A Symptom Profile Analysis of Depression in a Nationally Representative Sample of Asian Americans

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Abstract

Past research has suggested the existence of differences in depressive symptoms, diagnosis, and treatment of depression among ethnic and racial groups. In particular, Asian Americans have been found to experience depression differently than European Americans. Using a symptom profile approach, the presentation of depressive symptoms was examined in a nationally representative sample of Asian Americans and compared to that of European Americans. This study used data from the Collaborative Psychiatric Epidemiology Surveys, which include the National Latino and Asian American Study (NLAAS) and the National Comorbidity Survey-Replication (NCS-R). Depressive symptom profiles of Asian Americans and European Americans who reported depressive experiences were compared in order to analyze the phenomenology of depression in these groups. Findings suggested that Asian Americans reported somatic and affective depressive symptoms equally. When compared to European Americans though, they endorsed a variety of symptoms less frequently. Clinical implications and directions for future research are discussed.

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Culture and Depression

According to the World Health Organization (WHO), major depression is reported as the leading cause of disability worldwide and the fourth largest contributor to the global burden of disease (WHO, 2005). Major depression is a chief public health problem and it is projected to be the second largest contributor to global disease burden by 2020 (Murray & Lopez, 1996). The lifetime prevalence rates of depression range from 10% to 25% for women and from 5% to 12% for men (APA, 1994). Depression has been identified in all countries and among all ethnic and racial groups that have been studied (Kessler et al., 2003; Weissman et al., 1996).

The ubiquity and the serious consequences of major depression call for prompt actions in increasing our understanding of its etiology, phenomenology, assessment, diagnosis, and treatment. It is believed that culture plays an important role in the aforementioned processes and affects the way depressive symptoms are experienced and expressed, as well as described and measured. Research on the subject of culture and depressive experience has lead to a wide array of theoretical and clinical publications (e.g., Kirmayer & Jarvis, 2006; Kleinman & Good, 1985).

In their book *Culture and Depression,* Kleinman and Good (1985) bring together anthropologists, psychologists, and psychiatrists to present a unique perspective that challenges the purely biomedical conceptualization of depression. Cross-cultural studies of depression may provide evidence for its universality but they also offer data of cultural variations in depressive mood, symptoms, and illness. Therefore, the authors urge researchers to delve into the various aspects of depression, such as expression of bodily complaints, meaning of variations of affect (e.g., dysphoria, sadness, emptiness), and particular cultural idioms describing mood and distress.

The Western conceptualization of mental health relies on the notion of Cartesian dualism, considering the mind and the body as separate entities. The division of "psyche and soma" in Western medicine assumes that psychology and psychiatry deal with disorders of the mind and emotions, while somatic medicine treats the body and its disorders (Angel & Williams, 2000). However, this partition has proven to be quite controversial since all mental disorders according to the DSM-IV (APA, 1994) and ICD-10 (WHO, 1992) classifications include somatic components. For instance, the current diagnosis of depression relies on both psychological and somatic symptoms. Interestingly, previous research implies that Westerners often describe depression in relation to concepts like guilt, individualism, decision-making, and self-control (Marsella, 1987). In addition, the affective aspect of depression has been suggested to receive more emphasis in North American samples than in Asian samples (Ryder et al., 2008). In contrast, Eastern experience of depression may reflect the integration of body and mind, which would explain the widespread occurrence of somatic symptoms in place of affective ones or the lack of differentiation between the two realms (Ryder, Yang, & Heine, 2002).

The chief symptom in major depression in the West is considered to be sadness or depressed mood. However, in many societies people who suffer from major depression do not complain primarily of sadness. The symptoms that stand out for those people may be changes in appetite, headaches, backaches, stomachaches, insomnia, or fatigue (Kleinman, 1996). Such symptoms and complaints would take people suffering from depression to their primary care doctor and they may be less likely to be diagnosed with a mental disorder. According to the DSM-IV (APA, 1994), the presence of sadness, or a lack of interest, is necessary for a major depressive episode diagnosis to be considered. Parallel with that, other current depressive symptoms in the DSM-IV are drastic changes in appetite or weight, sleep problems,

psychomotor retardation or agitation, fatigue or low energy, difficulty concentrating or indecisiveness, worthlessness or inappropriate guilt, and suicidal ideation, plan, or attempt. In order to receive a Major Depressive Episode (MDE) DSM-IV diagnosis, at least five symptoms need to be endorsed for a period of two or more weeks most of the day, nearly every day. It is worth noting that some of the DSM-IV symptoms are directly related to Judeo-Christian religious concerns with guilt, sin, sloth, despair, and worthlessness (Marsella & Kaplan, 2002). However, these presentations may not be equally applicable in cultures that embrace different religions and societal norms.

One of the major problems with ethnocultural variations of depressive disorders is evident in the measurement of depressive experiences. The existing assessments of depressive symptoms may have limited cultural validity and this may reduce their clinical utility in non-Western populations (Marsella, 1987). The symptoms of major depression that are described by the DSM-IV and measured by clinicians may not be equally culturally sensitive to depressive experience (i.e., may be endorsed differently) in all populations. Therefore, Marsella (1980; 1987) proposed to measure depression based on five different dimensions: affective, somatic, interpersonal, cognitive, and existential. According to Marsella, all of these components are present in the depression diagnosis. Yet, in Western culture more attention may be placed on affective and existential symptoms (e.g., depressed mood, discouragement, hopelessness), while non-Western populations may be more likely to experience dysfunction through somatic symptoms (e.g., loss of appetite, sleep problems). To illustrate this, Marsella, Kinzie and Gordon (1973) used factor analysis to explore the expression of depressive symptoms among Japanese, Chinese, and European Americans. The authors found different depressive symptom profiles among the three groups: the Chinese Americans were more likely to emphasize somatic

complaints (e.g., headaches, insomnia, and indigestion), the Japanese Americans experienced more interpersonal problems (e.g., afraid to meet new people, does not feel like socializing, and feels ashamed), and the European Americans reported more affective and existential symptoms (e.g., loss of interest in life, hopelessness, depressed mood, suicidality, and memory problems). In addition, the authors found that Chinese and Japanese participants differed from European participants by reporting poor appetite more often, while European participants endorsed the urge to eat more frequently than the participants of Asian descent. A depressive symptom profile that allows us to map the endorsement of each symptom can reveal invaluable information about the phenomenology of the disorder in particular ethnocultural groups and may provide important implications for diagnosis and treatment.

Depression among Asian Americans

Asian Americans are one of the fastest growing and most diverse groups in the U.S. According to the U.S. Census Bureau (2004), by 2050 the Asian population in this country is projected to grow 213 percent, from 10.7 to 33.4 million people. This expected increase in the Asian population in the U.S. calls for a better understanding of this group's mental health. Among Asians and Asian Americans[1], reports about the lifetime prevalence of depression vary greatly. Some epidemiological studies indicated a relatively low lifetime prevalence rate of depressive disorders (6.9%) among Chinese Americans (Takeuchi et al., 1998) in comparison to European Americans (17.9%; Breslau et al., 2006). Takeuchi, Hong, Gile, and Alegría (2007) reported that 9.1% of Asian Americans in the National Latino and Asian American Study endorsed any affective disorder. Regardless of the true prevalence of depression among Asian Americans, it has been established that once they have a mental disorder, it tends to be very

[1] When referring to Asian Americans, we include both immigrants from Asian countries to the U.S. (first generation) and Americans of Asian descent (second, third, or fourth generation). Studies of Asian populations will be discussed because they may be relevant to first generation Asian Americans.

persistent and they are less likely to seek treatment for psychological problems than European Americans (Meyer, Zane, Cho, & Takeuchi, 2009). Moreover, Alegría et al. (2008) found that Asian Americans with a past-year depressive disorder were significantly less likely to access depression treatment and to receive adequate care compared to non-Latino Whites. Thus, if Asian Americans suffer from depression, they may be less likely to have the disorder detected and treated, which may result in a worse prognosis (Marin & Escobar, 2008).

The observed health disparities in depression treatment call for a closer examination of the manifestation and experience of depression among Asian Americans. Research on depressive symptoms and psychological distress among Asians and Asian Americans has found higher endorsement rates of somatic symptoms (e.g., Kleinman, 1977; Lu, Bond, Friedman, & Chan, 2010; Marsella et al., 1973). As a result, it has been concluded that somatization, or somatic expression of distress, is common among Asian cultures, while in Western cultures there is more emphasis on verbal and emotional expression of psychological distress, such as sadness or hopelessness (Chun, Enomoto, & Sue, 1996; Hwang et al., 2008).

One of the proposed explanations for the emphasis on somatic symptoms among Asian Americans has been the holistic representation of mind and body. Support for this proposition has been found in previous research on depressive symptoms among Asian Americans that examined the factor structure of the CES-D (Center for Epidemiological Studies Depression Scale). The CES-D assesses four domains of depression: negative/depressed affect, positive affect, interpersonal problems, and somatic symptoms (Radloff, 1977). However, these dimensions do not always hold and fewer factors often emerge among ethnic/racial minority populations (e.g., Chung & Singer, 1995; Edman et al., 1999). For example, Edman et al. found that in a sample of Filipino American adolescents, only two factors provided a reasonably good

fit: the first one included depressed affect, somatic complaints, and interpersonal problems and the second one consisted of the positive affect items. This finding implies that depressive symptoms may cluster in a different way among Asian Americans. In addition, Kanazawa, White, and Hampson (2007) investigated cultural variations in depressive symptoms among Native Hawaiians, Japanese Americans, and European Americans using the CES-D and found that Japanese Americans reported lower levels of positive affect compared to European Americans. This discrepancy was attributed to the differences in emotion regulation rather than in levels of depression. Additionally, Lu et al. (2010) examined the CES-D in a sample of Hong Kong Chinese and Anglo American students. While the authors found support for four factors in both samples, they observed a tendency among the Chinese participants to report somatic symptoms and a tendency among Anglo Americans to report both somatic and affective symptoms. Furthermore, Lu and colleagues concluded that American participants considered somatic and affective experiences as two different dimensions that comprise depression equally and Chinese individuals were more likely to report their somatic symptoms, despite their awareness of the psychological problem. The observed tendency among the Chinese participants to concentrate on somatic symptoms is arguably more socially acceptable and may be related to the assumption that a cure can be found more easily for such complaints.

Despite the various reasons that have been proposed to explain somatization, researchers recently have offered an alternative explanation. A recent study by Ryder and colleagues (2008) explored depressive symptom presentations among Chinese and Euro-Canadian outpatients and concluded that the type of assessment (spontaneous problem report, symptom self-report questionnaire, or structured clinical interview) influenced the type and frequency of the symptoms that the patient reported. In this study, Chinese outpatients were found to report more

depressive somatic symptoms in spontaneous report and structured interviews, while Euro-Canadian outpatients reported significantly more depressive affective symptoms (e.g., depressed mood, anhedonia, worthlessness, guilt) in all three assessment modalities. Based on their findings, Ryder and colleagues suggested that researchers may have spent too much time on discussing Chinese somatization of depression. Instead, they argue that it is more likely that Westerners overemphasize the affective aspects of depression compared to other cultures. This phenomenon is referred to as the "psychologization" of depression. Similarly, Kirmayer and Young (1998) argued that somatization is "the most common clinical expression of emotional distress worldwide" (p.420), although its features and prevalence may vary across cultures.

The affective/somatic dichotomy in depression among Asians has been examined in multiple studies. However, very few studies have explored the endorsement of specific depressive symptoms among Asian Americans. Most of the existing studies that investigated racial and ethnic differences in the expression of DSM depressive symptoms included African Americans, Hispanics, and European Americans (Breslau, Javaras, Blacker, Murphy, & Normand, 2008; Iwata, Turner, & Loyd, 2002). Only one such comparative study of depressive symptoms included an Asian American group (Uebelacker, Strong, Weinstock, & Miller, 2009). Uebelacker et al. (2009) examined differences in DSM-IV major depression symptoms among English-speaking African Americans, Hispanics, non-Hispanic Whites, Asian Americans, and American Indians. The authors used differential item functioning to detect whether certain depressive symptoms were easier to endorse for one racial/ethnic group when the level of depression severity was equal between groups. The results indicated that in comparison to European Americans, Asian Americans were more likely to endorse suicidal ideation given equal levels of depression severity. In addition, poor concentration discriminated European Americans

more than Asian Americans. However, Uebelacker and colleagues did not find any evidence to support their hypothesis that somatic symptoms would be endorsed more often among all racial/ethnic minorities, including Asian Americans. This study did not examine the two affective depressive symptoms in the DSM-IV, namely depressed mood and anhedonia, because the sample consisted of individuals who received an MDD diagnosis and the endorsement rates of these two symptoms were too high.

Based on the reviewed research, there is strong evidence to support that depressive symptoms and experience are shaped by culture. Previous research studies that investigated depressive symptoms among Asians and Asian Americans looked at outpatient and community samples (e.g., Kanazawa et al., 2007; Ryder et al., 2008), explored depression predominantly among one Asian ethnic subgroup (e.g., Chinese, Korean, or Japanese), employed qualitative methods that may make it difficult to replicate results (Bernstein et al., 2007), and used self-report questionnaires (e.g., BDI or CES-D) rather than structured interviews. Therefore, it is important to investigate depressive symptomatology among Asian Americans in more depth by addressing these limitations. Thus, the main focus of this study was to obtain and analyze a detailed depressive symptom profile of Asian Americans in a nationally representative U.S. sample using a diagnostic interview that allowed the examination of DSM-IV MDE criteria.

The Current Study

Relatively few studies have examined particular symptoms of depression among Asian Americans and none of these studies employed a large nationally representative U.S. sample of Asian Americans. In this study, systematic analyses were performed to examine the frequencies of discrete depressive symptoms in order to form a symptom profile of depression among Asian Americans. The symptom profile of depressed Asian Americans was compared to that of

depressed European Americans in order to detect possible similarities and differences in the manifestation of depression between the two ethnocultural groups. Based on the existing literature, differences in affective and somatic symptoms were expected. The study also examined reports of distress and impairment associated with the depressive episode among Asian Americans and European Americans.

The goal of the study was to answer the following questions:

1) What depressive symptoms have the highest endorsement rate among Asian Americans (e.g., depressed mood, appetite changes, or loss of energy)?

Hypothesis: It was expected that Asian Americans would have the highest endorsement rates for somatic symptoms (e.g., appetite changes, sleep disturbance, and loss of energy).

2) What specific symptoms are endorsed more often by Asian Americans than by European Americans and vice versa?

Hypothesis: It was expected that Asian Americans would endorse somatic depressive symptoms more (e.g., appetite changes, sleep disturbance, psychomotor disturance, and loss of energy) than European Americans, who would endorse affective depressive symptoms more often (e.g., depressed mood, discouragement, anhedonia, and self-reproach) than Asian Americans.

The ultimate goal of this study was to provide information about the nature and expression of depression among Asian Americans. A more nuanced understanding of these factors will allow for better recognition, assessment, and diagnosis of depression in this population in both primary care and mental health settings. In addition, this study's findings will be relevant to creating, adapting, and applying the most suitable treatments for depression.

Method

To address the research questions, secondary data analysis was conducted using data drawn from the Collaborative Psychiatric Epidemiology Surveys (CPES; Pennell et al., 2004) accessed through the online database of the Inter-university Consortium for Political and Social Research. The CPES includes the National Comorbidity Survey-Replication (NCS-R), the National Latino and Asian American Study (NLAAS), and the National Survey of American Life (NSAL; Heeringa et al., 2004). These surveys collected comprehensive epidemiological data on lifetime and 12-month prevalence of psychiatric disorders and rates of mental health use among the U.S. population and included a large number of racial and ethnic minority groups. In order to examine the proposed research questions, data for Asian Americans were drawn from the NLAAS and data for European Americans and Asian Americans were drawn from the NCS-R. The NLAAS is the first nationally representative community household epidemiological survey of Latinos and Asian Americans in the U.S. The rationale, overview, and procedures for the development of the NLAAS are described in detail in Alegría, Takeuchi, et al. (2004). The NCS-R is a nationally representative survey of English-speaking household residents aged 18 or older who live in the coterminous United States. The CPES studies are compatible in the sampling methods and measures they used and allow comparisons of psychiatric disorder characteristics between European, Hispanic, African American, and Asian American adults. The CPES dataset was selected for this study because it is the largest available epidemiological dataset that included a nationally representative sample of Asian Americans and European Americans.

Sampling Design

The NLAAS and the NCS-R used a four-stage stratified probability sampling procedure to recruit and survey adult non-institutionalized Asian Americans and European Americans. The core sampling process started with sampling in Metropolitan Statistical Areas (MSA) and single

counties. The second stage involved area segments sampling and the third stage comprised of housing units sampling. In the final stage, eligible respondents in each household were randomly selected. The sampling procedures have been described in more detail in Heeringa et al. (2004).

Participants

Participants in this study were 2095 Asian Americans drawn from the NLAAS, 189 Asian Americans from the NCS-R, and 6696 non-Latino Whites from the NCS-R. All participants were 18 years or older living in the coterminous United States. Among the NLAAS respondents there were 600 Chinese, 508 Filipino, 520 Vietnamese, and 467 Other Asians. The Asian American participants from the NCS-R (n = 189) were part of the Other Asian category.

Measures

The NLAAS measures were translated in four Asian languages: Cantonese, Mandarin, Tagalog, and Vietnamese. The NLAAS Core battery compares to the NCS-R and NSAL instruments with identical measures of psychiatric illness, service use, and impairment. The NLAAS and the NCS-R used the core CPES questionnaire, which was based on the World Health Organization's (WHO) version of the Composite International Diagnostic Interview (CIDI 3.0). The CIDI is described in detail in Kessler and Üstün (2004). The WMH-CIDI starts with a screening section, which included questions about particular disorders. If the participant endorsed one of the questions for a particular disorder, s/he was asked to complete the module associated with the disorder later. Thus, participants who completed the Depression Module endorsed one or more of the following three questions:

1) “Have you ever in your life had a period of time lasting several days or longer when most of the day you felt sad, empty or depressed?”

2) “Have you ever had a period of time lasting several days or longer when most of the day you were very discouraged about how things were going in your life?”

3) “Have you ever had a period of time lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?”

This study aimed to explore depressive symptoms among all participants who completed the Depression Module. The rationale for examining this sample was that it would provide more variation within the sample and allow examining participants with subthreshold levels of depression who may be otherwise ignored.

Ethnicity. The NLAAS targeted Asian American participants of Vietnamese, Filipino, and Chinese background. There was a fourth category of “Other Asian” that included participants of all other Asian ethnicities in the NLAAS and all Asian participants from the NCS-R. The four categories were combined to create one category of Asian Americans. European Americans were drawn from the NCS-R study.

Depressive symptoms. The Depression section of the WMH-CIDI included questions about depressive symptoms during the most severe major depressive episode in the participant’s life. Most of the questions were relevant to a DSM-IV MDE symptom (e.g., depressed mood, psychomotor retardation/agitation) and were rated as *present* or *absent*. Based on DSM-IV MDE diagnostic rules, the endorsement or denial of a symptom (e.g., worthlessness) defined further inquiry about other related symptoms (e.g., guilt).

Lifetime DSM-IV Major Depressive Episode. Lifetime DSM-IV Major Depressive Episode diagnosis was coded as present or absent. This variable was provided based on a SAS algorithm that considered the number of symptoms and rule outs.

Procedure

Data collection for NCS-R and NLAAS took place between February 2001 and December 2003. Initially, households and respondents were selected based on the probability sampling described earlier. NCS-R surveys were conducted by 342 certified interviewers, while NLAAS data were collected by 275 trained bilingual and bicultural interviewers. The interviewers obtained informed consent and conducted interviews by phone or in person using computer-based software. All instruments were translated and back translated in Cantonese, Mandarin, Tagalog and Vietnamese according to standard techniques (Alegria, Vila et al., 2004). Participants received monetary compensation for their participation. The development and implementation of all CPES studies is described in detail in Pennell et al. (2004).

Data Analyses

Of the combined NCS-R and NLAAS sample, only participants who endorsed depressive experiences in the screening questions and continued to answer questions about symptoms of their most severe depressive episode were included in the analyses. The study used both within-group (among Asian Americans) and between-group (between Asian Americans and European Americans) comparisons. All analyses were conducted using the Complex Samples Module in IBM SPSS version 19.0 using sample weights and controlling for sample design effects due to sample stratification and clustering. Specific CPES sample weights for NCS-R and NLAAS were utilized for all analyses. An alpha of .05 was used to evaluate the significance of all analyses.

Frequencies. Frequencies of depressive symptom endorsement for Asian Americans were examined and compared to identify which depressive symptoms are most often endorsed.

Chi-Square Analyses. To examine the rates of endorsement of depressive symptoms between Asian Americans and European Americans, a series of Pearson chi-square analyses

were conducted. Significant results, as indicated by *p*-values of less than .05, suggest that differences exist in endorsement rates of depressive symptoms between the two racial groups.

Results

Screening

Twenty-three percent ($n = 2073$; 310 Asian Americans and 1763 European Americans) of the pooled NLAAS and NCS-R samples ($n = 8980$) endorsed depressed mood, lack of interest, or discouragement for a period of two weeks or longer during their lifetime and answered the questions about depressive symptoms. One fifth ($n = 1598$; 19.7%) of the pooled NLAAS and NCS-R samples screened positive for suspected lifetime history of depression. The proportion of Asian Americans with Major Depressive Episode (9.1%, $SE = 0.8\%$; unweighted $n = 221$) was significantly lower than that of European Americans (20.3%, $SE = 0.5\%$; unweighted $n = 1377$), $\chi^2(1, N = 88) = 38.660$, $p < 0.001$.

Descriptives

Descriptive statistics are presented in Table 1. The age range for participants was 18-91. The mean age was 39.22 ($SE = 0.88$) for Asian Americans and 44.15 ($SE = 0.65$) for European Americans. Both racial groups had more females than males (61.3% vs. 38.7% for both groups). Within the Asian American sample there were 9.6% Vietnamese, 16.3% Filipino, 31.1% Chinese, and 42.9% Other Asian. Three quarters (77%) of the participants at risk for depression met criteria for DSM-IV MDE. However, European Americans (78.3%) were more likely to be diagnosed with MDE than Asian Americans (69%), ($\chi^2(1, N = 71) = 3.037$, $p = .001$).

Question Endorsement, Symptom Prevalence, and Symptom Profile

The endorsement rates of depressive symptoms according to DSM-IV MDE criteria for each racial group are presented in Table 2. Among the most frequently endorsed symptoms

(>70%) for Asian Americans were feeling depressed, feeling discouraged, trouble sleeping, low energy, trouble concentrating, loss of self-confidence, and feeling less talkative.

Chi-Square Analyses: Ethnicity X Depressive Symptoms

The endorsement rates of depressive symptoms among Asian and European participants were compared and results are presented in Table 3. Significant differences in endorsement rates were found between Asian Americans and European Americans for 9 of the 28 questions, with Asian Americans endorsing less frequently than European Americans all 9 questions (see Figure 1). In particular, Europeans were significantly more likely than Asians to report feeling sad/empty/depressed ($\chi^2(1, N = 71) = 1.346, p = .030$), feeling discouraged about life ($\chi^2(1, N = 71) = 2.288, p = .006$), loss of interest ($\chi^2(1, N = 71) = 1.223, p = .021$), larger appetite ($\chi^2(1, N = 71) = 1.549, p = .044$), weight gain ($\chi^2(1, N = 71) = 1.307, p = .028$), loss of self-confidence ($\chi^2(1, N = 71) = 1.442, p = .019$), feeling guilty ($\chi^2(1, N = 71) = 1.820, p = .010$), desire to be alone rather than with friends ($\chi^2(1, N = 71) = 3.191, p = .001$), and crying often ($\chi^2(1, N = 71) = 1.079, p = .019$).

Discussion

This study examined a symptom profile of depression among a nationally representative sample of Asian Americans and compared it to that of European Americans. Overall, Asian Americans at risk for depression had high endorsement rates (> 70%) for a variety of depressive symptoms, including depressed mood, discouragement, insomnia, loss of energy, trouble concentrating, loss of self-confidence, and decreased talkativeness. This pattern is relatively consistent with our hypothesis stating that somatic symptoms will be most prevalent among depressed Asian Americans. Indeed, trouble sleeping and low energy are somatic in nature and the endorsement rate of appetite/weight changes was above 70% when endorsement rates of

decreased (64.9%) and increased (8.3%) appetite were jointly considered. However, high endorsement rates of affective symptoms were also observed among Asian Americans. In particular, feeling sad, feeling discouraged about things in life, and losing self-confidence were most often endorsed. The high endorsement rates of affective symptoms could be explained in three different ways. First, the results are consistent with findings that Asian Americans experience depressive affective symptoms and are aware of the underlying psychological problems in depression (Lu et al., 2010). Second, the high endorsement rates of affective symptoms among Asian Americans might be related to their acculturation level as more acculturated Asian Americans may be more likely to manifest depression similarly to European Americans (Lee, 2002). Third, the diagnostic measure (WMH-CIDI) in the CPES used a screening process that emphasized affective symptoms of depression (i.e., felt sad, empty, or depressed; felt discouraged; lost interest in things). Therefore, it is possible that the participants who completed the Depression Module were already primed to report their affective symptoms.

Whereas these results suggest that the core features of depression may be present in different racial/ethnic groups, it is important to consider this finding in the context of the methodology that was used as noted in the following classic example from cross-cultural psychology. The International Pilot Study of Schizophrenia (IPSS) conducted by the World Health Organization in the 1970s provided the first data for cross-cultural comparisons of schizophrenia and concluded that psychoses present similarly across cultures. However, Kleinman (1988) later criticized the IPSS' methodology for using stringent inclusion and exclusion criteria, which yielded an "artificially homogenous sample" (Thakker & Ward, 1998, p.516). Kleinman suggested that the observed "similarity was an artifact of methodology" (p.19). In the present study, a similar phenomenon may have been observed, as the screening questions

for depression were based on DSM-IV MDE criteria and the participants included in the MDE sample were selected based on these possibly rigid criteria. However, having strict exclusion/inclusion criteria in cross-cultural studies may result in the exclusion of those participants who showed the greatest diversity of symptoms which might not fit with the DSM-IV diagnostic approach (Thakker & Ward, 1998).

To examine similarities and differences in depressive symptoms among Asian Americans and European Americans, the frequencies of endorsement were compared. Nine differences were found and, for all of them, European Americans endorsed the symptom significantly more often than Asian Americans. In particular, European Americans endorsed feeling sad, empty, or depressed, feeling discouraged about things in life, losing interest in almost all things, having a larger appetite, gaining weight, losing self-confidence, feeling extreme guilt, wanting to be alone rather than with friends, and crying often. These findings were only partially consistent with our hypothesis, which predicted that Asian Americans would endorse somatic symptoms more often and European Americans would be more likely to endorse affective symptoms. We observed that while the first part of this hypothesis was not supported, the second one was confirmed. European Americans were more likely to endorse depressed mood, anhedonia, and self-reproach symptoms. This finding is consistent with the recent propositions that Westerners are more likely to "psychologize" depression than Asians while somatic complaints are ubiquitous (Kirmayer & Young, 1998; Ryder et al., 2008).

We can speculate that the expression of negative emotions is more socially acceptable among European Americans than Asian Americans due to possible differences in the interaction between self-construal and emotional regulation. Independent self-construal involves construing the self as an individual, whose behavior is organized and meaningful based on the person's own

feelings, thoughts, and actions. Interdependent self-construal entails perceiving oneself as part of social relationships and realizing that one's behavior is contingent on and organized by the person's perception of others' thoughts, feelings, and behaviors (Markus & Kitayama, 1991). Markus and Kitayama suggested that independent self-construal is observed in Western cultures and interdependent self-construal is more common in Asian cultures, although variations within cultures are possible. In terms of emotional regulation, the authors implied that a person's self-construal can affect the expression, intensity, and frequency of emotions. Specifically, those with independent selves learn how to communicate very effectively their "ego-focused" emotions, such as sadness or frustration. In contrast, people with interdependent self-construal need to control and de-emphasize their private feelings in order to fit into the interpersonal context. Therefore, European Americans may put more weight on expressing negative affect (e.g., depressed mood, discouragement, crying often) than Asian Americans when they suffer from depression. Using the self-construal framework, we can also discuss European Americans' higher endorsement of wanting to be alone rather than with friends. The desire to be on one's own when one is depressed may be related to the concept of independence and individualism seen more often among Western cultures. Conversely, Asian Americans may either seek help from their social network or they may simply not have the choice to be on their own because isolation and avoidance are not socially appropriate. In addition, European Americans' tendency to endorse self-reproach symptoms more often than Asian Americans is consistent with Marsella's suggestion that guilt and worthlessness may be more salient to Westerners because they are related to the Judeo-Christian religion and individualism (Marsella, 1987; Marsella & Kaplan, 2002).

Another important finding was the higher endorsement rates of increased appetite and weight gain among European Americans and not Asian Americans. Although we did not have a hypothesis for this particular symptom, it is important to note that Marsella et al. (1973) reported a similar pattern, with Japanese and Chinese Americans endorsing a lack of appetite and European Americans endorsing an urge to eat. This finding also emphasizes the importance of keeping the appetite and weight change symptoms separate when examining cultural variations in depressive symptoms. That is, if we collapse all appetite/weight change symptoms together, we may not be able to detect meaningful differences.

Clinical Implications

The reported findings have important implications for mental health professionals and primary care physicians who work with Asian Americans. A culturally informed assessment of depressive symptoms among Asian Americans may not emphasize affective symptoms, such as feeling sad, empty, or depressed or losing interest in things that were previously enjoyed. While these symptoms may be present among depressed Asian Americans, they may not be the most salient ones or the reason why the clients sought help in the first place. In addition, taking into consideration the effect of gender, acculturation, and acculturative stress of the client may be essential for the assessment, diagnosis, and treatment of depression among Asian Americans.

Limitations

This study had several limitations that need to be addressed in future research. First, the screening process that was used in the WMH-CIDI limited our sample to Asian American participants who reported past experiences of sad, empty, or depressed mood, discouragement, and lack of interest. While this screening process is consistent with the current DSM-IV diagnosis, it might have eliminated Asian American participants who experienced depression

differently. However, we believe that the sample that we examined still presented with reasonable cultural variations in depression and provided valid data to answer our research questions. Another limitation of the current study was the small cell counts to examine differences in depressive symptoms based on ethnicity. While one of the strengths that the CPES dataset has is the oversampling of Chinese, Filipino, and Vietnamese participants, we could not take advantage of this feature because of the small number of individuals in each ethnic group.

Directions for Future Research

The systematic examination of symptom profiles of mental disorders among ethnic and racial minorities and cross-culturally can provide valuable information for improving assessment, diagnosis, and treatment. In the case of depression, it may be particularly important to examine symptoms among individual ethnic groups of Asian Americans and other racial minorities. In addition, while we found cross-racial differences, testing the mechanisms behind these differences in depressive symptoms among Asian Americans will be an important next step. Another topic that deserves more attention is the effect of acculturation on the overall prevalence of depression and depressive symptoms in particular. Lastly, future research of depressive symptoms endorsed by both depressed and non-depressed Asian Americans may shed some light in elucidating the diagnostic validity of the DSM-IV MDE diagnosis. In general, having a more loosely defined sample as opposed to a strictly defined sample will allow us to examine cultural variations of depression and other disorders more thoroughly.

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Table 1

Descriptives

Variables		Asian (n = 310) M(%) (SE)	European (n = 1763) M(%) (SE)
Ethnicity	Vietnamese	9.6% (1.8)	NA
	Filipino	16.3% (1.5)	NA
	Chinese	31.1% (3.3)	NA
	Other Asian	42.9% (2.9)	NA
Gender			
	Male	38.7% (2.7)	38.7% (1.4)
	Female	61.3% (2.7)	61.3% (1.4)
Age		39.22 (.88)	44.15 (.65)
Education			
	0-11 years	9.7 (2.2)	12.8 (1.0)
	12 years	15.3 (1.9)	30.3 (1.2)
	13-15 years	25.8 (2.5)	30.2 (0.9)
	≥ 16 years	49.2 (2.4)	26.7 (1.3)
Marital Status			
	Married/Cohabiting	53.7 (2.5)	54.5 (1.6)
	Divorced/Separated	14.2 (1.7)	24.8 (1.1)
	Never Married	32.2 (1.9)	20.6 (1.7)
MDE Dx	Endorsed	69.0% (2.2)	78.3% (1.0)

Table 2
Frequency of Depressive Symptoms among Asian American (n = 310)

Symptom Item	Frequency (%)	SE	Unweighted *n*
Depressed Mood			
Felt sad, empty or depressed	**89.0**	**0.9**	**276**
Discouraged about things in your life	**80.1**	**1.8**	**247**
Anhedonia			
Lose interest in almost all things	68.3	2.0	214
Appetite/Weight change			
Smaller appetite	64.9	2.7	203
Larger appetite	8.3	2.0	24
Gain weight	9.7	1.7	28
Lose weight	53.1	3.1	171
Sleep disturbance			
Insomnia	**74.1**	**2.0**	**225**
Sleep a lot more than usual	13.7	1.4	36
Loss of energy			
Low energy	**83.3**	**2.5**	**245**
Psychomotor retardation/agitation			
Talk/move more slowly	52.5	2.7	149
Restless and jittery	10.7	1.9	29
Cognitive difficulties			
Trouble concentrating	**72.9**	**3.5**	**217**
Slow thought	55.3	3.3	170
Indecisive	56.6	2.8	162
Self-reproach			
Lost self-confidence	**71.5**	**2.3**	**217**
Feel not as good as other people	61.5	3.3	181
Feelings of extreme guilt	59.9	2.7	179
Suicidality			
Thought of death	51.0	3.7	151
Would be better off dead	43.1	3.1	123
Thought of committing suicide	26.4	3.0	81
Made a suicide plan	11.8	1.7	34
Made a suicide attempt	8.9	1.4	25
Other psychological problems			
Irritable, grouchy, or in a bad mood	59.9	2.7	179
Nervous or anxious	59.3	2.7	169
Wanted to be alone rather than with friends	67.0	2.1	207
Less talkative	**80.8**	**2.7**	**238**

Often in tears	60.4	2.4	181

Note: Symptoms in bold indicate high frequency of endorsement (over 70%).

Table 3. *Endorsement and Prevalence of Depressive Symptoms among Asian Americans (n = 310) and European Americans (n = 1763)*

Symptom Item	Asian	SE	European	SE	Total	χ^2	*p*
Depressed Mood							
Felt sad, empty or depressed	**89.0**	**1.7**	**92.8**	**0.7**	**92.7**	**1.346**	**.030**
Discouraged about things in your life	**80.2**	**2.4**	**86.8**	**0.8**	**86.6**	**2.288**	**.006**
Anhedonia							
Lose interest in almost all things	**68.3**	**2.4**	**74.5**	**1.1**	**74.3**	**1.223**	**.021**
Appetite/Weight change							
Smaller appetite	64.9	3.6	63.9	1.4	63.9	.023	.807
Larger appetite	**8.3**	**2.1**	**13.9**	**0.9**	**13.8**	**1.549**	**.044**
Gain weight	**9.7**	**2.0**	**15.1**	**0.8**	**14.9**	**1.307**	**.028**
Lose weight	53.1	3.6	53.6	1.6	53.6	.006	.892
Sleep disturbance							
Insomnia	74.1	2.3	73.7	1.3	73.7	.005	.873
Sleep a lot more than usual	13.7	2.0	16.2	1.0	16.1	.261	.318
Loss of energy							
Low energy	83.3	2.7	83.4	1.1	83.4	.000	.982
Psychomotor retardation/agitation							
Talk/move more slowly	52.5	3.1	52.0	1.1	52.0	.006	.883
Restless and jittery	10.7	2.3	13.4	1.0	13.3	.353	.317
Cognitive difficulties							
Trouble concentrating	72.9	3.8	77.8	0.7	77.7	.791	.171
Slow thought	55.3	3.5	55.9	1.2	55.9	.010	.862
Indecisive	56.6	3.3	62.4	1.2	62.3	.832	.102
Self-reproach							
Lost self-confidence	**71.5**	**2.7**	**78.2**	**1.0**	**78.0**	**1.442**	**.019**
Feel not as good as other people	61.5	3.5	59.4	1.3	59.5	.109	.563
Feelings of extreme guilt	**42.5**	**3.3**	**51.4**	**1.3**	**51.2**	**1.820**	**.010**
Suicidality							
Thought of death	51.0	4.0	58.3	1.3	58.0	1.226	.095
Would be better off dead	43.1	3.3	42.9	1.4	42.9	.001	.952
Thought of committing suicide	26.4	3.2	33.0	1.2	32.8	1.131	.075
Made a suicide plan	11.8	2.1	11.0	0.9	11.0	.033	.746
Made a suicide attempt	8.9	1.5	8.5	0.6	8.5	.013	.788
Other psychological problems							
Irritable, grouchy, or in a bad mood	59.9	3.4	58.0	1.0	58.0	.082	.593
Nervous or anxious	59.3	3.2	64.3	1.4	64.2	.635	.148
Alone rather than with friends	**67.0**	**2.4**	**77.0**	**0.9**	**76.7**	**3.191**	**.001**
Less talkative	80.8	3.0	81.2	0.8	81.2	.005	.911

Often in tears	**60.4**	**2.6**	**66.9**	**0.9**	**66.7**	**1.079**	**.019**

Note: Percents are weighted. Statistical tests are design adjusted. Boldface type indicates a significant chi-square test for difference at the $p = 0.05$ level.

Figure 1. Frequency of Depressive Symptoms among Asian Americans and European Americans