporting, research findings that support this theory in explaining somatic symptoms in depression is limited. Mixed results were reported as whether amplification is an independent effect or whether it is mediated by factors such as anxiety, depression, and negative affectivity/neuroticism (Duddu, Isaac, & Chaturvedi, 2006).

The phenomenon of somatization is observed in both clinical and nonclinical settings (Gureje, Simon, Ustun, & Goldberg, 1997; Kirmayer & Young, 1998; Simon, Gater, Kisely, & Piccinelli, 1996; Simon et al., 1999). It is well documented that somatization is a common feature of depression in patients seen by primary care physicians (Katon et al., 1982a; Katon et al., 1984; Kirmayer, & Young, 1998). Furthermore, multiple studies support that a wide range of physical symptoms such as bodily aches and pain, in addition to the vegetative symptoms, accompanies depression (for a review, please see Katon et al., 1982a). Indeed, somatization is also common in the West (e.g., Keyes & Ryff, 2003; Simon et al., 1999). Further evidence that somatization is ubiquitous around the world comes from findings of a study that examined somatization of depression in primary care settings in 14 countries using three different definitions of somatization (Simon et al., 1999). When somatization was defined either as reporting of medically unexplained somatic symptoms or denial of psychological symptoms of depression on direct questioning, no significant differences in somatization among the countries were found, and the proportion of somatic symptoms to psychological symptoms did not differ across countries, suggesting that patients in non-Western countries did not engage in greater somatization. Simon and colleagues pointed out that somatic symptoms are a core component of depression and that the concept of somatization implies a culturally determined
assumption that psychological symptoms are more central than somatic symptoms. As such, the study of psychologization or the overemphasis on psychological symptoms deserves equal attention.

This view is shared by other researchers who proposed that it is rather the intrapsychic orientation of the Western cultures that characterizes the observed cultural differences given that cross-cultural findings establish somatization as a universal phenomenon. As Dwairy (1997) stated, “reports about somatization among non-Westerners may in fact indicate depsychologization rather than somatization of human problems” (p. 720). Within Western psychology, the use of psychological idioms is considered the norm for symptom conception and presentation (Yeung, & Kam, 2005). Psychological idioms can be described as a mode of expression that refers to the Western theories of mind, self, and emotion (Kirmayer, 1989).

In contrast to the notion that Chinese somatize depression, some recent findings support the psychologization explanation. For instance, contrary to what was expected, in a comparison of non-patient elderly Caucasian and Chinese Americans in the community on the prevalence of somatic and psychological complaints, Caucasian-Americans reported more somatic as well as psychic distress than their Chinese-American counterparts. Parker, Cheah, and colleagues (2001) found that 60% of a Malaysian Chinese sample nominated a somatic symptom as their chief complaint on self-report as compared with 13% of a Euro-Australian sample. However, what was more significant was that Chinese tended to endorse fewer psychological symptoms. Their study suggested that Western psychologization may be a stronger effect. A similar conclusion was drawn in White’s (1982) study in which he tested the “interpretive hypothesis” by analyzing the causal inferences about a range of illness complaints
and psychosocial difficulties made by Caucasian-American and Hong Kong Chinese students at a U.S. university. According to the “interpretative hypothesis,” somatization and psychologization reflect culturally contrastive modes of interpreting illnesses and social behavior. His findings indicated that American students tended to make greater use of emotive constructs than Chinese respondents in their explanations, whereas Chinese students consistently more frequently referred to situational pressures and academic concerns. Moreover, the overall patterns of results were more consistent with the theory of psychologization in Americans’ explanations of illness as the analyses showed differences in the use of psychological elements between the two groups but not in their use of somatic explanations.

Findings of Ryder and his colleagues (2008) support similar conclusions. They directly compared symptoms presented by Chinese and Euro-Canadian outpatients on spontaneous reports, structured interviews, and symptom questionnaires. Western participants reported significantly more psychological symptoms on all three methods of assessment as compared with their Eastern counterparts. In addition, this study examined possible explanations of cross-cultural differences by studying the factors of stigma and alexithymia. Their finding indicated that one aspect of alexithymia, externally oriented thinking, mediated the relationship between culture and somatic symptoms presentation. Their results indicated that somatization may be related to a tendency not to focus on one’s emotional state.

The current findings indicate that the somatization tendency among Chinese is not as straightforward as previous studies have suggested. It still remains a puzzle whether somatic symptoms dominate depressive symptom manifestation among Chinese. Hence, it requires
investigation to determine the validity of the phenomena of somatization and psychologization and the cultural factors that may account for them. Emerging studies that use a cultural approach have identified cultural factors associated with depression. For instance, attributional styles, locus of control, beliefs about self and the future, and cultural norms regarding negative emotions have been shown to shape the impact of depression differently in various cultures (Chentsova-Dutton & Tsai, 2009). These patterns of findings suggest how one orients to cultural beliefs and values, and his or her models of self may be associated with somatization and psychologization.

Cultural Variables Associated with Depression

Culture is considered as a socially constructed variable which typically refers to the customary practices and languages associated with a particular racial or ethnic group (Wong & Wong, 2006). It shapes the way one perceives the world based upon a shared set of social beliefs and values which are transmitted through convention, socialization, language, and social institutions. In psychology, individualism-collectivism and independent and interdependent self-construals are the two main empirically derived cultural dimensions that have been researched most frequently.

Hofstede (1980) first proposed organizing cultures according to the dimension of individualism-collectivism which is based on the degree to which people think of themselves as unique individuals or as members of a group. Individualism is characterized by a focus on individual rights, personal autonomy and self-fulfillment, a concern for oneself and immediate family, and an emphasis of one’s identity on one’s personal achievements. Collectivism, on the other hand, stresses individuals’ mutual obligations to the ingroup and fulfillment of social roles.
and group goals over personal needs. Individuals from the East are often assumed to be high in collectivism as opposed to individualism and vice versa. Oyserman, Coon, and Kemmelmeier’s (2002) meta analysis confirmed that people in the US, especially Euro-Americans, tend to be more individualistic and generally less collectivistic than those from non-Western nations. Their country-level analyses further revealed that Americans were significantly lower in collectivism than people in Hong Kong, Taiwan, and China. Their results indicated that cultural differences in individualism mainly emphasize valuing personal independence and personal uniqueness, whereas differences in collectivism focus primarily on valuing duty and in-group harmony.

Low individualism and high collectivism has been shown to relate to vulnerability to depression in European Americans (Oyserman et al., 2002). Yet, examination of broad cultural variability dimensions such as individualism-collectivism has been criticized for being inadequate and uninformative to explain how culture differs (Ratner & Hui, 2003). Thus, it is essential to find the relevant intervening variables to explain what in that culture accounts for the cultural differences observed.

The notion of self-concept has been explored extensively by researchers as a link between cultural variability and individual differences. For example, in explaining culture’s influence on behavior, Triandis (1989) proposed the concept of self as a mediating variable between culture and individuals’ behavior. Cross-cultural researchers generally assume that culture, in the form of values, norms, and beliefs, shapes the self-construal of its members. Self-construal, in turn, influences individuals’ cognition, emotions, and behaviors.
Marsella (1985) further proposed that differences in self could possibly affect the symptom presentation of depression. Based on his framework, differences in self-structures may explain why Asians are likely to express depression somatically as their cultural selves are not construed in existential and affective terms. Similarly, Dwairy (1997) theorized that influenced by the dualistic perspective of the Western cultures, the self of these individuals emerges as an independent entity, and distress is psychologized. As a result, depression and anxiety are attributed to intrapsychic structures and processes. On the other hand, non-Westerners adopt a more holistic perspective, and their collective or less individuated identities lead to their emphasis on physical health. The self-concept variable of self-construal thus seems to provide the most useful theoretical framework in understanding symptom manifestation across cultural groups. Examining the impact of culture on symptom presentation via self-construal allows us to identify the source of cultural differences and understand further the mechanisms underlying the processes of somatization and psychologization. The following section discusses the two types of self-construal and the research findings of their associations with depression.

*Independent and Interdependent Self-Construals*

Since the emergence of Hofstede’s (1980) framework on cultural orientation, Markus and Kitayama (1991) have refined this work and introduced the concepts of independent and interdependent self-construals, which emphasize cultural differences in self and incorporate many features of individualism and collectivism. According to these researchers, individuals from Western individualistic cultures and those from Asian collectivistic cultures differ in the way they define themselves in relation to their social contexts. People with an independent
self-construal define themselves in terms of their internal thoughts, feelings, and actions, and they view self as unique, autonomous, and separate from others. They are motivated to become independent from others and to pursue personal goals. By contrast, people with interdependent self-construal define self as part of the in-groups and interconnected with others. Their view of self is organized in reference to other people’s feelings, thoughts, actions, and wishes, and they are motivated to maintain harmony with others and to fulfill their social roles through regulating their emotions and thoughts to fit the agendas of other people.

Research generally supports that people in Western cultures are more independent and less interdependent than people in East Asia (Gaines et al., 1997; Singelis & Sharkey, 1995; Yamaguchi, Kuhlman, & Sugimori, 1995). These two different views of self have also been shown to coexist in varying degrees within individuals in both types of culture (Singelis, 1994; Singelis, Bond, Sharkey, & Lai, 1999). Singelis and colleagues (1999) further demonstrated the link between the two dimensions of self-construal to the cultural dimensions of collectivism and individualism. Their findings indicate that members of collective cultures, in this case, Hong Kong university students, have stronger interdependent self con-strual and weaker independent self-construal than Americans.

In addition, cultural orientation (individualism and collectivism) and its counterpart (independent and interdependent self-construals) shape a person’s cognition, emotion, and behavior as evidenced by the associations of these constructs with different psychological and behavioral patterns observed among individuals from different cultural groups. For instance, compared to their American counterparts, collectivistic Hong Kong Chinese, Korean, and Japanese college students reported greater needs for affiliation, nurturance, and sensitivity to
social rejection (Hui & Villareal, 1989; Yamaguchi et al., 1995), and they were more inclined to meet the expectations of their significant others, such as family and friends (Lay et al., 1998). Additionally, cross-cultural research reveals that individuals from individualistic cultures, such as Euro-Americans, tend to have a stronger sense of internal locus of control than those from collectivistic cultures such as Chinese (Hamid, 1994). Rothbaum, Weisz, and colleagues (Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Balckburn, 1984) further suggested that individuals with independent self-construal are likely to exercise primary control by trying to control or change the external environment. Conversely, those with interdependent self-construal are likely to exercise secondary control by trying to control or change their mind, emotions, thoughts, and behaviors.

Research has linked self-construal to psychological well-being of Asian and European Americans. Social anxiety and depression were found to correlate negatively with independent self-construal and positively with interdependent self-construal in a correlation study of European and Asian Americans (Okazaki, 1997, 2000). Findings from different cross-cultural and cross-ethnic studies of self-construal and psychological adjustment such as self-esteem generally reported a positive relationship between independent self-construal and well-being and a negative relationship between interdependent self-construal and well-being (e.g., Kwan, Bond, & Singelis, 1997; Singelis et al., 1999). Regardless of one’s ethnic or racial identity, those with higher independent self-construal tend to report being less depressed, less socially anxious, and having higher self-esteem, whereas those with higher interdependent self-construal tend to report being more depressed, more socially anxious, and having lower self-esteem.
Although there is empirical evidence to suggest that self-construal is related to depression, research findings fail to demonstrate that differences in self-structure affect the presentation of symptoms of depression. Ho (1995) conducted a cross-cultural study to examine the relationship between the collectivist-individualist self-structure and the expression and presentation of depressive symptoms among Americans and Chinese college students in the People’s Republic of China, Taiwan, and Hong Kong. She hypothesized that Chinese, being the most collectivistic, would present more somatic and interpersonal symptoms as compared to Americans who, being the most individualistic, would show more affective, existential, and cognitive symptoms. Chinese in Hong Kong and Taiwan would show profiles which are intermediate between the above two countries. Contrary to her hypotheses, the results indicated that there is no relationship between individualism and collectivism and the presentation of depressive symptoms. In addition, American participants were found to endorse more somatic symptoms than Chinese in the People’s Republic of China and Hong Kong, whereas Chinese in Taiwan had significantly higher endorsement of affective and cognitive symptoms than the other three groups. Ho’s findings refute the notions that Chinese are unable to express themselves in affective terms and that Americans tend to psychologize. However, as she explained, the lack of significant findings might be due to the restriction in range on the individualism-collectivism scale and/or the inadequate sensitivity of this measure.

Although Ho’s study failed to find a relationship between somatization and individualist-collectivist self-structure, other researchers suggested that somatization in Chinese may be dependent on cultural and acculturation influences, and even independent of race (Ying et al., 2000). If Chinese tend to somatize and somatization is indeed related to cultural factors such as
cultural values and beliefs, it follows that acculturation may moderate Chinese Americans’ somatization tendency as they become acculturated into the mainstream American culture. Ying and colleagues (2000) found evidence to support their hypothesis that as a result of acculturation, Chinese American college students who moved to the US at a young age showed a pattern of symptoms similar to that of non-migrants brought up in a Western culture. They examined and compared the factor structures of the Center for Epidemiologic Studies-Depression Scale (CES-D) of a Chinese American college student sample to those of European American and the general Chinese American community samples. The European Americans’ factor profile showed that they differentiated psychological and physical symptoms as they were loaded on different factors, whereas the Chinese American community sample profile suggested body-mind integration as psychological and vegetative symptoms were loaded together. Their results indicated that Chinese American college students, who were found to be bicultural, had a factor profile that better approximated European Americans’ differentiated profile than the general Chinese American community sample’s integrated profile.

In summary, though findings of some acculturation studies lend support to the proposition of the impact of culture on symptomatic expression and clinical presentation of depression, other studies (e.g., Mak & Zane, 2004) found that acculturation and time living in a Western culture were not related to somatization. These contradictory findings indicate that the relationship between culture and somatization is more complicated than previously hypothesized. More importantly, most of these studies assessed only general cultural practices and did not directly examine individuals’ views of self. It was thus the purpose of this study to determine if independent and interdependent self-construals influenced the symptom
presentation of depression between Chinese and Americans. Unlike the previous studies, besides examining the role of self-construal, this study aimed to uncover specific personality and cognitive variables which may be associated with cultural differences in symptom presentation of depression.

Personality and Cognitive Factors Associated with Depression

Different personality and cognitive factors have been identified to explain vulnerability and risk for depression. The present study focused on examining sociotropy and emotion-approach coping since these variables have been shown to be associated with depression in both the U.S. and Chinese samples. Moreover, sociotropy and emotional coping have been studied within the framework of stress-diatheses and biopsychosocial models to examine how they interact with other factors to contribute to the etiology and maintenance of depression. For instance, coping skills were found to moderate the relationship between sociotropy and depression (Connor-Smith & Compas, 2002). However, it is not certain how these findings will generalize to another culture as little attention has been given to study the effects of culture on these variables. Understanding whether these relationships differ across cultures and how they influence symptom presentation of depression thus warrants investigation.

Sociotropy

Sociotropy is considered as a distress vulnerability to depression (Beck, 1983). Beck (1976) theorized that individuals with depression form dysfunctional schemas which lead them to selectively attend to stimuli which are congruent with their schemas. When the dysfunctional schemas are activated by stressors, negative automatic thoughts arise, and depressed mood is initiated and maintained by these schema-influenced cognitions and biased
processing of information. Sociotropy is a type of schema that involves social relationships, and it refers to a combination of beliefs, attitudes, and behavior dispositions that reflect the excessive need to depend on others for personal satisfaction. Individuals with this cognitive style are presumed to strive to seek approval and please others so that they can be accepted, and they tend to catastrophize the possibility of losing connections with other people (Blatt & Zuroff, 1992; Robins & Block, 1988). According to Beck (1983), individuals who are sociotropic will be vulnerable to depression when they are faced with a threat or a loss of interpersonal connectedness. Empirical evidence suggests that sociotropy is associated with onset of depression (Mazure, Brice, Maciejewski, & Jacobs, 2000) and that it predicts increased depressive symptoms over time (Shih, 2006). In addition, Beck’s cognitive diathesis-stress theory is generally supported by cross-sectional (e.g., Bartelstone & Trull, 1995; Robins, 1990) and prospective studies (Hammen, Ellicott, & Gitlin, 1992; Robins, Haynes, Block, Kramer, & Villena, 1995) with college student and clinical samples.

Because of their need to maintain harmony, individuals with collectivistic orientation or interdependent self construal may be more sensitive and even vulnerable to interpersonal events as they potentially threaten their culturally salient aspects of the self. In their phenomenological study, Hsiao, Klimidis, Minas, and Tan (2006) examined how traditional cultural values influenced the experiences of suffering of Chinese patients with mental illness. Through an analysis of the narratives of their illness experiences and the interpretation of their illness given by these patients and their caregivers, these researchers concluded that Chinese’s psychological distress is influenced by their cultural emphasis on interpersonal relationships. In particular, the results suggest that influenced by their strong value on interpersonal harmony,
traditional Chinese people tended to perceive interpersonal issues as the principle source of stress. Their study illustrated that Chinese patients’ negative emotions such as feelings of guilt, shame, and hopelessness were tied to their negative perception of themselves due to their failure to live up to their values of filial piety and their family roles as required by Confucian philosophy. D. T. S. Lee and his colleagues’ (2007) ethnographic study of Chinese outpatients who experienced depressive symptoms confirmed the significance of the distress of social disharmony as they tended to express their distress by means of sociosomatic terms. For example, they described themselves as “huo qi da” (hot tempered) and “fanzao” (vexed and shaken) to convey their affective experiences of depression. Their descriptions and use of terms imply a sense of interpersonal or social discomfort, indicating that their distress is related to stress in personal relationships or disruption of social harmony.

The distinction between the concepts of independent and interdependent self-construals seems parallel to that between Beck’s notions of sociotropy and autonomy. Sato and McCann (1998) found that interdependent self-construal is correlated with sociotropy. This overlap suggests that those with interdependent self-construal may be more prone to develop such a cognitive style and thus are more vulnerable to depression. Since these concepts were developed in the West, the applicability of the above assumption to non-Western cultures needs to be investigated. Mak, Law, and Teng (2011) tested a cultural model of vulnerability to distress in which they examined the role of self-construal and sociotropy on anxiety and depression among Asian Americans and European Americans. These researchers hypothesized that individuals of both ethnic groups with interdependent self-construal, who define themselves in relation to others and who are concerned about maintaining harmonious
relationships with other people, are more vulnerable to develop the cognitive style of sociotropy which is characterized by excessive need for and doubt about interpersonal relationships. They further proposed that individuals with sociotropy vulnerability likely first experience anxiety due to their heightened sensitivity to social approval. Their oversensitivity then leads to an increase of their sense of social threat, and these individuals eventually develop depression when they evaluate their situations. Their results confirmed that Asian Americans had stronger interdependent self-construal and weaker independent self-construal than European Americans. More importantly, they found support that those with stronger interdependent self-construal, regardless of ethnicity, were more likely to develop a sociotropic cognitive style, which in turn was related to depression as mediated by anxiety.

The cultural model of vulnerability to distress proposed by Mak and her colleagues (2011) was tested with Asian and European Americans. As these researchers pointed out, their findings may indicate a mismatch between individuals’ cognitive style and the individualistic environment. In other words, individuals with interdependent self-construal may be more likely to develop a sociotropic cognitive style in a social context which emphasizes independence, whereas those with independent self-construal are less susceptible to develop such vulnerability. This raises the question of how the associations between self-construal, sociotropy, and depression will unfold in a different cultural context such as one that values interpersonal harmony.

Another area of focus in the sociotropy research is its association with coping strategies. In their attempt to understand the relationship between coping and personality vulnerability to social stress in the development of symptoms of depression and anxiety, Connor-Smith and
Compas (2002) examined two models of the role of coping by testing it as both a mediator and a moderator of the relationship between personality and emotional distress. They hypothesized that one possible explanation of the link between coping and personality was that individuals with the personality trait of sociotropy who are vulnerable to social stress may tend to choose ineffective coping techniques such as disengagement coping strategies which in turn lead to emotional distress. Alternatively, instead of assuming that personality determines coping techniques, they proposed that it is possible that coping moderates the relationship between personality and emotional distress. In other words, vulnerability to stress is associated with both personality and coping techniques which interact and influence the levels of distress. Although they found that sociotropic individuals tended to choose less effective coping strategies, the hypothesis that the relations between sociotropy and symptoms of anxiety and depression were accounted for by the coping strategies was not supported. Their findings, nevertheless, suggest that engagement coping strategies such as problem-solving and cognitive restructuring serve as buffers of the relationships between sociotropy and symptoms of distress, whereas disengagement coping strategies such as avoidance and denial amplify these relationships.

As the above findings indicate, individuals with interdependent self-construal are susceptible to develop a sociotropic cognitive style, and coping moderates the relationships between sociotropy and emotional distress. However, the generalizability of these findings to another cultural context remains undetermined. There have been growing efforts to understand the effect of culture on coping. The following section summarizes culture’s relationship with coping.
Coping

Coping refers to the behavioral and cognitive strategies one uses to manage the internal and external demands of a stressful situation (Lazarus & Folkman, 1984). Some common ways of dichotomizing coping styles and strategies include problem-focused versus emotion-focused, engagement versus disengagement (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001), and primary versus secondary control coping (Rothbaum et al., 1982). Problem-focused coping refers to activities that focus on directly changing elements of a stressful situation, whereas emotion-focused coping involves activities that focus on changing one’s internal states resulting from the stressful situation (Lazarus & Folkman, 1984). Behaviors such as problem-solving can be regarded as problem-focused coping, whereas emotion-focused coping generally refers to the use of ruminating, avoidance/escape, accepting responsibility, distancing, and positive reappraisal. Comparable to the distinction between problem-focused and emotion-focused coping, Compas and his colleagues (2001) differentiated engagement, which refers to coping by approaching the event or related emotions (such as problem-solving, cognitive restructuring, positive reappraisal, and distraction), from disengagement coping, which focuses on distancing oneself from the stressor or associated emotions (for example, avoidance, self-criticism, emotional discharge, and rumination). Similarly, Rothbaum and his colleagues’ (1982) primary control coping involves changing the existing environment to meet the individual’s needs, whereas secondary control coping includes changing one’s feelings and thoughts to adjust to the objective environment. The latter is often used when individuals are unable to exert primary control. Primary control strategies generally include problem-solving and seeking
emotion support, while secondary control strategies refer to cognitive restructuring and
distraction (Weisz, McCabe, & Denning, 1994).

In Western cultures, it is generally assumed that coping strategies that are action-
oriented are more adaptive and constructive than passive coping strategies such as avoidance
because the latter connote lack of motivation and effort (Wong & Wong, 2006). It is not
surprising that problem-solving and engagement coping strategies have generally been
associated with better psychological and physical outcomes than emotion-focused and
disengagement coping (e.g., Connor-Smith & Compas, 2002; Endler & Parker, 1990; Osowiecki,
& Compas, 1999). In reviewing the literature, it is noted that there are some conceptual
overlaps among these categories. Since Lazarus and Folkman’s (1984) way of categorizing
coping behavior has been used extensively to study coping, this review focuses on discussing
problem-focused and emotion-focused coping.

One of the major findings from coping research is that problem-focused coping is
associated with positive mental health, whereas emotion-focused coping is strongly related to
poor mental health (e.g., Endler & Parker, 1990). Specifically, emotion-focused coping has been
positively linked to depression, anxiety, and somatic symptoms (Suls & Fletcher, 1985a). Most
studies that have examined the relationships between coping and depression suggest that
those who use approach or problem-focused coping to manage stress are at a lower risk for
depression than those who use emotion or avoidance-focused coping strategies (Billings &
instance, Billings and Moos (1984) reported that among depressed individuals, the use of
problem-solving strategies was associated with less severe dysfunction. By contrast, emotion-
focused coping was linked to greater dysfunction. Other researchers found that people with depression tend to engage in more avoidance coping than non-depressed individuals (e.g., Folkman & Lazarus, 1986; Kuyken & Brewin, 1994). In their longitudinal study, Seiffge-Krenke and Klessinger (2000) found that avoidance coping leads to an increase of depressive symptoms in a nonclinical sample of adolescents, while those who used approach-oriented coping reported fewer depressive symptoms. In addition to depressive symptoms, avoidance has been found to be related to physical symptoms (Suls & Fletcher, 1985b).

A wealth of literature reports differential effects of coping styles between men and women. In Higgins and Endler’s (1995) study, they found that task-oriented coping negatively predicted psychological and physical distress for men only. Conversely, emotion-oriented coping predicted psychological and physical distress for both men and women. Specifically, emotion-oriented coping significantly contributed variance to psychiatric symptoms, depression, and somatization. Moreover, men and women were found to employ different strategies to cope with depression and dysphoria. Generally, men are more likely to cope with depressed moods through distraction such as engaging in sports, hobbies, and substance abuse, whereas women use more emotion-focused coping such as crying, seeking social support, and ruminating about depression (Angst, Gamma, Gastpar, & Tylee, 2002; Garnefski et al., 2004). Nolen-Hoeksema (1991) has shown that women tend to engage in ruminative response styles more than men do and that their styles of responding are related to the prolonged periods of distress. However, mixed findings were noted as whether gender moderates the relationship between emotion-focused coping and depressed moods. While some studies show that the use of emotion-focused strategies, such as expression of feelings, was associated with reduced
depressed moods for women (e.g., Howerton & Van Gundy, 2009), other studies indicate that women use more rumination and catastrophizing than men but these coping techniques are associated with higher levels of depression in both men and women (Garnefski et al., 2004).

Emotional Approach Coping

This view that emotion-focused coping is maladaptive is inconsistent with research findings that support the adaptive functioning of processing and expressing emotions. Studies of expressive disclosure of stressful experiences through writing, for instance, have shown a positive and significant effect on both physical and psychological health (for reviews, see Lepore & Smyth, 2002; Smyth, 1998). Additionally, the works of Richards and Gross (1999) and Wegner, Schneider, Knutson, and McMahon (1991) have provided empirical evidence of the detrimental effects of emotional suppression. According to the theory of inhibition, actively inhibiting one’s strong emotions leads to increase in the probability of stress-related diseases. It follows that expressing negative emotions would benefit one’s health (Pennebaker & Beall, 1986). Emotion suppression is linked to adverse effects on subjective well-being and physical health (John & Gross, 2004). Furthermore, failure to express negative emotions can cause stress (Pennebaker & Traue, 1992). However, various factors such as the nature of the relationship with the person one expresses to and the consequences of emotion expression for one’s self-image may influence the effects of emotion expression on well-being. Crying, for example, has been shown to elicit social support, and it may be the social support that makes one feel better rather than crying per se (Hendriks, Nelson, Cornrlius, & Vingerhoets, 2008).

Stanton, Danoff-Burg, Cameron, and Ellis (1994) asserted that the repeated findings of an association between emotion-focused coping and maladjustment may result from problems
with measurement and conceptualization of the emotion-focused coping construct. Their findings reveal that many measures of the emotion-focused coping are contaminated with contents reflecting psychological distress. Stanton, Kirk, Cameron, and Danoff-Burg (2000) sought to develop a scale that is free of distress-contaminated items. Their Emotional Approach Coping Scales (EAC) consist of two factors: emotional processing and emotional expression. Emotional processing refers to active attempts to acknowledge, explore meanings, and understand one’s emotions. Emotional expression is the active verbal and/or nonverbal attempt to communicate one’s emotional experience. In both cross-sectional and longitudinal analyses, they found that emotional coping is associated with positive adjustment. For instance, this coping strategy is associated with self-esteem, lower neuroticism (Jack & Dill, 1992), trait anxiety, and depressive symptoms in women (Stanton, Kirk, et al., 2000). Longitudinal studies show that emotional approach coping predicted lower depressive symptoms in couples who experienced infertility (Berghuis & Stanton, 2002) and decreased stress in women who completed breast cancer treatment (Stanton, Danoff-Burg, et al., 2000). In addition, emotion-focused coping predicted increased life satisfaction and decreased depressive symptoms over time for women but not for men (Stanton et al., 1994). A follow-up study revealed an interaction effect between coping through emotional processing and expression. These two processes when used alone predicted greater coping than when they were used simultaneously. This suggests that coping through emotional expression might be most adaptive when individuals have processed and come to the understanding of their feelings (Stanton, Kirk, et al., 2000).
It is theorized that the underlying mechanism responsible for the beneficial effects of coping through emotional processing and expression is that it helps direct one’s attention towards progress towards a goal and motivates him or her to generate ways to work towards the goal (Stanton, Parsa, & Austenfeld, 2002). Findings of a mediated relationship between emotion-focused coping and hope, and of emotion coping’s association with problem-focused coping, provide support to this interpretation. Furthermore, it is possible that emotional approach is adaptive because it helps one habituate to a stressor and the emotions evoked through either repeated exposure or cognitive reappraisal. Through processing and expressing emotions, one may come to the conclusion that the situation is not as bad as one believed and may reevaluate the situation. Additionally, expressing emotions may also facilitate support from the social environment.

Effects of emotion-focused coping may depend on various factors such as the situational context, nature of the stressor encounter, the interpersonal milieu, and attributes of the individual (Stanton et al., 2002). For example, it is believed that individuals who are punished for expressing emotions are less likely to benefit from this approach. It is likely that emotion-focused coping might be more useful for interpersonal stressors than for achievement-related stressors (Stanton et al., 1994) and for situations that are perceived as uncontrollable (Berghuis & Stanton, 2002). Individual difference characteristics such as gender, skills, and comfort levels of approaching emotions may also influence the utility of this approach.

Chinese Coping

The conclusion that emotion-focused coping is maladaptive has also been criticized as reflecting a bias in favor of the Western individualistic cultures by cross-cultural researchers.
(Wong & Wong, 2006). They argue that these findings may not apply to other cultures since most research on coping is based on Euro-American psychology. Cross-cultural theories postulate that given the cultural differences in beliefs and values, different cultures may have their specific coping strategies and resources. For instance, individuals with collectivistic orientation or interdependent self-construal may engage in more passive or avoidance coping because of their more external locus of control than their Western counterparts (Chun, Moos, & Cronkite, 2006). Believing that they have no control over the outcome, they thus control their internal states and behaviors by using secondary control coping or avoidance or emotion-focused coping (Cheng, Lo, & Chio, 2010). These postulations receive support from some cross-cultural studies as perceived control has been found to influence the use of coping strategies (e.g., O’Connor & Shimizu, 2002).

Cultural variations in coping goals may also explain the differences in the types of coping strategies chosen by people from different cultures in response to interpersonal stressors (Chun et al., 2006). Since collectivistic individuals with interdependent self-construal consider other people as part of the self, their primary coping goal may be to meet the needs of other people rather than their own needs for immediate reduction of their own psychological distress. Consequently, they may appear to be using ineffective coping strategies when symptom relief is used as a measure of successful outcome. Moreover, the cultural virtue of forbearance may affect the type of coping strategies used as individuals are taught to endure stress or suffering because these negative experiences can be beneficial to individuals through strengthening their will and resilience (Cheng et al., 2010). In a similar vein, teachings of Buddhism, Taoism, and Confucianism all advocate the importance of acceptance and endurance of suffering and coping
through changing one’s emotional state or goal structure. As such, use of cognitive coping and secondary control coping for emotional regulation such as letting go are deemed appropriate for Chinese.

Cross-cultural studies have also shown that Chinese tend to use more avoidance or emotion-focused or secondary control coping in response to stress in comparison to individuals in Western cultures (e.g., Peng, 1995). Peng found that Chinese immigrants to the US reported higher scores on the secondary control and lower scores in primary control than the American participants. In their study that examined the coping strategies preferred and used by Hong Kong Chinese students in Canada, Chataway and Berry (1989) found that an avoidance coping style such as detachment was associated with increased psychological and psychosomatic symptoms. Furthermore, relative to French and English Canadians, Hong Kong Chinese students coped with acculturative stress with less positive thinking and less tension reduction coping. Additionally, there is some evidence suggesting that Chinese with depression and neurasthenia tend to use less problem-focused coping and more emotion-focused coping than those without psychological problems (Gan, Zhang, Wang, Wang, & Shen, 2006).

Family influences and gender have been found to influence the use of emotion-focused coping in Chinese. In examining the influence of family environment on the coping style of Chinese adolescents, Hamid, Yue, and Leung (2003) found that Chinese adolescents whose families are warm and supportive use more emotion-focused coping such as adopting the philosophy of doing nothing than those whose families are controlling and conflict-ridden. In addition, some studies reveal gender differences among Chinese adolescents. For instance, Chinese girls tend to use more emotion-focused coping such as “get upset” than boys (Liu, Tein,
& Zhao, 2004). The findings for Chinese adults are less clear. While some studies (Chan, 1995; Gerdes & Ping, 1994) indicate no gender differences in the types of coping strategies used, others found that Chinese women were more likely to seek external help for handling stressors, whereas Chinese men are more prone to rely on themselves to solve problems (Chan, 1994; Shek, 1992).

Research findings are divided regarding the adaptiveness and maladaptiveness of problem-focused and emotion-focused coping for Chinese. On one hand, some studies report a positive association between problem-solving coping and adaptive outcomes for Chinese. For instance, Ng and Hurry (2011) found that the relationship between stress and depression was moderated by non-productive and problem-solving coping strategies in a sample of Chinese high school students from Hong Kong. Specifically, the use of problem-focused and productive emotion-focused coping, and the rejection of non-productive emotion-focused strategies such as self-blaming, worrying and becoming preoccupied with bodily symptoms, served as protector factors against depression in the presence of stress. On the other hand, recent research challenges the assumption that approach-focused coping strategies are more adaptive than those that do not actively confront stressors for Chinese. For example, contrary to the Western findings that problem-focused coping has been consistently linked to adaptive outcomes, Jose and Huntsinger (2005) found that problem-focused coping is associated with greater psychological maladjustment at moderate to high levels of stress for Chinese-American adolescents. Moreover, avoidance coping has been found to be most effective in reducing distress among adolescents under high stress levels. Such finding further suggests that there are cultural differences in the effectiveness of avoidance or emotion-focused coping in stress-
related outcomes, and it also points to the need to examine the cultural variables such as cultural orientation and self-construal so that results of studies of Chinese and Chinese-Americans are comparable.

The theory of self-construal has evidenced implications on individuals’ cognitions, emotions, and motivation across cultures (Markus & Kitayama, 1991). In view of the notion that Chinese and Americans have different self-construals, cultural differences might emerge in their coping strategies as they attribute different meanings to interpersonal conflicts (Markus & Lin, 1999). For Euro-Americans with independent self-construal, interpersonal conflicts arise when they place constraints on their individual freedom and rights, thus threatening their sense of autonomy. To restore their individuality, they resolve the conflicts by removing the barrier to their desired outcome. Specifically, they are likely to employ strategies that confront or modify the external stressors (e.g., approach-focused coping strategies). In this cultural context, compromise and accommodation are considered undesirable strategies as they mean giving up part of their own needs. On the contrary, for Asians with interdependent self construal, interpersonal conflicts occur when there is a disruption to the harmony in interpersonal relationships. As a result, the goal of conflict resolution is to restore the interconnectedness without shaming anyone in the process. Compromise and accommodation are considered appropriate as they indicate maturity and tactfulness, and coping strategies that avoid external stressors or direct confrontations and change the internal psychological states (e.g., avoidance-focused coping strategies) to adjust to social situations are preferred to manage the conflicts. These strategies may be more effective under the cultural context where the norm is to fit in with the environment than one where the norm is to assert individuality.
B. C. H. Kuo and Gingrich (2004) examined the relationships between self-construal and the use of collective, avoidance, and engaging coping among Asian and Caucasian Canadian college students. Their results showed that regardless of ethnicity, those with higher levels of independent self-construal tended to use engagement or problem-focused coping, while those with higher levels of interdependent self-construal used all three types of coping in response to the interpersonal stress situation. In addition, the latter rated interpersonal conflicts to be more stressful than the less interdependent participants. Lam and Zane (2004) examined the mediating role of self-construal on ethnicity and use of primary versus secondary control coping approaches to interpersonal stress among Asian American and European American college students. Independent self-construal was found to fully mediate the ethnic differences on primary control among European Americans. This suggests that independent European Americans are oriented towards controlling the environment or the stressor to fit own personal needs. Conversely, interdependent self-construal was found to partially mediate the ethic differences on secondary control among Asian Americans, indicating that interdependent Asian Americans preferred coping that involves adjusting themselves to external environments.

In a similar vein, cultural orientation has been found to influence one’s use of coping strategies (e.g., Bailey & Dua, 1999; Schaubroeck, Lam, & Xie, 2000). Although empirical evidence is not conclusive, there is generally more support for the relation between a collectivistic orientation and the use of avoidance-focused coping than between an individualistic orientation and the use of approach-focused coping (Chun et al., 2006). These cumulative findings thus support that cultural orientation and self-construal are important mechanisms underlying the use of different coping strategies.
To summarize, current research findings raise several questions regarding emotion-focused coping. First, as mentioned previously, coping strategies are often dichotomized into opposing categories with one connoting more confrontation and the other more avoidance. There seems to be some overlaps among the different categories. In reviewing the literature, some researchers used avoidance and emotion-focused coping interchangeably, and there seems to be some confusion as what constitutes emotion-focused coping strategies. As another example, positive reframing has been categorized as passive in some studies (Essau & Trommsdorff, 1996) and as active in others (Lee & Liu, 2001). Second, though Western studies have repeatedly shown a negative relationship between emotion-focused coping and psychological well-being, this association is much weaker among Chinese. Given the contradictory findings regarding the effects of emotion-focused coping, it will be interesting to examine its relationships with depression in a cross-cultural context. As mentioned earlier, Chinese tend to employ emotion-focused coping, and they also have the reputation of expressing emotions in moderation. Effects of emotion-focused coping may vary depending on the cultural contexts and personality traits. In addition, though evidence is scarce, emotion-focused coping has been linked to physical distress, and so how it relates to somatization of depression was examined in this study. Because of problems with current measures of emotion-focused coping, this study used the Emotional Approach Coping Scales (EAC) developed by Stanton and her colleagues (Stanton, Kirk, et al., 2000).

The Present Study

Our understanding of experiences of depressive disorders is mainly based on studies of individuals in the West. Little is known about the symptom expression of individuals in non-
Western societies. Moreover, even when non-Westerners are studied, these studies are conducted within the social context and diagnostic framework of a predominantly individualistic environment. As a result, findings may not generalize to a different cultural context.

Furthermore, previous cross-cultural studies on somatization often assume cultural differences based on studying individuals from different countries without examining where these differences lie. Explanations of cultural differences were often offered after the fact (Cheung, 1995). Identifying and understanding how cultural and psychological factors influence the symptom expression of depression of Chinese and Americans is a crucial step in making diagnosis, treatment, and research applicable across cultures. Given the increasing emphasis on multicultural competence, this knowledge is particularly essential as it facilitates the development of culturally sensitive assessment and treatment. Therefore, it was the purpose of this study to unpack the cultural differences in symptom presentation of depression by exploring the roles of specific cultural and psychological variables. Unlike previous research that compared Chinese with a Western comparison sample with the assumption that they are culturally different, this study was designed to unveil the relationships between self-construal and the phenomena of somatization and psychologization of depression. Another purpose of this study was to provide a preliminary investigation of the roles of sociotropy and emotional approach coping in somatic symptom presentation among Chinese and Americans.

Results of studies of self-construal and depression, whether conducted in the US or in China, come to the similar conclusion that depression is negatively associated with independent self-construal and positively associated with interdependent self-construal (e.g., Huang, Liu, Yao,
& Abela, 2009; Mak et al., 2011). In addition, previous research indicates that interdependent self-construal is associated with sociotropy whereas independent self-construal is negatively related to sociotropy (Mak et al., 2011). Evidently, Mak and colleagues found that regardless of ethnicity, individuals with high interdependent self-construal are more likely than those high in independent self-construal to develop sociotropy, which predisposes them to experience depressive symptoms. Moreover, there is substantial evidence from studies conducted in the Western cultures to support Beck's cognitive diathesis-stress theory of depression, which shows that sociotropy is associated with heightened risk for depression following interpersonal stressors (e.g., Robins, 1990). Although there are relatively fewer studies examining Beck's theory in non-Western countries, findings of a study examining Chinese women in Hong Kong provided partial support of Beck’s diathesis-stress model in which sociotropy was found to be related to depression (Leung, 2005). The implications of these findings indicate that self-construal and sociotropy relate to depression in similar ways in both the Western and Eastern contexts and do not support the theory of a misfit between a person’s cognitive style and cultural context as suggested by Mak and colleagues (2011).

In addition to its effect on overall depression, sociotropy may influence how interdependent individuals express their depressive symptoms. Given their sensitivity to social approval, they may deemphasize affective symptoms for the sake of preserving interpersonal harmony and instead emphasize somatic symptoms. This may be particularly relevant in the Chinese cultures given their cultural norms governing emotional expression and illness behaviors. On the other hand, independent individuals define themselves in terms of their internal attributes, and they organize their actions in reference to their own feelings and
thoughts. These qualities may make them more resistant to develop a scociotropic cognitive style. Consequently, they are more likely to express their emotions and endorse psychological symptoms.

As mentioned in previous sections, the preferred coping strategies may vary with the nature of the self-construal, and the adaptiveness of specific coping strategies may depend on the cultural contexts. Cross-cultural research has demonstrated differences between Eastern and Western cultures in the ways that individuals cope with their emotions and their beliefs about how and when emotions should be expressed and felt (e.g., Matsumoto, 1990; Mesquita & Frijda, 1992). Emotional expression is presumably valued by independent individuals and considered acceptable in Western cultures, whereas emotional restraint is considered normative for interdependent individuals (Soto, Levenson, & Ebling, 2005). Furthermore, in line with previous findings that culture influences the effect of expressive suppression on psychological functioning (e.g., Soto et al., 2011), the adaptiveness of emotional expression coping will likely be moderated by self-construal. Additionally, since the available empirical evidence that emotional approach coping is negatively associated with depression comes solely from studies of the U.S. samples, it is unknown whether this relationship will generalize to a cultural context where open emotional expression may be less well-received. In particular, for individuals with interdependent self-construal who may be vulnerable to develop sociotropy and subsequent depression, coping through emotional expression, especially negative feelings, may risk causing disruption in group harmony. Thus, use of emotional approach coping and its relationship with depression may vary between individuals with different self-construals.
Furthermore, their differential use of emotional approach coping may possibly influence how interdependent and independent individuals express their depressive symptoms. Specifically, given the differences in their emphasis on interpersonal connectedness, compared to those who have high independent self-construal, individuals with high interdependent self-construal are hypothetically less likely to employ emotional processing and expression to cope for the sake of preserving their interpersonal relationships. Therefore, they may be more vulnerable to depression and likely report their symptoms in predominantly somatic terms. On the other hand, use of emotional approach coping is more consistent with independent individuals’ cultural ideals of independence and autonomy. Hence, they will be more likely than interdependent individuals to express psychological symptoms.

Cultural contexts also likely influence this somatization tendency and its relationships between self-construal, sociotropy, and emotional approach coping. Since the usual norms governing emotional expression and illness behavior differ between Chinese and Americans, the extent of somatization is likely stronger in the Chinese than the Western cultures. Moreover, the associations of somatization and these cultural and psychological variables may be stronger among Chinese than Americans due to Chinese’s greater emphasis on these normative values.

As discussed in previous sections, much of the existing research pertaining to self-construal, sociotropy, and emotional approach coping has focused on examining their associations with depression. This study focused primarily on investigating how these variables relate to the somatization of depression. Therefore, in addition to examining whether there were cultural differences in somatic and psychological symptom reporting, the present study
was designed to test whether self-construal, sociotropy, and emotional approach coping predicted somatic symptoms of depression among Chinese and American samples.

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) and its Chinese version, Chinese Depression Scale (CDS; Lin, 1989), and the Depression and Somatic Symptoms Scale (DSSS; Hung, Weng, Su, and Liu, 2006a) were used to measure somatization of depression. The CES-D and the CDS were chosen because they have been used primarily in previous cross-cultural studies of depression and somatization, and results of this study can be comparable to prior findings. The DSSS was selected because its Somatic Subscale contains more somatic items related to depression than other depression measures. Moreover, it was developed in the Eastern context and was validated with a Chinese sample. It would be interesting to examine how applicable this measure was in a Western culture. In addition, the CES-D and the DSSS assess different dimensions of depression with the former measuring the frequency of symptoms and the latter the severity. Using both scales provided a better understanding of the phenomenon of somatization.

The mean scores of the Somatic Subscale of the DSSS, which indicates the severity level of somatic symptoms of depression, served as one of the dependent variables of somatization of depression. To compare the levels of endorsement of somatic versus psychological depressive symptoms, factor ratio scores of the CES-D and the CDS were created using the same method as described in the study by Yen and colleagues (2000). These researchers first conducted factor analyses on the CES-D and the CDS to develop somatic and psychological symptom reporting scales for the American and Chinese samples. Each participant’s mean item score for each of the two factors of the CES-D or its Chinese equivalent were then divided by
the participant’s mean score of the total number of items. The resulting ratio scores thus indicate the extent to which the individual emphasized that particular class of symptoms relative to their overall depressive symptom reporting.

It must be noted that the DSSS and some additional items of the CDS have not been validated with an American sample. In addition, the Emotional Approach Coping Scales (EAC) have not been studied in a Chinese context. Their psychometric properties were examined in this study.

Hypotheses

1. There will be a difference between a) Chinese and Americans on somatic symptom expression such that Chinese will report higher levels of endorsement and more severe somatic symptoms than American participants and b) Chinese and Americans on psychological symptom expression such that Americans will report higher levels of endorsement of psychological symptoms than Chinese participants.

2. There will be differences between Chinese and American participants on interdependent and independent self-construals, sociotropy, and emotional approach coping such that Chinese would report higher interdependent self-construal, lower independent self-construal, higher sociotropy, and lower emotional approach coping than the American participants.

3. Relative endorsement and severity levels of somatic symptoms of depression are associated with stronger interdependent self-construal and weaker independent self-construal.
4. Conversely, relative endorsement of psychological symptoms of depression is associated with stronger independent self-construal and weaker interdependent self-construal.

5. Relative endorsement and severity levels of somatic symptoms of depression are a) positively associated with interdependent self-construal and b) negatively associated with independent self-construal; c) interdependence will be a better predictor than independence in both cultures, and d) interdependent self-construal will be a better predictor for the Chinese than for the Americans.

6. Relative endorsement of psychological symptoms of depression is a) positively associated with independent self-construal and b) negatively associated with interdependent self-construal; c) independence will be a better predictor than interdependence in both cultures, and d) independent self-construal will be a better predictor for the Americans than for the Chinese.

7. Independent self-construal, interdependent self-construal, sociotropy, and emotional approach coping will predict relative endorsement and severity of somatic symptoms of depression for both samples.

8. Sociotropy and emotional approach coping, in particular, emotional expression coping, will account for significant unique variance in relative endorsement and severity of somatic symptoms over and above the variance accounted for by self-construal for the Chinese, but not for the American participants.
Participants from the US were recruited from a postsecondary institution located in the North Texas region, whereas Chinese students were recruited from the University of Macau. Macau, which is located in south-east China, has an estimated population of 615,000. It was once a colony of Portugal and was returned to China in 1999. About 93.8% of Macau’s population is Chinese, and they are predominantly influenced by traditional Chinese cultures, but the residents there have also been exposed to cultural influence from the West due to its past status as a colony of Portugal. The University of Macau is the only public university in Macau with local students and students from Mainland China comprising about 68% and 30% of the student populations. Undergraduate students enrolled in psychology courses from these two universities participated in this study.

Since the purpose of this study was to examine the symptom presentation of depression, participants were first screened with the Patient Health Questionnaire–Depression Module (PHQ-9; Kroenke, Spitzer, & Williams, 2001) to determine that they experienced at least some mild depressive symptoms. Only those with a cutoff score of two or above were considered for inclusion of participation in this study. In this case, a lower cutoff score was chosen instead of the conventional cutpoint of five which represents mild depression due to the consideration of the possibility that the presentation of depressive symptoms of Chinese might be different. The same cutoff was applied to both samples so as to avoid biases in inclusion. In addition, the following criterion was considered for inclusion for the Macau sample: individuals who are...
Chinese (both parents are of Chinese origin). As for the American sample, only participants who were born in the US were included. Additionally, in order to maintain a relative cultural distinction between the two samples, data from Asian American participants were collected to avoid the appearance of bias but were not included for analyses.

**American Sample**

Of the 1019 American students who participated in this study, after the initial data cleaning to eliminate inconsistent and repeated responses, 648 individuals met the initial inclusion criterion of obtaining a cutoff score of two or above on the PHQ-9. Due to significant age and gender differences between the American and Chinese samples, 157 participants were deleted from the American sample. Specifically, 35 individuals who were younger than 18 and older than 23 years old were excluded from this study. Then, an additional 122 females who were between the ages of 20 and 23 were deleted. The final sample consisted of 491 participants. See Table 1 for demographic information. Participants’ age ranged from 18 to 23 ($M = 19.26$, $SD = 1.36$). Of the 491 participants, 33.6% were males, and 66.4% were females. Ethnically, a majority of participants were European American (51.1%), followed by Hispanic/Latino (20.6%), African American (15.5%), American Indian/Indigenous (2.2%), Middle Eastern American (1.0%) and Pacific Islander (0.2%), and 9.4% of participants identified themselves as bi-racial or multi-racial. Most participants reported that they were single (94.3%). In regard to college standings, 50.3% were freshman, 23.2% were sophomore, 18.1% were junior, and 8.4% were senior. The length of time participants had lived in the US ranged from 3 to 23 years ($M = 19.10$, $SD = 1.79$). Most participants did not have the experience of living abroad (95.1%).
With regard to the birth places of their parents, most participants reported that their parents were born in the US (82.5% and 82.9% for fathers and mothers respectively). Participants’ fathers’ education levels were fairly normally distributed with 4.1% receiving less than high school education, 6.5% attaining some high school education, 23.2% completing high school, 24.8% obtaining Bachelor’s degrees, 9.2% having Master’s degrees, and 3.9% holding Doctoral degrees. Participants’ mothers’ education levels followed similar patterns with 3.1% receiving less than high school education, 4.5% attaining some high school education, 17.9% completing high school, 27.5% obtaining Bachelor’s degrees, 10.6% having Master’s degrees, and 2.2% holding Doctoral degrees. Regarding fathers’ occupations, the three most frequent categories were administrators/semi-professional (24.8%), followed by major business managers/minor professional (23.2%), and skilled manual workers (13.4%). As for mothers’ occupations, most participants’ mothers also worked as administrators/semi-professional (23.4%), followed by major business managers/minor professional (21.6%), and clerical and sales workers (14.9%).

In terms of medical and mental conditions, most participants reported no history (85.1% and 84.3% for medical conditions and mental conditions respectively). About 72.1% of participants stated that they were not currently taking any prescribed medications, and 96.3% denied experiencing any side effects from their medications. Most participants reported that none of their immediate family members had ever been diagnosed with any psychological disorders (74.5%), and 67.2% denied ever been in therapy or counseling.
Chinese Sample

Among the 644 participants who completed the questionnaires, 362 met the inclusion criteria of being Chinese (both parents are of Chinese origin) and obtaining a cutoff score of two or above on the Chinese PHQ-9 after the initial data cleaning to eliminate repeated or inconsistent responses. Of the 362 participants, three individuals had missing values in a demographic variable, and they were excluded from data analyses. In addition, six participants who were under 18 and over 23 years old were excluded from this study so that both samples had the same age range. The final sample was comprised of 353 participants. Descriptive data for demographic information can be found in Table 1. Of the 353 participants, a majority reported their nationality as China (94.1%). Specifically, more than half of the total number of participants were born in Macau (59.2%), followed by China (37.7%), and Hong Kong (3.1%). Note: Both Hong Kong and Macau are Special Administrative Regions of the People’s Republic of China. About 64.6% were females and 35.4% were males, and participants’ age ranged from 18 to 23 ($M = 19.10$, $SD = 1.15$). In terms of marital status, almost all were single (98.6%). Less than one percent was married/living together, and 1.1% were divorced/separated. Participants’ college standings were as follows: 75.9% were freshman, 13.0% were sophomore, 5.9% were junior, and 5.1% were senior. The length of time living in Macau ranged from 1 month to 23 years ($M = 12.46$, $SD = 8.28$). Most participants did not have the experience of living abroad (93.8%).

All participants’ parents were born either in China, Hong Kong, or Macau. In regard to fathers’ education levels, 22.1% received less than high school education, 18.4% attained some high school education, 30.0% received a high school diploma, 4.8% completing A Level, 15.9%
had Bachelor’s degrees, 2.0% obtained Master’s degrees, and 1.1% held Doctoral degrees. Mothers’ education levels followed similar patterns, with 23.8% receiving less than high school education, 17.0% having some high school education, 30.9% completing high school education, 5.4% completing A Level, 14.2% receiving Bachelor’s degrees, 2.0% holding Master’s degrees, and 0.6% obtaining Doctoral degrees. Most participants’ fathers worked as major business managers/minor professional (24.1%), followed by skilled manual workers (18.7%), and administrators/semi-professional (15.9%), whereas most participants’ mothers were either homemakers/self-employed (19.0%), followed by major business managers/minor professional (17.6), and skilled manual workers (16.4).

With regard to health, most participants denied having any medical conditions (92.1%) and none reported any mental conditions. A majority stated that they were not taking medications (95.8%), and 98.3% reported experiencing no side effects from their medications. Almost all of the participants reported that none of their immediate family members had ever been diagnosed with a mental condition (98.3%), and 96.3% of participants denied receiving any therapy or counseling.

Measures

Demographics Questionnaire

The demographic questionnaire consisted of questions regarding participants’ gender, age, years of education, ethnicity, marital status, place of birth, number of years living in current and other countries. Participants were also asked about their parents’ occupations and highest level of education attained. In addition to demographic questions, participants were asked about their physical and mental health.
The Patient Health Questionnaire–Depression Module (PHQ-9)

The PHQ-9 is the 9-item depression module of the Patient Health Questionnaire (Kroenke et al., 2001). Originally developed to screen for depression in primary care settings, this criterion-based instrument consists of the nine symptoms of the DSM-IV Criteria A for major depressive episode. Sample items are as follows: “having little interest or pleasure in doing things” and “feeling down, depressed, or hopeless.” Participants are asked to rate the frequency of the depressive symptoms that they experienced in the past two weeks on a 4-point Likert scale that ranges from 0 (not at all) to 1 (several days), 2 (more than half of the days), and 3 (nearly every day). The total score ranges from 0 to 27, with higher scores indicating greater severity of depressive symptoms. Kroenke et al. reported good test-retest reliability in the primary care and obstetrics-gynecology samples (r = .84). Internal consistency was also good, with a Cronbach’s alpha of .89 in the primary care sample and .86 in the obstetrics-gynecology sample. Good criterion validity with the clinical diagnostic interview as gold standard has been established (r = .84, r = .79 respectively; Spitzer, Kroenke, & Williams, 1999; Spitzer, Williams, Kroenke, Hornyak, & McMurray, 2000). In addition, a meta-analysis of 17 validation studies of the PHQ-9 found that it is as good as longer clinician-administered instruments in different countries and populations (Gilbody, Richards, Brealey, & Hewitt, 2007). The current study found the PHQ-9 to have good internal consistency with a Cronbach’s alpha of .84.

The Chinese PHQ-9

The PHQ-9 has been widely adopted as a clinical and research tool and has been translated into various languages. Yu, Tam, Wong, Lam, and Stewart (2012) reported that the
Chinese version has good reliability and validity in a Chinese community sample from Hong Kong with internal consistency being .82, and test-retest reliability over a 2-week interval is .76. Furthermore, validation studies among Chinese older adults in primary care (Chen et al., 2010) and Chinese Americans in primary care (Yeung et al., 2008) demonstrated good psychometric properties. Internal consistency for both studies was reported to be high (Cronbach alpha = .91). The traditional Chinese for Hong Kong version was used in this study, which was obtained from the PHQ website (www.phqscreeners.com). In the present study, the internal consistency was acceptable, with a Cronbach’s alpha of .79.

**The Revised Self-Construal Scale (SCS)**

The Revised SCS (Singelis, 1994; Singelis et al., 1999) is a 30-item measure which assesses the levels of independent and interdependent self-construals based on Markus and Kitayama’s (1991) conceptualization of cultural self-construal. It is comprised of two 15-item subscales: independence and interdependence. An example of an interdependent self-construal item is “my happiness depends on the happiness of those around me.” A sample item from the independent self-construal subscale is “I am the same person at home as I am at school.” This scale uses a 7-point Likert-type format (ranging from 1 strongly disagree to 7 strongly agree). Each subscale ranges from 15 to 105; higher scores on a subscale indicate a greater orientation to that subscale. The SCS was chosen because it has undergone extensive psychometric validation. The original scale had 24 items and was normed on a multiethnic sample of college students (Singelis, 1994). It was reported to have good construct and predictive validity and obtained Cronbach’s alpha coefficients for the independent and interdependent subscales ranging from .69 - .70 and .73 - .74 respectively. In Singelis and
colleagues’s (1999) cross-cultural study, the independence subscale of the original version had a Cronbach’s alpha of .58 while the interdependence subscale of the Chinese version obtained a Cronbach’s alpha of .53 among a sample of Hong Kong Chinese college students. Higher internal reliabilities were obtained among the U.S. European American sample (Cronbach’s alphas = .66 and .64 for independence and interdependence respectively). Convergent validity of the original scale has been established by its association with other collectivism measures (Singelis, Triandis, Bhawuk, & Gelfand, 1995). The latest version of the SCS consists of six additional items (3 for each subscale). The internal consistency of the revised SCS was reported to have improved (Cronbach’s alpha = mid .70’s) (as cited in Okazaki, 2002). The present study established acceptable internal consistency for independent self-construal (Cronbach’s alpha = .79) and interdependent self-construal (Cronbach’s alpha = .72) subscales. The two subscales were positively correlated ($r = .18$).

**The Revised SCS Chinese Version**

The Revised Self-Construal Scale has been studied within the Chinese population. In Xie, Leong, and Feng’s (2008) cross-cultural study, the alpha coefficients of the 30-item Chinese version were reported to be .67 and .77 for the independent and interdependent self-construal subscales respectively within a sample of Chinese undergraduate students from mainland China. The reliabilities of the original 24-item were reported to be .71 and .69 for independence and interdependence respectively among university students from Hong Kong (Kemmelmeier & Cheng, 2004). Additionally, Huang and colleagues (2009) validated the Chinese version of the 24-item scale among college students from mainland China. The independent and interdependent self-construal subscales obtained Cronbach’s alphas of .73 and .77 respectively.
Test-retest reliability of the scale within a month was .84. Results of their factor analysis indicated two factors and that the independent self-construal was found to correlate negatively with depression, whereas the interdependent self-construal was positively related to depression. Permission was obtained from Dong Xie to use his translated version in this study. The current study found the independent and interdependent subscales to have acceptable internal consistency with a Cronbach’s alpha of .74 and .83 respectively, and they were strongly and positively correlated ($r = .59$).

*The Revised Sociotropy-Autonomy Scale (SAS)*

The Revised SAS consists of one scale for sociotropy and two scales for autonomy (Clark, Steer, Beck, & Ross, 1995). In the present study, only the sociotropy scale was administered to the participants. The 29-item scale measures an individual’s needs to please others and concerns about disapproval and fear of criticism. This scale uses a 5-point frequency scale which ranges from 0% (*never*) to 100% (*all of the time*). A sample question is as follows: “I worry that somebody I love will die.” The sociotropy scale has demonstrated good internal consistency (Cronbach alpha = .87), temporal stability within 4 to 6 weeks, convergent, and discriminant validity (Clark et al., 1995). In the present study, the internal consistency of this measure was good, with a Cronbach’s alpha of .91.

*The Revised Chinese Sociotropy-Autonomy Scale (C-SAS)*

An abridged Chinese version of the SAS consisting of the 29-item sociotropy and 13-item Solitude subscales has been validated within a sample of Chinese adults from Hong Kong (Leung, 2005). Results of Leung’s factor analyses showed that the Chinese version had compatible factor structures to those of Clark et al. (1995). Internal consistency of the sociotropy subscale
was reported to be adequate (Cronbach alpha = .89). Satisfactory construct validity was demonstrated as sociotropy was shown to correlate with dependency which is another cognitive vulnerability factor. Permission was obtained from Leung to use her translated version. The internal consistency for this Chinese sample was good (Cronbach’s alpha = .91).

*The Center for Epidemiological Studies Depression Scale (CES-D)*

This is a 20-item self-report measure (Radloff, 1977), which was used to assess depressive symptoms of the American sample. Participants were asked to indicate the frequency with which they have experienced various depressive symptoms for the past week on a 4-point scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Summed scores range from 0 to 60 with higher scores indicating higher levels of depression. A cutoff of 16 and above has been used as indicative of clinical depression in the literature. The CES-D has four factors: depression affect (DEP, 7 items); absence of positive affect (POS, 4 items); somatic and retarded activity (SOM, 7 items), and interpersonal problems (INT, 2 items). Questions such as “I felt depressed” examine the aspect of depression affect, whereas items such as “my sleep was restless” assess the somatic aspect. Previous validation studies have demonstrated good psychometric properties with general population (Radloff, 1977). Radloff reported high internal consistency in the general population (alpha coefficient = .85) and the patient sample (alpha coefficient = .90). Moderate test-retest reliability ranges from .40 to .70 for varying intervals (Devins et al., 1988). Evidence of construct validity as well as concurrent validity by clinical and self-report criteria has also been established. In the present study, a 26-item version was used so as to increase the compatibility of the scales between the two samples since the Chinese version included six additional items to assess Chinese-specific experiences of
depression. Since these new items have not been evaluated within a U.S. college student sample, the current study also examined the internal consistency and factor structures. The internal consistency of the 26-item CES-D within this American sample was good, with a Cronbach’s alpha of .93.

**The Chinese Depression Scale (CDS)**

This is the Chinese translation of CES-D, and it consists of 26 items (Lin, 1989). Lin included six additional items to assess experiences of depression specific to the Chinese population. The internal consistency of the 26-item scale was good, reported to be .90, and the three factors identified within a community sample of Chinese adults were similar to three of the four factors usually found in the American samples. The CDS has demonstrated adequate criterion and construct validity in a Chinese sample. Likewise, Yen et al. (2000) obtained a reliability of .90 in their study of Chinese university students from mainland China using the 20-item version of the CDS. Results of their factor analysis were similar to those of Lin’s. In previous studies, the CES-D and the CDS were rated on a scale from 0 to 3. In this study, participants were asked to rate on a scale from 1 to 4 so that the factor ratio scores could be computed. The total scores were then changed back to the original scale so that they could be compared with scores in other studies. In the present study, good internal consistency was found with this Chinese sample (Cronbach’s alpha = .92).

**The Depression and Somatic Symptoms Scale (DSSS)**

Hung et al. (2006b) developed a scale to monitor both depression and somatic symptoms. It consists of two subscales: the depression subscale (DS; 12 items) which includes three vegetative symptoms and fatigue, and the somatic subscale (SS; 10 items) which includes
five pain items comprising the pain subscale (PS; 5 items). The former subscale was designed to
provide information about the severity of depression without being confounded by somatic
symptoms. Sample questions from each subscale are as follows: “loss of interest in daily or
leisure activities (depression subscale),” “muscle tension (somatic subscale),” and “back pain
(pain subscale).” This scale was first developed in Chinese (traditional form) and was validated
with a sample of Taiwanese outpatients with major depressive disorder. Items are rated
according to the degree of severity (0-absent, 1-mild, 2-moderate, and 3-severe). Total scores
for the subscales are the sum of scores on their respective items. Cronbach’s alpha was .88 for
the total scale, .78 for the depression subscale, and .86 for the somatic subscale respectively.
The scale has adequate internal consistency reliability and convergent validity. In a subsequent
validation study, Hung and colleagues (2006a) reported that the test-retest reliabilities within 1-
week were .92 for the total scale, .88 for the depression subscale, .90 for the somatic subscale,
and .90 for the pain subscale among Taiwanese outpatients. Results of the factor analysis
indicated two factors with most of the items loading in appropriate factors. Overall, the DSSS is
reliable and sensitive to treatment and has acceptable convergent, criterion, factorial, and
distinct-group validities (Hung et al., 2006a, 2006b; Hung, Wang, & Liu, 2009). Hung and
colleagues (2006a) have translated the DSSS into English, but it has not been evaluated with
American samples. Hence, it was validated in this study by examining its factor structure. In
the present study, the Cronbach’s alphas of the DSSS and all subscales fell within an acceptable
range within the American sample (.91 for overall scale, .89 for depression, .84 for somatic, and
.73 for pain subscales). Correlations of the DSSS total scores with the depression and somatic
subscale scores were .93 and .84 respectively. The two subscales were also positively
correlated \( r = .58 \). Similar results were obtained with the Chinese sample. The Cronbach’s alpha was .89 for the overall scale, .84 for depression, .83 for somatic, and .71 for pain subscales respectively. The DSSS total scores were positively related to those of the depression and somatic subscales \( r = .93 \) and \( .87 \) respectively. The correlation coefficient between the two subscales was .63.

**The Emotional Approach Coping Scales (EAC)**

Stanton and her colleagues (Stanton, Kirk, et al., 2000) developed this 16-item measure to examine coping through emotional approach. It consists of two scales: emotional processing (8 items) and emotional expression (8 items). Sample questions from each subscale are as follows: “I acknowledge my emotions” and “I take time to express my emotions.” Participants were asked to rate items on a four-point scale from 1 (I usually don’t do this at all) to 4 (I usually do this a lot). Cronbach’s alpha in previous studies ranged from .72 to .94, and it has good test-retest reliability as well as validity (Stanton, Kirk, et al., 2000). The present study found the scale to have good internal consistency within the American sample with a Cronbach’s alpha of .95. The subscales also had good reliability with Cronbach’s alphas of .92 for emotional processing and .95 for emotional expression. The two subscales were highly and positively correlated \( r = .70 \).

As mentioned previously, the EAC scales have not been studied with Chinese. Thus, it was first translated into Chinese and back translated, and the reliability and validity of the Chinese version were examined within this Chinese college student sample by evaluating the internal consistency, factor structures, and convergent validity. In this study, the internal consistency of the overall scale and subscales were good, with Cronbach’s alphas of .92 for the
overall scale and .90 for both emotional processing and emotional expression. The two subscales were positively correlated \( r = .59 \).

**COPE**

This measure was included for the purpose of validating the Chinese version of the EAC as Stanton and colleagues (Stanton, Kirk, et al., 2000) used it to establish convergent validity in their validation study. The original COPE is comprised of 13 coping strategies including problem-focused coping (Carver, Scheier, & Weintraub, 1989). Each subscale is assessed by four questions. Items are rated on a 4-point Likert scale from 1 (I usually don’t do this at all) to 4 (I usually do this a lot). Replicating Stanton and colleagues’ (Stanton, Kirk, et al., 2000) validation study, participants in this study were administered 48 items of the COPE. The Chinese version which has been validated among a sample of graduate students and government employees in China was used (Huang, Wen, Chen, & Yu, 2010). Huang and colleagues examined the dimensionality of the Chinese version of the revised COPE among a sample of graduate students and government employees from Beijing, China and concluded that it is a first-order multidimensional instrument with three factors including problem-focused coping, avoidance coping, and emotional/social coping. Permission was obtained from Huang to use his translated version.

**Procedure**

Prior to participant recruitment, this study was submitted and approved by the Institutional Review Board (IRB) of the University of North Texas. In addition, approval was obtained from the Head of the Department of Psychology of the University of Macau to recruit psychology students for participation.
Participants from each university were recruited through online collection of data (SONA) and compensated with credit for an undergraduate psychology course. This research was a web-based study, and participants were given or directed to an electronic link where they would complete the measures online. The Chinese versions of the measures were administered to the participants in Macau. All participants were first directed to an informed consent page (see Appendix) followed by the demographic questionnaire and scales in the order of the PHQ-9, the SCS, the SAS, the CES-D (CDS for Chinese participants), the DSSS, the EAC, and the COPE with the items of the latter two scales combining together to form one scale. Participants’ confidentiality was ensured as their names would never be included with the data and thus their responses would not be identified by names. Upon completion of the survey, participants were directed to another website where they entered their names for course credits.

Translation and Back Translation of Instructions and Measures

The administration was conducted in the native languages of the two cultures. The Emotional Approach Coping Scales (EAC) were translated into Chinese, and then the back translation technique (Brislin, 1986) was employed. In this technique, the English version was first translated into Chinese by a bilingual who speaks Chinese as his or her first language and English the second. Subsequently, the Chinese version was again translated back into English by another bilingual-translator. This version was then compared with the original English version, and any discrepancies were discussed and changed as appropriate.
Data Analysis Plan

Prior to hypothesis testing, the descriptive statistics and distributions for each variable were examined to check for outliers and normality. Then, sample differences in demographic and potential control variables were presented. Next, the psychometric properties of the scales were examined by performing item analyses and factor analyses. Based on results of factor analyses of the CES-D (CDS for Chinese), somatic and psychological factor ratio scores were computed which served as dependent variables. Finally, descriptive bivariate correlations were conducted between demographic and possible control variables and the independent and dependent variables to determine potential covariates in the primary hypotheses.

The first two hypotheses regarding cultural differences in the dependent (the DSSS somatic mean scores and the somatic and psychological factor ratio scores) and the independent variables (two types of self-construal, sociotropy, and emotional approach coping) were tested by conducting separate one-way multivariate analyses of covariance (MANCOVAs), controlling for those demographic and control variables that differed between the two samples. To test the third hypothesis regarding associations of self-construals with relative endorsement and severity of somatic symptoms of depression, the two criterion variables were regressed on independent and interdependent self-construals. Similarly, in order to test the fourth hypothesis, relative endorsement of psychological symptoms was regressed on independence and interdependence.

As for the fifth hypothesis which examined the relative importance of the two types of self-construal in predicting relative endorsement and severity of somatic symptoms of depression both within each culture and between the two cultures, separate hierarchical
multiple regression analyses were conducted for each sample with the DSSS somatic mean scores and somatic factor ratio scores serving as criterion variables. Demographic and other possible control variables which were related to the criterion variables were entered in the first block. The second block consisted of the independent and interdependent self-construals. The unstandardized regression coefficients of the two types of self construal were examined and compared by conducting a significance test. The sixth hypothesis was tested in a similar way with psychological factor ratio scores as the criterion variable.

As for the seventh hypothesis which examined the roles of independent and interdependent self-construals, sociotropy, and emotional approach coping in predicting relative endorsement and severity of somatic symptoms, and the eighth hypothesis which tested the differential predictive values of sociotropy and emotional approach coping across the two samples, separate hierarchical multiple regression analyses were conducted for each sample. Demographic and other possible control variables were entered in the first block, followed by the two types of self-construal which made up the second block. Sociotropy and emotional approach coping were added last.
CHAPTER III

RESULTS

Descriptive Analyses

Means, standard deviations, skewness, kurtosis, and ranges were calculated for each demographic, independent, and dependent variable for each sample who met the Patient Health Questionnaire-Depression Module (PHQ-9) cutoff scores (see Tables 2 and 3).

For the American samples, all demographic, independent, and dependent variables were reasonably normally distributed with the exception of the frequency distribution of the length of time living in the US which was negatively skewed and noticeably leptokurtic. As for the Chinese sample, most variables were fairly normally distributed with the possible exception of the distributions of five variables including the length of time living in Macau, mean interdependent self-construal scores, the Depression and Somatic Symptoms Scale (DSSS) scores and its depression and somatic subscales scores (kurtosis above 1.5 and below 3) which were slightly deviated from normal distributions.

For the screening measure, the PHQ-9, the American sample obtained a mean total score of 7.34 ($SD = 5.10$), while the Chinese sample had a mean total score of 6.62 ($SD = 3.87$) after those from both samples with scores below two were omitted to create the final sample examined in this chapter. Based on the total scores of PHQ-9, participants’ depressive symptoms were classified into minimal (1-4), mild (5-9), moderate (10-14), moderately severe (15-19), and severe (20-27). Accordingly, 37.5% of the American participants had minimal depression, while 35.6% experienced mild, 15.5% moderate, 8.1% moderately severe, and 3.3%
severe depression. As for the Chinese participants, 34.8% had minimal, 45.9% mild, 14.4% moderate, 4.2% moderately severe, and 0.6% severe depression.

The present study found that American participants reported a mean total score of 22.26 ($SD = 14.11$) on the 26-item Center for Epidemiological Studies Depression Scale (CES-D), whereas the Chinese participants had a mean total score of 24.59 ($SD = 12.86$) on the Chinese Depression Scale (CDS). Participants’ scores on the 20-item CES-D and its Chinese equivalent could be classified into three categories: minimal (less than 15), mild to moderate (15-21), and major (over 21). The frequencies of these categories for the American sample were as follows: 47.9%, 22.4%, and 29.7%, respectively, whereas the frequencies for the Chinese sample were: 36.5%, 28.3%, and 35.1%, respectively.

Sample Differences on Demographic and Possible Control Variables

No statistically significant age differences were found between the two samples, $t(820.79) = -1.89, p = .059; d = 0.13$. In addition, contingency table analyses were conducted to compare the two samples (American versus Chinese) on demographic variables such as gender (male versus female) and marital status (single versus married, separated, divorced, and “other” category) respectively. The results were nonsignificant for gender, Pearson $\chi^2(1, N = 844) = .30, p = .586, \Phi = .02$. The two samples did not differ in their proportions of males and females.

The four non-single levels of marital status, namely, married/living together, divorced/separated, widowed, and “other” category, were combined into one level due to the absence of or low frequency counts among these categories. The two samples differed in the proportions of marital status, Pearson $\chi^2(1, N = 844) = 11.71, p = .001, \Phi = .12$. The proportions
of individuals who were married, separated, divorced, and other category in the Chinese and American samples were .01 and .06 respectively, whereas the proportions of Chinese singles and American singles were .99 and .94 respectively.

Additionally, the two samples differed in the proportions of college standings, Pearson $\chi^2(3, N = 844) = 44.39$, $p < .001$, Cramér’s $V = .23$. The proportion of Chinese freshman (.74) was statistically significantly higher than that of American freshman (.52), whereas the proportions of American sophomores (.22) and American juniors (.17) were greater than those of Chinese (.14 and .06 respectively). The proportions of seniors did not differ significantly between the two samples (.08 and .05 for Americans and Chinese respectively). The two samples also did not differ significantly in whether they have lived abroad, Pearson $\chi^2(1, N = 844) = .72$, $p = .396$, $\Phi = .03$. Statistically significant difference between the two samples was found in the length of time living in their respective country, $t(375.69) = - 14.82$, $p < .001$; $d = 1.11$.

Due to differences in the education systems of the two countries, the educational levels of participants’ parents could not be directly compared. Instead, gender differences within each sample were examined. There were not statistically significant gender differences in the educational levels of participants’ fathers and mothers within each sample, $t(489) = 1.41$, $p = 1.60$; $d = 0.14$ for fathers’ educational levels of American sample; $t(489) = 1.40$, $p = .162$; $d = 0.13$ for mothers’ educational levels of American sample; $t(351) = - .21$, $p = .833$; $d = 0.02$ for fathers’ educational levels of Chinese sample, and $t(351) = - .52$, $p = .602$; $d = 0.05$ for mothers’ educational levels of Chinese sample.

Mann-Whitney $U$ tests were conducted to evaluate whether the two samples differed in terms of their parents’ occupational levels. The results were significant, $z = -4.88$, $p < .001$; $r$
= .17 for fathers and \( z = -3.51, p < .001; r = .12 \) for mothers. The American sample had an average rank of 413.02 for fathers’ occupational levels, whereas the Chinese sample had an average rank of 336.14. As for mothers’ occupational levels, American sample had an average rank of 424.55, while Chinese had an average rank of 367.46. Results indicated that American fathers and mothers had higher occupational levels than those of Chinese fathers and mothers.

Regarding the differences in proportions of the two samples with respect to their medical and mental conditions, a series of two-way contingency tables analyses were conducted. The proportions of those with or without medical conditions differed significantly between the American and Chinese samples, Pearson \( \chi^2(1, N = 844) = 9.38, p = .002, \Phi = .11 \). The proportion of Americans with medical conditions (.15) was significantly greater than that of Chinese with medical conditions (.08), whereas the proportion of Chinese without medical conditions (.92) was significantly higher that of Americans without medical conditions (.85).

Likewise, the proportions of those with or without mental conditions differed significantly between the Chinese and American samples, Pearson \( \chi^2(1, N = 844) = 60.92, p < .001, \Phi = .27 \). The proportion of Americans with mental conditions (.16) was significantly higher than that of Chinese (.00).

Similarly, with regard to those who were on medications, the proportions differed significantly between the American and Chinese samples, Pearson \( \chi^2(1, N = 844) = 77.81, p < .001, \Phi = .30 \). The American sample (.28) consisted of a higher proportion of individuals who were on medications than the Chinese sample (.04), whereas the Chinese sample (.96) had a higher proportion of individuals who were not taking prescribed medications when compared
to their American counterparts (.72). The presence or absence of side effects was not significantly different between the two samples, Pearson $\chi^2(1, N = 844) = 2.87, p = .09, \Phi = .06$.

The two samples differed significantly regarding the presence or absence of family mental conditions, Pearson $\chi^2(1, N = 844) = 88.41, p < .001, \Phi = .32$. More Americans (.26) reported family mental conditions than Chinese did (.02), and more Chinese (.98) denied family mental conditions than American did (.75). As for the differences between the two samples with regard to whether they had ever received therapy or counseling, the result was significant, $\chi^2(1, N = 844) = 106.31, p < .001, \Phi = .36$. The proportion of American participants who had received therapy or counseling (.33) was significantly greater that of Chinese participants (.04), whereas more Chinese (.96) than Americans (.67) had not received therapy or counseling.

To summarize, the two samples showed some differences in their demographics and health histories. Compared to the American sample, the Chinese sample consisted of more single and freshman. Furthermore, parents of the Chinese participants had lower occupational levels than those of American participants. The two samples did not differ in terms of their experiences living abroad, but they differed in the length of time living in their respective country. Moreover, significant differences were observed in their medical and mental histories. More American participants reported medical and mental conditions, therapy experience, and immediate family mental conditions than Chinese participants did. In addition, more American participants reported being on prescribed medications than their Chinese counterparts did, but the number of individuals who experienced side effects from medications did not differ between the two samples. Therefore, these variables were controlled in the analyses that compared the two samples.
Analyses of Scales

To ensure the psychometric adequacy of instruments in studying cross-cultural samples, in addition to examining the Cronbach’s alpha of these scales, item statistics such as item-total correlations, inter-item correlations, item means, and variances were computed separately for both samples (see Table 4).

The Patient Health Questionnaire–Depression Module (PHQ-9)

Item analyses were conducted on the PHQ-9 with the American sample. Each of the nine items correlated at least .30 with the total score for PHQ-9 (with the item removed). Corrected item-total correlations ranged from .48 to .67. Based on the results of item analyses, the PHQ-9 appeared to be internally consistent. For the Chinese sample, item analyses showed that each item correlated at least .30 with the total score for PHQ-9 (with the item removed). Corrected item-total correlations ranged from .40 to .57. Results indicated adequate internal consistency. Based on the results of reliability and item analyses, the PHQ-9 appeared to be adequate for use in this Chinese sample.

The Revised Self-Construal Scale (SCS)

Item analyses were conducted on the 30-item Revised SCS with the American sample. Each item was correlated with its own subscale (with the item removed) and with the other self-construal subscale. Each of the 15 items of the independent subscale was correlated with its total score (with the item removed). All the correlations were greater than .30 with the exception of one item (Item 25 “Being able to take care of myself is a primary concern for me”). Since elimination of this item did not increase the alpha, it was decided to retain it. Corrected item-total correlations ranged from .29 to .53. As for the interdependent subscale, seven items
had correlations less than .30 (Item 3 “Even when I strongly disagree with group members, I avoid an argument,” Item 11 “I should take into consideration my parents’ advice when making education/career plans,” Item 12 “I feel my fate is intertwined with the fate of those around me,” Item 16 “If my brother or sister fails, I feel responsible,” Item 17 “I often have the feeling that my relationships with others are more important than my own accomplishments,” Item 19 “I would offer my seat in a bus to my professor (or my boss),” and Item 30 “I usually go along with what others want to do, even when I would rather do something different”). Corrected item-total correlations ranged from .18 to .48. Since elimination of these items did not increase the alpha, it was decided to retain these items. Additionally, each item was more highly correlated with its own subscale than with the other self-construal subscale, with the exception of one item from the interdependent subscale which was more highly correlated with the independent subscale than with its own scale (Item 11 “I should take into consideration my parents’ advice when making education/career plans”), indicating potential problems with discriminant validity.

The same procedure was conducted with the Chinese sample as for the Americans. All the corrected item-total correlations of the independent subscale were greater than .30 except for four items (Item 1 “I enjoy being unique and different from others in many respects,” Item 5 “I do my own thing, regardless of what others think,” Item 15 “I am comfortable with being singled out for praise or rewards,” and Item 24 “I try to do what is best for me, regardless of how that might affect others”). Corrected item-total correlations ranged from .21 to .47. Since elimination of these items did not increase the alpha, it was decided to retain these items. As for the interdependent subscale, all the corrected item-total correlations were greater than .30,
ranging from .37 to .63. In addition, each item was more highly correlated with its own subscale than with the other self-construal subscale (with the range of difference of correlation coefficients being .02 to .24), except five items (Items 7, 10, 13, 15, and 22) from the independent self-construal subscale which were more highly correlated with the interdependent self-construal than their own subscale, suggesting real problems with internal consistency and discriminant validity. Therefore, these five items were eliminated from the independent subscale, and item analyses were rerun. The results indicated that there were still items that correlated more highly with the interdependent than with the independent subscale. Thus, these items were eliminated, and item analyses were repeated until all independent items were more highly correlated with their own subscale than with the other subscale. Five items (Items 5, 20, 24, 25, and 29) remained for the independent subscale, and their corrected item-total correlations ranged from .19 to .47 with two items having correlations lower than .30 (Items 5 and 25). The range of difference of correlation coefficients was .08-.62). Using this five-item version, the two types of self-construal were positively correlated (r = .25).

Coefficient alpha was computed to obtain the internal consistency estimate of reliability for the new independent subscale. Cronbach’s alpha decreased from .74 to .62 after eliminating ten items. This new alpha value was comparable to that reported in previous studies. In order to compare the American and Chinese samples, the same five items were used to measure independent self-construal in both samples. However, descriptive statistics are presented for the original 15-item version as well for the benefit of future researchers.

Item analyses were then rerun for the American sample. The corrected item-total correlations for the five independent items ranged from .23 to .50 with one item having a
correlation less than .30 (Item 25). Additionally, each item was more highly correlated with its own subscale than with the other self-construal subscale (with the range of difference of correlation coefficients being .07-.45). Cronbach’s alpha for the five-item independent subscale was .59, and after reducing the number of items, the correlation between independent and interdependent subscales was no longer statistically significant ($r = .05, p = .231$).

**The Revised Sociotropy-Autonomy Scale (SAS)**

Item analyses were conducted with the American sample. Each of the 29 items correlated at least .30 with the total score for sociotropy (with the item removed). Corrected item-total correlations ranged from .30 to .67. Based on the results of item analyses, the SAS appeared to be internally consistent. As for the Chinese sample, each of the 29 items was correlated with the total score for sociotropy (with the item removed). All correlations were greater than .30. Corrected item-total correlations ranged from .30 to .66. Overall, the scale seemed to be adequate to be used with the Chinese sample.

**Validation of Scales**

In addition to the above analyses, factor and item analyses were performed on the depression scales and the Emotional Approach Coping Scales (EAC) to examine equivalence between the two samples since the additional six items to the CES-D and the DSSS have not been validated within the American sample and the EAC has not been studied with the Chinese sample.

**The Center for Epidemiological Studies Depression Scale (CES-D)**

Appropriateness of a factor analysis with the American sample was determined through examining the frequency distributions of items and the correlation matrix. Results showed that
most items were normally distributed except for the frequency distributions of five items which were slightly skewed (skewness above 1.5 and below 3) and moderately leptokurtic (kurtosis above 1.5 and below 3). The correlation matrix indicated that all except two items correlated at least .30 with at least one other item, suggesting factorability. The Kaiser-Meyer-Olkin measure of sampling adequacy was .94, which was above .60 which is required for good factor analyses (Tabachnick & Fidell, 2001), and Bartlett’s test of sphericity was significant ($\chi^2(325) = 5776.56, p < .001$), further indicating factorability.

A principal component analysis with a varimax rotation was conducted. This method was used in the validation of the original CES-D (Radloff, 1977) and the CDS (Lin, 1989). Four criteria were used to determine the number of factors to rotate and retain: a priori hypothesis of the factor structure, Kaiser’s (1958) eigenvalue greater than one criterion, Cattell’s scree test (1966), and the interpretability of the factor solution. Results indicated four factors with eigenvalues above 1.0, whereas the scree test indicated two factors. Initial eigenvalues indicated that the first five unrotated factors explained 37% (eigenvalue of 9.64), 7% (eigenvalue of 1.90), 5% (eigenvalue of 1.29), and 4% (eigenvalue of 1.108) of the variance respectively.

Solutions for two, three, and four factors were examined using varimax rotations. Using the criteria of having a primary loading of .32 or above and few or no cross-loading of .32 or above as recommended by Costello and Osborne (2005), and the interpretability of the factor solution, the three-factor solution was preferred because of insufficient number of primary loadings of the fourth factor and the two-factor solution was difficult to interpret.
Examination of the pattern of loadings of the three factors indicated that they were similar to three of the four factors usually found with the CES-D, that is, the somatic and retarded activity factor, absence of positive affect factor, and interpersonal problems factor. Specifically, five out of the seven-item somatic and retarded activity factor items (Items 2, 5, 7, 11, and 13) loaded on factor one, see Table 5. Factor two consisted of solely all four items of the absence of positive affect factor, and factor three all items of the interpersonal problems factor as well as one new item Lin (1989) designed to assess Chinese-specific experiences of depression (Item 24). The rest of the items from the depression affect factor (Items 3, 6, 9, 10, 14, 17, and 18), the somatic and retarded activity factor (Items 1 and 20), and five other new items (Items 21, 22, 23, 25 and 26) loaded on more than one factor.

Examining the six new items Lin (1989) added to reflect Chinese specific experience of depression, it was noted that five had cross-loadings while one item loaded on the interpersonal problems factor (Item 24). Their correlations with CES-D (with the item removed) ranged from .49 to .63, suggesting adequate internal consistency with the rest of the scale. Cronbach’s alpha has increased from .91 to .93 with the addition of these six items.

Item analyses were conducted on the 26-item CES-D. Each of the 26 items was correlated with the total score for CES-D (with the item removed). All correlations were greater than .30 except for one item (Item 7 “I felt that everything I did was an effort”) \( r = .28 \). Corrected item-total correlations ranged from .28 to .79. Since elimination of this item increased the alpha only slightly, it was decided to retain this item.

Results with this American sample did not replicate the findings of four factors of the CES-D. Although the six additional items increased internal consistency, they did not seem to
be measuring any specific factors according to the analyses that rotated three or four factors as five of these new items loaded on both somatic and retarded activity and interpersonal problems factors when three factors were rotated. Furthermore, based on results of a four-factor solution, these six items also failed to form a distinct factor as three items cross loaded and two items loaded on the somatic and retarded factor and one item loaded on the interpersonal problems factor. These findings were inconsistent with the results of Lin’s (1989) factor analysis of the 22-item CDS (the items of the absence of positive affect were omitted from his analysis due to issues with reliability) in which most of the six new items loaded on the interpersonal problems factor.

*The Chinese Depression Scale (CDS)*

The same procedures were conducted with the CDS with the Chinese sample as for the CES-D. Initially, the factorability of CDS was examined. The frequency distributions of the items were approximately normal, and all items correlated at least .30 with at least one other item. The Kaiser-Meyer-Olkin measure of sampling adequacy was .93, which was well within acceptable limits. The Bartlett’s Test of Sphericity was significant ($\chi^2(325) = 4022.86, p < .001$), indicating that a factor analysis was deemed to be suitable.

The scree test, Kaiser’s (1958) eigenvalue greater than one criterion, the a priori hypothesis of the factor structure, and the interpretability of the factor solution were used to determine the number of factors to extract and retain. Results from the principal component analysis indicated that four factors had eigenvalues greater than 1.0, whereas the scree test indicated four factors. Initial eigenvalues indicated that the first four unrotated factors
explained 36% (eigenvalue of 9.29), 8% (eigenvalue of 2.08), 5% (eigenvalue of 1.42), and 5% (eigenvalue of 1.27) of the variance respectively.

Solutions for two, three, and four factors were examined using varimax rotations. Results showed that a three-factor structure best fitted the data due to difficulty of interpreting the two- and four-factor solutions. The three factors identified were similar to those of the American sample. Two items out of the original interpersonal problems factor, one item from the somatic and retarded activity factor, and four new items out of the six additional items loaded on factor one which could be labeled as interpersonal problems; see Table 6. Five items out of the original seven-item somatic and retarded activity factor and two out of the original seven-item depression affect factor loaded on factor two, and all items of the absence of positive affect factor loaded on factor three. The rest of the depression affect items (Items 3, 9, 10, 14, and 18), one item from the somatic and retarded activity factor (Item 20), and two new items (Items 21 and 22) loaded on more than one factor.

Examining the six new items Lin (1989) added to reflect Chinese specific experience of depression, it was noted that two had cross-loading while the other four (Items 23 to 26) loaded on the interpersonal problems factor. Their correlations with the CDS (with the item removed) ranged from .46 to .73, suggesting adequate internal consistency. Cronbach’s alpha has increased from .89 to .92 with the addition of these six items.

Item analyses were conducted on the 26-item CDS. Each of the 26 items was correlated with the total score for the CDS (with the item removed). All correlations were greater than .30 except for two items (Item 4 “I felt I was just as good as other people” and Item 8 “I felt hopeful about the future”) \( r = .22 \) and \( r = .29 \) respectively. Corrected item-total correlations ranged
from .22 to .73. Since elimination of these items increased the alpha only slightly, it was decided to retain these items.

Results of principal component analyses of the two samples were comparable. Similar factor structures were obtained from the two samples. In addition, out of the six additional items, four items (Items 23 to 26) seemed to be measuring primarily the interpersonal problems factor for the Chinese sample rather than cross-loading on the somatic factor as for the Americans, whereas two items (Items 21 and 22) cross loaded in both samples.

Since the six additional items did not seem to be comparable for use with both samples, factor analyses were performed with the 20-item versions so that the factor ratio scores could be determined. Results of both versions of the CES-D were similar for the American sample (see Table 7). However, for the Chinese sample, only three items out of the seven-item somatic and retarded activity factor loaded on factor two (see Table 8). In addition, all but one item out of the original seven-item depression affect factor cross-loaded for the American sample, whereas two items and one item of the depression affect factor loaded on the interpersonal problems and somatic factors respectively for the Chinese sample. The remaining four items loaded on more than one factor. Given that five somatic items loaded on the somatic and retarded activity factor for both samples with the 26-item versions, whereas only three items loaded on this factor for the Chinese sample when the 20-item version was used, it was decided to use the 26-item versions instead so that there was sufficient number of items to measure somatic symptoms.
Factor Scores of the CES-D and the CDS

Adopting the procedure used in Yen and colleagues (2000), factor ratio scores were created for each sample, which served as one of the two dependent variables in this study. The factor ratio scores indicated relative endorsement of specific factors derived from the CES-D and its Chinese equivalent. Initially, each participant’s mean item score for the somatic factor of the CES-D or its Chinese equivalent was calculated. Since the depression affect factor was not identified in this study as distinct from the somatic factor, the psychological factor ratio scores could not be obtained, and as such, only the somatic factor ratio scores were used as the dependent variable.

To obtain the somatic factor ratio scores, the mean of scores on items loading on this factor was calculated. Yen and colleagues (2000) used all items that loaded on the somatic factor which included two items from the depression affect factor to compute the somatic factor ratio scores. This study used only items that constituted the original somatic factor identified by Radloff (1977). For the Chinese sample, these were Items 1, 2, 5, 7, and 11. For the American sample, these were Items 2, 5, 7, 11, and 13. Four items were identical for both samples, but since the correlations between mean scores of four items and those of five items were high for both samples ($r = .96$ for the American sample and $r = .97$ for the Chinese sample), five items were used to compute the somatic factor ratio scores. Each mean score was then divided by the participant’s mean score of the total number of items of the CES-D/CDS. The resulting ratio score thus represent the extent to which the individual reported somatic symptoms relative to his or her reporting of depressive symptoms generally.
The Depression and Somatic Symptoms Scale (DSSS)

To ensure the data with the American sample was appropriate for a factor analysis, the frequency distribution of the DSSS was examined. Most items were found to be normally distributed except the frequency distributions of eight items exhibiting moderate skewness (skewness above 1.5 and below 3) and moderate to noticeable leptokurtosis (kurtosis above 3). The correlation matrix was also examined to determine if such procedure was appropriate. All items except one had correlations over .30 with at least one other item, suggesting reasonable factorability. The Kaiser-Meyer-Olkin measure of sampling adequacy was .91 which was well above the commonly acceptable value of .60. Bartlett’s test of sphericity was significant ($\chi^2(231) = 4637.72, p < .001$), indicating that a factor analysis was deemed to be suitable.

Factor structures of the English DSSS were examined using the principal axis factoring followed by a promax rotation. This method was employed in the validation of the Chinese DSSS (Hung et al., 2006a). Four criteria, including the scree test, the eigenvalue greater than one, the a priori hypothesis that the measure assesses two constructs, and interpretability of the factor solution were used to determine the number of factors. Four factors with eigenvalues above 1.0 were found, whereas the scree test revealed the possibility of a two- or three-factor solution.

Solutions for two, three, and four factors were examined using promax rotations. Results indicated that a two-factor structure best fitted the present American sample because (a) it was most consistent with the original scale structure, and b) there were insufficient numbers of items loading on a four-factor solution. The two unrotated factors accounted for a total of 45% of the variance, with the first factor accounted for 35% (eigenvalue of 7.74), and
the second factor 10% (eigenvalue of 2.13). All twelve items out of the original 12-item depression subscale loaded on factor one, whereas all ten items of the original 10-item somatic subscale loaded on factor two; see Table 9. The two factors were moderately positively correlated \((r = .58)\). The pattern of factor loadings was similar to the factor structures reported by Hung and colleagues (2006a) in which they found that most of the items in the depression and somatic subscales appropriately loaded in the depression and somatic factors, respectively.

Item analyses were conducted on the 22 items of the DSSS which consisted of the depression and somatic subscales. Each of the 12 items of the depression subscale was correlated with its total score (with the item removed). All the correlations were greater than .30, ranging from .40 to .75. As for the somatic subscale, all the correlations were greater than .30, ranging from .37 to .59. Additionally, items were more highly correlated with their own subscale than with the other subscale, indicating that the two subscales measure two different but related constructs. Taken together the results of reliability analysis and item analysis, the English version of the DSSS appeared to be internally consistent. Furthermore, preliminary evidence of convergent validity was provided in the relations of the DSSS with other depression measures such as the CES-D. Results of the correlational analyses revealed that the DSSS mean scores as well as the mean depression and somatic subscales scores were all positively correlated with the mean 26-item CES-D scores, \(r = .78, p < .001\), \(r = .84, p < .001\), \(r = .49\), and \(p < .001\), respectively.

Overall, results of the factor analysis were consistent with those of Hung and colleagues (2006a). Thus, the English version of the DSSS appeared to be adequate to be used with the American sample.
Appropriateness of a factor analysis with the Chinese sample was determined through examining the frequency distributions of items and the correlation matrix. Results showed that most items were normally distributed except the frequency distributions of eight items which were moderately skewed and moderately to noticeably leptokurtic. Correlation matrix indicated that all items except one correlated at least .30 with at least one other item, suggesting factorability. The Kaisier-Meyer-Olkin measure of sampling adequacy was .90, and Bartlett’s test of sphericity was significant ($\chi^2(231) = 2404.05, p < .001$), further indicating factorability.

The same analyses were performed with the Chinese sample as for the Americans. Four factors with eigenvalues above 1.0 were found, whereas the scree test revealed the possibility of a two-factor solution. Solutions for two, three, and four factors were examined using promax rotations. Results indicated that a two-factor structure best fitted this data because a) it was most consistent with the original scale structure, and b) insufficient number of items loading on a factor for a four-factor solution. The two unrotated factors accounted for a total of 38% of the variance, with the first factor accounted for 31% (eigenvalue of 6.84), and the second factor 8% (eigenvalue of 1.69). The factor loadings, in general, were similar to those of the American sample. Specifically, ten items out of the original 12 depression subscale items and one item out of the 10 somatic subscale loaded on factor one; see Table 9. Eight items out of the original 10 somatic subscale items loaded on factor two. Three items were found to be below .32, and no cross-loading was observed. The two factors were highly correlated ($r = .63$).

Results of item analyses indicated that corrected item-total correlations for the depression subscale ranged from .36 to .63, whereas the corrected item-total correlations for
the somatic subscale ranged from .41 to .59. Moreover, items always were more highly correlated with their own subscale than with the other subscale with the exception of one depression item which was equally correlated with the somatic subscale and its own subscale (Item 4 “Insomnia”).

Based on these results, the factor structures for both samples appeared to be comparable, and the DSSS seemed to be internally consistent with these samples.

*The Emotional Approach Coping Scales (EAC)*

Prior to the factor analysis with the American sample, the frequency distributions of items and the correlation matrix were examined. Results showed that all the EAC and COPE items demonstrated normal distributions except for the frequency distributions of nine COPE items which were slightly skewed and moderately leptokurtic. Correlation matrix also indicated that most items except three correlated at least .30 with at least one other item, suggesting factorability. The Kasier-Meyer-Olkin measure of sampling adequacy was .93, which was well above the acceptable limits, and the Bartlett’s test of sphericity was significant ($\chi^2(2016) = 23075.19, p < .001$), further indicating factorability.

Replicating Stanton and colleagues’ (Stanton, Kirk, et al., 2000) approach to validate the EAC, factor structures of the EAC were examined by submitting these items together with items from the COPE (Carver et al., 1989) to a maximum likelihood factor analysis with a promax rotation so that discriminate and convergent validity could also be examined. Cattell’s scree test (1966), Kaiser’s (1958) eigenvalue greater than one criterion, the a priori hypothesis that the EAC assesses two constructs, and the interpretability of the factor solution were used to determine the number of factors to extract and retain. Twelve factors with eigenvalues
above 1.0 were found, whereas the scree test revealed the possibility of a nine-factor solution. Initial eigenvalues indicated that the first four factors explained 27% (eigenvalue of 17.41), 9% (eigenvalue of 5.79), 6% (eigenvalue of 4.03), and 6% (eigenvalue of 3.57) of the variance respectively.

Solutions for eight, nine, ten, eleven, and twelve factors were examined using promax rotations. Using the criteria of having a primary factor loading of .32 or above, few or no cross-loading of .32 or above, and no factors with fewer than three items as recommended by Costello and Osborne (2005), and interpretability of the factor solution, the pattern matrix indicated that a 9-factor rotated solution, which explained 59% of the variance, best fitted the data. All emotional processing items loaded on the third factor except for one item (Item 3) which had a factor loading less than .32 on this factor (.21) and loaded similarly on two other factors; see Table 10. Similarly, all emotional expression items loaded on the fourth factor except for one item (Item 9) which loaded on more than one factor though most highly on factor four. The two factors were moderately correlated ($r = .63$). The remaining seven factors represented COPE subscales.

Item analyses were conducted on the 16-item EAC which assesses emotional processing and emotional expression coping. All the corrected item-total correlations of each item with its respective subscale were greater than .30. Corrected item-total correlations for the emotional processing subscale ranged from .56 to .82, whereas the corrected item-total correlations for the emotional expression subscale ranged from .76 to .85. Results further indicated that items were more highly correlated with their own subscale than with the other EAC coping subscale, suggesting that the two subscales measure two different constructs.
Factorability of the EAC with the Chinese sample was examined. The frequency distributions of all EAC and most of the COPE items were normally distributed with the exception of the frequency distributions of four COPE items which were slightly skewed and moderately to noticeably leptokurtic. All items except two correlated at least .30 with at least one other item, suggesting factorability. The Kaiser-Meyer-Olkin measure of sample adequacy was .91, and Bartlett’s test of sphericity was significant ($\chi^2(2016) = 12666.61$, $p < .001$), further indicating factorability.

The EAC and COPE scales were again submitted to a maximum likelihood factor analysis with a promax rotation. The scree plot indicated eight factors, whereas 14 factors had eigenvalues greater than 1.0. Initial eigenvalues indicated that the first four factors explained 24% (eigenvalue of 15.29), 10% (eigenvalue of 6.25), 6% (eigenvalue of 3.62), and 4% (eigenvalue of 2.59) of the variance respectively.

Solutions for eight, nine, ten, and fourteen factors were examined using promax rotations. Solutions for eleven to thirteen factors were not examined further due to insufficient number of primary loadings on these factors. Using the criteria of having a primary factor loading of .32 or above, few or no cross-loading of .32 or above, and no factors with fewer than three items as recommended by Costello and Osborne (2005) and interpretability of the factor solution, the pattern matrix indicated that a 8-factor rotated solution, which explained 49% of the variance, best fitted the data. All emotional expression items loaded on the second factor, while all emotional processing items loaded on the third factor; see Table 11. The two factors were moderately correlated ($r = .52$). The remaining six factors represented COPE subscales. The pattern of factor loadings was similar to the factor structures as reported by Stanton and
colleagues (Stanton, Kirk, et al., 2000) in which they identified the emotional processing, emotional expression factors and six COPE subscale factors.

Item analyses were performed on the Chinese version of the EAC. All the corrected item-total correlations of each item with its respective subscale were greater than .30. Corrected item-total correlations for the emotional processing subscale ranged from .54 to .82, while the corrected item-total correlations for the emotional expression subscale ranged from .57 to .74. Additionally, items were more highly correlated with their own subscale than with the other EAC coping subscale, indicating that the two subscales measure two different constructs. Taken together the results of reliability analysis and item analysis, the Chinese version of the EAC appeared to be internally consistent. Furthermore, convergent and discriminant validity was tested by examining the relations of the EAC with problem-focused coping measured by the active coping and planning subscales of the Chinese COPE and with depression scores measured by the CDS. Results of the correlational analyses showed that both emotional coping strategies were positively associated with the problem-focused coping, $r = .68$, $p < .001$ for emotional processing and $r = .49$, $p < .001$ for emotional expression coping. However, no statistically significant relationship was found between the mean 26-item CDS scores and emotional processing coping, $r = -.07$, $p = .187$, whereas emotional expression coping was negatively correlated with the mean 26-item CDS scores, $r = -.11$, $p = .041$.

Overall, the factor structures were similar for both samples. The EAC appeared to be adequate to be used with these samples. Results of the analyses of all the scales are summarized in Table 12.
Bivariate Correlations

Among Demographic Variables

Bivariate correlations were computed using phi, point-biserial, and Pearson’s product moment correlations to examine relationships among demographic variables, possible control variables, independent variables, and dependent variables for each sample. Cohen’s (1992) conventions were used to determine practical significance. See Tables 13 and 14 for intercorrelations among demographic variables for each sample.

American Sample

Female were more likely than male participants to be younger, to have lower college standings, and to have fathers with lower occupational levels. Older individuals tended to have higher college standings than younger individuals. In addition, they were more likely to be married/living together or in relationships and to have fathers with higher occupational levels. Moreover, individuals with higher college standings were more likely to be married/living together or in relationships when compared to those with lower standings. Those who were married/living together or in relationships tended to have fathers with higher occupational levels.

The occupational and educational levels of parents of American participants were positively associated such that those, including both fathers and mothers, with higher educational levels were more likely to have higher occupational levels. Furthermore, mothers’ and fathers’ educational and occupational levels were also positively related in such a way that each parent’s educational and occupational levels were positively associated with the other parent’s educational and occupational levels.
Chinese Sample

Older individuals were more likely than younger individuals to have higher college standings and to have mothers with lower educational levels and fathers with lower occupational levels. Furthermore, single individuals tended to have parents with lower educational levels. The occupational and educational levels were positively significantly related for both parents of the participants. Those with high educational levels were more likely to have higher occupational levels. Moreover, each parent’s educational and occupational levels were positively associated with the other parent’s educational and occupational levels.

*Among Possible Control Variables*

A series of correlations was conducted to examine the associations among possible control variables such as health histories of participants for each sample. See Tables 15 and 16 for correlation coefficients for each sample.

American Sample

Compared to participants who had no prior experience of living abroad, those who had such experience lived a shorter length of time in the US. Furthermore, compared to those without medical conditions, participants with medical conditions were more likely to have mental conditions, to be on prescribed medications, to experience side effects from medications, and to have family psychiatric history and counseling or therapy experience. Similarly, those with mental conditions tended to be on prescribed medications, to experience side effects from medications, to have family psychiatric history and counseling or therapy experience. Individuals who were on prescribed medications were more likely to experience side effects, to have family psychiatric history and counseling or therapy experience than those
who did not take medications. Participants with family psychiatric history were found to be more likely to experience side effects from medications and to have counseling or therapy experience. In turn, those with counseling or therapy experience were more likely to experience side effects from medications.

Chinese Sample

Chinese participants who had prior experience of living abroad were more likely to live in Macau for a shorter length of time and to experience side effects from medications than those who did not have the experience of living abroad. Those who lived in Macau for a shorter length of time tended to have counseling or therapy experience. Furthermore, those with medical issues were more likely to be on prescribed medications, to experience side effects from medications, to have family psychiatric history, and previous counseling or therapy experience compared to those without medical issues. Moreover, those who had family psychiatric history were more likely to be on medications than those without such history.

Between Demographic and Possible Control Variables

A series of correlations was conducted to examine the associations among demographic and possible control variables such as health histories for each sample. See Tables 17 and 18 for correlation coefficients for each sample.

American Sample

Males, older individuals, those with higher college standings, those who were married/living together or in relationships, and those with fathers who had higher occupational levels tended to live in the US longer. Those who had prior experience of living abroad tended to have mothers with lower occupational levels compared to those who had no such
experience. Female were more likely than male participants to have mental conditions, to be on prescribed medications, to have family psychiatric history and previous counseling or therapy experience. Those who were married/living together or in relationships were more likely to experience side effects from medications than those who were single.

Participants with fathers who had higher occupational levels were more likely to experience medical conditions than those with fathers who had lower levels. Fathers’ educational and occupational levels were found to be related to participants’ mental conditions. Specifically, participants with fathers who obtained higher educational and occupational levels reported more likely to have mental conditions as compared to those with fathers with lower levels. Likewise, participants with fathers and mothers who had higher educational and occupational levels were more likely to be on prescribed medications than those with parents with lower levels. Additionally, individuals with fathers who had higher educational levels reported being more likely to experience side effects from medications. Moreover, participants with mothers who had higher educational levels tended to have counseling or therapy experience.

Chinese Sample

Older individuals, those with higher college standings, and participants with mothers or fathers who had lower educational or occupational levels tended to live in Macau a longer period of time. Compared to those who had no such experience, Chinese participants who had prior experience of living abroad tended to have fathers with higher occupational levels. Individuals whose fathers had lower educational levels were more likely to have medical conditions or problems than those with fathers who had higher levels.
Between Demographic, Possible Control, and Independent Variables

A series of correlations was conducted to examine the associations among demographic, possible control variables, and independent variables for each sample. See Tables 19 and 20 for correlation coefficients for the American and Chinese samples respectively.

American Sample

Participants without mental conditions and family psychiatric histories tended to be more independent, whereas individuals with mothers who had lower occupational levels tended to be more interdependent than those with mothers who had higher occupational levels. In addition, younger individuals, those with lower college standings, participants who lived in the US a shorter length of time, and those who had mental conditions were more likely to be sociotropic. Individuals with fathers who had higher educational levels employed more emotional processing and expression coping than those with fathers who had lower educational levels. Finally, individuals who had prior counseling or therapy experience were more likely to cope through emotional processing.

Chinese Sample

Participants with fathers or mothers who had lower educational levels, individuals who had lived in Macau for a longer length of time, and those who had not lived abroad before tended to be more independent. Females and individuals with mothers who had higher educational and occupational levels were more likely to have higher interdependent self-construal. Single participants tended to be more sociotropic than those who were married/living together or in relationships.
Females were more likely to engage in emotional expression coping than males. Individuals with fathers or mothers who had higher educational levels, and those who had lived in Macau for a shorter length of time were more likely to employ emotional processing and expression coping. Finally, participants with fathers who had higher occupational levels tended to cope more with emotional expression than those with fathers who had lower levels.

Between Demographic, Possible Control, and Dependent Variables

A series of correlations was conducted to determine relationships among demographic, possible control variables, and dependent variables for each sample. See Tables 19 and 20 for correlation coefficients of the American and Chinese samples respectively.

American Sample

Females, individuals with mental conditions, those who were on prescribed medications, participants with family psychiatric history, and those who had therapy or counseling experience endorsed higher mean scores on the DSSS somatic subscale. The other dependent variable, somatic factor ratio scores, was not correlated with any of the demographic or possible control variables.

Chinese Sample

Those who had therapy or counseling experience reported higher mean DSSS somatic scores than those who had no such experience. Additionally, females and those with mothers who had higher educational levels tended to have higher somatic factor ratio scores than males and those with mothers who had lower levels respectively.
Among Independent Variables

A series of Pearson correlations was calculated to examine associations among independent variables for each sample. See Table 21 for correlation coefficients.

American Sample

Those who were higher in independent self-construal tended to be less sociotropic. Additionally, participants who were higher in independent self-construal were more likely to engage in emotional processing and expression coping, whereas individuals who were higher in interdependent self-construal tended to be more sociotropic and engage in more emotional processing and emotional expression coping. Individuals who employed more emotional processing coping were also more likely to use more emotional expression coping.

Chinese Sample

A positive relationship between independent and interdependent self-construals was found within the Chinese sample. Moreover, participants who were higher in independent self-construal tended to employ more emotional expression coping. Those who were higher in interdependent self-construal tended to be more sociotropic and engaged in more emotional processing and expression coping than those with lower interdependent self-construal. Individuals who were higher in sociotropy were also more likely to employ more emotional processing and expression coping. Chinese participants who employed more emotional processing tended to use more emotional expression.
Between Independent and Dependent Variables

A series of Pearson correlations was conducted to determine relationships among the independent and dependent variables for each sample. See Table 21 for correlation coefficients.

American Sample

Individuals with higher independent or interdependent self-construal tended to have higher somatic factor ratio scores. Participants with higher sociotropy were more likely to report higher mean scores on the DSSS somatic subscale but lower somatic factor ratio scores. Furthermore, emotional processing coping was positively associated with somatic factor ratio scores.

Chinese Sample

Individuals with higher interdependent self-construal had higher somatic factor ratio scores. Additionally, those who were higher in sociotropy reported higher mean scores on the DSSS somatic subscale. Emotional processing was positively correlated with somatic factor ratio scores, whereas emotional expression coping was positively associated with both somatic factor ratio scores and mean DSSS somatic scores.

Among Dependent Variables

A series of Pearson correlations was conducted to determine relationships among the dependent variables for each sample. See Table 21 for correlation coefficients.

American Sample

Mean scores on the DSSS somatic subscale were negatively correlated with somatic factor ratio scores.
Chinese Sample

No statistically significant correlation was found between somatic factor ratio scores and mean DSSS somatic scores.

Hypotheses Testing

Hypothesis 1a

There will be a difference between Chinese and Americans on somatic symptom expression such that Chinese will report higher levels of endorsement and more severe somatic symptoms than American participants. A one-way multivariate analysis of covariance (MANCOVA) was conducted to examine whether somatic symptom reporting differed between Chinese and Americans. The two dependent variables were mean DSSS somatic scores and somatic factor ratio scores. The control variables included mental conditions, medications, family psychiatric history, and therapy or counseling experience as these variables differed between the two samples and correlated with the dependent variables. The assumption of homogeneity of the variance-covariance matrices was violated, $F(3, 50574756) = 14.69, p < .001$. Significant differences were found, Wilks’s $\Lambda = .91, F(2,837) = 40.87, p < .001$. The multivariate $\eta^2$ based on Wilks’s $\Lambda$ was .09 (see Table 22). Using the Bonferroni method, each ANOVA was tested at the .025 level. Analyses of the univariate outcomes (adjusted for health history variables) showed that the ANOVA on somatic factor ratio scores was significant, but the ANOVA on the mean DSSS somatic scores was not significant.

The results did not support this hypothesis. Contrary to what was predicted, it was Americans who had higher levels of endorsement of somatic symptoms than Chinese did. No statistically significant cultural difference was found regarding severity of somatic symptoms.
Hypothesis 1b

There will be a difference between Chinese and Americans on psychological symptom expression such that Americans will report higher levels of endorsement of psychological symptoms than Chinese participants. The hypothesis about group differences on psychological symptom expression could not be tested due to failure to identify the depression affect factor separately from the somatic factor in the CES-D and its Chinese equivalent.

Hypothesis 2

There will be differences between Chinese and Americans on interdependent and independent self-construals, sociotropy, and emotional approach coping such that Chinese would report higher interdependent self-construal, lower independent self-construal, higher sociotropy, and lower emotional approach coping than the Americans.

A one-way multivariate analysis of covariance (MANCOVA) was conducted to assess differences in the two types of self-construal, sociotropy, and emotional approach coping between Chinese and Americans. The five dependent variables were mean independent and interdependent self-construals, sociotropy, emotional processing, and emotional expression coping scores. The control variables included marital status, college standing, parents’ occupation levels, years living in their respective country, mental conditions, family psychiatric history, and therapy or counseling experience as these variables differed between the two samples and correlated with the dependent variables. The assumption of homogeneity of the variance-covariance matrices was not met, $F(15, 1894968) = 4.86, p < .001$. Significant differences were found, Wilks’s $\Lambda = .93, F(5,721) = 11.59, p < .001$. The multivariate $\eta^2$ based on Wilks’s $\Lambda$ was .07 (see Table 22). Analyses of variances (ANOVA) on the dependent variables
were conducted as follow-up tests to the MANCOVA. Using the Bonferroni method, each ANOVA was tested at the .01 level. The ANOVAs on the mean scores of independent self-construal and sociotropy showed significant cultural differences. However, the ANOVAs on the mean scores of interdependent self-construal, emotional processing and emotional expression coping were not significant.

Results partly supported this hypothesis. As predicted, Americans were more independent than Chinese, while Chinese were more sociotropic than Americans. No cultural differences were found in terms of interdependent self-construal and the use of emotional processing and emotional expression coping.

**Hypothesis 3**

Relative endorsement and severity levels of somatic symptoms of depression are associated with stronger interdependent self-construal and weaker independent self-construal. Results from bivariate correlations on the combined samples suggested that independent self-construal was not correlated with the mean DSSS somatic scores ($r = .06, p = .09$) but was positively associated with somatic factor ratio scores ($r = .22, p < .001$). Additionally, interdependent self-construal was not correlated with either the mean DSSS somatic scores or somatic factor ratio scores ($r = -.06, p = .07$, and $r = .05, p = .15$, respectively).

Two separate multiple regression analyses were conducted to test this hypothesis with the mean DSSS somatic scores and the somatic factor ratio scores as the criterion variables. Assumptions were first tested. Examination of frequency distributions of the predictors and criterion variables suggested normality. Bivariate scatterplots between the predictors and the criterion variables were examined to confirm linear relationships between the variables.
Results of the collinearity statistics including tolerance and VIF were all within accepted limits. Finally, scatterplots of standardized residuals and standardized predicted values were examined to evaluate the homoscedasticity assumption, which indicated that this assumption was met.

The results of the regression analysis with the mean DSSS somatic scores as the criterion variable were presented in Table 23. The regression equation was statistically significant, $R^2 = .01$, $F(2, 841) = 3.31$, $p = .037$, and accounted for approximately 1% of the variance in the mean DSSS somatic scores. The regression coefficients of both independent and interdependent self-construals were not statistically significant, indicating that neither explained significant unique variance.

A multiple regression analysis was conducted with the somatic factor ratio scores as the criterion variable, and the result was presented in Table 24. The linear regression was statistically significant, $R^2 = .05$, $F(2, 841) = 21.39$, $p < .001$, and accounted for approximately 5% of the variance in the somatic factor ratio scores. Only the regression coefficient of independent self-construal was statistically significant. When examining the beta weights and structure coefficients, independent self-construal ($\beta = .22$, $p < .001$) appeared to be more salient in predicting somatic factor ratio scores than interdependent self-construal ($\beta = .04$, $p = .296$), which did not account for significant unique variance.

This hypothesis was not supported. As the results indicated, independent self-construal was positively associated with relative endorsement, whereas interdependent self-construal was not related to either relative endorsement or severity of somatic symptoms of depression. Regressing the mean DSSS somatic scores and somatic factor ratio scores on independence and
interdependence revealed a unique relation between independent self-construal and somatic factor ratio scores.

**Hypothesis 4**

Relative endorsement of psychological symptoms of depression is associated with stronger independent self-construal and weaker interdependent self-construal. This hypothesis could not be tested due to failure to identify the depression affect factor separately from the somatic factor in the CES-D and its Chinese equivalent.

**Hypothesis 5**

Relative endorsement and severity levels of somatic symptoms of depression are a) positively associated with interdependent self-construal and b) negatively associated with independent self-construal; c) interdependence will be a better predictor than independence in both cultures, and d) interdependent self-construal will be a better predictor for the Chinese than for the Americans. Results from bivariate correlations of the American sample indicated that neither independent nor interdependent self-construal correlated significantly with the mean DSSS somatic scores for either sample, whereas both independent and interdependent correlated positively with the somatic factor ratio scores for the American sample, and only interdependent self-construal related positively with somatic factor ratio scores for the Chinese sample.

Hierarchical regression analyses were conducted to examine the predictive values of the two types of self-construal for each of the criterion variables within each culture. Prior to conducting a hierarchical regression with the mean DSSS somatic scores as the criterion variable separately for each sample, assumptions were tested. Bivariate scatterplots between
the predictors and the criterion variable were examined to confirm linear relationships between the variables. An examination of correlations (see Table 21) showed that no independent variables were highly correlated. Results of the collinearity statistics including tolerance and VIF were all within accepted limits. Finally, a scatterplot of standardized residuals and standardized predicted values was examined to evaluate the homoscedasticity assumption. The standardized errors were spread relatively evenly across the range of predicted values for the American sample, indicating the assumption of homoscedasticity was met.

A hierarchical multiple regression analysis was conducted with the American sample with the mean DSSS somatic scores as the criterion variable and the two types of self-construal as predictors. Block one consisted of control variables including gender and four health history variables such as participants’ mental conditions, prescription of medication, family psychiatric history, and therapy or counseling experience as these variables were found to correlate with the criterion variable. The regression analysis was presented in Table 25. The regression equation with the control variables was statistically significantly different from zero, $R^2 = .06$, adjusted $R^2 = .05$, $F(5, 485) = 6.33, p < .001$. The sample multiple correlation coefficient was .25, indicating that approximately 6% of the variance of the mean DSSS somatic scores can be accounted for by the control variables. The regression equation with independent and interdependent self-construals did not explain significant additional variance.

Prior to conducting a hierarchical regression with the mean DSSS somatic scores as the dependent variable for the Chinese sample, assumptions were tested. Bivariate scatterplots between the independent variables and the mean DSSS somatic scores were examined to
confirm linear relationships between the variables. An examination of correlations (see Table 21) showed that no independent variables were highly correlated. Results of the collinearity statistics including tolerance and VIF were all within accepted limits. Finally, a scatterplot of standardized residuals and standardized predicted values was examined to evaluate the homoscedasticity assumption, and the data appeared to meet this assumption.

A two stage hierarchical multiple regression analysis was conducted to evaluate how well independent and interdependent self-construals predicted the mean DSSS somatic scores for the Chinese sample. Block one consisted of participants’ therapy or counseling experience as this variable was found to correlate with the criterion variable. The self-construal variables were entered at stage two. The results of this analysis indicated that at stage one, the regression equation was significant, $R^2 = .01$, $F(1, 351) = 4.17$, $p = .042$; see Table 26. The control variable accounted for 1% of the variation in the mean DSSS somatic scores. A second analysis was conducted to evaluate whether independent and interdependent self-construals predicted the mean DSSS somatic scores over and above the control variable. The regression equation was not statistically significant, but independent self-construal was a significant predictor.

Prior to conducting a multiple regression with the somatic factor ratio scores as the criterion variable separately for each sample, assumptions were tested. Bivariate scatterplots between the independent variables and the somatic factor ratio scores were examined for each culture to confirm linear relationships between the variables. An examination of correlations (see Table 21) showed that the independent variables were not too highly correlated. Results of the collinearity statistics including tolerance and VIF were all within accepted limits. Finally,
A scatterplot of standardized residuals and standardized predicted values was examined to evaluate the homoscedasticity assumption. The standardized errors were relatively evenly across the range of predicted values for the American sample, indicating the assumption of homoscedasticity was met.

A multiple regression analysis was conducted with the American sample with somatic factor ratio scores as the criterion variable and the two types of self-construal as predictors. Since somatic factor ratio scores did not correlate with any of the demographic variables, they were not included as control variables. The regression analysis was presented in Table 27. The linear regression was statistically significantly different from zero, $R^2 = .05$, adjusted $R^2 = .05$, $F(2, 488) = 13.29, p < .001$. The sample multiple correlation coefficient was .23, indicating that approximately 5% of the variance of somatic factor ratio scores can be accounted for by the two types of self-construal. Only the regression coefficient of independent self-construal was statistically significant. In examining both the beta weights and structure coefficients, results indicated that independent self-construal was more salient in explaining the somatic factor ratio scores than interdependent self-construal. The former explained 86% of the effect observed while the latter contributed 18%.

Prior to conducting a multiple regression with the somatic factor ratio scores as the dependent variable for the Chinese sample, assumptions were tested. An examination of correlations (see Table 21) showed that the independent variables were not too highly correlated. Results of the collinearity statistics including tolerance and VIF were all within accepted limits. Finally, a scatterplot of standardized residuals and standardized predicted
values was examined to evaluate the homoscedasticity assumption, and the data appeared to meet this assumption.

A two stage hierarchical multiple regression analysis was conducted to evaluate how well independent and interdependent self-construals predicted somatic factor ratio scores for the Chinese sample. Gender and the educational levels of participants’ mothers were entered at stage one of the regression to control for their effects as these variables were found to be related to the criterion variable. The self-construal variables were entered at stage two. The results of this analysis indicated that at stage one, the regression equation was significant, $R^2 = .03$, $F(2, 350) = 4.49$, $p = .012$. The control variables accounted for 3% of the variation in the somatic factor ratio scores. A second analysis was conducted to evaluate whether independent and interdependent self-construals predicted somatic factor ratio scores over and above the control variables. The two self-construal variables accounted for a statistically significant proportion of the variance after controlling for gender and the educational levels of participants’ mothers, $R^2 \text{ change} = .02$, $F(2, 348) = 4.38$, $p = .013$. The two self-construal variables accounted for an additional 2% of the variance in the somatic factor ratio scores; see Table 28. Only the regression coefficient of interdependent self-construal was statistically significant. Examination of both the beta weights and structure coefficients revealed that interdependent self-construal was most salient in explaining unique variance in the effect observed.

Significance tests based on $Z$ statistic were conducted to compare the unstandardized regression coefficients of the two types of self-construal between the two samples. The results showed that independent self-construal had significantly different regression weights in the
two samples with somatic factor ratio scores as the criterion variable ($z = 4.29, p < .001$). American sample had a greater regression coefficient than the Chinese sample. No significant cultural differences were found in the regression weights of independent self-construal with the mean DSSS somatic scores as the criterion variable ($z = 1.11, p = .13$). Similarly, the regression coefficients of interdependent self-construal did not differ between the two samples with either of the criterion variable ($z = 0.4, p = .34$ and $z = 0.71, p = .24$ for mean DSSS somatic scores and somatic factor ratio scores, respectively.)

This hypothesis was partly supported. For Hypothesis 5a regarding the associations of interdependent self-construal with the two dependent variables, as predicted, it was positively correlated with relative endorsement for both samples. However, contrary to prediction, interdependent self-construal did not correlate significantly with severity levels of somatic symptoms for both samples. Regarding Hypothesis 5b, independent self-construal did not correlate significantly with severity levels for both samples, but it correlated positively with relative endorsement for the American sample. As for Hypothesis 5c which compared the relative importance of the two predictors, contrary to prediction, interdependent self-construal did not predict severity levels for both samples. Moreover, independent self-construal predicted severity levels for the Chinese sample, while it predicted relative endorsement for the American sample only. Nonetheless, the direction of the relationships between independent self-construal and the two criterion variables was opposite to what was hypothesized. Specifically, independent self-construal was positively associated with the mean DSSS scores and somatic factor ratio scores for the Chinese and the American sample respectively. As predicted, for the Chinese sample, interdependent self-construal was a
statistically significant predictor of relative endorsement, while independent was not a statistically significant predictor. Regarding Hypothesis 5d, results did not support this hypothesis. Independence was a better predictor of relative endorsement for the Americans than for Chinese.

**Hypothesis 6**

Relative endorsement of psychological symptoms of depression is a) positively associated with independent self-construal and b) negatively associated with interdependent self-construal; c) independence will be a better predictor than interdependence in both cultures, and d) independent self-construal will be a better predictor for the Americans than for the Chinese. This hypothesis could not be tested due to failure to identify the depression affect factor separately from the somatic factor in the CES-D and its Chinese equivalent.

**Hypothesis 7**

Independent self-construal, interdependent self-construal, sociotropy, and emotional approach coping will predict relative endorsement and severity of somatic symptoms of depression for both samples. Prior to conducting a hierarchical multiple regression analysis with the mean DSSS somatic scores as the criterion variable for the American sample, assumptions were tested. Examination of frequency distributions of the variables suggested normality. Residual and scatterplots indicated the assumptions of linearity and homescedasticity were satisfied. Furthermore, collinearity statistics such as tolerance and VIF were all within accepted limits. Among all predictor variables, only sociotropy was correlated with the criterion variable.
The first block consisted of control variables which included gender, mental condition, medication, family psychiatric history, and therapy or counseling experience. The two types of self-construal were entered next, and the last block consisted of sociotropy and emotional processing and expression coping. The results indicated that the regression equation for the first block was significant, $R^2 = .06$, $F(5, 485) = 6.33$, $p < .001$, but the second regression equation was not significant, $R^2$ change = .00, $F(2, 483) = .56$, $p = .574$, whereas the third regression equation was statistically significant, $R^2$ change = .04, $F(3, 480) =$ 7.67, $p < .001$; see Table 25. Interdependent self-construal and sociotropy were the only statistically significant predictors, with sociotropy apparently increasing the weight of interdependent self-construal. In examining both the beta weights and structure coefficients of the five predictors, sociotropy was the most salient in explaining the variance of the effect observed in the mean DSSS somatic scores. Although emotional expression coping was not a significant predictor, it explained 5% of the effect observed, which was slightly more than what interdependent self-construal could explain. It is possible that emotional expression coping did not receive the credit because of the shared variance explained by it and other predictors.

The same procedure was conducted with the Chinese sample as for the Americans to evaluate whether sociotropy and emotional approach coping predicted the mean DSSS somatic scores over and above independent and interdependent self-construals and control variables. Prior to conducting the hierarchical regression analysis, assumptions were first tested. Residual and scatterplots indicated the assumption of linearity was met but mild heteroscedasticity was observed. Furthermore, collinearity statistics such as tolerance and VIF were all within accepted limits.
The control variable, prior therapy or counseling experience, was entered in the first block, followed by independent and interdependent self-construals in the second block, and sociotropy and emotional processing and emotional expression coping in the third block. Results indicated that at stage one, the regression equation was significant, $R^2 = .01, F(1, 351) = 4.17, p = .042$; see Table 26. The control variable accounted for 1% of the variance in the mean DSSS somatic scores. Sociotropy and emotional expression coping accounted for a statistically significant proportion of the variance after controlling for these variables, $R^2$ change $= .03, F(3, 346) = 3.99, p = .008$. Adding sociotropy and emotional approach coping contributed an additional 3% of the variance. When all five independent variables were included in the final step of the regression model, they accounted for 6% of the variance in the mean DSSS somatic scores. Independent and interdependent self-construals, sociotropy, and emotional expression were significant predictors of the mean DSSS somatic scores. Examination of both the beta weights and structure coefficients revealed that sociotropy was the most useful predictor. Interestingly, there seemed to be suppressor effect. Both interdependent self-construal and emotional processing coping had close to zero correlations with the criterion variable. Emotional processing coping had a negative coefficient though it correlated positively and weakly with the mean DSSS somatic scores. Adding interdependent self-construal increased the $R^2$ of the regression equation as well as the beta weights of independent self-construal (from .08 to .11), sociotropy (from .11 to .16), and emotional expression coping (from .12 to .13). In a similar vein, adding emotional processing coping to the regression equation increased $R^2$, and the beta weight of emotional expression coping (from .10 to .13). In these two cases, it appeared that these two suppressor variables improved predictability by
increasing the predictive power of other predictor variables by removing some irrelevant variance in other predictors. For instance, when the emotional processing coping predictor was added to the regression of severity levels, the effect of emotional expression coping increased. This increase in the magnitude of the effect of emotional expression coping occurred because emotional processing explained variability in emotional expression coping. Being able to express one’s emotion required one to have the ability to process one’s emotions.

Prior to conducting a hierarchical multiple regression analysis with the somatic factor ratio scores as the criterion variable for the American sample, assumptions were tested. Bivariate scatterplots between the independent variables and the somatic factor ratio scores indicated linearity. An examination of correlations (see Table 21) showed that the two emotional approach coping strategies had a correlation of .70 but the rest of the independent variables were not too highly correlated. Based on values of tolerance and VIF, there was no indication of multicollinearity. Finally, a scatterplot of standardized residuals and standardized predicted values indicated that the homoscedasticity assumption was met.

A hierarchical multiple regression analysis was conducted to evaluate whether sociotropy and emotional approach coping will predict somatic factor ratio scores over and above the two types of self-construal for the American sample. Because no control variables were needed, the first block consisted of the two types of self-construal, and the second block added sociotropy and the two types of emotional approach coping. The results of this analysis indicated that sociotropy and emotional approach coping accounted for a statistically significant proportion of the variance after controlling for these variables, $R^2$ change = .05, $F(3, 485) = 8.65, p< .001$. Adding sociotropy and emotional approach coping to the regression
model explained an additional 5% of the variance; see Table 27. When all five independent
variables were included in final step of the regression model, they accounted for 10% of the
variance in somatic factor ratio scores, and independent and interdependent self-construal and
sociotropy were significant predictors of somatic factor ratio scores. Sociotropy had the highest
beta weight ($\beta = -0.23$, $p < 0.001$), followed by independent self-construal and interdependent
self-construal. In examining both the beta weights and structure coefficients, although
sociotropy had the highest beta weight, it did not explain as much of the variance in the effect
observed as independent self-construal. It is possible that the variance that independent self-
construal can explain is also accounted for by other predictors.

As for the Chinese sample, a three stage hierarchical multiple regression analysis was
conducted with somatic factor ratio scores as the criterion variable. Prior to this analysis,
assumptions were tested. An examination of correlations (see Table 21) showed that the two
emotional approach coping strategies had a correlation of .59 but the rest of the independent
variables were not too highly correlated. Residual and scatterplots indicated the assumptions
of linearity and homescedasticity were met. In addition, collinearity statistics such as tolerance
and VIF were all within accepted limits.

The first block consisted of the control variables including gender and the educational
levels of participants’ mothers. The two types of self-construal were entered at stage two,
while the last block added sociotropy and the two emotional approach coping strategies. The
results of this analysis indicated that the regression equation at stage one was significant, $R^2$
= .03, $F(2, 350) = 4.49, p = .012$; see Table 28. The control variables accounted for 3% of the
variation in the somatic factor ratio scores. Lastly, sociotropy and emotional approach coping
accounted for a statistically significant proportion of the variance after controlling for these variables, $R^2$ change = .05, $F(3, 345) = 5.79, p = .001$. Adding sociotropy and emotional approach coping to the regression model explained an additional 5% of the variation in somatic factor ratio scores. When all five independent variables were included in the final step of the regression model, they accounted for 10% of the variance in the somatic factor ratio scores, and only emotional expression coping was a significant predictor of the somatic factor ratio scores. In examining both the beta weights and structure coefficients, emotional expression coping appeared to be the most important predictor of somatic factor ratio scores which explained 71% of the obtained effect.

This hypothesis was partly supported. For the American sample, interdependent self-construal and sociotropy were statistically significant independent predictors of severity levels of somatic symptoms of depression, while independent and interdependent self-construals, sociotropy, and emotional expression coping were significant independent predictor for the Chinese sample. Regarding relative endorsement of somatic symptoms of depression, independent and interdependent self-construals and sociotropy were statistically significant predictors for the American participants, whereas emotional expression coping was the only significant predictor for the Chinese participants.

**Hypothesis 8**

Sociotropy and emotional approach coping, in particular, emotional expression coping, will account for significant unique variance in relative endorsement and severity of somatic symptoms over and above the variance accounted for by the self-construal variables for the Chinese, but not for the American participants. This hypothesis was not supported. For the
Chinese participants, sociotropy and emotional approach coping accounted for significant additional variance in relative endorsement and severity of somatic symptoms over and above the variance accounted for by the two self-construal variables. In addition, emotional expression coping was a significant predictor for relative endorsement, while the two types of self-construals, sociotropy, and emotional expression coping significantly predicted severity of somatic symptoms. However, contrary to what was hypothesized, similar results were observed with the American sample. Sociotropy and emotional approach coping accounted for significant variance in relative endorsement and severity of somatic symptoms over and above the variance accounted for by the self-construal variables for the American sample as well. The two types of self-construal and sociotropy significantly predicted relative endorsement of somatic symptoms, while interdependent self-construal and sociotropy significantly predicted severity of somatic symptoms.
CHAPTER IV
DISCUSSION

The primary purpose of this study was to examine differences in somatic and psychological symptom reporting between Chinese from Macau and American college students. Results of this study were contrary to what was hypothesized. Despite the popular notion of Chinese somatization, American students endorsed a higher proportion of somatic symptoms compared to all other depression symptoms than their Chinese counterparts did. No significant culture difference was found regarding the severity levels of somatic symptoms after controlling for demographic and health history variables. The finding that Chinese students endorsed a significantly lower proportion of somatic symptoms than the American students was contrary to results of most previous research and challenges the assumption that Chinese tend to somatize. Yet, these results were consistent with the findings of more recent studies such as those of Yen and colleagues (2000) in which they used factor ratio scores to compare the somatic and affective symptoms of depression between Chinese, Chinese American, and Caucasian American students. In their study, they found that both nonpatient Caucasian Americans and Chinese Americans endorsed higher somatic factor ratio scores than nonpatient Chinese, whereas Chinese outpatients were found to endorse higher ratio scores than nonpatient Chinese control. In addition, no statistically significant differences in affective factor ratio scores were found between the three nonpatient ethnic groups. These results led them to conclude that greater somatization might be confined to the clinical populations in China than to the population at large. Other more recent cross-cultural studies (Parker, Cheah, et al., 2001; Ryder et al., 2008) found greater endorsement of somatic symptoms among Chinese
outpatients, but what was more significant was their finding of a stronger tendency toward psychological symptom reporting among Caucasians. Taken together, this study provides evidence to refute the notion of greater Chinese somatization. Unfortunately, this study could not examine the alternative explanation of Caucasian psychologization due to the failure to identify the depression affect factor from the Center for Epidemiological Studies Depression Scale (CES-D) and the Chinese Depression Scale (CDS) for both samples. As a result, this study could not answer the question whether there was a cultural difference in psychological symptom reporting. Further investigation also reveals that this result was not due to the use of the 26-item CES-D (CDS for Chinese) as the same factor structures were observed using the 20-item versions.

Nonetheless, reviewing the item loadings of the depression affect factor of the CES-D and the CDS reveals interesting patterns. Results from both samples indicated that most items of this factor loaded on more than one factor and some of them loaded on the somatic factor. These results seem to suggest that American and Chinese did not differentiate clearly the psychological and physical symptoms and that they have a similar conception of depression. In contrast, Ying and colleagues (2000) examined the factor structures of the CES-D with Chinese American college students and compared the pattern of factor loadings with those of White American adults from Radloff’s (1977) study and Chinese American community sample from Ying’s (1988) study. What they found was that the psychological items did not load with physical items on the same factor for the Chinese American college students. More importantly, this pattern resembled that of White American adults more than it resembled the three-factor model of the Chinese American community sample in which somatic and depressed affect
items clustered together. Similar observation was noted in other studies that have used the CES-D among Chinese samples. For instance, Yen et al. (2000) reported three factors (somatic, affective, and positive) in their Chinese university students sample using the 20-item CDS, and their results also indicated a clustering of somatic and affective symptoms similar to what has been found among Asian American samples (Kuo, 1984). While previous research based on results of factor analysis of CES-D with Chinese or Chinese American sample seems to reveal an inseparability of affective and somatic complaints, the research findings with the American sample generally support the four-factor model. In a meta-analysis study of the factor structures of the CES-D, Shafer (2006) reported that the original four-factor structure identified by Radloff (1977) has generally been supported by the majority of studies with the American samples. However, as Kim, Decoster, Huang, and Chiriboga (2011) observed, this factor structure could not be replicated in diverse racial/ethnic groups. In their meta-analysis which focused on examining racial/ethnic differences, they found that the original four-factor structure may not be the best fit for all racial/ethnic groups. Kim and colleagues further suggested that the different factorial structures on depression found among different racial/ethnic groups indicated that people from different cultures conceptualize and express their depressive symptoms differently.

In this study, the factors identified with the American sample seem to be parallel to those found with the Chinese sample. The three factors found correspond closely to Radloff’s (1977) somatic and retarded activity, interpersonal problems, and positive affect factors. While this might indicate that Chinese and American students hold similar conception of depression, it is notable that the relationship between the two dependent variables differed between
American and Chinese participants. Surprisingly, the severity levels and relative endorsement of somatic symptoms did not correlate significantly within the Chinese sample, whereas they correlated negatively within the American sample. This might be due to participants responding differently to the somatic items of the CES-D and the Depression and Somatic Symptoms Scale (DSSS) or greater variability in their responses to other items of the CDS since somatic factor ratio scores were derived from dividing the mean scores of the somatic factor by the mean score across all the items of the CDS. As for the American sample, the negative correlation suggests that their higher endorsement of somatic symptoms was also accompanied by an even higher endorsement of other symptoms measured by the CES-D. The fewer somatic symptoms they endorsed, the disproportionately fewer overall symptoms they reported.

Interestingly, a closer look at the moderately positive relationship between the mean DSSS somatic subscale scores and the mean scores of the somatic factor of the CES-D (CDS for Chinese) in both samples ($r = .42$ for Americans and $r = .39$ for Chinese) raises the question of the distinction between the types of somatic symptoms measured. Although the two scales were rated on different dimensions of depression with the CES-D/CDS measuring frequency and the DSSS measuring severity, the different results obtained with these two dependent variables might be due to their measuring different aspects of somatic symptoms. The DSSS somatic subscale primarily measures somatic symptoms such as various bodily pains, chest tightness, and palpitations, whereas the somatic factor of the CES-D mainly assesses vegetative or retarded symptoms of depression such as appetite, sleep, and concentration difficulties which are among the diagnostic criteria of a major depressive disorder. The somatization literature does not consistently define somatic symptoms of depression. Moreover, depending on the
measurement used in these studies, the scope and types of somatic symptoms assessed may vary. Clarity on how somatization is defined and measured, and studying symptoms beyond vegetative signs and retarded activities, are essential to expand our understanding of somatization. As this study shows, different factors might account for cross-cultural differences depending on the types of somatic symptoms measured.

Another objective of this study was to examine the predictive value of cultural and psychological variables for somatic symptoms of depression. The variables chosen included independent and interdependent self-construals, sociotropy, and emotional approach coping. While these variables have been shown to correlate with depression, their relationships with somatic symptoms of depression were largely unknown, and according to the results of the present study, these variables have some limited predictive power which varies as a function of cultures and how somatic symptoms were measured. Independent and interdependent self-construals, sociotropy, and emotional expression predicted somatization independently when it was measured by the DSSS somatic subscale scores for the Chinese sample, whereas interdependent self-construal and sociotropy were the unique predictors for the American sample. When somatization was measured by somatic factor ratio scores, independent and interdependent self-construals and sociotropy appeared to be the best predictors for the American sample, whereas emotional expression was the only significant unique predictor for the Chinese sample. The results differed between the two dependent variables which may be due to these variables measuring somatization in different ways. More significantly, different predictors were identified for American and Chinese samples, thus underscoring the importance of studying the role of culture and how cultural variables interact with
psychological variables to examine the generality of psychological theories across cultures. It also highlights the need to adopt the combined etic-emic approach to fully understand the universal and culturally specific aspects of these variables and their relationships and how they shape individuals’ expression of distress.

In the present study, emotional approach coping, specifically, coping through emotional expression, was predictive of relative endorsement and severity of somatic symptoms for Chinese but not for Americans. Chinese participants who coped through emotional expression reported a higher level of endorsement and severity of somatic symptoms. These results were contrary to previous research regarding emotional approach coping as it has been shown to associate with adaptive benefits pertaining to both psychological and physical health (Austenfeld & Stanton, 2004). Nevertheless, as Austenfeld and Stanton pointed out, the relations of emotional approach coping and health-related outcomes depend on other factors such as the environmental context, attributes of the stressors, and individual characteristics. Findings suggest that these coping strategies are most effective when used in an emotionally receptive social context, when the stressors are interpersonal in nature as opposed to achievement-related, and when the stressor is perceived as relatively uncontrollable. Stanton, Danoff-Burg, et al. (2000) and Stanton, Kirk, et al. (2000) also observed that prolonged processing without expression may be maladaptive. The temporal relationship between coping and outcomes also suggests that early emotional expression or simultaneous emotional processing and expression coping might be less adaptive. The underlying mechanisms for the effectiveness of coping through emotional processing and expression could be due to increase in hope and social support. In this case, it is unclear how these potential moderators and
mediators operate among the American and Chinese participants. For instance, it is unknown how participants’ social environments responded to their use of emotional approach coping and their level of social support, particularly for the Chinese sample.

Additionally, one confounding variable that was not controlled in this study was negative affect which is a robust correlate of pain and somatic complaints. Studies have shown that individuals high in negative affectivity tend to report aversive emotions and physical symptoms (Watson & Pennebaker, 1989). Different explanations have been proposed to account for the strong relationship between negative affectivity and reported physical complaints such as the psychosomatic, the disability, and symptom perception hypotheses. Watson and Pennebaker found more support for the symptom perception model in their study of the role of negative affectivity and health complaints. They explained that individuals high in negative affectivity are more likely to attend to and/or complain about internal physical sensations. Future research might consider including this variable in the study of somatization and examining its relationship with the use of emotional approach coping.

In this study, coping through emotional expression was related to somatization for the Chinese participants. While it is possible that expressing one’s emotions directed one’s attention toward his or her emotional distress, which could be expressed psychologically or physically, perhaps the process is reversed. Experiencing more somatic symptoms of depression leads Chinese to cope more with emotional expression so as to convey their distress.

Results of this study show that the two types of self-construal predicted somatization differently for the two samples. Independent self-construal predicted relative endorsement of somatic symptoms for the American sample, whereas it predicted severity levels for the
Chinese sample. The relationships of interdependent self-construal with these two criterion variables were more complex as it was positively associated with relative endorsement for the American sample and negatively related to severity of somatic symptoms for both samples. Contrary to prediction, the more independent one was, the more likely that the person either had a higher endorsement or severity level of somatic symptoms depending on whether the person was an American or Chinese. On the other hand, regardless of culture, the more interdependent one was, the less severe somatic symptoms he or she reported. Yet, the more interdependent an American was, the more likely that he or she endorsed a higher level of somatic symptoms. These seemingly contradictory results could be due to measurement issues since the two scales measure different aspects of somatic symptoms. Another possible explanation was that Americans who had less severe somatic symptoms experienced no other symptoms of depression other than some somatic symptoms which could thus result in higher ratio scores. As such, it was possible for a person to have a low severity score but a high endorsement of somatic symptoms. Nonetheless, the relationships between the two types of self-construal and somatization in both samples call into question the general findings of the associations of positive well-being with independent self-construal and negative well-being with interdependent self-construal (e.g., Kwan, Bond, & Singelis, 1997; Singelis et al., 1999). It is plausible that self-construal contributes to somatization through indirect pathways such as perception of health and attribution styles. More research is needed to understand how independent and interdependent self-construals relate to somatization. As this study shows, sociotropy was a significant predictor of somatization particularly for the American sample, while emotional expression predicted somatization for the Chinese sample only. Future
research can build on these findings to further investigate the mechanisms through which self-construals, sociotropy, and emotional expression contribute to somatization in order to develop a cultural model to explain somatization.

One interesting finding in this study is the noticeable large discrepancy in the number of participants experiencing mental conditions between the two samples. All of the Chinese participants denied suffering from any mental conditions, whereas about 16% of American participants reported experiencing mental conditions. It is not clear whether stigma might have influenced Chinese’s report. At the same time, it also raises the questions as how familiar Chinese are with the concepts of mental illnesses and how aware they are of their emotional experiences.

This study also provided preliminary information regarding the psychometric properties of the DSSS and the Emotional Approach Coping Scales (EAC) in Chinese translation. Both had satisfactory internal consistency and their original factor structures were replicated in this study. However, in examining the psychometric adequacy of the Revised Self-Construal Scale (SCS) with the Chinese sample, five independent items were found to correlate higher with the interdependent subscale than with their own subscale, suggesting problems with discriminant validity. This led to the elimination of ten items, and the low number of items used in this study casts doubt on whether independent self-construal was adequately measured.

Finally, it must be noted that there might be cultural differences in severity of depression. While no significant differences between the two samples were found in their mean scores on the Patient Health Questionnaire-Depression Module (PHQ-9) and the 26-item CES-D/CDS, American participants were found to endorse significantly higher mean scores than
their Chinese counterparts on the DSSS. These discrepancies might be due to the different ways these measures assess depression. For example, items of the PHQ-9 and the DSSS depression subscale assess clinical symptoms of depression directly, whereas items of the CESD-D/CDS measure depression in less direct ways. Consequently, the observed cultural difference in relative endorsement of somatic symptoms could be a function of severity of depression. Perhaps the more depressed a person is, the more somatic symptoms he or she presents. Additionally, in this case, without first accounting for global severity of depression as a confounding variable, no definite interpretation with regard to the effects of the predictors on relative endorsement and severity of somatic symptoms of depression can be made. Future study should take into account the severity level when examining cultural differences in symptom presentation and how it relates to the somatic symptom presentation and interacts with other predictors of somatic symptoms.

**Limitations and Future Directions**

One of the major methodological challenges of cross-cultural research is to reduce bias and establish equivalence so that results across cultures can be compared. Equivalence includes but is not limited to sampling of subjects and measures. In this study, college students were compared assuming that they shared similar demographic characteristics across the two cultures. However, the samples were not matched, and thus it could not be ruled out that the cultural differences observed might be due to noncontrolled cross-cultural differences in sample characteristics that had a bearing on the measures. Although effort was made to control some of the demographic variables that differed between the samples and could be potential confounds, there were certain characteristics that could not be directly compared and
controlled in this study. For instance, due to differences in the socioeconomic situations
between the two cultures, meaningful comparison could not be made.

Moreover, the present samples did not claim to be representative of the populations.
The sample consisted of participants who were enrolled in psychology courses only. The
academic life has its unique stressors and challenges, and academic pressure likely has an
impact on students’ physical and mental functioning. It is possible that their demographic
characteristics, stressors, and types and severity of dysfunction are different from the general
populations, or from those who seek treatment or are being referred for treatment. Therefore,
generalization of the findings is suspect.

Researchers have proposed using different methods to examine measurement
equivalence. For example, confirmatory factor analysis and item response analysis are
considered the best approaches to examine measurement equivalence and bias. To establish
cross-cultural equivalence of measurement in this study, factor and item analyses were
performed to determine construct equivalence. Exploratory factor analysis was performed
instead of confirmatory factor analysis so as to uncover the underlying dimensions of these
measures without imposing a preconceived structure, considering that these measures have
not been studied with the Chinese sample. Moreover, one form of bias that was not examined
in this study was item bias. An item is considered to be biased if individuals from different
cultures who are equivalent with respect to the attribute being measured are not equally likely
to endorse the item (van de Vijver & Leung, 1997). Li and Hicks (2010) reported cultural
response bias of less acculturated Chinese American women, who were less likely to endorse
positive items on the CES-D. In a similar vein, Yen et al. (2000) found that Chinese were less
likely to endorse positive items than to endorse somatic and affective items. Previous research also suggests that Chinese and Chinese Americans are more likely than Americans to select the midpoint of scales, while some studies found such effect only on items that involve expression of positive feelings (Chen, Lee, & Stevenson, 1995; Lee, Jones, Mineyama, & Zhang, 2002). The explanation of this tendency is linked to the cultural values emphasizing modesty, moderation, and emotional restraint. Unfortunately, the sample size of this study was insufficient to perform differential item functioning analysis to detect item bias. Since this study did not examine culture-specific response styles such as acquiescence or tendency to endorse midpoint responses, future study would benefit from using more advanced approaches to examine and establish measurement equivalence to determine the possible effect of response style on the results.

Despite these limitations, findings from this study have important implications for research and practice. The present findings challenge the notion that Chinese place greater emphasis on somatic or vegetative symptoms of depression. As the results suggest, expressing somatic or vegetative symptoms of depression was also common among Americans, and this finding is consistent with other studies which indicate that depression is often reported in somatic terms and associated with unexplained medical symptoms in the Western cultures (Keyes & Ryff, 2003). In addition, this study attempted to unpack cross-cultural differences in symptom reporting. In their discussion of theoretical and methodological problems in cross-cultural psychology, Ratner and Hui (2003) asserted that most cross-cultural research fails to explain the cultural basis of psychological differences among groups and often resorts to abstract and impoverished constructs such as collectivism and individualism to explain
psychological differences. This study intended to go beyond these broad cultural variables and examined specific factors that might contribute to somatization. As evidence is accumulating that somatization is not unique to Chinese, future research should investigate both somatization and psychologization to fully understand the presentation of depressive symptoms across cultures. Besides, theories are especially needed to guide this area of research, which should take into account the interaction of culture, biology, and individual differences in explaining the extent of cultural similarities and differences in symptom presentation of depression. In addition to theory formulation, future research will benefit from adopting the combined etic-emic approach to advance our understanding of depression and its symptom manifestation across cultures. Applying and testing Western models and theories in cross-cultural contexts to determine their universality has been called the imposed etic approach (Cheung, van de Vijver, & Leong, 2011). Emic approach, on the other hand, refers to studying a particular psychological construct from within the culture through developing its own measurements and theories indigenous to the specific culture. A combined approach such as studying emic constructs (e.g., neurasthenia) and utilizing emic or culture specific measures in addition to the imposed-etic tests would have broadened our understanding of the universal and culturally specific aspects of depression and its presentation. Considering that major depression is being defined by Western criteria, which might reflect cultural bias, adopting these strict and culturally specific criteria might not apply to a different culture. Thus, cultural variation is best understood if research takes into account the conception of depressive symptoms, the meaning, and implications of these symptoms across cultures.
The present study utilized college student samples and compared their symptom presentation of depression. Future research might consider studying clinical samples whose subject, demographic, and symptom-related characteristics such as severity, chronicity, and comorbidity are likely to have an influence on their symptom reporting, as recent findings suggest differences in somatic and psychological symptom reporting between student and clinical samples. In addition, given the strong relationship between anxiety and depression, and that anxiety has been found to predict somatic symptoms in depressive disorder in previous research (Sayar, Kirmayer, & Taillefer, 2003), future research should also examine how anxiety relates to somatization and depression.

Finally, as previous research has shown, cultural differences in somatic symptom reporting may depend on assessment methods (Ryder et al., 2008). Therefore, future research might consider using more than one assessment modality in order to determine if there are any interaction effects. In addition to using different assessment methods, future research should examine whether the use of absolute scores or relative scores (e.g., factor ratio scores) might have an effect on the outcomes. As mentioned earlier, results from recent studies with student samples measuring their factor ratio scores suggest that Americans expressed more somatic symptoms than their Chinese counterparts did, whereas findings with clinical samples measuring their absolute scores indicated the opposite and a stronger psychologization effect among Americans. The different results obtained might be a function of how somatization is measured, or of relative severity of depression. Much more work is needed to explore the underlying reasons for these differences.
In conclusion, results of this study demonstrate that Americans are equally likely as Chinese to present somatic symptoms and as such, it points to the need to assess both somatic and psychological symptoms. Since most of the current Western depression scales include few items assessing somatic symptoms, selection of measurement will be crucial to arrive at a better understanding of symptom presentation of depression.

Cultural competence has become increasingly important in the mental health field. Although it is essential for clinicians to recognize cultural differences in symptom presentation among various cultural groups, it is equally important not to overlook cultural similarities. Indeed, as an old Asian saying states “all individuals, in some ways, are like no other individuals, like some individuals, and like all other individuals.”
Table 1

*Frequencies for Demographic and Possible Control Variables for the Final Samples*

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th></th>
<th></th>
<th>Chinese</th>
<th></th>
<th></th>
<th>(\Phi/V/r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n^a)</td>
<td>Percentage</td>
<td>(n^a)</td>
<td>Percentage</td>
<td>(n^a)</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>Female</td>
<td>326</td>
<td>66.4%</td>
<td>228</td>
<td>64.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>165</td>
<td>33.6%</td>
<td>125</td>
<td>35.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>251</td>
<td>51.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>101</td>
<td>20.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>76</td>
<td>15.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian/Indigenous</td>
<td>11</td>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Eastern American</td>
<td>5</td>
<td>1.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>1</td>
<td>0.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (multi-racial)</td>
<td>46</td>
<td>9.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birth Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macau</td>
<td></td>
<td></td>
<td>209</td>
<td></td>
<td>59.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td>133</td>
<td></td>
<td>37.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td>3.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.12**</td>
</tr>
<tr>
<td>Single</td>
<td>463</td>
<td>94.3%</td>
<td>348</td>
<td>98.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 1 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th></th>
<th></th>
<th>Chinese</th>
<th></th>
<th></th>
<th>(\Phi/V/r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n^a)</td>
<td>Percentage</td>
<td>(n^a)</td>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living together</td>
<td>13</td>
<td>2.6%</td>
<td>1</td>
<td>0.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/separated</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>1.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (in relationship)</td>
<td>15</td>
<td>3.1%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.23***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>247</td>
<td>50.3%</td>
<td>268</td>
<td>75.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>114</td>
<td>23.2%</td>
<td>46</td>
<td>13.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>89</td>
<td>18.1%</td>
<td>21</td>
<td>5.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>41</td>
<td>8.4%</td>
<td>18</td>
<td>5.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Father’s Birth Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>405</td>
<td>82.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>85</td>
<td>17.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Mother’s Birth Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>407</td>
<td>82.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>83</td>
<td>16.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese Father’s Birth Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macau</td>
<td>84</td>
<td>23.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>258</td>
<td>73.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>11</td>
<td>3.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
Table 1 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th></th>
<th>Chinese</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Percentage</td>
<td>n</td>
<td>Percentage</td>
</tr>
<tr>
<td>Chinese Mother’s Birth Place</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macau</td>
<td>85</td>
<td>24.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>263</td>
<td>74.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5</td>
<td>1.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father’s Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>1</td>
<td>0.2%</td>
<td>4</td>
<td>1.1%</td>
</tr>
<tr>
<td>Some elementary school</td>
<td>4</td>
<td>0.8%</td>
<td>32</td>
<td>9.1%</td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>15</td>
<td>3.1%</td>
<td>42</td>
<td>11.9%</td>
</tr>
<tr>
<td>Some high school</td>
<td>32</td>
<td>6.5%</td>
<td>65</td>
<td>18.4%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>114</td>
<td>23.2%</td>
<td>106</td>
<td>30.0%</td>
</tr>
<tr>
<td>Completed A level</td>
<td>N/A</td>
<td>N/A</td>
<td>17</td>
<td>4.8%</td>
</tr>
<tr>
<td>Some college</td>
<td>130</td>
<td>26.5%</td>
<td>16</td>
<td>4.5%</td>
</tr>
<tr>
<td>Held Bachelor's degree</td>
<td>122</td>
<td>24.8%</td>
<td>56</td>
<td>15.9%</td>
</tr>
<tr>
<td>Some graduate school</td>
<td>9</td>
<td>1.8%</td>
<td>4</td>
<td>1.1%</td>
</tr>
<tr>
<td>Held Master's degree</td>
<td>45</td>
<td>9.2%</td>
<td>7</td>
<td>2.0%</td>
</tr>
<tr>
<td>Held Doctoral degree</td>
<td>19</td>
<td>3.9%</td>
<td>4</td>
<td>1.1%</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 1 (*continued*).

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th></th>
<th>Chinese</th>
<th></th>
<th>$\Phi/V/r$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n^a$</td>
<td>Percentage</td>
<td>$n^a$</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>Some elementary school</td>
<td>4</td>
<td>0.8%</td>
<td>28</td>
<td>7.9%</td>
<td></td>
</tr>
<tr>
<td>Completed elementary school</td>
<td>11</td>
<td>2.2%</td>
<td>53</td>
<td>15.0%</td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>22</td>
<td>4.5%</td>
<td>60</td>
<td>17.0%</td>
<td></td>
</tr>
<tr>
<td>High school graduate</td>
<td>88</td>
<td>17.9%</td>
<td>109</td>
<td>30.9%</td>
<td></td>
</tr>
<tr>
<td>Completed A level</td>
<td>N/A</td>
<td>N/A</td>
<td>19</td>
<td>5.4%</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>160</td>
<td>32.6%</td>
<td>19</td>
<td>5.4%</td>
<td></td>
</tr>
<tr>
<td>Held Bachelor's degree</td>
<td>135</td>
<td>27.5%</td>
<td>50</td>
<td>14.2%</td>
<td></td>
</tr>
<tr>
<td>Some graduate school</td>
<td>8</td>
<td>1.6%</td>
<td>3</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Held Master's degree</td>
<td>52</td>
<td>10.6%</td>
<td>7</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Held Doctoral degree</td>
<td>11</td>
<td>2.2%</td>
<td>2</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Father’s Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.17***</td>
</tr>
<tr>
<td>Don’t know</td>
<td>55</td>
<td>11.2%</td>
<td>25</td>
<td>7.1%</td>
<td></td>
</tr>
<tr>
<td>Homemaker/self-employed</td>
<td>19</td>
<td>3.9%</td>
<td>23</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Unskilled/self-taught worker</td>
<td>5</td>
<td>1.0%</td>
<td>18</td>
<td>5.1%</td>
<td></td>
</tr>
<tr>
<td>Semiskilled worker</td>
<td>32</td>
<td>6.5%</td>
<td>36</td>
<td>10.2%</td>
<td></td>
</tr>
<tr>
<td>Skilled manual worker</td>
<td>66</td>
<td>13.4%</td>
<td>66</td>
<td>18.7%</td>
<td></td>
</tr>
<tr>
<td>Clerical and sales worker</td>
<td>17</td>
<td>3.5%</td>
<td>25</td>
<td>7.1%</td>
<td></td>
</tr>
<tr>
<td>Administrator/semi-Professional</td>
<td>122</td>
<td>24.8%</td>
<td>56</td>
<td>15.9%</td>
<td></td>
</tr>
</tbody>
</table>
Table 1 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th>Chinese</th>
<th>$\Phi/V/r$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n^2$</td>
<td>Percentage</td>
<td>$n^2$</td>
</tr>
<tr>
<td>Major business manager/minor professional</td>
<td>114</td>
<td>23.2%</td>
<td>85</td>
</tr>
<tr>
<td>Higher executive/large business owner</td>
<td>58</td>
<td>11.8%</td>
<td>17</td>
</tr>
<tr>
<td>Something else</td>
<td>3</td>
<td>0.6%</td>
<td>2</td>
</tr>
<tr>
<td>Mother’s Occupation</td>
<td></td>
<td></td>
<td>.12***</td>
</tr>
<tr>
<td>Don’t know</td>
<td>27</td>
<td>5.5%</td>
<td>13</td>
</tr>
<tr>
<td>Homemaker/self-employed</td>
<td>67</td>
<td>13.6%</td>
<td>67</td>
</tr>
<tr>
<td>Unskilled/self-taught worker</td>
<td>10</td>
<td>2.0%</td>
<td>16</td>
</tr>
<tr>
<td>Semiskilled worker</td>
<td>16</td>
<td>3.3%</td>
<td>16</td>
</tr>
<tr>
<td>Skilled manual worker</td>
<td>61</td>
<td>12.4%</td>
<td>58</td>
</tr>
<tr>
<td>Clerical and sales worker</td>
<td>73</td>
<td>14.9%</td>
<td>53</td>
</tr>
<tr>
<td>Administrator/semi-professional</td>
<td>115</td>
<td>23.4%</td>
<td>54</td>
</tr>
<tr>
<td>Major business manager/minor professional</td>
<td>106</td>
<td>21.6%</td>
<td>62</td>
</tr>
<tr>
<td>Higher executive/large business owner</td>
<td>15</td>
<td>3.1%</td>
<td>11</td>
</tr>
<tr>
<td>Something else</td>
<td>1</td>
<td>0.2%</td>
<td>3</td>
</tr>
<tr>
<td>Living Abroad Before</td>
<td></td>
<td></td>
<td>.03</td>
</tr>
<tr>
<td>Yes</td>
<td>24</td>
<td>4.9%</td>
<td>22</td>
</tr>
<tr>
<td>No</td>
<td>467</td>
<td>95.1%</td>
<td>331</td>
</tr>
<tr>
<td>Medical Conditions</td>
<td></td>
<td></td>
<td>.11**</td>
</tr>
</tbody>
</table>

(table continues)
Table 1 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th>Chinese</th>
<th>Φ/V/r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n⁰</td>
<td>Percentage</td>
<td>n⁰</td>
</tr>
<tr>
<td>Yes</td>
<td>73</td>
<td>14.9%</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>418</td>
<td>85.1%</td>
<td>325</td>
</tr>
<tr>
<td>Mental Conditions</td>
<td></td>
<td>.27***</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>77</td>
<td>15.7%</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>414</td>
<td>84.3%</td>
<td>353</td>
</tr>
<tr>
<td>Medications</td>
<td></td>
<td>.30***</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>137</td>
<td>27.9%</td>
<td>15</td>
</tr>
<tr>
<td>No</td>
<td>354</td>
<td>72.1%</td>
<td>338</td>
</tr>
<tr>
<td>Side Effects</td>
<td></td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>3.7%</td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>473</td>
<td>96.3%</td>
<td>347</td>
</tr>
<tr>
<td>Family Psychiatric History</td>
<td></td>
<td>.32***</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>125</td>
<td>25.5%</td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>366</td>
<td>74.5%</td>
<td>347</td>
</tr>
<tr>
<td>Therapy or Counseling Experience</td>
<td></td>
<td>.36***</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>161</td>
<td>32.8%</td>
<td>13</td>
</tr>
<tr>
<td>No</td>
<td>330</td>
<td>67.2%</td>
<td>340</td>
</tr>
</tbody>
</table>

Note. ᵃSubsample meeting PHQ cutoff score of 2.

* p < .05, **p < .01, ***p < .001.
Table 2

*Descriptive Statistics for the American Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19.26</td>
<td>1.36</td>
<td>18-23</td>
<td>1.08</td>
<td>.39</td>
</tr>
<tr>
<td>Years living in the US</td>
<td>19.10</td>
<td>1.79</td>
<td>3-23</td>
<td>-2.25</td>
<td>19.04</td>
</tr>
<tr>
<td>Educational levels of participants’ fathers</td>
<td>6.22</td>
<td>1.64</td>
<td>1-10</td>
<td>.29</td>
<td>.27</td>
</tr>
<tr>
<td>Educational levels of participants’ mothers</td>
<td>6.35</td>
<td>1.49</td>
<td>2-10</td>
<td>.21</td>
<td>.48</td>
</tr>
<tr>
<td>PHQ-9 Total Scores(^a)</td>
<td>7.34</td>
<td>5.10</td>
<td>2-26</td>
<td>1.16</td>
<td>.81</td>
</tr>
<tr>
<td>Independent Self-Construal (15 items)</td>
<td>4.97</td>
<td>.76</td>
<td>2.13-6.87</td>
<td>-.52</td>
<td>.82</td>
</tr>
<tr>
<td>Independent Self-Construal (5 items)</td>
<td>4.68</td>
<td>1.00</td>
<td>1.6-7</td>
<td>-.22</td>
<td>.01</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>4.82</td>
<td>.64</td>
<td>2.53-6.47</td>
<td>-.31</td>
<td>.28</td>
</tr>
<tr>
<td>Sociotropy</td>
<td>3.09</td>
<td>.66</td>
<td>1.31-5</td>
<td>.01</td>
<td>-.18</td>
</tr>
<tr>
<td>Emotional Processing Coping</td>
<td>2.54</td>
<td>.78</td>
<td>1-4</td>
<td>.06</td>
<td>-.67</td>
</tr>
<tr>
<td>Emotional Expression Coping</td>
<td>2.28</td>
<td>.83</td>
<td>1-4</td>
<td>.31</td>
<td>-.63</td>
</tr>
<tr>
<td>26-item CES-D Total Scores</td>
<td>22.26</td>
<td>14.11</td>
<td>1-69</td>
<td>.89</td>
<td>.12</td>
</tr>
<tr>
<td>20-item CES-D Total Scores</td>
<td>17.49</td>
<td>10.81</td>
<td>0-52</td>
<td>.83</td>
<td>-.01</td>
</tr>
<tr>
<td>DSSS Total Scores</td>
<td>36.93</td>
<td>10.87</td>
<td>22-74</td>
<td>1.08</td>
<td>.68</td>
</tr>
<tr>
<td>DSSS Depression Total Scores</td>
<td>21.47</td>
<td>7.13</td>
<td>12-45</td>
<td>1.01</td>
<td>.41</td>
</tr>
<tr>
<td>DSSS Somatic Total Scores</td>
<td>15.46</td>
<td>5.06</td>
<td>10-34</td>
<td>1.25</td>
<td>1.07</td>
</tr>
<tr>
<td>DSSS Pain Total Scores</td>
<td>8.29</td>
<td>2.89</td>
<td>5-18</td>
<td>1.04</td>
<td>.46</td>
</tr>
<tr>
<td>Somatic Factor Ratio Scores</td>
<td>1.14</td>
<td>.24</td>
<td>.55-1.99</td>
<td>.44</td>
<td>.09</td>
</tr>
</tbody>
</table>

\(^a\)Participants with scores of 0 or 1 were dropped.
Table 3

Descriptive Statistics for the Chinese Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19.10</td>
<td>1.15</td>
<td>18-23</td>
<td>1.18</td>
<td>1.32</td>
</tr>
<tr>
<td>Years living in Macau</td>
<td>12.46</td>
<td>8.28</td>
<td>.08-23</td>
<td>-.49</td>
<td>-1.57</td>
</tr>
<tr>
<td>Educational levels of participants’ fathers</td>
<td>5.09</td>
<td>2.10</td>
<td>1-11</td>
<td>.53</td>
<td>-.19</td>
</tr>
<tr>
<td>Educational levels of participants’ mothers</td>
<td>5.01</td>
<td>2.00</td>
<td>1-11</td>
<td>.55</td>
<td>-.16</td>
</tr>
<tr>
<td>PHQ-9 Total Scores(^a)</td>
<td>6.62</td>
<td>3.87</td>
<td>2-23</td>
<td>1.09</td>
<td>1.17</td>
</tr>
<tr>
<td>Independent Self-Construal (15 items)</td>
<td>4.73</td>
<td>.63</td>
<td>1.73-6.33</td>
<td>-.50</td>
<td>1.23</td>
</tr>
<tr>
<td>Independent Self-Construal (5 items)</td>
<td>4.12</td>
<td>.88</td>
<td>1.80-6.40</td>
<td>.09</td>
<td>-.44</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>5.08</td>
<td>.66</td>
<td>1.93-6.60</td>
<td>-.69</td>
<td>1.85</td>
</tr>
<tr>
<td>Sociotropy</td>
<td>3.33</td>
<td>.56</td>
<td>1.66-4.66</td>
<td>-.38</td>
<td>.14</td>
</tr>
<tr>
<td>Emotional Processing Coping</td>
<td>2.67</td>
<td>.65</td>
<td>1-4</td>
<td>.18</td>
<td>-.30</td>
</tr>
<tr>
<td>Emotional Expression Coping</td>
<td>2.47</td>
<td>.62</td>
<td>1-4</td>
<td>.23</td>
<td>.04</td>
</tr>
<tr>
<td>26-item CDS Total Scores</td>
<td>24.59</td>
<td>12.86</td>
<td>0-67</td>
<td>.66</td>
<td>.06</td>
</tr>
<tr>
<td>20-item CDS Total Scores</td>
<td>18.98</td>
<td>9.88</td>
<td>0-51</td>
<td>.58</td>
<td>-.04</td>
</tr>
<tr>
<td>DSSS Total Scores</td>
<td>33.92</td>
<td>8.71</td>
<td>22-75</td>
<td>1.28</td>
<td>1.99</td>
</tr>
<tr>
<td>DSSS Depression Total Scores</td>
<td>19.65</td>
<td>5.51</td>
<td>12-42</td>
<td>1.30</td>
<td>2.29</td>
</tr>
<tr>
<td>DSSS Somatic Total Scores</td>
<td>14.27</td>
<td>4.10</td>
<td>10-33</td>
<td>1.30</td>
<td>1.78</td>
</tr>
<tr>
<td>DSSS Pain Total Scores</td>
<td>7.24</td>
<td>2.30</td>
<td>5-15</td>
<td>1.26</td>
<td>1.33</td>
</tr>
<tr>
<td>Somatic Factor Ratio Scores</td>
<td>.99</td>
<td>.19</td>
<td>.50-1.73</td>
<td>.51</td>
<td>.82</td>
</tr>
</tbody>
</table>

\(^a\)Participants with scores of 0 or 1 were dropped.
Table 4

*Item Statistics of Measures for the Final Samples*

<table>
<thead>
<tr>
<th>Measure</th>
<th>American</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>.82</td>
<td>.74</td>
</tr>
<tr>
<td>Range of item means</td>
<td>1.09</td>
<td>1.10</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.39</td>
<td>.31</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.20-.65</td>
<td>.14-.54</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.38</td>
<td>.30</td>
</tr>
<tr>
<td>SCS- Independent Self-Construal Subscale (15 items)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>4.97</td>
<td>4.73</td>
</tr>
<tr>
<td>Range of item means</td>
<td>2.12</td>
<td>2.21</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.63</td>
<td>.70</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>-.01-.59</td>
<td>-.06-.55</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.21</td>
<td>.16</td>
</tr>
<tr>
<td>SCS- Independent Self-Construal Subscale (5 items)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>4.68</td>
<td>4.12</td>
</tr>
<tr>
<td>Range of item means</td>
<td>1.13</td>
<td>1.17</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.46</td>
<td>.47</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.05-.59</td>
<td>.09-.55</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.22</td>
<td>.24</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 4 (continued).

<table>
<thead>
<tr>
<th>Measure</th>
<th>American</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS-Interdependent Self-Construal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>4.82</td>
<td>5.08</td>
</tr>
<tr>
<td>Range of item means</td>
<td>2.56</td>
<td>1.32</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.76</td>
<td>.43</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>-.06-.45</td>
<td>.06-.60</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.16</td>
<td>.26</td>
</tr>
<tr>
<td>SAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>3.09</td>
<td>3.33</td>
</tr>
<tr>
<td>Range of item means</td>
<td>1.79</td>
<td>1.54</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.49</td>
<td>.43</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.00-.59</td>
<td>-.03-.55</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.26</td>
<td>.26</td>
</tr>
<tr>
<td>26-item CES-D (CDS for Chinese)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>.86</td>
<td>.95</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.93</td>
<td>.75</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.27</td>
<td>.21</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>-.02-.74</td>
<td>-.06-.64</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.33</td>
<td>.31</td>
</tr>
</tbody>
</table>
Table 4 (continued).

<table>
<thead>
<tr>
<th>Measure</th>
<th>American</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>20-item CES-D (CDS for Chinese)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>.88</td>
<td>.95</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.89</td>
<td>.75</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.26</td>
<td>.22</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>-.02-.74</td>
<td>-.02-.62</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.33</td>
<td>.30</td>
</tr>
<tr>
<td><strong>DSSS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>1.68</td>
<td>1.54</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.92</td>
<td>.77</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.29</td>
<td>.22</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.08-.76</td>
<td>.09-.56</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.31</td>
<td>.27</td>
</tr>
<tr>
<td><strong>DSSS-Depression Subscale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>1.79</td>
<td>1.64</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.91</td>
<td>.77</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.28</td>
<td>.22</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.18-.75</td>
<td>.16-.49</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.40</td>
<td>.30</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 4 (continued).

<table>
<thead>
<tr>
<th>Measure</th>
<th>American</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DSSS-Somatic Subscale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>1.55</td>
<td>1.43</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.73</td>
<td>.53</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.25</td>
<td>.16</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.20-.76</td>
<td>.16-.56</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.36</td>
<td>.33</td>
</tr>
<tr>
<td><strong>DSSS-Pain Subscale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>1.66</td>
<td>1.45</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.73</td>
<td>.53</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.29</td>
<td>.21</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.20-.61</td>
<td>.17-.56</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.35</td>
<td>.33</td>
</tr>
<tr>
<td><strong>EAC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>2.41</td>
<td>2.57</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.64</td>
<td>.71</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.19</td>
<td>.17</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.32-.80</td>
<td>.18-.69</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.57</td>
<td>.43</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 4 (continued).

<table>
<thead>
<tr>
<th>Measure</th>
<th>American</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EAC-Emotional Processing Subscale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>2.54</td>
<td>2.67</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.54</td>
<td>.26</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.20</td>
<td>.10</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.38-.79</td>
<td>.33-.69</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.60</td>
<td>.53</td>
</tr>
<tr>
<td><strong>EAC-Emotional Expression Subscale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall item mean</td>
<td>2.28</td>
<td>2.47</td>
</tr>
<tr>
<td>Range of item means</td>
<td>.22</td>
<td>.58</td>
</tr>
<tr>
<td>Standard deviation of item means</td>
<td>.07</td>
<td>.18</td>
</tr>
<tr>
<td>Inter-item correlations</td>
<td>.62-.80</td>
<td>.38-.63</td>
</tr>
<tr>
<td>Average inter-item correlations</td>
<td>.71</td>
<td>.53</td>
</tr>
</tbody>
</table>

*Note.* *a*Participants with scores of 0 or 1 were dropped.
Table 5

Component Loadings With Varimax Rotation of the 26-Item Center for Epidemiological Studies Depression Scale (CES-D) for the Final American Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Somatic</th>
<th>II. Absence of Positive Affect</th>
<th>III. Interpersonal Problems</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D1</td>
<td>.40</td>
<td>.22</td>
<td>.39</td>
<td>.36</td>
</tr>
<tr>
<td>CES-D2$^a$</td>
<td><strong>.46</strong></td>
<td>.17</td>
<td>.19</td>
<td>.28</td>
</tr>
<tr>
<td>CES-D3</td>
<td>.67</td>
<td>.53</td>
<td>.23</td>
<td>.66</td>
</tr>
<tr>
<td>CES-D4$^b$</td>
<td>-.03</td>
<td><strong>.73</strong></td>
<td>.17</td>
<td>.57</td>
</tr>
<tr>
<td>CES-D5$^a$</td>
<td><strong>.52</strong></td>
<td>.10</td>
<td>.16</td>
<td>.31</td>
</tr>
<tr>
<td>CES-D6</td>
<td>.56</td>
<td>.60</td>
<td>.27</td>
<td>.74</td>
</tr>
<tr>
<td>CES-D7$^a$</td>
<td><strong>.52</strong></td>
<td>-.10</td>
<td>.09</td>
<td>.29</td>
</tr>
<tr>
<td>CES-D8$b$</td>
<td>-.07</td>
<td><strong>.74</strong></td>
<td>.10</td>
<td>.57</td>
</tr>
<tr>
<td>CES-D9</td>
<td>.27</td>
<td>.51</td>
<td>.45</td>
<td>.54</td>
</tr>
<tr>
<td>CES-D10</td>
<td>.40</td>
<td>.38</td>
<td>.34</td>
<td>.42</td>
</tr>
<tr>
<td>CES-D11$^a$</td>
<td><strong>.51</strong></td>
<td>.06</td>
<td>-.04</td>
<td>.27</td>
</tr>
<tr>
<td>CES-D12$b$</td>
<td>.28</td>
<td><strong>.76</strong></td>
<td>.08</td>
<td>.67</td>
</tr>
<tr>
<td>CES-D13$a$</td>
<td><strong>.55</strong></td>
<td>.16</td>
<td>.20</td>
<td>.37</td>
</tr>
<tr>
<td>CES-D14</td>
<td>.56</td>
<td>.42</td>
<td>.30</td>
<td>.58</td>
</tr>
<tr>
<td>CES-D15$c$</td>
<td>.10</td>
<td>.04</td>
<td><strong>.72</strong></td>
<td>.52</td>
</tr>
<tr>
<td>CES-D16$b$</td>
<td>.21</td>
<td><strong>.78</strong></td>
<td>.08</td>
<td>.66</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>Item</th>
<th>I. Somatic</th>
<th>II. Absence of Positive Affect</th>
<th>III. Interpersonal Problems</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D17</td>
<td>.35</td>
<td>.37</td>
<td>.24</td>
<td>.32</td>
</tr>
<tr>
<td>CES-D18</td>
<td>.49</td>
<td>.53</td>
<td>.28</td>
<td>.60</td>
</tr>
<tr>
<td>CES-D19&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.16</td>
<td>.27</td>
<td>&lt;b&gt;.76&lt;/b&gt;</td>
<td>.68</td>
</tr>
<tr>
<td>CES-D20</td>
<td>.47</td>
<td>.36</td>
<td>.33</td>
<td>.46</td>
</tr>
<tr>
<td>CES-D21</td>
<td>.49</td>
<td>.07</td>
<td>.35</td>
<td>.37</td>
</tr>
<tr>
<td>CES-D22</td>
<td>.51</td>
<td>.28</td>
<td>.40</td>
<td>.50</td>
</tr>
<tr>
<td>CES-D23</td>
<td>.33</td>
<td>.13</td>
<td>.68</td>
<td>.58</td>
</tr>
<tr>
<td>CES-D24&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.14</td>
<td>.15</td>
<td>&lt;b&gt;.74&lt;/b&gt;</td>
<td>.59</td>
</tr>
<tr>
<td>CES-D25</td>
<td>.38</td>
<td>.18</td>
<td>.52</td>
<td>.45</td>
</tr>
<tr>
<td>CES-D26</td>
<td>.54</td>
<td>.24</td>
<td>.37</td>
<td>.49</td>
</tr>
</tbody>
</table>

<sup>Note.</sup> Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2$ = Communality estimates after extraction.

<sup>a</sup>Items constituting the Somatic factor.  <sup>b</sup>Items constituting the Absence of Positive Affect factor.

<sup>c</sup>Items constituting the Interpersonal Problems factor.
Table 6

Component Loadings With Varimax Rotation of the 26-Item Chinese Depression Scale (CDS) for the Final Chinese Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Interpersonal Problems</th>
<th>II. Somatic</th>
<th>III. Absence of Positive Affect</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS1$^a$</td>
<td>.17</td>
<td>.64</td>
<td>-.04</td>
<td>.45</td>
</tr>
<tr>
<td>CDS2$^a$</td>
<td>.25</td>
<td>.45</td>
<td>-.03</td>
<td>.27</td>
</tr>
<tr>
<td>CDS3</td>
<td>.36</td>
<td>.63</td>
<td>.15</td>
<td>.55</td>
</tr>
<tr>
<td>CDS4$^b$</td>
<td>-.02</td>
<td>.01</td>
<td>.72</td>
<td>.52</td>
</tr>
<tr>
<td>CDS5$^a$</td>
<td>.08</td>
<td>.66</td>
<td>.03</td>
<td>.45</td>
</tr>
<tr>
<td>CDS6$^a$</td>
<td>.23</td>
<td>.67</td>
<td>.23</td>
<td>.56</td>
</tr>
<tr>
<td>CDS7$^a$</td>
<td>.18</td>
<td>.73</td>
<td>.21</td>
<td>.61</td>
</tr>
<tr>
<td>CDS8$^b$</td>
<td>-.02</td>
<td>.08</td>
<td>.79</td>
<td>.64</td>
</tr>
<tr>
<td>CDS9</td>
<td>.32</td>
<td>.57</td>
<td>.23</td>
<td>.48</td>
</tr>
<tr>
<td>CDS10</td>
<td>.33</td>
<td>.61</td>
<td>.16</td>
<td>.51</td>
</tr>
<tr>
<td>CDS11$^a$</td>
<td>.25</td>
<td>.45</td>
<td>-.01</td>
<td>.26</td>
</tr>
<tr>
<td>CDS12$^b$</td>
<td>.26</td>
<td>.21</td>
<td>.63</td>
<td>.51</td>
</tr>
<tr>
<td>CDS13$^c$</td>
<td>.44</td>
<td>.22</td>
<td>.06</td>
<td>.25</td>
</tr>
<tr>
<td>CDS14</td>
<td>.55</td>
<td>.45</td>
<td>.28</td>
<td>.58</td>
</tr>
<tr>
<td>CDS15$^c$</td>
<td>.68</td>
<td>.18</td>
<td>.20</td>
<td>.54</td>
</tr>
<tr>
<td>CDS16$^b$</td>
<td>.23</td>
<td>.05</td>
<td>.77</td>
<td>.66</td>
</tr>
<tr>
<td>CDS17$^a$</td>
<td>.28</td>
<td>.35</td>
<td>.03</td>
<td>.21</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 6 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Interpersonal Problems</th>
<th>II. Somatic</th>
<th>III. Absence of Positive Affect</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS18</td>
<td>.58</td>
<td>.45</td>
<td>.22</td>
<td>.58</td>
</tr>
<tr>
<td>CDS19&lt;sup&gt;c&lt;/sup&gt;</td>
<td><strong>.71</strong></td>
<td>.25</td>
<td>.20</td>
<td>.61</td>
</tr>
<tr>
<td>CDS20</td>
<td>.38</td>
<td>.43</td>
<td>.40</td>
<td>.48</td>
</tr>
<tr>
<td>CDS21</td>
<td>.50</td>
<td>.34</td>
<td>-.09</td>
<td>.37</td>
</tr>
<tr>
<td>CDS22</td>
<td>.47</td>
<td>.56</td>
<td>.27</td>
<td>.60</td>
</tr>
<tr>
<td>CDS23&lt;sup&gt;c&lt;/sup&gt;</td>
<td><strong>.76</strong></td>
<td>.21</td>
<td>-.02</td>
<td>.61</td>
</tr>
<tr>
<td>CDS24&lt;sup&gt;c&lt;/sup&gt;</td>
<td><strong>.73</strong></td>
<td>.29</td>
<td>.18</td>
<td>.65</td>
</tr>
<tr>
<td>CDS25&lt;sup&gt;c&lt;/sup&gt;</td>
<td><strong>.71</strong></td>
<td>.16</td>
<td>.09</td>
<td>.53</td>
</tr>
<tr>
<td>CDS26&lt;sup&gt;c&lt;/sup&gt;</td>
<td><strong>.51</strong></td>
<td>.28</td>
<td>.02</td>
<td>.34</td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2$ = Communality estimates after extraction.

<sup>a</sup>Items constituting the Somatic factor.  <sup>b</sup>Items constituting the Absence of Positive Affect factor.

<sup>c</sup>Items constituting the Interpersonal Problems factor.
Table 7

Component Loadings With Varimax Rotation of the 20-Item Center for Epidemiological Studies Depression Scale (CES-D) for the Final American Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Absence of Positive Affect</th>
<th>II. Interpersonal Problems</th>
<th>III. Somatic</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D1</td>
<td>0.15</td>
<td>0.55</td>
<td>0.34</td>
<td>0.44</td>
</tr>
<tr>
<td>CES-D2(^a)</td>
<td>0.15</td>
<td>0.20</td>
<td>0.49</td>
<td>0.31</td>
</tr>
<tr>
<td>CES-D3</td>
<td>0.51</td>
<td>0.35</td>
<td>0.52</td>
<td>0.65</td>
</tr>
<tr>
<td>CES-D4(^b)</td>
<td>0.73</td>
<td>0.20</td>
<td>-0.05</td>
<td>0.57</td>
</tr>
<tr>
<td>CES-D5(^a)</td>
<td>0.10</td>
<td>0.20</td>
<td>0.50</td>
<td>0.31</td>
</tr>
<tr>
<td>CES-D6</td>
<td>0.57</td>
<td>0.39</td>
<td>0.52</td>
<td>0.75</td>
</tr>
<tr>
<td>CES-D7(^a)</td>
<td>-0.10</td>
<td>0.07</td>
<td>0.60</td>
<td>0.38</td>
</tr>
<tr>
<td>CES-D8(^b)</td>
<td>0.73</td>
<td>0.15</td>
<td>-0.08</td>
<td>0.56</td>
</tr>
<tr>
<td>CES-D9</td>
<td>0.48</td>
<td>0.51</td>
<td>0.22</td>
<td>0.54</td>
</tr>
<tr>
<td>CES-D10</td>
<td>0.34</td>
<td>0.46</td>
<td>0.33</td>
<td>0.44</td>
</tr>
<tr>
<td>CES-D11(^a)</td>
<td>0.06</td>
<td>-0.01</td>
<td>0.55</td>
<td>0.31</td>
</tr>
<tr>
<td>CES-D12(^b)</td>
<td>0.78</td>
<td>0.09</td>
<td>0.29</td>
<td>0.70</td>
</tr>
<tr>
<td>CES-D13(^a)</td>
<td>0.16</td>
<td>0.24</td>
<td>0.55</td>
<td>0.39</td>
</tr>
<tr>
<td>CES-D14</td>
<td>0.42</td>
<td>0.37</td>
<td>0.52</td>
<td>0.58</td>
</tr>
<tr>
<td>CES-D15(^c)</td>
<td>-0.05</td>
<td>0.81</td>
<td>0.06</td>
<td>0.66</td>
</tr>
<tr>
<td>CES-D16(^b)</td>
<td>0.80</td>
<td>0.05</td>
<td>0.24</td>
<td>0.70</td>
</tr>
<tr>
<td>CES-D17(^c)</td>
<td>0.28</td>
<td>0.50</td>
<td>0.24</td>
<td>0.39</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 7 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Absence of Positive Affect</th>
<th>II. Interpersonal Problems</th>
<th>III. Somatic</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D18</td>
<td>.49</td>
<td>.43</td>
<td>.43</td>
<td>.61</td>
</tr>
<tr>
<td>CES-D19$^c$</td>
<td>.22</td>
<td><strong>.77</strong></td>
<td>.14</td>
<td>.66</td>
</tr>
<tr>
<td>CES-D20</td>
<td>.34</td>
<td>.38</td>
<td>.47</td>
<td>.48</td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2$ = Communality estimates after extraction.

$^a$Items constituting the Somatic factor. $^b$Items constituting the Absence of Positive Affect factor.

$^c$Items constituting the Interpersonal Problems factor.
Table 8

Component Loadings With Varimax Rotation of the 20-item Chinese Depression Scale (CDS) for the Final Chinese Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Interpersonal Problems</th>
<th>II. Somatic</th>
<th>III. Absence of Positive Affect</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D1</td>
<td>.34</td>
<td>.56</td>
<td>-0.06</td>
<td>.43</td>
</tr>
<tr>
<td>CES-D2a</td>
<td>.05</td>
<td>.69</td>
<td>0.04</td>
<td>.49</td>
</tr>
<tr>
<td>CES-D3</td>
<td>.41</td>
<td>.62</td>
<td>0.15</td>
<td>.58</td>
</tr>
<tr>
<td>CES-D4b</td>
<td>.06</td>
<td>-0.04</td>
<td>0.70</td>
<td>.50</td>
</tr>
<tr>
<td>CES-D5a</td>
<td>.29</td>
<td>.51</td>
<td>0.02</td>
<td>.34</td>
</tr>
<tr>
<td>CES-D6</td>
<td>.53</td>
<td>.42</td>
<td>0.18</td>
<td>.49</td>
</tr>
<tr>
<td>CES-D7</td>
<td>.51</td>
<td>.47</td>
<td>0.15</td>
<td>.51</td>
</tr>
<tr>
<td>CES-D8b</td>
<td>-0.01</td>
<td>.10</td>
<td>0.82</td>
<td>.68</td>
</tr>
<tr>
<td>CES-D9c</td>
<td>.61</td>
<td>.31</td>
<td>0.17</td>
<td>.49</td>
</tr>
<tr>
<td>CES-D10</td>
<td>.53</td>
<td>.44</td>
<td>0.12</td>
<td>.48</td>
</tr>
<tr>
<td>CES-D11a</td>
<td>.14</td>
<td>.60</td>
<td>0.04</td>
<td>.38</td>
</tr>
<tr>
<td>CES-D12b</td>
<td>.27</td>
<td>.21</td>
<td>0.64</td>
<td>.53</td>
</tr>
<tr>
<td>CES-D13c</td>
<td>.71</td>
<td>-0.05</td>
<td>-0.05</td>
<td>.51</td>
</tr>
<tr>
<td>CES-D14c</td>
<td>.70</td>
<td>.31</td>
<td>0.21</td>
<td>.63</td>
</tr>
<tr>
<td>CES-D15c</td>
<td>.70</td>
<td>.14</td>
<td>0.14</td>
<td>.52</td>
</tr>
<tr>
<td>CES-D16b</td>
<td>.26</td>
<td>.02</td>
<td>0.77</td>
<td>.66</td>
</tr>
<tr>
<td>CES-D17a</td>
<td>.06</td>
<td>.62</td>
<td>0.10</td>
<td>.39</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 8 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>I. Interpersonal Problems</th>
<th>II. Somatic</th>
<th>III. Absence of Positive Affect</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES-D18</td>
<td>.55</td>
<td>.46</td>
<td>.21</td>
<td>.56</td>
</tr>
<tr>
<td>CES-D19(^c)</td>
<td><strong>.68</strong></td>
<td>.23</td>
<td>.17</td>
<td>.55</td>
</tr>
<tr>
<td>CES-D20</td>
<td>.50</td>
<td>.31</td>
<td>.37</td>
<td>.48</td>
</tr>
</tbody>
</table>

*Note. Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2$ = Communality estimates after extraction.*

\(^a\)Items constituting the Somatic factor. ^b\)Items constituting the Absence of Positive Affect factor.

\(^c\)Items constituting the Interpersonal Problems factor.
Table 9

*Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Depression and Somatic Symptoms Scale (DSSS) for the Final Samples*

| Item      | American | Chinese |  |  |  |  |
|-----------|----------|---------|  |  |  |  |
|           | Factor 1 | Factor 2 | $h^2$ | Factor 1 | Factor 2 | $h^2$ |
| Somatic subscale |          |          |       |          |          |      |
| DSSS1     | .08      | .35      | .16   | .14      | .35      | .20   |
| DSSS3     | .21      | .52      | .43   | .28      | .45      | .43   |
| DSSS5     | .03      | .65      | .44   | .03      | .61      | .39   |
| DSSS7     | -.18     | .73      | .42   | -.15     | .77      | .47   |
| DSSS9     | .22      | .36      | .27   | .24      | .35      | .29   |
| DSSS11    | .07      | .59      | .40   | .12      | .45      | .28   |
| DSSS13    | -.15     | .75      | .46   | -.11     | .73      | .44   |
| DSSS15    | .23      | .46      | .39   | .37      | .29      | .36   |
| DSSS17    | -.04     | .66      | .41   | -.09     | .68      | .40   |
| DSSS19    | .29      | .42      | .40   | .30      | .24      | .25   |
| Depression subscale |      |          |       |          |          |      |
| DSSS2     | .71      | .00      | .51   | .61      | -.07     | .32   |
| DSSS4     | .33      | .17      | .20   | .22      | .26      | .19   |
| DSSS6     | .58      | .10      | .42   | .47      | .09      | .28   |
| DSSS8     | .90      | -.13     | .69   | .79      | -.13     | .51   |

*(table continues)*
Table 9 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>American</th>
<th></th>
<th></th>
<th>Chinese</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 2</td>
<td>$h^2$</td>
<td>Factor 1</td>
<td>Factor 2</td>
<td>$h^2$</td>
</tr>
<tr>
<td>DSSS10</td>
<td>.85</td>
<td>-.14</td>
<td>.60</td>
<td>.64</td>
<td>-.03</td>
<td>.38</td>
</tr>
<tr>
<td>DSSS12</td>
<td>.67</td>
<td>-.04</td>
<td>.42</td>
<td>.64</td>
<td>-.07</td>
<td>.36</td>
</tr>
<tr>
<td>DSSS14</td>
<td>.34</td>
<td>.14</td>
<td>.19</td>
<td>.43</td>
<td>.01</td>
<td>.20</td>
</tr>
<tr>
<td>DSSS16</td>
<td>.59</td>
<td>.10</td>
<td>.43</td>
<td>.50</td>
<td>.18</td>
<td>.40</td>
</tr>
<tr>
<td>DSSS18</td>
<td>.61</td>
<td>-.07</td>
<td>.33</td>
<td>.60</td>
<td>-.04</td>
<td>.33</td>
</tr>
<tr>
<td>DSSS20</td>
<td>.59</td>
<td>.01</td>
<td>.35</td>
<td>.27</td>
<td>.16</td>
<td>.15</td>
</tr>
<tr>
<td>DSSS21</td>
<td>.62</td>
<td>.11</td>
<td>.48</td>
<td>.46</td>
<td>.20</td>
<td>.37</td>
</tr>
<tr>
<td>DSSS22</td>
<td>.54</td>
<td>.10</td>
<td>.37</td>
<td>.51</td>
<td>.03</td>
<td>.28</td>
</tr>
</tbody>
</table>

Note. Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2 =$ Communality estimates after extraction.
Table 10

Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Emotional Approach Coping Scales (EAC) for the Final American Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>Factor 9</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC1</td>
<td>.10</td>
<td>-.05</td>
<td><strong>.80</strong></td>
<td>-.12</td>
<td>.05</td>
<td>.03</td>
<td>-.06</td>
<td>-.06</td>
<td>-.01</td>
<td>.57</td>
</tr>
<tr>
<td>EAC2</td>
<td>.01</td>
<td>.02</td>
<td><strong>.86</strong></td>
<td>-.09</td>
<td>.12</td>
<td>-.12</td>
<td>.00</td>
<td>-.02</td>
<td>.01</td>
<td>.64</td>
</tr>
<tr>
<td>EAC3</td>
<td>.24</td>
<td>.23</td>
<td>.21</td>
<td>.04</td>
<td>-.12</td>
<td>.04</td>
<td>-.01</td>
<td>.08</td>
<td>-.04</td>
<td>.47</td>
</tr>
<tr>
<td>EAC4</td>
<td>-.08</td>
<td>.08</td>
<td><strong>.56</strong></td>
<td>.13</td>
<td>-.14</td>
<td>.12</td>
<td>-.00</td>
<td>.10</td>
<td>-.04</td>
<td>.57</td>
</tr>
<tr>
<td>EAC5</td>
<td>.12</td>
<td>.04</td>
<td><strong>.76</strong></td>
<td>-.03</td>
<td>-.06</td>
<td>.02</td>
<td>-.01</td>
<td>-.01</td>
<td>.02</td>
<td>.72</td>
</tr>
<tr>
<td>EAC6</td>
<td>-.04</td>
<td>-.08</td>
<td><strong>.89</strong></td>
<td>.12</td>
<td>.01</td>
<td>-.07</td>
<td>.06</td>
<td>-.03</td>
<td>-.04</td>
<td>.77</td>
</tr>
<tr>
<td>EAC7</td>
<td>.07</td>
<td>-.13</td>
<td><strong>.78</strong></td>
<td>.17</td>
<td>-.02</td>
<td>-.05</td>
<td>.04</td>
<td>-.07</td>
<td>.03</td>
<td>.76</td>
</tr>
<tr>
<td>EAC8</td>
<td>.02</td>
<td>.09</td>
<td><strong>.69</strong></td>
<td>.02</td>
<td>.01</td>
<td>.00</td>
<td>-.01</td>
<td>.10</td>
<td>.01</td>
<td>.67</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC9</td>
<td>.07</td>
<td>.09</td>
<td>.39</td>
<td>.43</td>
<td>.09</td>
<td>.03</td>
<td>-.04</td>
<td>-.08</td>
<td>.03</td>
<td>.68</td>
</tr>
<tr>
<td>EAC10</td>
<td>.02</td>
<td>.10</td>
<td>-.03</td>
<td><strong>.83</strong></td>
<td>.02</td>
<td>-.02</td>
<td>-.02</td>
<td>-.08</td>
<td>.03</td>
<td>.73</td>
</tr>
<tr>
<td>EAC11</td>
<td>.02</td>
<td>-.00</td>
<td>.24</td>
<td><strong>.66</strong></td>
<td>-.01</td>
<td>-.02</td>
<td>.01</td>
<td>.01</td>
<td>-.02</td>
<td>.71</td>
</tr>
<tr>
<td>EAC12</td>
<td>.01</td>
<td>-.03</td>
<td>.02</td>
<td><strong>.83</strong></td>
<td>-.03</td>
<td>.07</td>
<td>.02</td>
<td>.01</td>
<td>.05</td>
<td>.74</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 10 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EAC13</td>
<td>.01</td>
</tr>
<tr>
<td>EAC14</td>
<td>.10</td>
</tr>
<tr>
<td>EAC15</td>
<td>-.04</td>
</tr>
<tr>
<td>EAC16</td>
<td>.08</td>
</tr>
<tr>
<td>COPE</td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td></td>
</tr>
<tr>
<td>COPE4</td>
<td>.57</td>
</tr>
<tr>
<td>COPE20</td>
<td>.70</td>
</tr>
<tr>
<td>COPE37</td>
<td>.73</td>
</tr>
<tr>
<td>COPE46</td>
<td>.53</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td>COPE15</td>
<td>.84</td>
</tr>
<tr>
<td>COPE26</td>
<td>.83</td>
</tr>
<tr>
<td>COPE32</td>
<td>.63</td>
</tr>
<tr>
<td>COPE44</td>
<td>.70</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 10 (*continued*).

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instrumental Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE3</td>
<td>.00</td>
<td>.80</td>
<td>.10</td>
<td>-.13</td>
<td>.04</td>
<td>.04</td>
<td>-.04</td>
<td>-.08</td>
<td>.00</td>
<td>.56</td>
</tr>
<tr>
<td>COPE12</td>
<td>.20</td>
<td>.60</td>
<td>-.05</td>
<td>-.00</td>
<td>-.03</td>
<td>-.08</td>
<td>-.03</td>
<td>.05</td>
<td>.06</td>
<td>.52</td>
</tr>
<tr>
<td>COPE24</td>
<td>.37</td>
<td>.48</td>
<td>-.06</td>
<td>-.02</td>
<td>.06</td>
<td>-.01</td>
<td>-.04</td>
<td>-.05</td>
<td>.07</td>
<td>.46</td>
</tr>
<tr>
<td>COPE36</td>
<td>.15</td>
<td>.63</td>
<td>-.15</td>
<td>.04</td>
<td>.01</td>
<td>-.01</td>
<td>.05</td>
<td>.13</td>
<td>.03</td>
<td>.54</td>
</tr>
<tr>
<td><strong>Emotional Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE9</td>
<td>-.13</td>
<td>.84</td>
<td>.00</td>
<td>.10</td>
<td>-.07</td>
<td>-.01</td>
<td>.01</td>
<td>-.03</td>
<td>-.04</td>
<td>.70</td>
</tr>
<tr>
<td>COPE18</td>
<td>-.03</td>
<td>.79</td>
<td>.01</td>
<td>.05</td>
<td>-.07</td>
<td>-.03</td>
<td>.02</td>
<td>.03</td>
<td>-.01</td>
<td>.68</td>
</tr>
<tr>
<td>COPE27</td>
<td>.06</td>
<td>.56</td>
<td>-.03</td>
<td>.25</td>
<td>.05</td>
<td>-.02</td>
<td>.06</td>
<td>-.11</td>
<td>.02</td>
<td>.54</td>
</tr>
<tr>
<td>COPE41</td>
<td>-.12</td>
<td>.74</td>
<td>-.05</td>
<td>.28</td>
<td>-.03</td>
<td>-.01</td>
<td>.02</td>
<td>.02</td>
<td>-.04</td>
<td>.75</td>
</tr>
<tr>
<td><strong>Denial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE5</td>
<td>.12</td>
<td>.04</td>
<td>.09</td>
<td>-.14</td>
<td>.65</td>
<td>.03</td>
<td>.02</td>
<td>.03</td>
<td>.04</td>
<td>.43</td>
</tr>
<tr>
<td>COPE22</td>
<td>.11</td>
<td>.05</td>
<td>.05</td>
<td>-.03</td>
<td>.78</td>
<td>.02</td>
<td>-.05</td>
<td>-.11</td>
<td>-.06</td>
<td>.57</td>
</tr>
<tr>
<td>COPE33</td>
<td>.14</td>
<td>-.04</td>
<td>-.08</td>
<td>.03</td>
<td>.82</td>
<td>.01</td>
<td>-.05</td>
<td>-.00</td>
<td>-.06</td>
<td>.61</td>
</tr>
<tr>
<td>COPE45</td>
<td>.16</td>
<td>-.11</td>
<td>-.09</td>
<td>-.00</td>
<td>.69</td>
<td>.01</td>
<td>-.03</td>
<td>.12</td>
<td>-.01</td>
<td>.43</td>
</tr>
</tbody>
</table>

*Note: (table continues)*
Table 10 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>1</td>
</tr>
<tr>
<td>Behavioral</td>
<td></td>
</tr>
<tr>
<td>Disengagement</td>
<td></td>
</tr>
<tr>
<td>COPE8</td>
<td>-.15</td>
</tr>
<tr>
<td>COPE19</td>
<td>-.11</td>
</tr>
<tr>
<td>COPE30</td>
<td>-.16</td>
</tr>
<tr>
<td>COPE40</td>
<td>-.13</td>
</tr>
<tr>
<td>Religious Coping</td>
<td></td>
</tr>
<tr>
<td>COPE6</td>
<td>.03</td>
</tr>
<tr>
<td>COPE14</td>
<td>-.01</td>
</tr>
<tr>
<td>COPE38</td>
<td>.02</td>
</tr>
<tr>
<td>COPE48</td>
<td>-.05</td>
</tr>
<tr>
<td>Substance Use</td>
<td></td>
</tr>
<tr>
<td>COPE10</td>
<td>.06</td>
</tr>
<tr>
<td>COPE21</td>
<td>.04</td>
</tr>
<tr>
<td>COPE28</td>
<td>.02</td>
</tr>
<tr>
<td>COPE42</td>
<td>-.01</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
</tr>
<tr>
<td>COPE11</td>
<td>-.04</td>
</tr>
</tbody>
</table>

(table continues)
Table 10 *(continued).*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>Factor 9</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE17</td>
<td>.02</td>
<td>-.06</td>
<td>.02</td>
<td>-.04</td>
<td>.03</td>
<td>-.04</td>
<td>-.05</td>
<td>.68</td>
<td>.00</td>
<td>.43</td>
</tr>
<tr>
<td>COPE35</td>
<td>.14</td>
<td>-.14</td>
<td>-.10</td>
<td>.14</td>
<td>-.11</td>
<td>-.01</td>
<td>-.03</td>
<td>.68</td>
<td>.01</td>
<td>.58</td>
</tr>
<tr>
<td>COPE43</td>
<td>-.03</td>
<td>-.08</td>
<td>-.05</td>
<td>-.00</td>
<td>.14</td>
<td>-.05</td>
<td>.02</td>
<td>.76</td>
<td>.02</td>
<td>.48</td>
</tr>
<tr>
<td>Humor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE7</td>
<td>-.04</td>
<td>.09</td>
<td>.01</td>
<td>-.01</td>
<td>.02</td>
<td>.06</td>
<td>-.09</td>
<td>-.01</td>
<td>.74</td>
<td>.55</td>
</tr>
<tr>
<td>COPE16</td>
<td>-.02</td>
<td>.01</td>
<td>.03</td>
<td>-.03</td>
<td>-.02</td>
<td>-.05</td>
<td>-.00</td>
<td>.02</td>
<td>.88</td>
<td>.78</td>
</tr>
<tr>
<td>COPE29</td>
<td>-.02</td>
<td>-.03</td>
<td>-.03</td>
<td>.03</td>
<td>-.04</td>
<td>.01</td>
<td>.04</td>
<td>.01</td>
<td>.92</td>
<td>.84</td>
</tr>
<tr>
<td>COPE39</td>
<td>.07</td>
<td>-.06</td>
<td>-.01</td>
<td>.02</td>
<td>.05</td>
<td>-.02</td>
<td>.01</td>
<td>-.06</td>
<td>.89</td>
<td>.79</td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinterpretation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE1</td>
<td>.10</td>
<td>.01</td>
<td>.21</td>
<td>-.12</td>
<td>-.18</td>
<td>.12</td>
<td>.01</td>
<td>.36</td>
<td>-.01</td>
<td>.37</td>
</tr>
<tr>
<td>COPE23</td>
<td>.39</td>
<td>.03</td>
<td>.02</td>
<td>.07</td>
<td>.04</td>
<td>.03</td>
<td>.01</td>
<td>.22</td>
<td>.11</td>
<td>.44</td>
</tr>
<tr>
<td>COPE31</td>
<td>.34</td>
<td>-.05</td>
<td>-.02</td>
<td>.12</td>
<td>-.06</td>
<td>.07</td>
<td>.03</td>
<td>.28</td>
<td>.15</td>
<td>.46</td>
</tr>
<tr>
<td>COPE47</td>
<td>.25</td>
<td>.09</td>
<td>.04</td>
<td>-.05</td>
<td>-.14</td>
<td>.02</td>
<td>-.03</td>
<td>.44</td>
<td>-.02</td>
<td>.51</td>
</tr>
<tr>
<td>Mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disengagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE2</td>
<td>.12</td>
<td>.21</td>
<td>.03</td>
<td>-.31</td>
<td>.12</td>
<td>.08</td>
<td>.00</td>
<td>.34</td>
<td>-.07</td>
<td>.20</td>
</tr>
<tr>
<td>COPE13</td>
<td>-.15</td>
<td>.11</td>
<td>.18</td>
<td>-.22</td>
<td>.13</td>
<td>.06</td>
<td>-.02</td>
<td>.27</td>
<td>.12</td>
<td>.13</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 10 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>Factor 9</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE25</td>
<td>-.16</td>
<td>.05</td>
<td>.08</td>
<td>.12</td>
<td>-.02</td>
<td>.12</td>
<td>.07</td>
<td>.04</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>COPE34</td>
<td>-.23</td>
<td>.21</td>
<td>.02</td>
<td>-.03</td>
<td>.18</td>
<td>.06</td>
<td>.05</td>
<td>.33</td>
<td>.04</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note. Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2$ = Communality estimates after extraction.
Table 11

Factor Loadings for Exploratory Factor Analysis With Promax Rotation of the Emotional Approach Coping Scales (EAC) for the Final Chinese Sample

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC1</td>
<td>.05</td>
<td>.06</td>
<td>.68</td>
<td>-.05</td>
<td>-.04</td>
<td>-.12</td>
<td>.00</td>
<td>.08</td>
<td>.50</td>
</tr>
<tr>
<td>EAC2</td>
<td>.12</td>
<td>-.06</td>
<td>.66</td>
<td>-.07</td>
<td>.10</td>
<td>-.03</td>
<td>.02</td>
<td>.04</td>
<td>.47</td>
</tr>
<tr>
<td>EAC3</td>
<td>.10</td>
<td>.02</td>
<td>.49</td>
<td>.20</td>
<td>-.07</td>
<td>.25</td>
<td>-.04</td>
<td>-.19</td>
<td>.59</td>
</tr>
<tr>
<td>EAC4</td>
<td>.18</td>
<td>.22</td>
<td>.32</td>
<td>-.04</td>
<td>-.12</td>
<td>.20</td>
<td>-.08</td>
<td>.01</td>
<td>.42</td>
</tr>
<tr>
<td>EAC5</td>
<td>.07</td>
<td>.01</td>
<td>.80</td>
<td>-.04</td>
<td>-.06</td>
<td>-.01</td>
<td>-.09</td>
<td>.05</td>
<td>.66</td>
</tr>
<tr>
<td>EAC6</td>
<td>.01</td>
<td>.00</td>
<td>.84</td>
<td>-.00</td>
<td>-.02</td>
<td>.12</td>
<td>.03</td>
<td>-.10</td>
<td>.77</td>
</tr>
<tr>
<td>EAC7</td>
<td>.05</td>
<td>.13</td>
<td>.73</td>
<td>-.14</td>
<td>.02</td>
<td>-.05</td>
<td>.02</td>
<td>.06</td>
<td>.60</td>
</tr>
<tr>
<td>EAC8</td>
<td>-.00</td>
<td>.08</td>
<td>.71</td>
<td>-.01</td>
<td>-.06</td>
<td>-.06</td>
<td>.10</td>
<td>-.02</td>
<td>.60</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAC9</td>
<td>-.02</td>
<td>.49</td>
<td>.29</td>
<td>.05</td>
<td>.06</td>
<td>-.00</td>
<td>.00</td>
<td>-.00</td>
<td>.51</td>
</tr>
<tr>
<td>EAC10</td>
<td>-.08</td>
<td>.75</td>
<td>.04</td>
<td>.08</td>
<td>.07</td>
<td>-.06</td>
<td>-.01</td>
<td>.05</td>
<td>.59</td>
</tr>
<tr>
<td>EAC11</td>
<td>.25</td>
<td>.78</td>
<td>-.08</td>
<td>-.13</td>
<td>.06</td>
<td>-.02</td>
<td>-.06</td>
<td>-.01</td>
<td>.61</td>
</tr>
<tr>
<td>EAC12</td>
<td>.13</td>
<td>.72</td>
<td>-.03</td>
<td>-.02</td>
<td>.04</td>
<td>-.12</td>
<td>.07</td>
<td>.02</td>
<td>.60</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 11 (*continued*).

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAC13</td>
<td>.04</td>
<td>.74</td>
<td>.00</td>
<td>.01</td>
<td>.03</td>
<td>.06</td>
<td>-.02</td>
<td>-.03</td>
<td>.59</td>
</tr>
<tr>
<td>EAC14</td>
<td>.03</td>
<td>.58</td>
<td>.20</td>
<td>.03</td>
<td>.03</td>
<td>-.06</td>
<td>.04</td>
<td>-.05</td>
<td>.56</td>
</tr>
<tr>
<td>EAC15</td>
<td>-.10</td>
<td>.66</td>
<td>.11</td>
<td>.09</td>
<td>-.01</td>
<td>.02</td>
<td>.05</td>
<td>-.01</td>
<td>.57</td>
</tr>
<tr>
<td>EAC16</td>
<td>-.15</td>
<td>.61</td>
<td>-.02</td>
<td>.13</td>
<td>.07</td>
<td>-.11</td>
<td>.07</td>
<td>.04</td>
<td>.41</td>
</tr>
</tbody>
</table>

COPE

Active Coping

| COPE4 | .55 | -.18 | .08 | .08 | -.02 | -.09 | .10 | .07 | .35   |
| COPE20| .50 | -.13 | .32 | .12 | .12 | -.16 | -.01| .00 | .53   |
| COPE37| .59 | .04 | .06 | .14 | .18 | -.21 | .01 | .00 | .51   |
| COPE46| .77 | -.03 | -.08 | .03 | .03 | -.08 | -.04| .03 | .52   |

Planning

| COPE15| .43 | -.04 | .13 | .04 | .12 | -.12 | .07 | .02 | .28   |
| COPE26| .48 | -.05 | .17 | .17 | -.04 | .13 | -.10| .06 | .48   |
| COPE32| .74 | -.03 | -.01 | .08 | -.07 | .06 | -.06| .02 | .60   |
| COPE44| .71 | -.05 | .09 | .08 | .04 | .00 | -.07| -.00| .57   |

Positive

Reinterpretation

| COPE1  | .58 | .00 | .17 | -.10 | -.01 | -.04 | -.06 | -.08 | .42   |

*(table continues)*
Table 11 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>h²</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE23</td>
<td>.59</td>
<td>.15</td>
<td>-.08</td>
<td>-.13</td>
<td>-.09</td>
<td>-.13</td>
<td>.23</td>
<td>.05</td>
<td>.44</td>
</tr>
<tr>
<td>COPE31</td>
<td>.62</td>
<td>.11</td>
<td>-.18</td>
<td>-.04</td>
<td>-.19</td>
<td>.03</td>
<td>.28</td>
<td>.04</td>
<td>.53</td>
</tr>
<tr>
<td>COPE47</td>
<td>.78</td>
<td>-.03</td>
<td>-.08</td>
<td>.03</td>
<td>.03</td>
<td>-.08</td>
<td>-.04</td>
<td>.03</td>
<td>.50</td>
</tr>
</tbody>
</table>

Acceptance

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>h²</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE11</td>
<td>.33</td>
<td>.02</td>
<td>-.05</td>
<td>.01</td>
<td>-.08</td>
<td>.37</td>
<td>-.01</td>
<td>-.03</td>
<td>.26</td>
</tr>
<tr>
<td>COPE17</td>
<td>.41</td>
<td>-.09</td>
<td>-.11</td>
<td>.05</td>
<td>-.04</td>
<td>.39</td>
<td>.01</td>
<td>.00</td>
<td>.28</td>
</tr>
<tr>
<td>COPE35</td>
<td>.58</td>
<td>.17</td>
<td>-.04</td>
<td>-.14</td>
<td>-.04</td>
<td>.22</td>
<td>-.04</td>
<td>-.02</td>
<td>.42</td>
</tr>
<tr>
<td>COPE43</td>
<td>.43</td>
<td>.08</td>
<td>.01</td>
<td>-.24</td>
<td>-.10</td>
<td>.31</td>
<td>.01</td>
<td>.05</td>
<td>.32</td>
</tr>
</tbody>
</table>

Instrumental Support

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>h²</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE3</td>
<td>-.04</td>
<td>-.05</td>
<td>.01</td>
<td>.73</td>
<td>.01</td>
<td>.01</td>
<td>-.03</td>
<td>.10</td>
<td>.50</td>
</tr>
<tr>
<td>COPE12</td>
<td>.10</td>
<td>.03</td>
<td>-.01</td>
<td>.69</td>
<td>.05</td>
<td>.09</td>
<td>.08</td>
<td>-.16</td>
<td>.61</td>
</tr>
<tr>
<td>COPE24</td>
<td>.26</td>
<td>-.10</td>
<td>.22</td>
<td>.54</td>
<td>.02</td>
<td>-.12</td>
<td>.06</td>
<td>.04</td>
<td>.65</td>
</tr>
<tr>
<td>Cope36</td>
<td>.26</td>
<td>.01</td>
<td>-.06</td>
<td>.64</td>
<td>.07</td>
<td>-.04</td>
<td>.08</td>
<td>-.02</td>
<td>.62</td>
</tr>
</tbody>
</table>

Emotional Support

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>h²</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE9</td>
<td>-.12</td>
<td>.18</td>
<td>-.08</td>
<td>.80</td>
<td>-.10</td>
<td>.04</td>
<td>.00</td>
<td>.02</td>
<td>.70</td>
</tr>
<tr>
<td>COPE18</td>
<td>.18</td>
<td>.02</td>
<td>-.12</td>
<td>.69</td>
<td>.01</td>
<td>.11</td>
<td>-.04</td>
<td>.05</td>
<td>.56</td>
</tr>
</tbody>
</table>

(table continues)
Table 11 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>( h^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPE27</td>
<td>-.12</td>
<td>.42</td>
<td>-.02</td>
<td>.41</td>
<td>-.01</td>
<td>.18</td>
<td>-.12</td>
<td>.06</td>
<td>.49</td>
</tr>
<tr>
<td>COPE41</td>
<td>-.09</td>
<td>.28</td>
<td>-.08</td>
<td>.70</td>
<td>-.14</td>
<td>-.04</td>
<td>.07</td>
<td>.01</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE10</td>
<td>.08</td>
<td>.06</td>
<td>-.08</td>
<td>-.02</td>
<td>.85</td>
<td>.07</td>
<td>-.06</td>
<td>-.09</td>
<td>.67</td>
</tr>
<tr>
<td>COPE21</td>
<td>.08</td>
<td>.03</td>
<td>.01</td>
<td>-.00</td>
<td>.90</td>
<td>.05</td>
<td>-.04</td>
<td>-.02</td>
<td>.79</td>
</tr>
<tr>
<td>COPE28</td>
<td>.01</td>
<td>.08</td>
<td>-.01</td>
<td>-.05</td>
<td>.89</td>
<td>.01</td>
<td>-.03</td>
<td>-.02</td>
<td>.77</td>
</tr>
<tr>
<td>COPE42</td>
<td>-.05</td>
<td>.03</td>
<td>-.01</td>
<td>-.01</td>
<td>.82</td>
<td>.01</td>
<td>.00</td>
<td>.02</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE5</td>
<td>-.04</td>
<td>.01</td>
<td>-.01</td>
<td>-.02</td>
<td>.15</td>
<td>.06</td>
<td>.22</td>
<td>.32</td>
<td>.28</td>
</tr>
<tr>
<td>COPE22</td>
<td>-.21</td>
<td>.08</td>
<td>.04</td>
<td>.01</td>
<td>.34</td>
<td>.07</td>
<td>.11</td>
<td>.20</td>
<td>.33</td>
</tr>
<tr>
<td>COPE33</td>
<td>.06</td>
<td>-.17</td>
<td>.09</td>
<td>-.09</td>
<td>.17</td>
<td>.37</td>
<td>.24</td>
<td>.04</td>
<td>.37</td>
</tr>
<tr>
<td>COPE45</td>
<td>-.05</td>
<td>-.20</td>
<td>.10</td>
<td>-.06</td>
<td>.20</td>
<td>.32</td>
<td>.28</td>
<td>.07</td>
<td>.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disengagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE8</td>
<td>-.25</td>
<td>-.03</td>
<td>-.04</td>
<td>.05</td>
<td>.12</td>
<td>.47</td>
<td>.09</td>
<td>.04</td>
<td>.35</td>
</tr>
<tr>
<td>COPE19</td>
<td>-.07</td>
<td>-.07</td>
<td>-.12</td>
<td>.08</td>
<td>.08</td>
<td>.63</td>
<td>-.08</td>
<td>.03</td>
<td>.39</td>
</tr>
<tr>
<td>COPE30</td>
<td>-.09</td>
<td>.07</td>
<td>-.03</td>
<td>.03</td>
<td>.11</td>
<td>.51</td>
<td>.02</td>
<td>.04</td>
<td>.33</td>
</tr>
<tr>
<td>COPE40</td>
<td>-.02</td>
<td>.12</td>
<td>-.09</td>
<td>.03</td>
<td>.05</td>
<td>.23</td>
<td>.29</td>
<td>-.00</td>
<td>.22</td>
</tr>
</tbody>
</table>

(table continues)
Table 11 (continued).

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>$h^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE7</td>
<td>-.00</td>
<td>.02</td>
<td>.08</td>
<td>.02</td>
<td>.01</td>
<td>.16</td>
<td>.42</td>
<td>.03</td>
<td>.31</td>
</tr>
<tr>
<td>COPE16</td>
<td>-.00</td>
<td>-.04</td>
<td>.05</td>
<td>.05</td>
<td>.06</td>
<td>.15</td>
<td>.66</td>
<td>-.10</td>
<td>.54</td>
</tr>
<tr>
<td>COPE29</td>
<td>.02</td>
<td>.12</td>
<td>-.12</td>
<td>-.02</td>
<td>.02</td>
<td>.09</td>
<td>.73</td>
<td>-.14</td>
<td>.58</td>
</tr>
<tr>
<td>COPE39</td>
<td>-.02</td>
<td>-.03</td>
<td>.08</td>
<td>.06</td>
<td>-.14</td>
<td>-.13</td>
<td>.89</td>
<td>.03</td>
<td>.72</td>
</tr>
<tr>
<td>Religious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE6</td>
<td>.18</td>
<td>.02</td>
<td>.02</td>
<td>-.04</td>
<td>-.13</td>
<td>.11</td>
<td>.02</td>
<td>.56</td>
<td>.39</td>
</tr>
<tr>
<td>COPE14</td>
<td>-.07</td>
<td>.05</td>
<td>.11</td>
<td>-.02</td>
<td>-.08</td>
<td>.11</td>
<td>-.10</td>
<td>.80</td>
<td>.68</td>
</tr>
<tr>
<td>COPE38</td>
<td>.08</td>
<td>.03</td>
<td>-.08</td>
<td>.02</td>
<td>.17</td>
<td>-.08</td>
<td>.04</td>
<td>.66</td>
<td>.52</td>
</tr>
<tr>
<td>COPE48</td>
<td>-.00</td>
<td>-.06</td>
<td>-.02</td>
<td>.13</td>
<td>-.01</td>
<td>.04</td>
<td>-.13</td>
<td>.76</td>
<td>.58</td>
</tr>
<tr>
<td>Mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disengagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPE2</td>
<td>.32</td>
<td>-.05</td>
<td>.06</td>
<td>.01</td>
<td>.12</td>
<td>.14</td>
<td>-.00</td>
<td>-.02</td>
<td>.15</td>
</tr>
<tr>
<td>COPE13</td>
<td>-.04</td>
<td>-.05</td>
<td>.14</td>
<td>.08</td>
<td>-.04</td>
<td>.48</td>
<td>.01</td>
<td>.02</td>
<td>.28</td>
</tr>
<tr>
<td>COPE25</td>
<td>.15</td>
<td>.04</td>
<td>.05</td>
<td>.00</td>
<td>.32</td>
<td>.12</td>
<td>.01</td>
<td>.05</td>
<td>.18</td>
</tr>
<tr>
<td>COPE34</td>
<td>.07</td>
<td>.01</td>
<td>.03</td>
<td>.01</td>
<td>-.05</td>
<td>.28</td>
<td>.15</td>
<td>.06</td>
<td>.18</td>
</tr>
</tbody>
</table>

*Note.* Factor loadings > .32 are in boldface unless the item is cross-loaded; $h^2 =$ Communality estimates after extraction.
## Table 12

### Summary of Results of Analyses of Scales

<table>
<thead>
<tr>
<th>Scales</th>
<th>Americans</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9</td>
<td>Cronbach’s alpha = .84</td>
<td>Cronbach’s alpha = .79</td>
</tr>
<tr>
<td></td>
<td>Items are internally consistent</td>
<td>Items are internally consistent</td>
</tr>
<tr>
<td>Revised Self-Construal Scale (SCS)</td>
<td>Cronbach’s alpha of 5–item</td>
<td>Some independent items</td>
</tr>
<tr>
<td></td>
<td>independent subscale = .59</td>
<td>correlated more highly with</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s alpha of</td>
<td>interdependent subscale</td>
</tr>
<tr>
<td></td>
<td>interdependent subscale = .72</td>
<td>10 independent items deleted</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s alpha of independent</td>
<td>decreased from .74 to .62</td>
</tr>
<tr>
<td></td>
<td>subscale</td>
<td>after eliminating ten items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cronbach’s alpha of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interdependent subscale = .83</td>
</tr>
<tr>
<td>Revised Sociotropy-Autonomy Scale (SAS)</td>
<td>Cronbach’s alpha = .91</td>
<td>Cronbach’s alpha = .91</td>
</tr>
<tr>
<td></td>
<td>Items are internally consistent</td>
<td>Items are internally consistent</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 12 (continued).

<table>
<thead>
<tr>
<th>Scales</th>
<th>Americans</th>
<th>Chinese</th>
</tr>
</thead>
<tbody>
<tr>
<td>26–item CES-D (CDS)</td>
<td>Cronbach’s alpha = .93</td>
<td>Cronbach’s alpha = .92</td>
</tr>
<tr>
<td></td>
<td>Replicated only 3 of the</td>
<td>Replicated only 3 of the</td>
</tr>
<tr>
<td></td>
<td>original 4-factor structure</td>
<td>original 4-factor structure</td>
</tr>
<tr>
<td></td>
<td>Items of depression affect factor cross-loaded</td>
<td>Items of depression affect factor cross-loaded</td>
</tr>
<tr>
<td>Depression and Somatic Symptoms Scale (DSSS)</td>
<td>Cronbach’s alphas = .91 for</td>
<td>Cronbach’s alphas = .89 for the</td>
</tr>
<tr>
<td></td>
<td>overall scale, .89 for</td>
<td>overall scale, .84 for</td>
</tr>
<tr>
<td></td>
<td>depression, .84 for somatic</td>
<td>depression, .83 for somatic</td>
</tr>
<tr>
<td></td>
<td>Factors replicated</td>
<td>Factors replicated</td>
</tr>
<tr>
<td>Emotional Approach Coping Scales (EAC)</td>
<td>Cronbach’s alphas = .92 for</td>
<td>Cronbach’s alphas = .90 for</td>
</tr>
<tr>
<td></td>
<td>emotional processing &amp; .95</td>
<td>both emotional processing &amp;</td>
</tr>
<tr>
<td></td>
<td>for emotional expression</td>
<td>emotional expression</td>
</tr>
<tr>
<td></td>
<td>Factors replicated</td>
<td>Factors replicated</td>
</tr>
</tbody>
</table>
Table 13

**Intercorrelations Among Demographic Variables for the Final American Sample**

<table>
<thead>
<tr>
<th>Demographic</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Age</strong></td>
<td>-.23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. College Standing</strong></td>
<td>-.12**</td>
<td>.82**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Marital Status</strong></td>
<td></td>
<td></td>
<td>.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. Father’s Education</strong></td>
<td></td>
<td></td>
<td></td>
<td>.06</td>
<td>.07</td>
<td>.07</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. Mother’s Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.06</td>
<td>.01</td>
<td>-.04</td>
<td>-.03</td>
</tr>
<tr>
<td>d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7. Father’s Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.12*</td>
<td>.05</td>
<td>.10*</td>
</tr>
<tr>
<td>e</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>8. Mother’s Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.11*</td>
<td>.38**</td>
</tr>
<tr>
<td>e</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.**  
- aCoded: 1 = men, 2 = women.  
- bCoded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior.  
- cCoded: 1 = single, 2 = married, divorced, in relationship.  
- dCoded: 1 = no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = some college, 7 = Bachelor’s degree, 8 = some graduate school, 9 = Master’s degree, 10 = Doctoral degree.  
- eCoded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional.  
- *p < .05, **p < .01.
Table 14

Intercorrelations Among Demographic Variables for the Final Chinese Sample

<table>
<thead>
<tr>
<th>Demographic</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender(^a)</td>
<td></td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age</td>
<td>-.04</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. College Standing(^b)</td>
<td>-.03</td>
<td>.68**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Marital Status(^c)</td>
<td>.04</td>
<td>-.09</td>
<td>.03</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Father’s Education(^d)</td>
<td>.01</td>
<td>-.08</td>
<td>.01</td>
<td>.11*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Mother’s Education(^d)</td>
<td>.03</td>
<td>-.14**</td>
<td>-.02</td>
<td>.11*</td>
<td>.70**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Father’s Occupation(^e)</td>
<td>.05</td>
<td>-.11*</td>
<td>-.04</td>
<td>.08</td>
<td>.52**</td>
<td>.41**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>8. Mother’s Occupation(^e)</td>
<td>-.02</td>
<td>-.08</td>
<td>-.06</td>
<td>.07</td>
<td>.36**</td>
<td>.48**</td>
<td>.42**</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. \(^a\)Coded: 1 = men, 2 = women. \(^b\)Coded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior. \(^c\)Coded: 1 = single, 2 = married, divorced, separated. \(^d\)Coded: 1 = no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = completed A Level, 7 = some college, 8 = Bachelor’s degree, 9 = some graduate school, 10 = Master’s degree, 11 = Doctoral degree. \(^e\)Coded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional.

* \(p < .05\), ** \(p < .01\).
Table 15

*Intercorrelations Among Possible Control Variables for the Final American Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Years Living in the US</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Living Abroad&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.37**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Medical Condition&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.06</td>
<td>-.02</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Mental Condition&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.03</td>
<td>.03</td>
<td>.12**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Medications&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.02</td>
<td>-.08</td>
<td>.30**</td>
<td>.38**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Side Effects&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.04</td>
<td>.06</td>
<td>.19**</td>
<td>.18**</td>
<td>.29**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Family Psychiatric History&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.06</td>
<td>.02</td>
<td>.10*</td>
<td>.34**</td>
<td>.19**</td>
<td>.11*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>8. Therapy/Counseling Experience&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.01</td>
<td>.06</td>
<td>.11*</td>
<td>.40**</td>
<td>.22**</td>
<td>.16**</td>
<td>.30**</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. <sup>a</sup>Coded: 1 = yes, 2 = no.

* *p < .05, **p < .01.
Table 16

*Intercorrelations Among Possible Control Variables for the Final Chinese Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Years Living in Macau</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Living Abroad&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.11*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Medical Condition&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.05</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Medications&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.05</td>
<td>.00</td>
<td>.35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Side Effects&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.04</td>
<td>.15**</td>
<td>.29**</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Family Psychiatric History&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.01</td>
<td>.06</td>
<td>.13*</td>
<td>.30**</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Therapy/Counseling Experience&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.11*</td>
<td>-.05</td>
<td>.11*</td>
<td>.03</td>
<td>.09</td>
<td>-.03</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* No Chinese reported having a mental condition.

<sup>a</sup>Coded: 1 = yes, 2 = no.

* *p < .05, ** p < .01.
Table 17

*Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic and Possible Control Variables for the Final American Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Years Living in the US</th>
<th>Living Abroad</th>
<th>Medical Condition</th>
<th>Mental Condition</th>
<th>Medications</th>
<th>Side Effects</th>
<th>Family Psychiatric History</th>
<th>Therapy/ Counseling Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gendera</td>
<td>-.15**</td>
<td>.04</td>
<td>-.06</td>
<td>-.09*</td>
<td>-.22**</td>
<td>-.07</td>
<td>-.13**</td>
<td>-.11*</td>
</tr>
<tr>
<td>2. Age</td>
<td>.77**</td>
<td>-.05</td>
<td>-.06</td>
<td>-.03</td>
<td>.02</td>
<td>-.05</td>
<td>.03</td>
<td>-.07</td>
</tr>
<tr>
<td>3. College Standingb</td>
<td>.63**</td>
<td>-.02</td>
<td>-.03</td>
<td>-.01</td>
<td>.01</td>
<td>-.05</td>
<td>.01</td>
<td>-.04</td>
</tr>
<tr>
<td>4. Marital Statusc</td>
<td>.09*</td>
<td>-.07</td>
<td>-.02</td>
<td>-.02</td>
<td>.04</td>
<td>-.09*</td>
<td>-.04</td>
<td>.00</td>
</tr>
<tr>
<td>5. Father’s Educationd</td>
<td>.06</td>
<td>-.02</td>
<td>-.06</td>
<td>-.13**</td>
<td>-.16**</td>
<td>-.12**</td>
<td>-.08</td>
<td>-.09</td>
</tr>
<tr>
<td>6. Mother’s Educationd</td>
<td>.01</td>
<td>.00</td>
<td>.01</td>
<td>-.09</td>
<td>-.14**</td>
<td>-.03</td>
<td>-.02</td>
<td>-.10*</td>
</tr>
<tr>
<td>7. Father’s Occupatione</td>
<td>.11**</td>
<td>.02</td>
<td>-.11*</td>
<td>-.15**</td>
<td>-.16**</td>
<td>-.00</td>
<td>-.04</td>
<td>-.06</td>
</tr>
<tr>
<td>8. Mother’s Occupatione</td>
<td>.08</td>
<td>.19**</td>
<td>-.03</td>
<td>-.06</td>
<td>-.18**</td>
<td>-.08</td>
<td>-.02</td>
<td>-.05</td>
</tr>
</tbody>
</table>

*Note.* aCoded: 1 = men, 2 = women. bCoded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior. cCoded: 1 = single, 2 = married, divorced, in relationship. dCoded: 1 = no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = some college, 7 = Bachelor’s degree, 8 = some graduate school, 9 = Master’s degree, 10 = Doctoral degree. eCoded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional. fCoded: 1 = yes, 2 = no.

* p < .05, ** p < .01.
Table 18

*Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic and Possible Control Variables for the Final Chinese Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Years Living in Macau</th>
<th>Living Abroad&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Medical Condition&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Medications&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Side Effects&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Family Psychiatric History&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Therapy/Counseling Experience&lt;sup&gt;f&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-0.08</td>
<td>-0.02</td>
<td>-0.04</td>
<td>-0.07</td>
<td>-0.05</td>
<td>-0.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>2. Age</td>
<td>0.18**</td>
<td>0.05</td>
<td>-0.03</td>
<td>-0.07</td>
<td>-0.08</td>
<td>-0.08</td>
<td>0.04</td>
</tr>
<tr>
<td>3. College Standing&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.16**</td>
<td>0.06</td>
<td>-0.05</td>
<td>-0.03</td>
<td>-0.10</td>
<td>-0.02</td>
<td>0.06</td>
</tr>
<tr>
<td>4. Marital Status&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-0.08</td>
<td>0.03</td>
<td>-0.05</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>5. Father’s Education&lt;sup&gt;d&lt;/sup&gt;</td>
<td>-0.56**</td>
<td>-0.10</td>
<td>0.14**</td>
<td>0.10</td>
<td>0.06</td>
<td>-0.06</td>
<td>-0.01</td>
</tr>
<tr>
<td>6. Mother’s Education&lt;sup&gt;d&lt;/sup&gt;</td>
<td>-0.50**</td>
<td>-0.04</td>
<td>0.04</td>
<td>0.02</td>
<td>0.01</td>
<td>-0.04</td>
<td>-0.06</td>
</tr>
<tr>
<td>7. Father’s Occupation&lt;sup&gt;e&lt;/sup&gt;</td>
<td>-0.42**</td>
<td>-0.11*</td>
<td>0.06</td>
<td>-0.02</td>
<td>0.04</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>8. Mother’s Occupation&lt;sup&gt;e&lt;/sup&gt;</td>
<td>-0.25**</td>
<td>-0.07</td>
<td>0.02</td>
<td>0.03</td>
<td>-0.01</td>
<td>-0.02</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

*Note.*  
<sup>a</sup>Coded: 1 = men, 2 = women.  
<sup>b</sup>Coded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior.  
<sup>c</sup>Coded: 1 = single, 2 = married, divorced, separated.  
<sup>d</sup>Coded: 1 = no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = completed A Level, 7 = some college, 8 = Bachelor’s degree, 9 = some graduate school, 10 = Master’s degree, 11 = Doctoral degree.  
<sup>e</sup>Coded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional.  
<sup>f</sup>Coded: 1 = yes, 2 = no.  
* <i>p < .05</i>, ** <i>p < .01</i>.
Table 19

*Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic Variables, Possible Control Variables, Independent, and Dependent Variables for the Final American Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Independent Self-construal</th>
<th>Interdependent Self-construal</th>
<th>Sociotropy</th>
<th>Emotional Processing Coping</th>
<th>Emotional Expression Coping</th>
<th>DSSS Somatic Scores</th>
<th>Somatic Factor Ratio Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender(^a)</td>
<td>-.02</td>
<td>-.03</td>
<td>.06</td>
<td>-.05</td>
<td>.08</td>
<td>.12**</td>
<td>-.02</td>
</tr>
<tr>
<td>2. Age</td>
<td>.07</td>
<td>-.12^*</td>
<td>-.13**</td>
<td>.03</td>
<td>-.04</td>
<td>-.03</td>
<td>-.05</td>
</tr>
<tr>
<td>3. College Standing(^b)</td>
<td>.03</td>
<td>-.07</td>
<td>-.16**</td>
<td>.07</td>
<td>.04</td>
<td>-.03</td>
<td>-.03</td>
</tr>
<tr>
<td>4. Marital Status(^c)</td>
<td>.05</td>
<td>-.04</td>
<td>.01</td>
<td>.05</td>
<td>.08</td>
<td>.09</td>
<td>.00</td>
</tr>
<tr>
<td>5. Father’s Education(^d)</td>
<td>.01</td>
<td>.04</td>
<td>-.02</td>
<td>.12**</td>
<td>.16**</td>
<td>.05</td>
<td>.02</td>
</tr>
<tr>
<td>6. Mother’s Education(^d)</td>
<td>.06</td>
<td>-.05</td>
<td>-.06</td>
<td>.05</td>
<td>.06</td>
<td>-.05</td>
<td>.08</td>
</tr>
<tr>
<td>7. Father’s Occupation(^e)</td>
<td>-.05</td>
<td>-.06</td>
<td>-.06</td>
<td>.08</td>
<td>.04</td>
<td>.00</td>
<td>-.05</td>
</tr>
<tr>
<td>8. Mother’s Occupation(^e)</td>
<td>.02</td>
<td>-.12**</td>
<td>-.08</td>
<td>-.04</td>
<td>-.02</td>
<td>-.00</td>
<td>-.04</td>
</tr>
<tr>
<td>9. Years Living in the US</td>
<td>.04</td>
<td>-.08</td>
<td>-.11^*</td>
<td>.04</td>
<td>-.04</td>
<td>-.00</td>
<td>-.07</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 19 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Independent Self-Construal</th>
<th>Interdependent Self-Construal</th>
<th>Sociotropy</th>
<th>Emotional Processing Coping</th>
<th>Emotional Expression Coping</th>
<th>DSSS Somatic Scores</th>
<th>Somatic Factor Ratio Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Living Abroad</td>
<td>-.02</td>
<td>.01</td>
<td>.03</td>
<td>.03</td>
<td>-.02</td>
<td>.06</td>
<td>-.06</td>
</tr>
<tr>
<td>11. Medical Condition</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
<td>-.01</td>
<td>.04</td>
<td>-.08</td>
<td>.02</td>
</tr>
<tr>
<td>12. Mental Condition</td>
<td>.10*</td>
<td>.04</td>
<td>-.14**</td>
<td>-.00</td>
<td>.04</td>
<td>-.20**</td>
<td>.01</td>
</tr>
<tr>
<td>13. Medications</td>
<td>.02</td>
<td>.04</td>
<td>-.01</td>
<td>-.02</td>
<td>-.05</td>
<td>-.14**</td>
<td>.05</td>
</tr>
<tr>
<td>14. Side Effects</td>
<td>.04</td>
<td>-.01</td>
<td>.06</td>
<td>-.04</td>
<td>-.01</td>
<td>-.04</td>
<td>-.04</td>
</tr>
<tr>
<td>15. Family Psychiatric History</td>
<td>.10*</td>
<td>.06</td>
<td>-.02</td>
<td>-.02</td>
<td>-.00</td>
<td>-.16**</td>
<td>-.01</td>
</tr>
<tr>
<td>16. Therapy/Counseling Experience</td>
<td>.02</td>
<td>.04</td>
<td>-.04</td>
<td>-.09*</td>
<td>-.04</td>
<td>-.15**</td>
<td>-.02</td>
</tr>
</tbody>
</table>

Note.  
- aCoded: 1 = men, 2 = women.  
- bCoded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior.  
- cCoded: 1 = single, 2 = married, divorced, in relationship.  
- dCoded: 1 = no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = some college, 7 = Bachelor’s degree, 8 = some graduate school, 9 = Master’s degree, 10 = Doctoral degree.  
- eCoded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional.  
- fCoded: 1 = yes, 2 = no.  
* p < .05, ** p < .01.
Table 20

*Intercorrelations (Phi, Point-Biserial, Pearson) Among Demographic Variables, Possible Control Variables, Independent, and Dependent Variables for the Final Chinese Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Independent Self-Construal</th>
<th>Interdependent Self-Construal</th>
<th>Sociotropy</th>
<th>Emotional Processing Coping</th>
<th>Emotional Expression Coping</th>
<th>DSSS Somatic Scores</th>
<th>Somatic Factor Ratio Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender(^a)</td>
<td>.04</td>
<td>.11(^*)</td>
<td>.01</td>
<td>.03</td>
<td>.18(^*)</td>
<td>.10</td>
<td>.11(^*)</td>
</tr>
<tr>
<td>2. Age</td>
<td>.06</td>
<td>-0.09</td>
<td>-0.06</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.06</td>
<td>0.04</td>
</tr>
<tr>
<td>3. College Standing(^b)</td>
<td>.04</td>
<td>-0.05</td>
<td>-0.06</td>
<td>-0.02</td>
<td>0.03</td>
<td>0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>4. Marital Status(^c)</td>
<td>.04</td>
<td>-0.02</td>
<td>-0.16(^*)</td>
<td>-0.05</td>
<td>0.00</td>
<td>0.01</td>
<td>-0.09</td>
</tr>
<tr>
<td>5. Father’s Education(^d)</td>
<td>-0.21(^**)</td>
<td>0.02</td>
<td>0.00</td>
<td>0.15(^**)</td>
<td>0.18(^*)</td>
<td>-0.05</td>
<td>0.06</td>
</tr>
<tr>
<td>6. Mother’s Education(^d)</td>
<td>-0.14(^*)</td>
<td>0.11(^*)</td>
<td>0.08</td>
<td>0.17(^**)</td>
<td>0.22(^*)</td>
<td>0.01</td>
<td>0.12(^*)</td>
</tr>
<tr>
<td>7. Father’s Occupation(^e)</td>
<td>-0.03</td>
<td>0.10</td>
<td>0.05</td>
<td>0.11</td>
<td>0.15(^*)</td>
<td>-0.04</td>
<td>-0.00</td>
</tr>
<tr>
<td>8. Mother’s Occupation(^e)</td>
<td>-0.05</td>
<td>0.14(^**)</td>
<td>0.07</td>
<td>0.06</td>
<td>0.06</td>
<td>0.02</td>
<td>0.08</td>
</tr>
<tr>
<td>9. Years Living in Macau</td>
<td>.19(^**)</td>
<td>-0.07</td>
<td>-0.01</td>
<td>-0.19(^**)</td>
<td>-0.12(^*)</td>
<td>0.07</td>
<td>-0.08</td>
</tr>
</tbody>
</table>

*(table continues)
Table 20 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Independent Self-Construal</th>
<th>Interdependent Self-Construal</th>
<th>Sociotropy</th>
<th>Emotional Processing Coping</th>
<th>Emotional Expression Coping</th>
<th>DSSS Somatic Scores</th>
<th>Somatic Factor Ratio Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Living Abroad(^f)</td>
<td>.12*</td>
<td>-.05</td>
<td>-.08</td>
<td>-.02</td>
<td>.02</td>
<td>.01</td>
<td>-.05</td>
</tr>
<tr>
<td>11. Medical Condition(^f)</td>
<td>-.01</td>
<td>.02</td>
<td>-.01</td>
<td>-.02</td>
<td>.07</td>
<td>-.08</td>
<td>-.01</td>
</tr>
<tr>
<td>12. Medications(^f)</td>
<td>.01</td>
<td>-.02</td>
<td>-.08</td>
<td>-.04</td>
<td>.01</td>
<td>-.04</td>
<td>-.01</td>
</tr>
<tr>
<td>13. Side Effects(^f)</td>
<td>-.02</td>
<td>.04</td>
<td>.03</td>
<td>.02</td>
<td>-.08</td>
<td>-.08</td>
<td>-.09</td>
</tr>
<tr>
<td>14. Family Psychiatric History(^f)</td>
<td>.08</td>
<td>-.04</td>
<td>-.10</td>
<td>-.03</td>
<td>.06</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>15. Therapy/Counseling Experience(^f)</td>
<td>.08</td>
<td>-.04</td>
<td>.03</td>
<td>-.08</td>
<td>-.03</td>
<td>-.11*</td>
<td>-.02</td>
</tr>
</tbody>
</table>

Note. \(^a\)Coded: 1 = men, 2 = women. \(^b\)Coded: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior. \(^c\)Coded: 1 = single, 2 = married, divorced, separated. \(^d\)Coded: 1= no formal education, 2 = some elementary school, 3 = completed elementary school, 4 = some high school, 5 = high school graduate or equivalent, 6 = completed A Level, 7 = some college, 8 = Bachelor’s degree, 9 = some graduate school, 10 = Master’s degree, 11 = Doctoral degree. \(^e\)Coded: 2 = homemaker/self-employed; 3 = unskilled/self-taught worker, 4 = semiskilled worker, 5 = skilled manual worker, 6 = clerical and sales worker, 7 = administrator/owner of small business/semi-professional, 8 = major business manager/owner of medium-sized business/minor professional, 9 = higher executive/large business owner/major professional. \(^f\)Coded: 1 = yes, 2 = no. * p < .05, ** p < .01.
Table 21

*Intercorrelations Among Independent and Dependent Variables for the Final American and Chinese Samples*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independent Self-Construal</td>
<td>--</td>
<td>.25**</td>
<td>.07</td>
<td>.05</td>
<td>.13*</td>
<td>.09</td>
<td>-.00</td>
</tr>
<tr>
<td>2. Interdependent Self-Construal</td>
<td>.05</td>
<td>--</td>
<td>.44**</td>
<td>.30**</td>
<td>.25**</td>
<td>-.01</td>
<td>.17**</td>
</tr>
<tr>
<td>3. Sociotropy</td>
<td>-.17**</td>
<td>.39**</td>
<td>--</td>
<td>.18**</td>
<td>.16**</td>
<td>.12*</td>
<td>.08</td>
</tr>
<tr>
<td>4. Emotional Processing Coping</td>
<td>.13**</td>
<td>.22**</td>
<td>.04</td>
<td>--</td>
<td>.59**</td>
<td>.03</td>
<td>.23**</td>
</tr>
<tr>
<td>5. Emotional Expression Coping</td>
<td>.24**</td>
<td>.13**</td>
<td>.01</td>
<td>.70**</td>
<td>--</td>
<td>.11*</td>
<td>.26**</td>
</tr>
<tr>
<td>6. DSSS Somatic Scores</td>
<td>-.01</td>
<td>-.06</td>
<td>.17**</td>
<td>-.04</td>
<td>-.07</td>
<td>--</td>
<td>.06</td>
</tr>
<tr>
<td>7. Somatic Factor Ratio Scores</td>
<td>.21**</td>
<td>.10*</td>
<td>-.19**</td>
<td>.09*</td>
<td>.05</td>
<td>-.11*</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note.* Intercorrelations for Chinese sample are presented above the diagonal, and interrelations for American sample are presented below the diagonal.

* *p < .05, **p < .01.
Table 22

**MANCOVA Results for Independent and Dependent Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>American</th>
<th>Chinese</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Wilks’s Λ = .93</td>
<td></td>
<td></td>
<td>11.59***</td>
<td>.07</td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>4.68</td>
<td>1.00</td>
<td>4.12</td>
<td>.88</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>5.08</td>
<td>.66</td>
<td>4.82</td>
<td>.64</td>
</tr>
<tr>
<td>Sociotropy</td>
<td>3.09</td>
<td>.66</td>
<td>3.33</td>
<td>.56</td>
</tr>
<tr>
<td>Emotional Processing</td>
<td>2.54</td>
<td>.78</td>
<td>2.67</td>
<td>.65</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>2.28</td>
<td>.83</td>
<td>2.47</td>
<td>.62</td>
</tr>
<tr>
<td>Wilks’s Λ = .91</td>
<td></td>
<td></td>
<td>40.87***</td>
<td>.09</td>
</tr>
<tr>
<td>Somatic Factor Ratio Scores</td>
<td>1.55</td>
<td>.51</td>
<td>1.43</td>
<td>.41</td>
</tr>
</tbody>
</table>

*Note.  * *p* < .05, ** *p* < .01, *** *p* < .001.*
Table 23

Summary of Regression Analyses for Variables Predicting the Mean DSSS Somatic Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>r²</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Self-Construal</td>
<td>.03</td>
<td>.02</td>
<td>.06</td>
<td>.43</td>
<td>[-.00, .06]</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>-.05</td>
<td>.03</td>
<td>-.07</td>
<td>.51</td>
<td>[-.10, .00]</td>
</tr>
</tbody>
</table>

R²                      .01

Adjusted R²              .01

ΔR²                     .01

F(2, 841)                3.31*

Note. N = 844. CI = confidence interval.

* p < .05, ** p < .01, *** p < .001.
Table 24

Summary of Regression Analyses for Variables Predicting the Somatic Factor Ratio Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>( r^2 )</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Self-Construal</td>
<td>.05</td>
<td>.01</td>
<td>.22***</td>
<td>.97</td>
<td>[.03, .07]</td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>.01</td>
<td>.01</td>
<td>.04</td>
<td>.05</td>
<td>[-.01, .04]</td>
</tr>
</tbody>
</table>

\( R^2 \)

.05

Adjusted \( R^2 \)

.05

\( \Delta R^2 \)

.03

\( F(2, 841) \)

21.39***

Note. \( N = 844 \). CI = confidence interval.

* \( p < .05 \), ** \( p < .01 \), *** \( p < .001 \).
Table 25

**Summary of Hierarchical Regression Analyses for Variables Predicting the DSSS Somatic Subscale Scores for the Final American Sample**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>r²s</th>
<th>95% CI</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>∆R²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.25</td>
<td>.06</td>
<td>.05</td>
<td>.06***</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.09</td>
<td>.05</td>
<td>.08</td>
<td>.23</td>
<td>[-.01, .18]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Conditions</td>
<td>-.17</td>
<td>.07</td>
<td>-.12*</td>
<td>.64</td>
<td>[-.31, -.03]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications</td>
<td>-.05</td>
<td>.06</td>
<td>-.04</td>
<td>.30</td>
<td>[-.16, .06]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Psychiatric History</td>
<td>-.09</td>
<td>.06</td>
<td>-.08</td>
<td>.40</td>
<td>[-.09, .02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy Experience</td>
<td>-.07</td>
<td>.05</td>
<td>-.06</td>
<td>.39</td>
<td>[-.17, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.25</td>
<td>.06</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.09</td>
<td>.05</td>
<td>.08</td>
<td>.22</td>
<td>[-.01, .18]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 25 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>r²s</th>
<th>95% CI</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Conditions</td>
<td>-.17</td>
<td>.07</td>
<td>-.12*</td>
<td>.62</td>
<td>[.32, .03]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications</td>
<td>-.05</td>
<td>.06</td>
<td>-.04</td>
<td>.29</td>
<td>[-.15, .06]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Psychiatric History</td>
<td>-.09</td>
<td>.06</td>
<td>-.08</td>
<td>.38</td>
<td>[-.20, .02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy Experience</td>
<td>-.07</td>
<td>.05</td>
<td>-.06</td>
<td>.37</td>
<td>[-.17, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>.01</td>
<td>.02</td>
<td>.02</td>
<td>.00</td>
<td>[-.04, .05]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>-.04</td>
<td>.04</td>
<td>-.05</td>
<td>.06</td>
<td>[-.11, .03]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.33</td>
<td>.11</td>
<td>.09</td>
<td>.04***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>r²s</th>
<th>95% CI</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.08</td>
<td>.05</td>
<td>.07</td>
<td>.13</td>
<td>[-.01, .18]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Conditions</td>
<td>-.12</td>
<td>.07</td>
<td>-.08</td>
<td>.37</td>
<td>[-.26, .03]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medications</td>
<td>-.06</td>
<td>.05</td>
<td>-.06</td>
<td>.17</td>
<td>[-.17, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Psychiatric History</td>
<td>-.10</td>
<td>.06</td>
<td>-.08</td>
<td>.23</td>
<td>[-.21, .01]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 25 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>( SE , B )</th>
<th>( \beta )</th>
<th>( r^2 )</th>
<th>95% CI</th>
<th>( R )</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>( \Delta R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy Experience</td>
<td>-.07</td>
<td>.05</td>
<td>-.06</td>
<td>.22</td>
<td>[-.17, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>.04</td>
<td>.02</td>
<td>.07</td>
<td>.00</td>
<td>[-.01, .08]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>-.10</td>
<td>.04</td>
<td>-.13*</td>
<td>.03</td>
<td>[-.18, -.02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropy</td>
<td>.16</td>
<td>.04</td>
<td>.21***</td>
<td>.28</td>
<td>[.09, .24]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Processing</td>
<td>.03</td>
<td>.04</td>
<td>.04</td>
<td>.02</td>
<td>[-.05, .11]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>-.07</td>
<td>.04</td>
<td>-.11</td>
<td>.05</td>
<td>[-.14, .01]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. \( N = 491 \). CI = confidence interval.

* \( p < .05 \), ** \( p < .01 \).
Table 26

Summary of Hierarchical Regression Analyses for Variables Predicting the DSSS Somatic Subscale Scores for the Final Chinese Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.11</td>
<td>.01</td>
<td>.01</td>
<td>.01*</td>
</tr>
<tr>
<td>Control Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy Experience</td>
<td>-.24</td>
<td>.12</td>
<td>-.12*</td>
<td>1</td>
<td>[-.46, -.01]</td>
<td>.15</td>
<td>.02</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy Experience</td>
<td>-.26</td>
<td>.12</td>
<td>-.12*</td>
<td>.50</td>
<td>[-.48, -.03]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>.05</td>
<td>.03</td>
<td>.11*</td>
<td>.37</td>
<td>[.00, .10]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>-.02</td>
<td>.03</td>
<td>-.04</td>
<td>.00</td>
<td>[-.09, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.24</td>
<td>.06</td>
<td>.04</td>
<td>.03**</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy Experience</td>
<td>-.27</td>
<td>.12</td>
<td>-.13*</td>
<td>.21</td>
<td>[-.50, -.05]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 26 (*continued*).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE\ B$</th>
<th>$\beta$</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Self-Construal</td>
<td>.05</td>
<td>.03</td>
<td>.11*</td>
<td>.16</td>
<td>[.00, .10]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>-.08</td>
<td>.04</td>
<td>-.12*</td>
<td>.00</td>
<td>[-.15, -.00]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropy</td>
<td>.12</td>
<td>.04</td>
<td>.16**</td>
<td>.26</td>
<td>[.03, .20]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Processing</td>
<td>-.03</td>
<td>.04</td>
<td>-.05</td>
<td>.02</td>
<td>[-.11, .05]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>.09</td>
<td>.04</td>
<td>.13*</td>
<td>.23</td>
<td>[.00, .17]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. $N = 353$. CI = confidence interval.*

* $p < .05$, ** $p < .01$. 
Table 27

*Summary of Hierarchical Regression Analyses for Variables Predicting Somatic Factor Ratio Score for the Final American Sample*

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>∆$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>.23</td>
<td>.05</td>
<td>.05</td>
<td>.05</td>
<td>.03, .07</td>
<td>.32</td>
<td>.10</td>
<td>.09</td>
<td>.05***</td>
</tr>
<tr>
<td></td>
<td>Independent Self-Construal</td>
<td>.05</td>
<td>.01</td>
<td>.21</td>
<td>.21***</td>
<td>[.03, .07]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interdependent Self-Construal</td>
<td>.03</td>
<td>.02</td>
<td>.08</td>
<td>.18</td>
<td>[-.00, .06]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.32</td>
<td>.10</td>
<td>.09</td>
<td>.09</td>
<td>[.03, .10]</td>
<td>.32</td>
<td>.10</td>
<td>.09</td>
<td>.05***</td>
</tr>
<tr>
<td></td>
<td>Independent Self-Construal</td>
<td>.04</td>
<td>.01</td>
<td>.17</td>
<td>.17***</td>
<td>[.02, .06]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interdependent Self-Construal</td>
<td>.06</td>
<td>.02</td>
<td>.16</td>
<td>.16**</td>
<td>[.03, .10]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sociotropy</td>
<td>-.08</td>
<td>.02</td>
<td>-.23</td>
<td>-.23***</td>
<td>[-.12, -.05]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional Processing</td>
<td>.03</td>
<td>.02</td>
<td>.09</td>
<td>.09</td>
<td>-.01, .06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional Expression</td>
<td>-.02</td>
<td>.02</td>
<td>-.06</td>
<td>-.06</td>
<td>-.05, .02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 491. CI = confidence interval.*

* $p < .05$, ** $p < .01$, *** $p < .001$. 
### Table 28

**Summary of Hierarchical Regression Analyses for Variables Predicting Somatic Factor Ratio Score for the Final Chinese Sample**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.04</td>
<td>.02</td>
<td>.11*</td>
<td>.47</td>
<td>[.00, .08]</td>
<td>.16</td>
<td>.03</td>
<td>.02</td>
<td>.03*</td>
</tr>
<tr>
<td>Educational Levels of Participants’ Mothers</td>
<td>.01</td>
<td>.01</td>
<td>.12*</td>
<td>.56</td>
<td>[.00, .02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.04</td>
<td>.02</td>
<td>.09</td>
<td>.24</td>
<td>[-.01, .08]</td>
<td>.22</td>
<td>.05</td>
<td>.04</td>
<td>.02*</td>
</tr>
<tr>
<td>Educational Levels of Participants’ Mothers</td>
<td>.01</td>
<td>.01</td>
<td>.09</td>
<td>.29</td>
<td>[-.00, .02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>-.01</td>
<td>.01</td>
<td>-.04</td>
<td>.00</td>
<td>[-.03, .02]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>.05</td>
<td>.02</td>
<td>.16**</td>
<td>.61</td>
<td>[.02, .08]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 28 (continued).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE$ $B$</th>
<th>$\beta$</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 3</td>
<td>.31</td>
<td>.10</td>
<td>.08</td>
<td>.05**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Control Variables

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$SE$ $B$</th>
<th>$\beta$</th>
<th>$r^2_s$</th>
<th>95% CI</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.03</td>
<td>.02</td>
<td>.07</td>
<td>.12</td>
<td>[-.02, .07]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Levels of</td>
<td>.00</td>
<td>.01</td>
<td>.05</td>
<td>.15</td>
<td>[-.01, .01]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participants’ Mothers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Self-Construal</td>
<td>-.01</td>
<td>.01</td>
<td>-.05</td>
<td>.00</td>
<td>[-.03, .01]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdependent Self-Construal</td>
<td>.03</td>
<td>.02</td>
<td>.11</td>
<td>.32</td>
<td>[-.00, .07]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociotropy</td>
<td>-.00</td>
<td>.02</td>
<td>-.01</td>
<td>.07</td>
<td>[-.04, .04]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Processing</td>
<td>.03</td>
<td>.02</td>
<td>.09</td>
<td>.54</td>
<td>[-.01, .06]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>.05</td>
<td>.02</td>
<td>.17*</td>
<td>.71</td>
<td>[.01, .09]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $N = 353$. CI = confidence interval.

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

190
Title of Study: A Study of Cross-Cultural Experiences of Distress

Principal Investigator: Pui San Tse, a graduate student in the University of North Texas, Department of Psychology.

Purpose of the Study: You are being asked to participate in a research study which involves an assessment of cross-cultural experiences of distress.

Study Procedures: You will be asked to complete an online questionnaire that will take approximately 1.5 hours. Your participation is voluntary and your decision to participate or not will have no effect on your standing or grades in this or any other course.

Foreseeable Risks: The potential risks involved in this study are some minor level of discomfort. You may refuse to participate or withdraw from this study at any time without any penalty. The research credits awarded will be proportionate to your participation.

Benefits to the Subjects or Others: This study is not expected to be of any direct benefit to you, but may benefit our understanding of how people differ in terms of their distress experiences.

Compensation for Participants: You will receive 3 credits as compensation for your full participation.

Procedures for Maintaining Confidentiality of Research Records: Your participation in this study will be confidential. The data collected from this study will be used for education and publication purposes. You will be assigned a study ID number, and you will not be identified by name in any of the data recording or analysis kept in computers. The confidentiality of your individual information will also be maintained in any publications or presentations regarding this study.

Questions about the Study: If you have any questions about the study, you may contact Pui San Tse at pt0081@unt.edu or the faculty advisor, Dr. Sharon Rae Jenkins UNT Department of Psychology, at telephone number 940-565-2671.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.
Research Participants’ Rights:
By agreeing to proceed, you indicate that you have read all of the above and that you confirm all of the following:

- You have read about the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You may print a copy of this form for your records.

☐ You may simply close the page/browser window to exit the survey

☐ Yes, I agree to participate
REFERENCES


of the Center for Epidemiological Studies Depression Scale. *Psychology and Health, 2*, 139-156.


White, G. M. (1982). The role of cultural explanations in ‘somatization’ and ‘psychologization’.* Social Science and Medicine, 16*, 1519-1530.


