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Influences of self-construals and personality styles on international students' depressive symptoms.

Yu-Yun Liu

INFLUENCES OF SELF-CONSTRUALS AND PERSONALITY STYLES ON
INTERNATIONAL STUDENTS' DEPRESSIVE SYMPTOMS

By

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ABSTRACT

INFLUENCES OF SELF-CONSTRUALS AND PERSONALITY STYLES ON
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The literature suggested that personality styles (i.e., sociotropy and autonomy;

Beck, 1983) are vulnerability factors that could – in interaction with stress - trigger

mental health concerns. Culturally influenced self-construals (Kashima, Yamaguchi,

Kim, Choi, Gelfand, & Yuki, 1995; Markus & Kitayama, 1991) also detect how

individuals function in a sociocultural context. While the number of international

students in the U.S. increased over the past decades, their reported mental health concerns

warrant more attention. This study explored relationships among self-construals,

personality styles, domain-specific stressful life events, and depressive symptoms among

international students in the U.S. Participants were 579 international students (identified

as holding F-1/J-1 visas) recruited from universities across the U.S. Participants

completed an online survey consisting of items that assess personality styles, self-

construals, social anxiety, stressful life events, and depressive symptoms. Results of path

analyses, controlling for social anxiety, confirmed the associations between personality

styles and self-construals, and further yielded significant associations with depressive

symptoms. No significant relationship was found between a tripartite model of self-

construal and the interactions of personality styles and domain-specific stressful life events. However, the interaction of negative achievement life events and autonomy was found to be significantly related to depressive symptoms. Mediation analyses showed that sociotropy mediated the relationship between collective self-construal and depressive symptoms. Implications in regard to working with international students were discussed in light of these findings.

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CHAPTER I

INTRODUCTION

In the United States (U.S.) university system, the number of international students

has increased over the past few decades (Institute of International Education, 2014a).

Culturally diverse student populations bring with them the influence of their social and

cultural backgrounds. With the intention of better understanding this unique student

population and better promoting their mental health, the focus of this study will be to

investigate the impact of cultural influences on international students' depressive

symptoms through their personality styles.

International Students and Their Impact on the U.S.

What defines and distinguishes international students from immigrants or visitors

is the visa status. International students are normally issued with a temporary student

visa and are required to be enrolled in accredited institutions (Institute of International

Education, 2014a). The U.S. has been one of the most popular countries that international

students choose as their designated country of study. According to the Institute of

International Education (2014b), the number of international students in the U. S.

postsecondary school system in the 2013-14 academic year reached a record high of

886,052, with international students making up 4.2% of the U.S. higher education

population. Many of those international students are to pursue graduate studies (Allum,

2014; Gonzales, Allum, & Sowell, 2013). In the Fall semester of 2013, international

graduate students represent 16.7% of the overall graduate student population which has

increased consistently over the past 10 years (Allum, 2014). In addition, among first-time graduate enrollment, 20.2% of those are international students (Allum, 2014). International students are becoming a critical part in the U.S. higher education.

Given the increasing number of students who travel outside their country of origin for postsecondary education in recent years, universities have highly valued the internationalization of higher education (Guo & Chase, 2011). In addition, several national surveys confirmed the trend of the increasing international student population and revealed the significant impact of these students on U.S. higher education systems (Barger, 2004; Green, 2005; Hayward & Siaya, 2001). In a report addressing internationalization of higher education, Green (2005) analyzed a sample of 8,782 students from eight institutions that scored high in an internationalization index created by the American Council on Education (ACE). Results indicated that more than 85% of the students at these colleges and universities agreed that the presence of international students benefitted their learning experience. In a Cross-Cultural Interaction Model that measured the relationship between cross-cultural interactions and educational experiences, a positive association was found between domestic students' cross-cultural interactions and educational aspects (Barger, 2004). International students are generally more engaged in educational activities and are more achievement-oriented than their American peers (Volet & Ang, 2012). The greater engagement of international students resulted in better educational outcomes and positive academic and social influences on the domestic students (Zhao, Kuh, &Carini, 2005; Volet & Ang, 2012). Moreover, having opportunities interacting with individuals with different cultural backgrounds helps domestic students become culturally aware and sensitive, which also better prepares them

to live and work in a multicultural society (Barger, 2004; Brustein, 2007; Hayward & Siaya, 2001). Based on these findings, international students bring about a positive impact on U.S. college campuses.

In addition, international students positively influence the U.S. economy while they stay for their career upon completing their studies. While the mobility of the labor force becomes a global phenomenon, many countries have increased their recruitment of international students as skilled migrants (Ziguras & Law, 2006). International graduate students, along with skilled migrants, made significant contributions to U.S. innovation (Chellaraj, Maskus, & Mattoo, 2008). They helped increase the university innovation and patenting, which is viewed as a significant determinant of the U.S. economy. It is clear that including international students in the U.S. higher education system and workforce creates benefits in many aspects. However, if international students fail to adjust to American society, such benefits are at risk (Wang, Lin, Pang, & Shen, 2006). Thus, it is important to consider the well-being of this unique student population and promote their mental health.

Mental Health of International Students

Among college students, depressive symptoms are viewed as common manifestations of stress (Arthur, 1998). For example, they are often reported as one of the primary concerns presented at college counseling centers (Nilsson, Berkel, Flores, & Lucas, 2004; Yi, Lin, & Kishimoto, 2003). Further, depressive symptoms can have damaging impact on individuals' daily life (Ayuso-Mateos, Nuevo, Verdes, Naidoo, & Chatterji, 2010; Klerman, 1989). Results from a longitudinal study indicates that the lifetime prevalence rate for depressive symptoms is 24% and that individuals with

depressive symptoms are at greater risk for a first-onset of major depression during a one-year period than those who are not (Horwath, Johnson, Klerman, & Weissman, 1992).

International students encounter multiple stressors upon entering the U.S. for higher education, including academic performance, social relationships, financial distress, language proficiency, and adjustment to a different culture (Wei, Heppener, Mallen, Ku, Liao, & Wu, 2007; Fritz, Chim, & DeMarinis, 2008; Sümer, Poyrazli, &Grahame, 2008). Stressors that are associated with acculturation process often put international students at risk for compromised mental health (Constantine, Okazaki, & Utsey, 2004; Rice, Choi, Zhang, Morero, & Anderson, 2012; Wei et al., 2007). When comparing to their pre-arrival and post-arrival status, their psychological health is likely to be diminished after starting their life studying abroad (Ying & Liese, 1991). Stress-induced discomfort is also likely to cause feelings of loneliness, helplessness, and hopelessness, all risk factors for depressive symptoms, while adjusting to a host country (Aubrey, 1991; Mori, 2000). Thus, not surprisingly, the acculturative stressors are often positively associated with depressive symptoms among international students (Wei et al., 2007; Yang & Clum, 1995; Ying & Han, 2006).

In addition to stress-induced depressive symptoms, it is important to understand how other contributing sources like changes in identity impact the development of depressive symptoms among international students (Jung, Hecht, &Wadsworth, 2007). When international students move to their host country and adjust to a new culture, the way they understand and conceptualize themselves becomes divergent. Cultural differences and communication barriers would lead to limited expression of self among

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international students, creating identity gaps. The effects of identity gaps could possibly trigger the development of depressive symptoms (Jung et al., 2007).

Little is known regarding the prevalence and impact of depressive symptoms among international students (Sümer et al., 2008). A recent study showed that approximately 44% of international graduate students had encountered at least one emotional-or stress-related problem in the previous semester and experienced difficulty in maintaining their physical and mental health as well as academic performance (Hyun, Quinn, Madon, & Lustig, 2007). The prevalence of stress reported by international students is not significantly different from domestic students (Hyun et al., 2007; Khawaja & Dempsey, 2008; Smith & Khawaja, 2011). A multiwave study also found that international students might not experience a significant increased stress shortly after their arrival of host country (Wang, Heppner, Fu, Zhao, Li, & Chuang, 2012). However, international students often do not recognize mental health related issues like depressive symptoms but report more somatic complains (Aubrey, 1991) and have greater stigma associated with seeking mental health services (Hyun et al, 2007; Nilsson et al., 2004). Moreover, they tend to have less social support and use more maladaptive coping strategies (Khawaja & Dempsey, 2008; Smith & Khawaja, 2011). As social support is also found to mediate depressive symptoms (Sümeret al., 2008; Wang, Cai, Qian, & Peng, 2014), the lack of access to social support is associated with the development of more mental health issues like depressive symptoms.

For individuals with different cultural backgrounds, failure to manage depressive symptoms and excessive stress could lead to negative outcomes like poor academic achievement (Rodriguez, Myers, Morris, & Cardoza, 2000; Wan, Chapman, & Biggs,

1992), diminished mental health (Wan el al., 1992), impairment in functioning (Mori, 2000), less satisfaction with life (Wan et al., 1992) and greater risk for suicide (Wong, 2013). Given the varying contributing sources to the development of depressive symptoms, the notion of depressive symptoms varies from individual to individual and should not be viewed unitarily (Hsu, Hailey, & Range, 1987). To better serve individual needs of international students, one's cultural background should be considered as well.

Self-Construals

It is important to examine international students' identity development when studying factors influential to their depressive symptoms, as this could be a contributing factor. In regard to culture and the self, Markus and Kitayama (1991) suggested that individuals form self-images and distinguish themselves from other people; this formation of the self can be conceptualized as different construals of the self and others. In responding to cultural influences, there are two construals of the self: independent and interdependent dimensions. The concept of independent self-construal refers to the autonomous and independent person who separates the self from the social context and asserts one's needs (Markus & Kitayama, 1991). Individual uniqueness and achievement is emphasized and encouraged in a societal context that values independence. In contrast, the idea of interdependent self-construal represents the interdependence among individuals. In other words, individuals with interdependent self-construal are more interested in making connections with others and fitting into groups (Markus & Kitayama, 1991). A societal context that signifies interdependence is one that appreciates interpersonal harmony and pursuing group goals. Individuals establish their self-

definition through one's social roles. These self-construals can further influence cognition, emotion, and motivation of individuals.

Other commonly used constructs to separate individuals with different cultural tendencies are individualism (IND) and collectivism (COL), as proposed by Hofstede (1980), where individuals displayed different preferences in self-in-group relationships. Members from individualistic cultures value self-expression and self-determination toward personal goals whereas members from collectivistic cultures emphasize in-group harmony and unquestioning loyalty (Hofstede, 1980). The boundaries for IND-COL recently became blurred with the variation existing within and across nationalities (Oyserman, Coon, & Kemmelmeier, 2002). For instance, European-Americans were found to be individualistic, meaning they favored personal independence and valued peers as less important. In addition, they were not more individualistic than African-American and Latinos, and not less collectivistic than Japanese or Koreans (Oyserman et al, 2002). While the terms of IND and COL are often viewed as limited to specific countries and nations, researchers recognized that the concepts of self-construals focus more on locus of identity and extend beyond nations (Oyserman et al, 2002; Brewer & Chen, 2007).

Evidence on how individuals' self-construals influence the development of depressive symptoms was found through some studies (Mak, Law, & Teng, 2011; Okazaki, 1997; Sato & McCann, 1998; Su, Lee, & Oishi, 2013). Depressive symptoms were negatively correlated with independent self-construal, with correlations ranging from $r = -.18$ (Su et al., 2013) to $r = -.44$ (Mak et al., 2011). The relationship between depressive symptoms and interdependent self-construal is less clear. Results indicated a

significant but weakly positive correlation ($r = .20$; Okazaki, 1997) or no relationship ($r = .03$ & $.11$; Mak et al., 2011). Other studies found no relations between both self-construals and depressive symptoms (independent SC: $r = -.05$; interdependent SC: $r = .18$; Shim, Freund, Stopsack, Kämmerer, & Barnow, 2014; independent SC: $r = -.06$ & $.04$; interdependent SC: $r = .06$ & $-.05$; Yamaguchi, Kim, & Akutsu, 2014).

Empirical support suggested some relationships between self-construals and social anxiety (Dinnel, Kleinknecht, & Tanaka-Matsumi, 2002; Essau, Leung, Koydemir, Sasagawa, O'Callaghan, & Bray, 2012; Hardin, 2006; Hong & Woody, 2007; Okazaki, 1997; Su et al., 2013; Xie, Leong, & Feng, 2008). Independent self-construal is consistently found to be negatively associated with social anxiety, and ranged from $r = -.34$ (Xie et al., 2008) to $r = -.61$ (Essau et al., 2012). A less consistent relationship existed between interdependent self-construal and social anxiety; significant correlations ranged from $r = -.14$ (Xie et al., 2008) to $r = .24$ (Okazaki, 1997). Given the suggested association between self-construals and social anxiety, it is important to consider the impact of social anxiety when studying relationships between self-construals and depressive symptoms (Cross, Hardin, & Gercek-Swing, 2011). In a sample of White American and Asian American college students, neither independent nor interdependent self-construal was associated with depressive symptoms when controlling for social anxiety (Okazaki, 1997). Therefore, controlling for social anxiety is a prudent step in researching self-construals and depressive symptoms.

In the past decades, cross-cultural research focused on how individuals define themselves across cultures through Markus and Kitayama's (1991) two dimensions of self-construals (Mak et al., 2011; Okazaki, 1997; Sato & McCann, 1998; Singelis, 1994;

Su et al., 2013). Some scholars did not agree with the approach of capturing self-representations through only independence and interdependence; using self-other distinction to shape self-view seems somewhat limited (Brewer & Gardner, 1996; Cross, Bacon, & Morris, 2000; Kashima, Yamaguchi, Kim, Choi, Gelfand, & Yuki, 1995; Levine et al., 2003). Some have attempted to expand the two-dimension category into three or more dimensions to better understand how self-view is formed (Brewer & Gardner, 1996; Cross et al., 2000; Kashima et al., 1995).

Brewer and Gardner (1996) argued that self-representations can be understood through three different levels: personal, relational, and collective. In particular, the relational and collective levels are the social aspect of self, resulted from different focuses on interpersonal relationships and a symbolic group membership (Brewer & Gardner, 1996; Kashima et al., 1995). Similarly, a tripartite model of self-construals, comprising of relational-interdependent, collective-interdependent, and independent type of self-construals, is supported through separating interpersonal relationships across cultural contexts (Cross et al., 2000; Cross et al., 2011). For example, women tend to value close relationships more than men; such an observed gender difference exists even in independence-oriented Western societies. Some individuals define themselves through a larger societal context, emphasizing belongingness and group membership such as a family or an ethnic group. This nuance has driven scholars to consider different dimensions of the concept of interdependence. The focuses on close relationships versus on group-centered memberships are later distinguished and defined as relational-interdependent and collective-interdependent self-construals, respectively (Cross et al., 2000; Cross et al., 2011). Relational-interdependent self-construal is significantly

correlated with relational well-being (e.g., Cross, Gore, & Morris, 2003) and friendship

quality (e.g., Morry, Kito, Mann, & Hill, 2013), but not with depressive symptoms (Cross

et al., 2003; Çetin, Eroğlu, Peker, Akbaba, & Pepsoy, 2012). However, the research to

relational-interdependent self-construals and depressive symptoms is limited in two

regards. First, there are only two studies researching the association between relational-

interdependent self-construals and depressive symptoms (Cross et al., 2000). Second,

both studies used the same measure, the Relational-Interdependent Self-Construal Scale

(RISC scale; Cross et al., 2000). The generalizability of their results is somewhat limited.

Thus, the relationship of tripartite model of self-construal and the development of

depressive symptoms needs more empirical support. Another question has been raised

regarding individuals' response pattern to these styles. Individuals could display traits of

both interdependent and independent self-construals (Gardner, Gabriel, & Lee, 1999;

Trafimow, Triandis, & Goto, 1991). Gardner et al. (1999) tested the influence of

situational prime on the shift of self-construal and found that individuals with

independent self-construal did display more characteristics of interdependence when

exposed to more interdependent priming material. Therefore, it is possible that exposure

to a cultural environment different from the original culture of the individuals will prime

them to shift in self-construal. For example, international students will display self-

construals that might be different from their original cultural environment.

Given the globalized context in which individuals live, along with the advances in

technology and communication, people are more interconnected with one another. How

individuals define themselves might be beyond the physical limits of countries and

nations and instead may be more complex. To better understand the prevalence of

depressive symptoms in international students as well as to gain information for prevention, it is necessary to assess individuals' self-construal through a different lens like personality styles, especially without the presumption on the nationality.

Personality styles as Vulnerabilities to Depressive symptoms

Noticing that individuals have different emotional reactions to specific stressors, Beck (1983) hypothesized that there are differences in individuals' cognitive organization. Based on one's reaction to predominant concerns, he proposed that individuals could be categorized into one of two personality styles: the sociotropic style and the autonomous style.

Individuals with a sociotropic personality style tend to invest themselves in building positive relationships with other people. Interpersonal relatedness with others brings this type of individuals satisfaction. The emphasis on acceptance, support, admiration, and validation leaves sociotropic individuals more vulnerable to social rejection and isolation (Beck, 1983). As Bowlby (1977) stated in his attachment theory, interruption of social bonding is likely to lead to the development of depressive symptoms for individuals at any age. While Beck (1983) did not view social bonding as the only contributing factor to depressive symptoms, he acknowledged that the lack of social bonding accounts at least partially for the development of depressive symptoms.

In contrast, individuals with an autonomous personality style value personal achievement and independence (Beck, 1983). They tend to be interested in preserving and increasing control over one's life. Thus they are more likely to experience depressive symptoms triggered by failure to attain their goals (Beck, 1983). Internalized

standards and personal achievements tend to elicit the emotional reaction of individuals

with autonomous personality style (Blatt, Shahar,& Zuroff, 2001).

Other scholars also proposed two sets of personality styles, similar to Beck's

(1983) personality styles of sociotropy and autonomy, intending to understand

individuals' vulnerability to depressive symptoms. Those terms include but are not

limited to: anxious attachment and compulsive self-reliance (Bowlby, 1977) and

dependency and self-criticism (Blatt, D'Afflitti, & Quinlan, 1976; Blatt & Zuroff, 1992)

and often are used interchangeably (Robins, Ladd, Welkowitz, Blaney, Diaz, & Kutcher,

1994).

The notion of the personality styles of sociotropy and autonomy has received

much research attention, especially with their function as vulnerabilities to depressive

symptoms (Bieling & Alden, 2001; Hammen, Ellicott, Gitlin, & Jamison, 1989;

Iacoviello, Grant, Alloy, & Abramson, 2009; Mongrain & Blackburn, 2005; Nietzel &

Harris, 1990). As sociotropy and autonomy are viewed as vulnerabilities (Sutton et al.,

2011), stressful life events are necessary to trigger the development of depressive

symptoms (Beck, 1983). Multiple studies found a significant interaction between the

sociotropic personality style and negative social events to trigger depressive symptoms

(Hammen et al., 1989; Mongrain & Blackburn, 2005; Nietzel & Harris, 1990; Robins &

Block, 1988). Positive relationships were also found between sociotropy and depressive

symptoms (Alford & Gerrity, 1995; Bagby et al., 2001; Bieling & Alden, 2001; Mazure,

Raghavan, Maciejewski, Jacobs, & Bruce, 2001; Nelson, Hammen, Daley, Burge, &

Davila, 2001; Sato & McCann, 1998; Sutton et al., 2011). Further, in a sample of

graduate students who reported at least one depressive episode, Mongrain and Blackburn

(2005) found that sociotropy is significantly and positively associated with previous depressive episodes ($r = .35$).

It is generally believed that these distinct personality styles help explain people's vulnerability to depressive symptoms. However, research has shown inconsistent results regarding autonomy. For example, a few studies found that the association between depressive symptoms and the interaction of high autonomy and failure events was not as strong as the association between depressive symptoms and the interaction of sociotropy and negative social events (Hammen et al., 1989). Other studies did not find significant relationships between depressive symptoms and the interaction of high autonomy and failure events (Iacoviello et al., 2009; Mazure et al., 2001; Robins & Block, 1988). Further studies found no association between autonomy and depressive symptoms without any occurrence of life events (Alford & Gerrity, 1995; Nelson et al., 2001). Nevertheless, some studies found a significantly positive association between autonomy and the recurrence of depressive symptoms (Bagby et al., 2001; Bieling & Alden, 2001; Mongrain & Blackburn, 2005; Sato & McCann, 1998; Sutton et al., 2011) and others found significant associations between the interaction of achievement-related events and subscales of autonomy (e.g., Iacoviello et al., 2009: goal attainment and sensitivity to others' control; Mazure et al., 2001; Nelson et al., 2001: need for control) and severity of depressive symptoms.

Abela, Mcintyre-Smith, and Dechef (2003) theorized that one reason for the inconsistent findings could be that participants interpreted the meaning of stressful life events differently from the researchers. For example, individuals with an autonomous personality style might have viewed stressful life events interpreted by researchers as

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interpersonal events as achievement-related, which led to misinterpretation of the interaction between personality characters and stressors.

In addition, similar to individuals' response to self-construals, individuals could display both traits of sociotropy and autonomy. Though conceptually the intercorrelation between the two personality styles should be low, Abela et al. (2003) pointed out a significant intercorrelation is often observed. Since individuals with both personality styles are likely to develop depressive symptoms when encountering either social or achievement related life events, this might lead to incongruent findings on the impact of autonomy on depressive symptoms. Overall, previous studies found mixed results regarding the impact of personality styles on the onset of depressive symptoms. There is more support for the interaction of sociotropy and negative social events on depressive symptoms (Alford & Gerrity, 1995; Hammen et al.,1989; Nietzel & Harris, 1990) while less evidence has been found to support the pathway of autonomy and failure events to depressive symptoms (Iacoviello et al., 2009).

Relationships between Personality Styles and Self-Construals

Individuals with high sociotropic personality style respond predominantly to social concerns while those with high interdependent self-construal value interpersonal relationships as well as group harmony (Beck, 1983; Markus & Kitayama, 1991). Research showed an overlap of the concepts of sociotropy and interdependent self-construal (Gorski & Young, 2002; Sato & McCann, 1998). However, the notions represented by autonomy and independent self-construal are not as similar; Sato and McCann (1998) suggested that autonomy reflects a mode of functioning that may cause individuals to develop depressive symptoms while independent self-construal is an

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adaptive mode of functioning influenced by societal context. There is no clear pattern between autonomy and independent self-construal as tested in previous studies (Gorski & Young, 2002; Sato & McCann, 1998).

To date, little research has examined relationships between personality styles and self-construals (Gorski & Young, 2002; Mak, 2001; Sato & McCann, 1998). However, the existing evidence leads to the conclusion that the association between sociotropic personality style and interdependent self-construal is stronger ($r = .46$, $p < .001$, Gorski & Young, 2002; $r = .86$, $p < .01$, Mak, 2001; $r = .46$, $p < .05$, Sato & McCann, 1998) than the association between autonomous personality style and independent self-construal ($r = .23$, $p > .05$, Gorski & Young, 2002; $r = -.24$, $p < .01$, Mak, 2001; $r = -.08$, $p < .05$, Sato & McCann, 1998).

The cultural-specific vulnerability-stress model proposed by Mak (2001) suggested that distress patterns could be separated based on individuals' cultural backgrounds, namely the way individuals identify and distinguish themselves from a larger social group. Individuals with certain types of self-construals are likely to develop either sociotropic or autonomous personality style, which might trigger depressive symptoms as stressful life events occur (Mak, 2001; Sato & McCann, 1998). Results of previous studies indicate that interdependent self-construal was related positively to sociotropy whereas independent self-construal was related weakly to autonomy (Gorski & Young, 2002; Mak, 2001; Sato & McCann, 1998). In Mak's (2001) study, direct relationships were found between sociotropy and anxiety and between autonomy and depressive symptoms. There was no significant moderating relationship found between life events and depressive symptoms. Mak et al. (2011) modified the model and

proposed a different model which addressed only the effects of self-construals and

sociotropy on anxiety and depressive symptoms, but the result yielded no better model fit

than the one tested by Mak (2001).

Purpose of this Study

Previous literature has supported the influences of an individual's cultural self-

construal (Mak et al., 2011; Okazaki, 1997; Sato & McCann, 1998; Su et al., 2013) and

one's personality style (Beck, 1983; Hammen et al., 1989; Mongrain & Blackburn, 2005)

on the development of depressive symptoms separately. Some studies further supported

the impacts of one's cultural self-construal on one's personality style and therefore one

might develop depressive symptoms differently as encountering certain life events

(Gorski & Young, 2002; Mak et al., 2011; Sato & McCann, 1998). Therefore, the

interaction between personality styles and life events will be tested for moderating effects

in this study. Furthermore, the number of studies on effects of both self-construals and

personality styles on the development of depressive symptoms is limited. Even within

the existing literature, some publications reported different analyses but used the same

sample(e.g. Mak, 2001and Mak et al., 2011). This inflates the number of independent

samples appear higher than they actually are. The purpose of the study is to research the

associations between self-construals, personality style, and depressive symptoms in

international students. This study aims at adding more empirical evidence to the

relationships between personality style and self-construals and proving implications for

promoting mental health of international students.

Hypotheses

In this current study, it was proposed that the effects of self-construals on personality styles would influence the development of depressive symptoms for international students when encountering stressful life events. More specifically, it was predicted that cultural self-construals would predict certain personality styles within the international student population. Relational self-construal and collective self-construal would be positively associated with sociotropic personality style but not with autonomous personality style. Also, independent self-construal would be positively associated with autonomous personality style but not with sociotropic personality style.

Further, it was proposed that the main effects of personality styles and the interaction of personality styles and domain-specific life events but not the main effects of domain-specific life events would be associated with international students' depressive symptoms. The interaction of sociotropic personality style and interpersonal-related events and interaction of autonomous personality style and achievement events would be associated with depressive symptoms. While previous studies found a weak (Bagby et al., 2001; Bieling & Alden, 2001) or even a lack of (Alford & Gerrity, 1995; Robins & Block, 1988; Segal, Shaw, Vella, & Katz, 1992) a relationship between autonomous personality style and depressive symptoms, Iacoviello and his colleagues (2009) found significant interaction effects between autonomic personality style and life events. Based on Beck's (1983) theory and results from Sato and McCann (1998), it was hypothesized that the association from autonomous personality style and achievement-related events to depressive symptoms would be significant.

It was also predicted that the main effects of personality styles and the interaction of personality styles and occurrence of domain-specific life events would mediate the associations between self-construals with depressive symptoms. That is, the association between relational self-construal and depressive symptoms and the association between collective self-construal and depressive symptoms would be mediated by sociotropy and the interaction of sociotropy and stressful interpersonal life events, respectively. Similarly, the association between independent self-construal and depressive symptoms would be mediated by autonomy and the interaction of autonomy and negative achievement life events.

Finally, social anxiety was added as a control variable (see Figure 1); it might account for some variance explained in the model, but it would not change the association among independent variables to dependent variable of depressive symptoms.
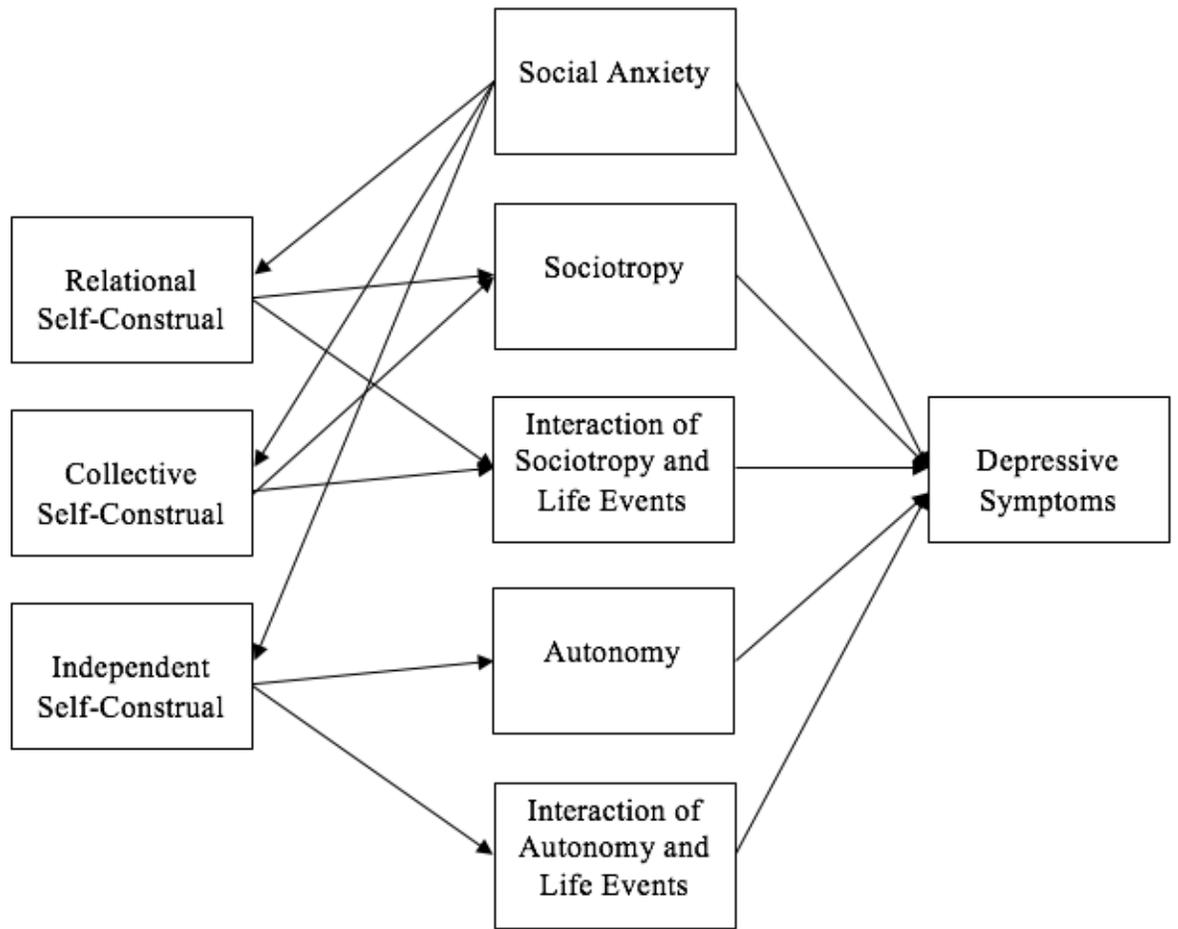
Figure 1. Hypothesized model

CHAPTER II

METHOD

Participants

Six hundred individuals who were enrolled in U.S. institutions for postsecondary

education (with F-1/J-1 visas) during academic year 2015-2016 completed all survey

questions, and 579 respondents passed the validity test and were included in the final

analysis (96.5%). Participants were recruited through International Scholars and Students

Offices (or parallel official offices) as well as through Facebook, and student

organization webpages.

This final sample includes international students currently holding F-1 or J-1

student visa in the United States (M_{age} = 26.24 years, SD = 4.52, female: 58.2%). In

terms of intended degree, 11.9% of participants identified as seeking a bachelor degree,

34% seeking a master's degree, 51.8% seeking a doctoral degree, and 2.3% seeking a

certificate or do not seek a degree. As for financial sources, 36.4% of participants are

supported by their family, 9.5% by their own government, 41.1% by their home

university, 6.4% by themselves, and 6.6% by other sources such as a combination of

family, school, and loans. In regard to marital status, 19.2% of participants identified as

being in a committed relationship, 15.4% are married, 64.6% are single, and 0.3% are

divorced. The median of length of stay for the current sample was 24 months, with a

minimum of 0.5 month and a maximum of 204 months. Table 1 presents country of

origin of the final sample. Top five countries of origin for the current sample are China,

India, Taiwan, South Korea, and Brazil, and they represented 65.8% of the total sample.

The proposed model included 22 estimated parameters. Based on Kline's (2011)

suggested 20 to 1 ratio of participants to estimated parameters, the minimum number of

participants required for this study is 440. The final sample of 600 exceeded the

minimum requirement and therefore generated enough power for statistical analyses.

Measures

Demographics. Participants were asked to provide information about their

nationality, age, gender, marital status, subject of study, length of stay in the U.S., and

source of financial support.

Sociotropy and autonomy. The Personal Style Inventory-II (PSI-II; Robins et al.,

1994) contains 48 items measuring two dimensions of sociotropy and autonomy. Items

are responded on a six-point rating scale ranging from 1 (strongly disagree) to 6 (strongly

agree). Each dimension contains three subscales: sociotropy includes "Concern About

What Others Think", "Dependence", and "Pleasing Others" while autonomy includes

"Self-criticism", "Need for Control", and "Defensive Separation." Items on the

sociotropy scale include, "*I am very sensitive to criticism by others*", "*I find it difficult to*

*be separated from people I lov*e", and "*I often put other people's needs before my own*."

Items on the autonomy scale contain, "*It bothers me when I feel that I am only average*

and ordinary", "*I am easily bothered by other people making demands of me*", and "*I*

tend to keep other people at a distance." The reliability scores ranged from $\alpha = .84$ to α

$=.90$ for the PSI dimension of sociotropy and ranged from $\alpha = .82$ to $\alpha = .86$ for the

Table 1

Demographics: Country of Origin (N = 579)

Country of Origin	Frequency	Percentage
Argentina	2	0.35%
Australia	3	0.52%
Azerbaijan	1	0.17%
Bahrain	1	0.17%
Bangladesh	4	0.69%
Belgium	3	0.52%
Belize	1	0.17%
Brazil	16	2.76%
Canada	7	1.21%
Chile	3	0.52%
China	118	20.38%
Colombia	6	1.04%
Cyprus	3	0.52%
Denmark	2	0.35%
Dominican Republic	1	0.17%
Ecuador	2	0.35%
Egypt	3	0.52%
Finland	1	0.17%
France	7	1.21%
Germany	8	1.38%
Ghana	1	0.17%
Greece	3	0.52%
Guatemala	1	0.17%
Hong Kong	4	0.69%
Hungary	1	0.17%
India	106	18.31%
Indonesia	4	0.69%

(continued)

Table 1 (continued)

Demographics: Country of Origin (N = 579)

Iran	12	2.07%
Israel	2	0.35%
Italy	2	0.35%
Japan	8	1.38%
Jordan	1	0.17%
Kazakhstan	2	0.35%
S. Korea	32	5.53%
Kurdistan	1	0.17%
Kuwait	1	0.17%
Lebanon	3	0.52%
Libya	1	0.17%
Macau	3	0.52%
Malaysia	10	1.73%
Mauritius	1	0.17%
Mexico	10	1.73%
Mongolia	1	0.17%
Nepal	2	0.35%
New Zealand	2	0.35%
Nigeria	3	0.52%
Norway	1	0.17%
Pakistan	1	0.17%
Palestine	3	0.52%
Peru	1	0.17%
Poland	2	0.35%
S. Africa	4	0.69%
Russia	3	0.52%
Saudi Arabia	8	1.38%
Singapore	4	0.69%

(continued)

Table 1 (continued)

Demographics: Country of Origin (N = 579)

Spain	4	0.69%
St Lucia	1	0.17%
Sweden	1	0.17%
Syria	1	0.17%
Taiwan	109	18.83%
Thailand	5	0.86%
Trinidad and Tobago	1	0.17%
Turkey	7	1.21%
United Kingdom	3	0.52%
Venezuela	2	0.35%
Vietnam	7	1.21%
Zimbabwe	1	0.17%
missing	1	0.17%

dimension of autonomy (Bagby et al., 2001; Sato, 2003; Sutton et al., 2011; Wong & Mak, 2013). Cronbach's αs for this current sample was .89 and .83 for sociotropy and autonomy, respectively, consistent with the previous research results.

Self-construals. The Relational, Individual, and Collective Self-Aspects (RIC) Scale (Kashima & Hardie, 2000) is a self-report measure using 10 sets of three items to assess three different aspects of self-construal. Items are rated on a seven-point rating scale, ranged from 1 (not like me) to 7 (very much like me). A total self-aspect score is calculated by summing all 10 ratings for each dimension; a higher score in each self-aspect indicates a salient identity. Sample items set include: "*I think it is most important in life to: have personal integrity/ be true to myself (I); have good personal relationships with people who are important to me (R); work for causes to improve the well-being of my group (C).*"Studies yielded reliable internal consistency for each subscale; the Cronbach's alpha coefficients for the R subscale ranged from $\alpha = .75$ to $\alpha = .85$, for the I subscale ranged from $\alpha = .71$ to $\alpha = .82$, and for the C subscale ranged from $\alpha = .77$ to $\alpha = .83$ (Hardie, Critchley, & Morris, 2006; Kashima & Hardie, 2000). For this current study, Cronbach's αs were .74, .75, and .81 for subscales R, I, and C, respectively, similar to what was reported in the previous studies.

Life events. The occurrence of stressed life events is measured by a 31-item scale of Index of Life Stress (ILS; Yang & Clum, 1995). The ILS is a self-report survey of individuals' patterns of life stress in domains of: (1) concern about finance and desire to stay in the U.S., (2) language difficulty, (3) interpersonal stress, (4) stress from new culture and desire to return to one's home country, and (5) academic pressure. Items include "*My English embarrasses me when I talk to people*", "*I can feel racial*

discrimination toward me from other students", and "*I worry about my academic performance.*" The items are rated on a four-point scale from 1 (*never*) to 4 (*always*). A higher score indicates higher life stress. In Yang and Clum's (1995) study on Asian international students, a one-month test-retest reliability of *r* = .87 was reported.

Depressive symptoms. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report survey of depressive symptoms for the general population. The CES-D uses a four-point rating scale ranging from 0 (never or rarely) to 3 (most or all the time) asking participants to describe the frequency of experiencing a given depressive symptom (e.g., "*I felt depressed*", "*I did not feel like eating*", "*I thought my life had been a failure*"). The total CES-D score is calculated by reversing items 4, 8, 12, and 16 and summing all 20 items. Total scores can range from 0 to 60 and a higher score indicates a high level of depressive symptoms. Cronbach's *α*s in previous studies were .89 for Chinese international students (Wei et al, 2007), .90 for Taiwanese international students (Ying & Han, 2006), and .91 for African, Asian, and Latino international students (Constantine et al., 2004). Cronbach's *α* for the international students in this study was .91, which is comparable to previous findings.

Social anxiety. The Social Phobia and Anxiety Inventory-23 (SPAI-23; Roberson-Nay, Strong, Nay, Beidel, & Turner, 2007) is a 23-item abbreviated measure of the 45-item Social Phobia and Anxiety Inventory (Turner, Beidel, Dancu, & Stanley, 1989). The two subscales of the SPAI-23 have a strong correlation with those from the original SPAI (*r* = .97 and .90 for the Social Phobia subscale and the Agoraphobia subscale, respectively). Items are rated on a five-point scale, ranged from 0 (never) to 4 (always). Items include "*I feel anxious when I am in a social situation and I am expected to engage*

in some activity" (for social phobia) and "*Being in large open spaces makes me feel*

anxious" (for agoraphobia). Two subscales (16-item Social Phobia subscale and 7-item

Agoraphobia subscale) are calculated separately by summing all the ratings. A difference

score is computed through subtracting the Agoraphobia score from the Social Phobia

score. The internal consistencies were consistently high in previous studies; for the

Social Phobia subscale, αs ranged from .93 to .95 and for the Agoraphobia subscale, αs

ranged from .85 to .88 (Roberson-Nay et al., 2007; Schry et al., 2012). In this current

study, αs were .94 and .85 for Social Phobia and Agoraphobia subscales, respectively,

which is consistent with previous research.

Procedure

Approval from Institutional Review Board was obtained prior to participant

recruitment. Five offices of International Student and Scholar Services from institutions

that host international students advertised for study recruitment through email listserv and

social medias (such as Facebook page or blog). Further, international student

organizations and faculty members from 14 universities that were identified as leading

institutions hosting international students (Institute of International Education, 2014b)

helped distribute recruitment messages through listservs, emails, and social medias. In

addition, the survey link was also distributed through listservs of the American

Psychological Association Divisions 17 (Counseling Psychology) and 52 (International

Psychology). Finally, 170 training directors of psychology pre-doctoral internship sites

were contacted to help distribute the survey to eligible trainees. However, it is unclear

how many of them actually distributed the survey.

Participants received an online survey link containing a preamble page and a set of questionnaires. Respondents who chose "I agree. I understand the information above, I am age 18 or over, and I am holding a student visa (F-1/J-1) in the U.S. Take me to the survey!" were directed to the survey questions. Respondents who chose "No, I don't agree! I don't want to take the survey, I am under the age of 18, and/or I am not holding a student visa (F- 1/J-1) in the U.S." were thanked for their time and the survey discontinued.

The online survey by Qualtrics included a demographic questionnaire, PSI-II (Robins et al., 1994), RIC scale (Kashima & Hardie, 2000), ILS (Yang & Clum, 1995), SPAI-23 (Roberson-Nay et al., 2007), and CES-D (Radloff, 1977). The researcher arranged questionnaires in four different orders, with the CES-D always positioned as the last questionnaire. After completing the survey, participants were given a chance to join a drawing for a $50 gift card.

Data Analysis

Two validity questions instructing respondents to select a certain response (e.g. *Agree* and *Sometimes*) were embedded in the survey to identify participants who gave random responses. Only those who passed both validity questions were included in the final sample. Initial data cleaning, internal consistencies of all scales, and sum scores of all constructs were calculated using SPSS 22.

Path analyses were conducted using Amos 22 to investigate the cross-sectional associations between self-construals, personality styles, interaction of life events and personality styles, and depressive symptoms, after controlling for social anxiety. The structural model using maximum likelihood estimation was tested.

Goodness of model fit was first tested with value of chi-square (χ^2), a traditional measure for overall model fit. Wheaton, Muthen, Alwin, and Summers (1977) suggested a method of relative/normed chi-square (χ^2/df) to minimize the impact of sample size. A ratio ranged from 2.0 to 5.0 is considered as acceptable (Wheaton et al., 1977). Other goodness of fit measures used were the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), Comparative Fit Index (CFI; Bentler, 1990), and root mean squared of the residuals (RMSEA; Steiger& Lind, 1980). A value of $\geq .95$ is considered a good model fit and a value of $\geq .90$ indicates an acceptable model fit for CFI and TLI (Hu & Bentler, 1999). A RMSEA value of $< .05$ is viewed as a good model fit and a value of $< .08$ is considered as acceptable (Hu & Bentler, 1999).

When model fit indices suggested the hypothesized model describes the empirical data poorly, the model was modified to improve the model fit (Kenny, 2011; Kline, 2011). Model modification, also called re-specification, is often done based on theoretical rationale or empirical tests (Kenny, 2011). In this current study, the researcher proceeded with re-specification based on the empirical data. The first step of re-specification was to identify and add all possible associations between variables (see Figure 2). The overall model fit for the model with all paths was evaluated in the second step, and then estimates of regression weights were used for modification suggestion. Hosmer and Lemeshow (1989) and Burkholder and Harlow (2003) suggested to use a p value of .20 ($z = 1.28$) as cutoff. Meaning a regression with a – p value of .20 or higher was set to zero. During re-specification, only one modification was made at one time. Following each modification, the estimate of overall model fit was then re-calculated. Such modification process was repeated until the model-data fit reached a good fit and an
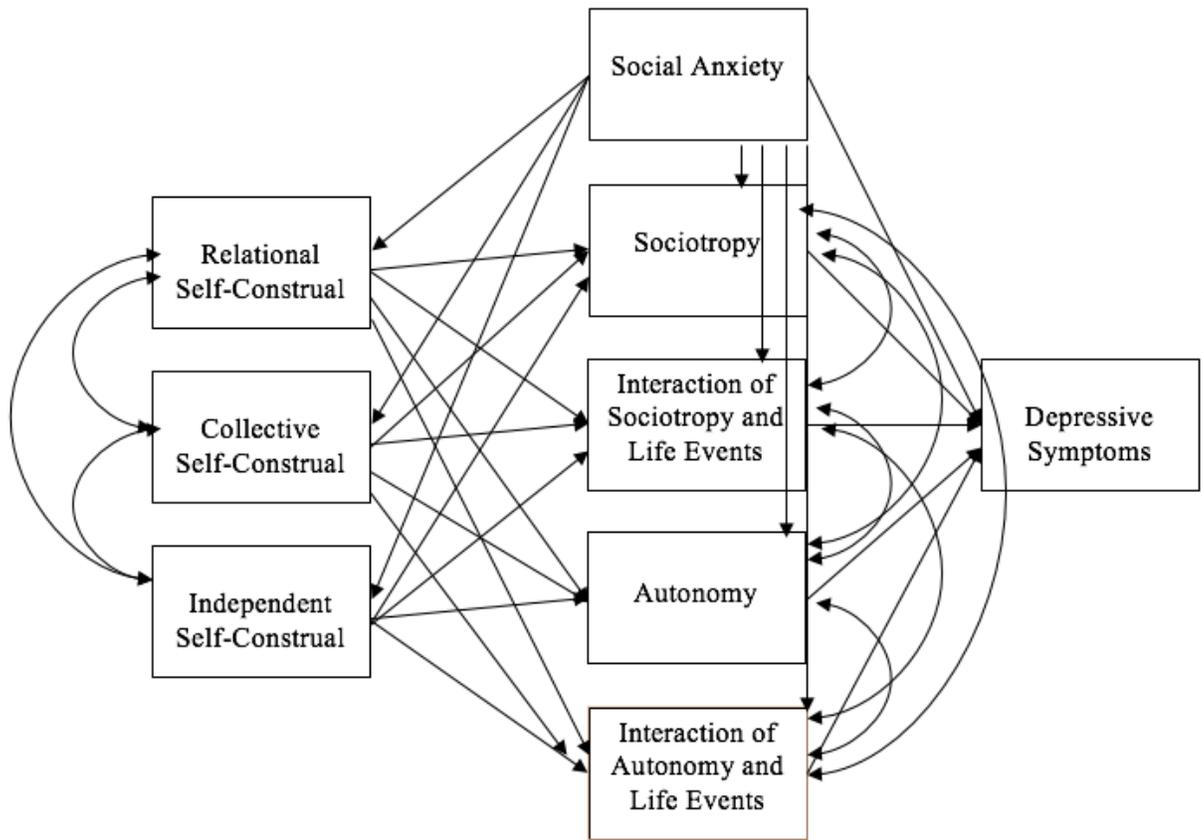
Figure2. Model with All Paths

optimal model was generated. Chi-square difference test was conducted to assess

whether the re-specified model was statistically different from the previous model. The

difference between CFI values (ΔCFI) for the previous model and the re-specified model

was calculated. When ΔCFI of two models is > .002, the model with a higher CFI fits the

data significantly better. However, if ΔCFI is ≤ .002, both models fit equally well from a

statistical point of view and the more parsimonious model (with more degrees of freedom)

should be accepted (Meade, Johnson, & Braddy, 2008).

Mediation analyses of personality styles and the interactions of personality styles

and domain-specific life events on the associations between self-construals and

depressive symptoms were conducted using Amos 22. A bias-corrected bootstrapping

approach was used to improve the accuracy of confidence limits for the indirect effect,

and 95% confidence intervals were calculated (Preacher & Hayes, 2008; Shrout & Bolger,

2002). According to Preacher and Hayes (2008), multiple mediation effects exist when

the indirect effect is significant. To further test for individual mediation effects for each

mediator (sociotropy and the interaction of sociotropy and negative interpersonal life

events), RMediation (Tofighi & MacKinnon, 2011) was used to calculate this individual

mediation effects.

CHAPTER III

RESULTS

Descriptive and Missing Data

Table 2 presents mean and standard deviation of all variables measured in the

present study and Table 3 presents the bivariate correlations among those variables. The

overall percentage of missing data was 0.31%. The randomness of missing data was

evaluated using Little's Missing Completely at Random Test (MCAR; Little, 1988).

Results of Little's MCAR test, χ^2 (16382)= 16335.64, p = .600, indicated that data were

missing at completely random rates and there were no identifiable patterns for the

missing data. Expectancy Maximization algorithm (EM; Dempster, Laird, & Rubin,

1977) was then conducted to impute missing values.

Path Analyses

The hypothesized model (model controlling for social anxiety; Figure 1) included

variables of relational self-construal, collective self-construal, independent self-constural,

social anxiety, sociotropy, autonomy, interaction of sociotropy and interpersonal life

events, interaction of autonomy and achievement life events, and depressive symptoms.

Results showed that the hypothesized model was not consistent with the empirical data.

The model fit indices, χ^2 (22) = 920.13, $p<$ .001, χ^2/df = 41.82, TLI = -.351, CFI = .175,

RMSEA = .266, indicated a poor model fit.

Due to the poor model fit, the hypothesized model was modified (Kenny, 2011).

All possible associations between variables, including covariances between relational

32

Table 2

Descriptive Data (N = 579)

	Mean	SD
Relational Self-Construal	57.98	7.10
Collective Self-Construal	52.67	8.95
Independent Self-Construal	59.33	7.09
Social Anxiety	24.29	11.60
Sociotropy	95.49	16.75
Autonomy	89.02	13.65
Interpersonal Life Events	4.46	3.43
Achievement Life Events	8.45	3.23
Interaction of Sociotropy and Interpersonal Life Events	.14	1.04
Interaction of Autonomy and Achievement Life Events	.30	1.15
Depressive Symptoms	18.53	10.65

Table 3

Correlations among Variables (N = 579)

	1	2	3	4	5	6	7	8	9	10	11
1. Relational Self-Construal	–										
2. Collective Self-Construal	.59**	–									
3. Independent Self-Construal	.56**	.37**	–								
4. Social Anxiety	-.06	-.10*	-.05	–							
5. Sociotropy	.23**	.24**	.23	.31**	–						
6. Autonomy	-.10*	-.06	.04	.35**	.46**	–					
7. Interpersonal Life Events	-.07	-.05	-.07	.18**	.15**	.22**	–				
8. Achievement Life Events	.02	.11*	.01	.29**	.34**	.31**	.35**	–			
9. Interaction of Sociotropy & Interpersonal Life Events	.01	-.05	-.06	-.04	-.09**	-.06	.10*	-.04	–		
10. Interaction of Autonomy & Achievement Life Events	.06	.02	.02	-.10*	-.14**	-.13**	-.02	-.06	.31**	–	
11. Depressive Symptoms	-.11**	-.12**	-.21**	.30**	.39**	.36**	.27**	.41**	.02	.04	–

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

self-construal, collective self-construal, and independent self-construal, covariances between sociotropy, autonomy, and their interaction with life events, correlations between social anxiety and sociotropy, autonomy, and their interaction with life events were added (see Figure 2). The path analysis for the model with all associations still yielded a poor to acceptable model fit, $\chi^2(3) = 38.28$, $p < .001$, $\chi^2/df = 12.76$, TLI = .611, CFI = .968, RMSEA = .143. Because of the poor to acceptable model fit, the next step of re-specification was that paths with a p value of .20 or lower were set to zero (Hosmer & Lemeshow, 1989; Burkholder & Harlow, 2003). The following paths were identified and eliminated during this step of re-specification: (a) association from independent self-construal to interaction of autonomy and life events, (b) association from interaction of autonomy and life events to depressive symptoms, (c) association from collective self-construal to autonomy, (d) association from collective self-construal to interaction of autonomy and life events, (e) association from relational self-construal to interaction of autonomy and life events, and (f) correlation between autonomy and interaction of autonomy and life events. Model fit indices for the revised model (see Figure 3), $\chi^2(11) = 44.32$, $p < .001$, $\chi^2/df = 4.03$, TLI = .900, CFI = .969, RMSEA = .072, indicated a good model fit.

An alternative model with no interaction of personality styles and domain-specific life events was tested (see Figure 4). Results of path analysis for the model without interaction, $\chi^2(3) = 36.88$, $p < .001$, $\chi^2/df = 12.29$, TLI = .764, CFI = .966, RMSEA = .140, yielded a poor to fair model fit. Re-specification was conducted based on the above outlined empirical criterion, and one path was identified and eliminated: the association from collective self-construal to autonomy. Model fit indices for the
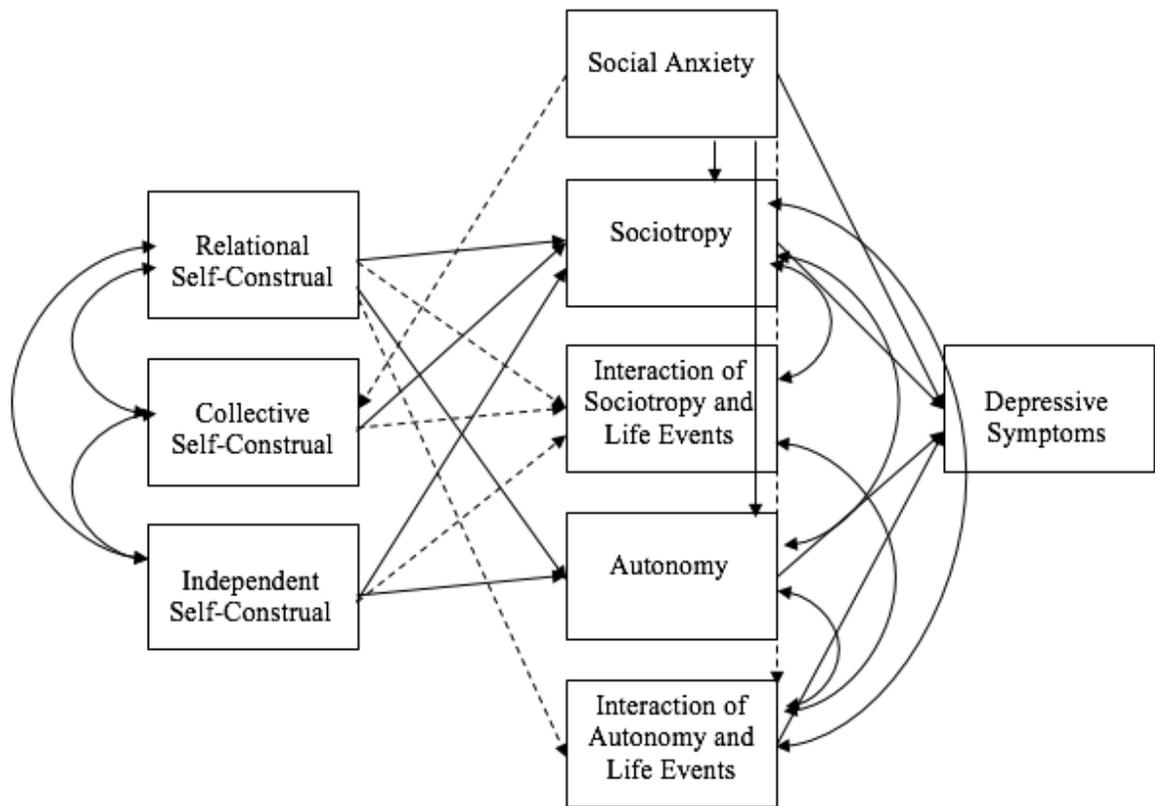
Figure 3. Modified Model
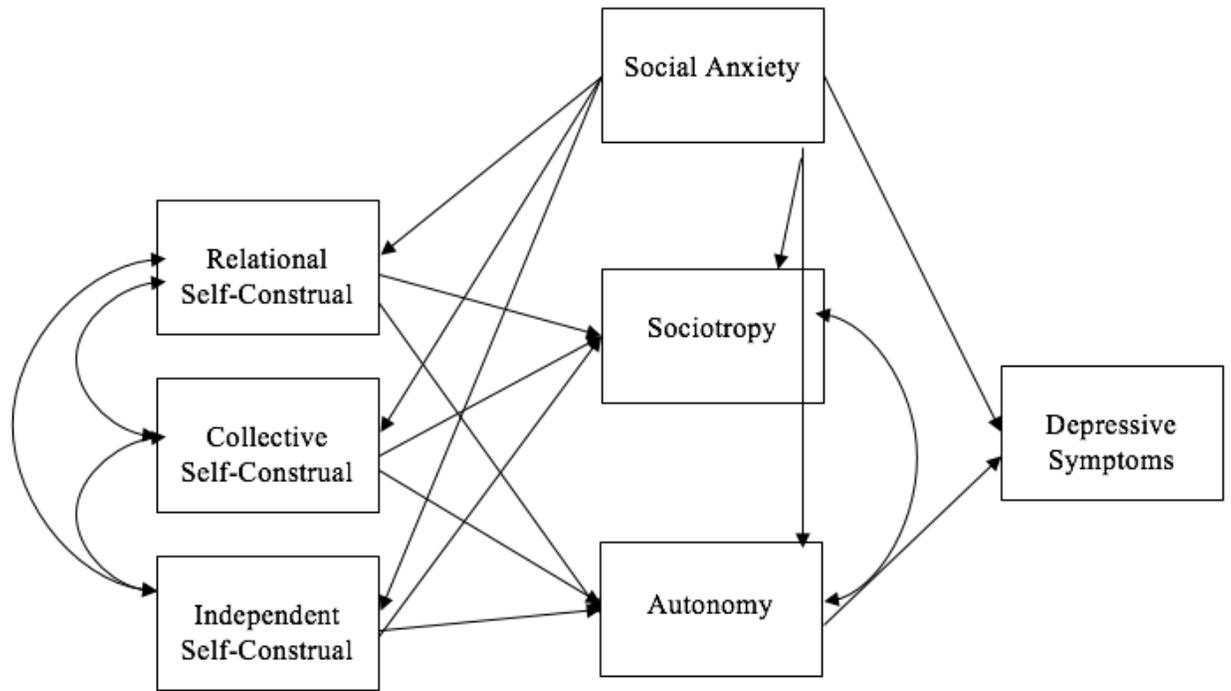
Figure4. Model without Interactions

modified model without interaction (see Figure 5), χ^2 (6) = 39.87, p < .001, χ^2/df = 6.65, TLI = .882, CFI = .966, RMSEA = .099, indicated a acceptable model fit.

A comparison was conducted to calculate the difference between CFI values for the modified model and the modified model without interaction. Results indicated a ΔCFI of .003, which is larger than the suggested value of .002, so the modified model with interaction was kept. Standardized regression weights for this optimal model were presented in Table 4.

Tests for Mediation

Total effects, direct effects, and indirect effects are shown in Table 5. Analysis of indirect effects was conducted to test for mediation effects of personality styles on the association between self-construals and depressive symptoms using 95% bootstrapping confidence intervals. There was only one significant indirect effect found from collective self-construal to depressive symptoms, B = .057, p = .001, 95% CI [.028, .097]. To test for individual mediation effects of sociotropy, result showed that sociotropy is a significant mediator for the path of collective self-construal to depressive symptoms, β = .057, SE = .015, 95% CI [.03, .088].

Table 4

Standardized Regression Weights (N = 579)

Path	Estimate
Social Anxiety → Collective Self-Construal	-.06
Relational Self-Construal → Sociotropy	.28[*]
Relational Self-Construal → Autonomy	-.17[*]
Relational Self-Construal → Interaction of Sociotropy and Life Events	.09
Relational Self-Construal → Interaction of Autonomy and Life Events	.05
Collective Self-Construal → Sociotropy	.18[*]
Collective Self-Construal → Interaction of Sociotropy and Life Events	-.07
Independent Self-Construal → Sociotropy	-.23[*]
Independent Self-Construal → Autonomy	.15[*]
Independent Self-Construal → Interaction of Sociotropy and Life Events	-.08
Social Anxiety → Sociotropy	.33[*]
Social Anxiety → Autonomy	.34[*]
Social Anxiety → Interaction of Autonomy and Life Events	-.08
Social Anxiety → Depressive Symptoms	.16[*]
Sociotropy → Depressive Symptoms	.27[*]
Autonomy → Depressive Symptoms	.20[*]
Interaction of Autonomy and Life Events → Depressive Symptoms	.12[*]

Note. * *p*< .05

Table 5

Total, Direct, and Indirect Effects and Their 95% Confidence Intervals Testing for

Multiple Mediations

	Effects	Lower CI	Upper CI
Total effects			
Relational SC → Interaction of A & ILS	.009	-.008	.026
Relational SC → Autonomy	-.324[*]	-.518	-.132
Relational SC → Sociotropy	.655[*]	.419	.900
Relational SC → Depressive Symptoms	.071	-.005	.158
Relational SC → Interaction of S & ILS	.013	-.007	.036
Independent SC → Autonomy	.295[*]	.114	.467
Independent SC → Sociotropy	-.541[*]	-.788	-.321
Independent SC → Depressive Symptoms	-.047	-.129	.025
Independent SC → Interaction of S & ILS	-.012	-.030	.005
Collective SC → Sociotropy	.336[*]	.178	.494
Collective SC → Depressive Symptoms	.057[*]	.028	.097
Collective SC → Interaction of S & ILS	-.008	-.022	.004
Interaction of A & ILS → Depressive Symptoms	1.088[*]	.267	1.874
Autonomy → Depressive Symptoms	.153[*]	.070	.231
Sociotropy → Depressive Symptoms	.170[*]	.110	.232
Direct effects			
Relational SC → Interaction of A & ILS	.009	-.008	.026
Relational SC → Autonomy	-.324[*]	-.518	-.132

(continued)

Table 5 (continued)

Total, Direct, and Indirect Effects and Their 95% Confidence Intervals Testing for Multiple Mediations

	Effects	Lower CI	Upper CI
Relational SC → Sociotropy	.655[*]	.419	.900
Relational SC → Depressive Symptoms	.000	.000	.000
Relational SC → Interaction of S & ILS	.013	-.007	.036
Independent SC → Autonomy	.295[*]	.114	.467
Independent SC → Sociotropy	-.541[*]	-.788	-.321
Independent SC → Depressive Symptoms	.000	.000	.000
Independent SC → Interaction of S & ILS	-.012	-.030	.005
Collective SC → Sociotropy	.336[*]	.178	.494
Collective SC → Depressive Symptoms	.000	.000	.000
Collective SC → Interaction of S & ILS	-.008	-.022	.004
Interaction of A & ILS → Depressive Symptoms	1.088[*]	.267	1.874
Autonomy → Depressive Symptoms	.153[*]	.070	.231
Sociotropy → Depressive Symptoms	.170[*]	.110	.232
Indirect effects			
Relational SC → Depressive Symptoms	.071	-.005	.158
Independent SC → Depressive Symptoms	-.047	-.129	.025
Collective SC → Depressive Symptoms	.057[*]	.028	.097

Note. CI = Confidence Interval; SC = Self-Construal; Interaction of A & ILS = Interaction of Autonomy and Life Events; Interaction of S & ILS = Interaction of Sociotropy and Life Events. * $p < .05$.
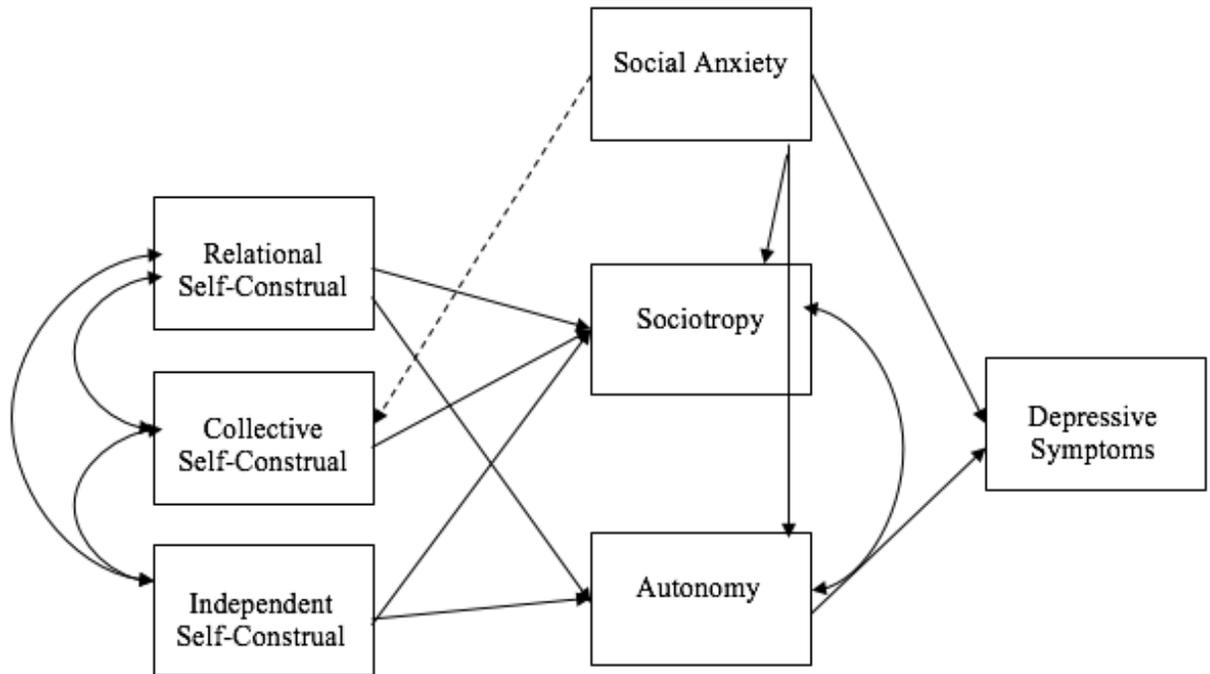
Figure5. Modified Model without Interactions

CHAPTER IV

DISCUSSION

This study aimed to examine the relationships among self-construals, personality styles, interactions of personality styles and domain specific life events, and depressive symptoms in international students. Results of path analyses confirmed one of the four proposed hypotheses while the other three hypotheses were partially supported. Social anxiety did not influence the associations of self-construals and personality styles with depressive symptoms. In addition, self-construals were found to be positively associated with corresponding personality styles; that is, relational-interdependent self-construal and collective-interdependent self-construal both were positively related to sociotropic personality style while independent self-construal was positively related to autonomous personality style. The interaction of autonomous personality style and stressful achievement life events was associated with international students' depressive symptoms.Results also supported the mediation effect of sociotropy for the relationship between collective self-construal and depressive symptoms.

However, while results supported the relationships between self-construals and their corresponding personality styles, there were unexpected negative associations found between relational self-construal and autonomy and between individual self-construal and sociotropy. Also, contrary to the hypotheses, none of the self-construals was related to

the interactions of personality styles and domain-specific life events. Further, there was

no relationship between interaction of sociotropy and interpersonal negative life events to

depressive symptoms.

Before discussing each result in details, it should be noted that the

intercorrelations between relational self-construal and collective self-construal ($r = .59$)

and between relational self-construal and independent self-construal ($r = .56$) were

considerably high, which raised a question whether these constructs were independent

from one another. In the original scale development, Kashima and Hardie (2000) also

encountered similar high intercorrelations among the RIC subscales ($r = .53$ for relational

self-construal and collective self-construal and $r = .58$ for relational self-construal and

individual self-construal). They argued these high intercorrelations are caused by the

context the subscales share, since each scenario was asked three times to assess three

different self-aspects in the RIC scale. Another possibility is that self-construals might be

related to an individual's self-evaluation. Someone with a positive self-evaluation is

likely to rate him-/herself consistently positive and therefore respond to items of all self-

construals similarly. While further research like confirmatory factor analysis is

warranted to investigate the relationship among constructs, it is possible that there might

be overlaps among self-construals measured by the RIC scale.

Relationships between Self-Construals and Personality Styles

The literature in general supported no correlation between interdependence and

autonomy (Gorski & Young, 2002; Sato & McCann, 1998; Mak et al., 2011). Thus, it

was hypothesized that relational self-construal and collective self-construal would be

associated with sociotropy but not with autonomy. Contrary to this hypothesis, results

yielded a negative association from relational self-construal to autonomy. Considering

that relational self-construal refers to the degree individuals define themselves through

relatedness to others and that defensive separation is one subscale measured by autonomy,

it is possible that one might endorse opposite scores on the scales of relational self-

construal and autonomy and thus resulted in the negative association. Further

investigation is warranted to replicate and confirm such relationship.

Similarly, it was hypothesized that independent self-construal would be associated

with autonomy but not with sociotropy. Results of this study yielded an unexpected

negative association between independent self-construal and sociotropy. However, the

results fit partially with previous findings as previous research showed mixed results

regarding the existence of negative association between independent self-construal and

sociotropy (Gorski & Young, 2002; Mak et al., 2011; Sato & McCann, 1998). Studies

that supported negative association between the independent self-construal and

sociotropy (Mak et al., 2011; Sato & McCann, 1998) suggested that the negative

association was a reflection of individuals' adaptiveness to independence in the American

cultural context. While participants from those previous studies were American

undergraduate students (Sato & McCann, 1998) and Americans with minority ethnic

identities (Mak et al., 2011), participants of this current study were mostly international

students from cultures that are less likely value independence (e.g., China, India, South

Korea, and Taiwan; Fernández, Paez, & González, 2005; Morling, & Fiske, 1999) and

matriculating through the process of acculturation. It is possible that international

students might still identify strongly with their own cultural values, while rejecting and

not incorporating American culture into their sense of self (Berry, 1997; Searle & Ward,

1990). Therefore, one might interpret the negative association between independent self-construal and sociotropy as a reflection of the limited acculturation of international students included in the current study.

Relationship between Self-Construals and Interaction of Personality Styles and Domain-Specific Life Events

Based on the assumptions that there are associations between self-construals and personality styles, it was hypothesized that self-construals would be related to the corresponding interaction of personality styles and domain-specific life events. For example, relational-interdependent self-construal and collective-interdependent self-construal would be related to the interaction of sociotropic personality style and interpersonal life events. Similarly, it was proposed that independent self-construal would be positively related to the interaction of autonomous personality style and achievement life events. As mentioned above, the proposed associations between self-construals and personality styles were confirmed in this study. However, the hypotheses regarding the self-construals and the interactions of personality styles and life-events were not supported by the results.

To understand the lack of relationships between self-construals and the interaction of personality styles and domain-specific life events, one might consider the relationship between self-construals and stressful life events first. A majority of previous studies have focused on the indirect impact of self-construals on perceived stress and adjustment, such as through coping (Lam & Zane, 2004; Oguri & Gudykunst, 2002; Yang, Noels, & Saumure, 2006). Only Cross (1995) analyzed the direct association between self-construals and perceived stress for 71 East Asian international students and 79 American

graduate students. Results showed that only interdependent self-construal (which is comparable to collective self-construals), but not independent self-construal, had a positive direct effect on stress for the sample of international students. While Cross (1995) found the association between interdependent self-construal and perceived stress was significant among international students, more research is needed to explain the contrary findings.

In the literature there is no pre-established significant relationship between relational self-construal and stress or between independent self-construal and stress, thus making the current examination of this relationship exploratory in nature. In addition, the main effects of stressful life events were not studied in the present study. Since there were no significant relationships between the main effect of stress and relational self-construal or independent self-construal, it is no surprise that there were no significant associations between self-construals and the interactions of personality styles and stressful life events beyond the main effects of life events.

Association between Interaction of Sociotropy and Interpersonal Life Events and Depressive Symptoms

Contrary to expectations, no relationship was found between the interaction of sociotropy and interpersonal life events and depressive symptoms. In Beck's theory (1983), individuals with sociotropic personality style who encounter negative interpersonal life events, such as rejection and loss of loved ones, may experience depressive symptoms. In the current study, stressful interpersonal life events were measured using the Interpersonal Distress subscale of the Index of Life Stress, which measures mainly one's perceived racial discrimination (e.g., "*I can feel racial*

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discrimination toward me from other students", "*People treat me badly just because I am a foreigner.*") Thus, one could argue that the results of interpersonal distress obtained in this study were limited to perceived discrimination, instead of interpersonal negative life events that are congruent with the concept of sociotropy. Therefore, the lack of association between the interaction of sociotropy and negative interpersonal life events and depressive symptoms might not be contrary to Beck's theory (1983) and the proposed hypothesis.

Another possible explanation for the lack of association between the interaction of sociotropy and negative interpersonal life events and depressive symptoms is that relationships between perceived discrimination and depressive symptoms is inconsistent. Some studies confirmed a direct relationship between perceived racial discrimination and depressive symptoms (Chae, Lee, Lincoln, & Ihara, 2012; Finch, Kolody, & Vega, 2000; Rahman & Rollock, 2004; Wei, Ku, Russel, Mallinckrodt, & Liao, 2008) while others found no direct impact of discrimination on depressive symptoms (Budhwani, Hearld, & Chavez-Yenter, 2015; Lau, Tsai, Shih, Liu, Hwang, & Takeuchi, 2013). In general, when encountering racial discrimination, U.S.-born racial minorities were found to be more prone to depressive symptoms and other mental health concerns than their non-U.S. born counterparts (Budhwani et al., 2015; Lau et al., 2013). To be more specific, Wei and colleagues (2008) found that there was no relationship between racial discrimination and depressive symptoms in Asian international students. Therefore, one could argue that foreign-born international students are less likely to react to discrimination-based interpersonal distress with depressive symptoms.

A third possible explanation for the lack of association between interaction of sociotropy and negative interpersonal life events and depressive symptoms is the categorization of negative life events (Abramson, Alloy, & Hogan, 1997; Coyne & Whiffen, 1995). Some researchers speculated that individuals experiencing life events might interpret such events as belonging to a different category than what the developers of an instrument had in mind (Abramson et al., 1997; Kwon & Whisman, 1998). Because of this varied categorization, there is a potential for mixed findings between the interaction of personality styles and life events and depressive symptoms for the current study.

Finally, while individuals are likely to focus on self-relevant life events, achievement life events are more prevalent to college student populations (Giordano, Wood, & Michaela, 2000). Thus, it is possible that international students are more academically-driven and react to achievement life events more than to interpersonal life events. This hypothesis is supported by two other studies using non-clinical college students in which no association between the interaction of sociotropy and negative interpersonal life events and depressive symptoms could be found (Clark & Oates, 1995; Giordano et al., 2000). These previous studies align with that of the current study.

Mediating Effects of Personality Styles

The hypotheses were that the main effects of personality styles and the interactions of personality styles and domain-specific stressful life events would mediate the relationships between self-construals and depressive symptoms. The previous section provides a possible explanation for the lack of relationships between the interaction of sociotropic personality styles and stressful interpersonal life events and depressive

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symptoms and between independent self-construal and the interaction of autonomous personality style and negative achievement life events outlined. While these non-significant relationships among variables suggest no mediation effects, they do not explain why sociotropy was only found to mediate the relationship between collective self-construal and depressive symptoms but not for relational self-construal.

One explanation for this pattern of findings might be that relational self-construal referred to one's close relationships, like partners and friends. One third of international students in the current sample identified as either married or in a committed relationship, while two-thirds of the sample were single. This demographic composition might have influenced what this group of international students would refer to as their close relationship. The concept of defining oneself through close relationships might become more complex in the context of international students adapting to U.S. culture. As international students adjust to the U.S., they grieve the loss of their social support system and face the challenge of building a comparable social support system (Mallinckrodt & Leong, 1992; Sandhu, 1995; Yeh & Inose, 2003). For this reason, students may define one of various social relationships as "close." For example, close relationships may refer to friends and family back at home or friends they make in the U.S. This redefinition of close relationships for international students helps possibly explain why sociotropy did not mediate the association between relational self-construal and depressive symptoms. For example, if international students refer their friendship back home as close relationships, the influence of "close relationships" on their responses to sociotropy might not be as present as those who refer to nearby "close relationships,"

as sociotropy measures "concern about what others think", "dependence", and "pleasing others."

Similarly, and contrary to the hypothesis, autonomy did not mediate the association between independent self-construal and depressive symptoms. This lack of mediation might be explained by the examining relationship between independent self-construal and depressive symptoms is exploratory, as previous studies did not find a consistent relationship between the two variables. Independent self-construal in this study reflected whether one lives up with his or her own value, develop uniqueness as an individual, and assume personal responsibility. If individuals with high independent self-construal lose their sense of uniqueness, one might speculate that it would trigger depressive symptoms and other negative emotional reactions. However, research also showed that independent self-construal is positively related to better coping and better psychological outcome compared to interdependent self-constural (Lam & Zane, 2004; Oguri & Gudykunst, 2002; Yang et al., 2006). Autonomy was positively related to independent self-construal in the current study and previous studies (Gorski & Young, 2002). While autonomy was found to be positively related to depressive symptoms in the current study, previous literature yielded mixed findings (related: Bagby et al., 2001; Bieling & Alden, 2001; Mongrain & Blackburn, 2005; Sato & McCann, 1998; Sutton et al., 2011; not related: Alford & Gerrity, 1995; Nelson et al., 2001). Nevertheless, independent self-construal was negatively correlated with depressive symptoms in this study, also supported by literature (Mak et al, 2011; Su et al., 2013). Despite the earlier speculation that independent self-construal would be positively related to depressive symptoms due to its positive correlation with autonomy, results of this study did not

support such relationship. Therefore, it would make sense that in the current study autonomy was not found to be a significant mediator.

Limitations

While the findings of the current study have significant implications, results should be interpreted in consideration of its limitations. This study used a cross-sectional design, which does not allow for causal inferences.

Also, as mentioned previously, as it is unclear if international students' refer to friends and family back in their home country or in the U.S., asking for close relationships might have led to mixed results regarding mediation effects in this study. Using a mixed design for future studies could potentially provide more nuances in understanding the influences of self-construals and personality styles for international students.

A further limitation is that eighty percent of the participants of this study were graduate students, with a mean age of 26.24 years old, who are presumably more mature than undergraduate students. Therefore, the generalizability of this study might be limited to graduate students. Another data collection to replicate and confirm the model fit would help address the limited generalizability.

As noted above, items used to assess interpersonal life events in the present study mainly measured participants perceived racial discrimination, which could be one aspect of stressful interpersonal life events but which is not representative at all. The lack of associations between the interaction of sociotropic personality style and stressful life events and other variables (e.g. collective self-construal or depressive symptoms) might relate to the limited number of items. In addition, the Index of Life Stress (ILS; Yang

&Clum, 1995), was developed two decades ago and would benefit from updates to its content. Thus, it might be that items failed to capture stressful interpersonal life events as defined by Beck (1983) and they are not being representative enough of current negative social life events. Future research might include items that reflect current trends of connecting with one another through social media and the stress related to the lacking of such connection.

Implications for Practice

Despite study limitations, results contribute to the literature of personality styles and mental health of international students. Several implications can be drawn from the current study. First, results of this study confirmed that the concept of self-construals was significantly related to personality styles of sociotropy and autonomy in international students. As this population is understudied, the present study expands the horizon of cross-cultural literature and provided practical implications for higher education personnel to working with international students in the U.S. In particular, results showed that sociotropy is significantly related to relational self-construal and collective self-construal, the previously defined interdependence, and that autonomy is related to independent self-construal. Therefore, identifying international students' self-construals would help better understand their personality styles, which are vulnerabilities to depressive symptoms. Personnel who work with international students in higher education institutions, such as mental health professionals and academic advisors, can incorporate measures of the PSI-II or the RIC scale during intake assessment or initial meeting to profile international students' personality style and provide according support. Considering there was a significant relationship between depressive symptoms and the

interaction of negative achievement life events and autonomy, it may be the case that international students who identify as achievement-driven are likely responding to stressful achievement related events when studying in the U.S. Thus, providing academic support through workshops or one-on-one guidance for this subgroup of international students would be beneficial in increasing academic self-efficacy and performance and potentially buffer depressive symptoms. Furthermore, results of this study provide evidence that international students display varying personality styles and self-construals. This helps keep personnel who work with international students in check regarding their assumptions that international students only display certain cultural and personality traits.

In sum, the present study is the first study of its kind to explore the relationships among self-construals, personality styles, and interactions of personality styles and stressful life events in international students. In addition, this study provides a more nuanced understanding of the way international students perceive themselves in an American context. This study adds knowledge to understand self-concepts and their relationships to depression for the growing international student population in the U.S. Results also provide higher education personnel more angles in understanding international students and provide according support.

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    sociotropy and autonomy. *Journal of Psychopathology and Behavioral*

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    global 'skills race' as viewed from Australia and Malaysia. *Globalisation,*

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CURRICULUM VITAE

Yu-Yun Liu

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EDUCATION

PhD (anticipated)	Counseling Psychology (APA Accredited) University of Louisville, Louisville, Kentucky *Dissertation:* Influences of Self-Construals and Personality Styles on International Students' Depressive Symptoms Status: Defended in July 2016 08/2011 – 08/2016
MEd	Counseling Psychology University of Louisville, Louisville, Kentucky 05/2014
MEd	School Counseling (CACREP Accredited) Purdue University, West Lafayette, Indiana 08/2008 – 05/2010
BA	Chinese Literature. Certificate in Secondary Teacher Education. National Central University, Taoyuan, Taiwan 09/2002 – 06/2006

CLINICAL EXPERIENCES

University of Florida Counseling and Wellness Center, Gainesville, FL   08/2015 – 07/2016
Clinical Concentration: Eating Disorders
Title: Psychology Intern
Supervisors: Drs. Michael Murphy & Jennifer Stuart (Licensed Psychologists)

- Conduct triage assessment, on-call consultation, and individual therapy regarding adjustment difficulties, identity development, disordered eating, psychological symptoms, and academic and relational distress
- Co-facilitate groups including themes of LGBTQ Empowerment, Making Peace with Food, and International Student Support Group in Mandarin
- Supervise a first-year doctoral practicum student and attend weekly supervision of supervision
- Participate in staff committees including intern selection, International Initiatives Team (UFIIT), and Crisis Response Team (CRT)
- Develop a consultation project for UF International Initiatives Team (UFIIT)

- Attend staff meetings, seminar trainings, and provide outreach presentations to campus wide associations

University of Louisville Counseling Center, Louisville, KY   08/2014 –05/2015
Title: Practicum Student
Supervisor: Drs. Juan Pablo Kalawski & Geeta Gulati (Licensed Psychologists)
- Conducted psychological intake assessment and individual therapy with clients experiencing depression, anxiety, suicidal ideation, relational distress, and academic difficulties
- Provided consultation to peer practicum students
- Assisted in outreach presentations and information tables
- Participated in weekly individual and group supervision

Bellarmine University Counseling Center, Louisville, KY   08/2013 – 08/2014
Title: Practicum Student, Liaison with Housing and Residence Life Team
Supervisor: Dr. Amy Wendell (Licensed Psychologist)
- Conducted psychological intake assessment and individual therapy with clients experiencing depression, anxiety, grief, suicidal ideation, eating disorders, and relational conflicts
- Co-facilitated an interpersonal group therapy targeting college students with social anxiety
- Provided consultation to students and staff
- Provided outreach presentations on various topics including college adjustment, stress management, sexual assault, alcohol use, and cultural differences
- Participated in weekly individual and group supervision, and seminar training

Communicare Services, Inc., Elizabethtown, KY   08/2012 – 08/2013
Title: Mental Health Intern
Supervisor: Dr. Jillian Carden (Licensed Psychologist)
- Conducted psychological intake assessment, and psychiatric hospital discharge evaluations
- Provided individual therapy to clients presenting with severe mental illness, substance use, and relational conflicts
- Coordinated community resources with case management
- Administered psychological assessment to children and adults
- Participated in weekly individual and group supervision, and staff meetings

Counseling Clinic at Jen-Kang Hospital, Taipei, Taiwan   06/2010 – 06/2011
Title: Intern Counselor
Supervisor: Ms. Tzu-Lee Chang (Licensed Counseling Psychologist in Taiwan)
- Provided individual and group therapy, and parental consultation
- Coordinated monthly staff meetings and group supervision
- Assisted in program accreditation from Taiwan Guidance and Counseling Association
- Participated in weekly individual and group supervision

Frontier Jr.-Sr. High School, Chalmers, Indiana   08/2009 – 05/2010
Title: Intern Guidance Counselor
Supervisor: Ms. Kathy Bassett (Licensed School Counselor)

- Conducted individual and group counseling, guidance lessons, and individual schedule planning
- Organized college information and facilitated career exploration
- Provided consultation to teachers and parents, including IEP meetings
- Attended weekly individual supervision

Purdue University BRIDGe Program, West Lafayette, Indiana   02/2009 –05/2009
Title: Grief Group Facilitator
Supervisor: Dr. Heather Servaty-Seib (Licensed Psychologist)
- Planned and prepared for a grief themed counseling group
- Co-facilitated eight group sessions for children aged 6 to 8
- Participated in weekly group supervision

Carroll Elementary School, Flora, Indiana   01/2009 – 05/2009
Title: Intern Guidance Counselor
Supervisor: Ms. Amy Hickson (Licensed School Counselor)
- Conducted individual and group counseling, and guidance lessons
- Coordinated community resources
- Provided consultation to teachers and parents
- Participated in weekly individual and group supervision

Miami Elementary School, Lafayette, Indiana   09/2009 –05/2010
Glen Acre Elementary School, Lafayette, Indiana   11/2008 –05/2009
Title: On Track Group Facilitator
Supervisor: Dr. Jean Peterson (Licensed Mental Health Counselor)
- Prepared group sessions in the areas of self-esteem, feelings, friendship, and values
- Facilitated small group discussion for fifth grade students
- Participated in weekly group supervision

LICENSE AND CERTIFICATION

Licensed Counseling Psychologist (#003251), Taiwan   September 2015
National Certified Counselor (#269332), U.S.A.   September 2011
Teaching Certificate in Chinese at the Middle and Senior High School Levels (#9601400)
April 2007

UNIVERSITY OUTREACH EXPERIENCES

University of Florida, Gainesville, Florida
Preview – New Student and Family Orientation (Presentation)   06/2016 & 07/2016
UFIIT Workshop – Home sweet home (Coordination & Introduction)   04/2016
Ready for Success Workshop – Break Up: Do's and Don'ts (Presentation)   03/2016
UFIIT Workshop – Don't be scammed (Coordination & Introduction)   03/2016
UFIIT Workshop – Healthy Relationships (Coordination & Introduction)   02/2016
Mental Health Awareness Week Panel Discussion with Professionals On-Site Counselor 12/2015
Mental Health Awareness Week Panel Discussion with Students On-Site Counselor   12/2015
ROTC Outreach - Memorial Service (Visibility)   12/2015

UFIIT Workshop – Academic Expectations and Success (Coordination &Introduction)   11/2015
UFIIT Workshop – Housing and Legal Services (Coordination & Introduction)   10/2015
UFIIT Workshop – Dating and Relationships in the U.S. (Coordination &Introduction)   09/2015
Ready for Success Workshop – Improving Concentration (Presentation)   09/2015
Re-entry Study Abroad Program (Presentation)   09/2015
Ready for Success Workshop– Habits of Happy People (Presentation)   09/2015
LGBTA Welcome Assembly (Tabling)   09/2015
Asian American Student Welcome Assembly (Tabling)   08/2015
Rec Stravaganza - Student Recreation & Fitness Center Open House (Tabling)   08/2015
Taiwanese Student Orientation (Visibility)   08/2015

University of Louisville, Louisville, Kentucky
Take Back the Night(Tabling)   09/2014
Pride Week Cookout Event(Tabling)   09/2014
International Student Orientation (Presentation)   08/2013 & 01/2014
Mental Health Awareness and Screening Day (Tabling & Brief Assessment)   10/2013

Bellarmine University, Louisville, Kentucky
Healthcare System and Culture(Presentation)   06/2014
Eating Disorder Awareness Week(Visibility)   02/2014
Study-Abroad, Alcohol Use, and Sexual Assault (Co-Presentation)   10/2013
Stress Management and College Adjustment (Presentation)   09/2013 &11/2013

Purdue University, West Lafayette, Indiana
Alive@Purdue, Campus Suicide Prevention Educator Training(Co-Presentation)   08/2009

AWARDS

Tuition Match Award ($12,624), University of Louisville   06/2014 –06/2015

First Place in the American Psychological Association Convention Division 52 (International Psychology) Student Poster Competition. Title: *Context of Instruction: How do Taiwanese students respond to the Teaching Behavior Questionnaire (TBQ)?*   08/2014

Graduate Student Council Travel Grant ($250), University of Louisville   08/2014

PRESENTATIONS

Liu, Y. -Y., Snyder, K. E., & Ralston, P. A. (2015, June). *Changes in motivational beliefs among first year engineering students: Relation to academic achievement and retention status*. Conference paper accepted at American Society for Engineering Education Annual Conference and Exposition, Seattle, WA.

Liu, Y. -Y.& Pössel, P. (2014, August). *Context of Instruction: How do Taiwanese students respond to the Teaching Behavior Questionnaire (TBQ)?* Poster presented at American Psychological Association Annual Convention, Washington, D. C.

Liu, Y. -Y.& Pössel, P. (2013, April).*Psychometric test of the Personal Style Inventory-II (PSI-II) in a Taiwanese youth sample*. Poster accepted at the biennial meeting of the Society for Research on Child Development, Seattle, WA.

Liu, Y. -Y. & Pössel, P. (2013, March). *Evaluation of the Chinese Personal Style Inventory-II (PSI-II) short form with an adolescent sample.* Poster presented at Kentucky Psychological Association Spring Academic Conference, Louisville, KY.

Kang, S. C., **Liu, Y. -Y.** & Chen, F. M. (2011, April 1-2). *Redesign of Introductory Course in Department of Civil Engineering.* Paper presented at the 1st International Workshop on Design for Civil and Environmental Engineering, Daejeon, South Korea (pp. 69-73).

RESEARCH AND WORK EXPERIENCES

Guild for Engineering and Education, Achievement, Retention, and Success, University of Louisville
Title: Graduate Research Assistant   07/2014 – 07/2015
Supervisor: Dr. Patricia Ralston
- Assisted in research projects entitled "Influences of Math Intervention on the Retention Rate of First Year Engineering Students" and "Changes in Motivational Beliefs among First Year Engineering Students"
- Conducted data distribution, data coding, and data analyses
- Prepared materials for conference paper and manuscript submission

Laboratory for School-based Prevention of Adolescent Depression and Promotion of Academic Achievement, University of Louisville, Louisville, KY
Title: Research Member   08/2011– 05/2015
Supervisor: Dr. Patrick Pössel
- Assisted in data collection, data entry, and data analyses
- Contributed to manuscript reviewing and writing

Department of Educational and Counseling Psychology, University of Louisville, Louisville, KY
Title: Graduate Research Assistant   08/2011 –06/2014
Supervisors: Drs. Patrick Pössel, Mark Leach, and John Dewell
- Assisted in research projects entitled "Service Learning and Faculty Beliefs" and "Petitionary Prayers across Religions"
- Assisted and lectured in graduate level classes
- Coordinated practicum placements and provided orientation for new practicum students
- Prepared materials for the APA program accreditation and the CACREP program accreditation

Imagination Research Group (IRG) &Center of iNnovation and Synergy for IntelliGent Home and Living Technology, Elderly Welfare Promotion Group (iINSIGHT-EWPG), National Taiwan University, Taiwan
Title: Research Assistant   09/2010 –06/2011
Supervisor: Dr. Shih-Chung Kang
- Prepared worksheets for "Introduction to Civil Engineering" and facilitated group discussion
- Prepared materials for manuscript submission and conference presentation
- Coordinated monthly guest speaker forum, and arranged events and exhibition
- Managed and led the press team in advertisement and publication

TEACHING EXPERIENCES

Department of Educational and Counseling Psychology, University of Louisville, Louisville, Kentucky

ECPY 648: Intellectual Assessment   Fall 2012
- Taught two sessions of administration, scoring and interpretation of Wechsler assessments
- Scored video administrations, test protocols, and reports for graduate students

ECPY 540: Evaluation and Measurement   Fall 2012
- Taught two sessions of principles of measurement and statistics to graduate students
- Assisted students in homework and test preparation

ECPY 650: Group Process and Practice   Fall 2012
- Graded and provided feedback to weekly student reflection papers for graduate students

SERVICE ACTIVITIES

University of Florida Counseling Psychology Incoming Graduate Students Interview   01/2016
Internship Information Session for Counseling Psychology Students   04/2015
The 2014 Counseling Psychology Conference Registration Desk Volunteer   03/2014
University of Louisville International Student Orientation Ambassador   08/2013 – 01/ 2014
University of Louisville ECPY Doctoral Student Organization Secretary   08/2012–01/2014
Kentucky Psychological Association (KPA) Spring Conference Student Poster Judge   03/2013

PROFESSIONAL AND ACADEMIC MEMBERSHIP

American Psychological Association (APA) Student Member
> Division 17: Society of Counseling Psychology
> Division 44: Society for the Psychological Study of Lesbian, Gay, Bisexual, and Transgender Issues
> Division 52: International Psychology

Taiwan Psychology Network (TPN) Member
University of Louisville ECPY Doctoral Student Organization

ATTENDED WORKSHOPS, TRAININGS, AND CONFERENCES

Interdisciplinary Collaboration in the Treatment of Clients with Complex Eating Disorders
Gainesville, FL   03/2016
Not a Drag! Competencies in Working with Trans* Clients- Part Two-Transgender Protocol
Gainesville, FL   03/2016
Psychological First Aid: Providing Help in the Aftermath. *Gainesville, FL*   01/2016
Understanding the ICD-10-CM. *Gainesville, FL*   10/2015
Psychosis: A Brief Review. *Gainesville, FL*   09/2015
American Psychological Association Annual Convention. *Washington D. C.*   08/2014
The Counseling Psychology Conference, Counseling Psychology in Action: Future Opportunities and Challenges. *Atlanta, GA*   03/2014
Healing Broken Bonds: Traumatic Attachment and Affect Regulation. *Louisville, KY*   03/2014
Kentucky Psychological Association Spring Conference. *Louisville, KY*   03/2013

University of Louisville Trans* 101 Workshop. *Louisville, KY*   11/2012
Great Lakes Counseling Psychology Conference. *West Lafayette, IN*   03/2012
"School Counselors in International Dialogue" program, Fontys University, *Holland*   03/2010
Indiana School Counselor Conference. *Indianapolis, IN*   11/2009
Alive@Purdue, Campus Suicide Prevention Educator Training. *West Lafayette, IN*   05/2009
Intensive English Institute, University of Illinois at Urbana Champaign. *IL*   05/2008 –08/2008
Counselor Training Program, Teacher Chang Foundation. *Taiwan*   09/2007 – 01/2008
Chinese Language Teacher Training Program. *Taiwan*   09/2007 – 01/2008

VOLUNTEER EXPERIENCES

Missionaries of Charity. Care of clients, food service, laundry and cleaning.
Kolkata, India   07/2007

Taipei City Hospital, Women and Children Branch. Story teller to children, information service
for parents. *Taipei, Taiwan*   04/2007 –01/2008

Eden Social Welfare Foundation. Provided social services and consultation for new immigrants
from Southeast Asia. *Taipei, Taiwan*   03/2007 – 01/2008

The Bunun Culture and Education Foundation, Aboriginal Tribe. Tutor to tribal children and
teenagers, assisted with the tribal tourist business. *Taitung, Taiwan*   07/2006

PROFESSIONAL REFERENCES

Jennifer Stuart, Ph.D.
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University of Florida Counseling and Wellness Center
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Natasha Maynard-Pemba, Ph.D.
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Assistant Director/Training Director
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Professor
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Practicum Coordinator/International Team Coordinator
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