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Direct reprint requests to:

Yoon G. Lee, Ph.D.  
Department of Family, Consumer, and Human Development  
2905 Old Main Hill  
Utah State University  
Logan, UT 84322-2905  
e-mail: yoonlee@cc.usu.edu

## MEASURING DEPRESSION IN A MULTICULTURAL SOCIETY: CONCEPTUAL ISSUES AND RESEARCH RECOMMENDATIONS

**GIYEON KIM, PH.D.**

*The University of Alabama*

### ABSTRACT

Despite the extensive research on culture and depression in the social and behavioral sciences, little has been critically addressed regarding how to measure depression in a multicultural society. This article aims to provide conceptual issues related to assessing the cross-cultural comparability of depression, as well as recommendations for future depression research. Three conceptual issues were addressed: 1) two approaches for cross-cultural depression research; 2) DSM criteria for depression across cultures; and 3) establishing measurement equivalence in depression research. In addition, implications for different conceptualizations of depression in diverse cultural groups are discussed. Specifically, the author discusses the need for a conceptual model and proposes a conceptual model of the relationship of culture to depression for future research.

**Key Words:** culture, depression, cross-cultural comparability, measurement equivalence

### INTRODUCTION

With the increased attention to racial and ethnic disparities in mental health (U.S. Department of Health and Human Services, 2005), a number of researchers have pointed to racial/ethnic disparities in depression (e.g., Perreira, Deeb-Sossa,

Harris, & Bollen, 2005; Robison, Curry, Gruman, Covington, Gaztambide, & Blank, 2003). Several studies have reported higher rates of depressive symptoms and disorders in some racial/ethnic minority groups than in White Americans (e.g., Dunlop, Song, Lyons, Mannheim, & Chang, 2003; Minsky, Vega, Miskimen, Gara, & Escobar, 2003). However, reported prevalence rates of depression vary dramatically across diverse racial/ethnic groups, ranging from 1.5% to 25.4% (e.g., Mui, Burnette, & Chen, 2002; Saez-Santiago & Bernal, 2003; Weissman, Bland, Canino, Faravelli, Greenwald, Hwu, et al., 1996). Given that culture shapes values, attitudes, beliefs, and behaviors by a group of people (Sternberg, 2004), and also influences disease manifestation and diagnostic labeling (Kleinman, 2004), cultural differences among different racial/ethnic groups may contribute to this variation in prevalence.

Cross-cultural comparative studies raise concerns about the cross-racial/ethnic validity of the depression measures used. Most depression assessment instruments were initially developed and tested for European Americans. Therefore, there exists a serious question regarding how well these instruments can assess and capture depression in other racial/ethnic groups. Culturally equivalent measures are crucial in comparative studies because, if measures have differential meanings or differential validity across racial/ethnic groups, prevalence estimates may be inaccurate (Vandenberg & Lance, 2000) and group comparisons misleading (Hui & Triandis, 1985). However, there has been disagreement as to the specific degree to which cultural diversity should be incorporated into actual depression instruments. This disagreement would seem to reflect two different approaches in ethnographic research: the etic and emic approaches.

This article seeks to explore three conceptual issues that underlie concerns about depression measurement equivalence among diverse cultural groups:

1. two approaches for cross-cultural depression research including emic and etic approaches to cross-cultural depression research;
2. DSM criteria for depression across cultures; and
3. establishing measurement equivalence in cross-cultural depression research including conceptual, metric, and structural equivalence.

In addition, implications for different conceptualizations of depression and recommendations for future research are also discussed in this article.

### **CONCEPTUAL ISSUES I: TWO APPROACHES FOR CROSS-CULTURAL DEPRESSION RESEARCH**

A central issue in cross-cultural comparative studies involves two different perspectives, which together have been called the "emic-etic paradigm" (Brislin, Lonner, & Thorndike, 1973; Canino, Lewis-Fernandez, & Bravo, 1997; Pike, 1954; Triandis & Brislin, 1984). The emic approach reflects the inside perspective

of the ethnographer, whereas the etic approach reflects the outside perspective of the comparativist researcher (Morris, Leung, Ames, & Lickel, 1999; Ng & Earley, 2006). The emic approach uses variables and observations that are culturally specific to a particular group, at a certain period in time, to develop an instrument (Rait & Burns, 1998). This does not allow for comparative research as it looks at variables in terms of language and culture and the instrument may not be relevant to other groups. The etic approach, on the other hand, is basically comparative, and is directed at eliciting standardized categories of phenomena out of local specificities (Canino et al., 1997).

### **Emic Approach to Cross-Cultural Depression Research**

The emic approach attempts to describe the internal logic of a culture, its singularity, considering this a necessary step prior to any valid cross-cultural analysis (Chávez & Canino, 2005). Therefore, it does not allow cross-cultural comparisons using identical case definitions and standardized diagnostic interviews as case-finding instruments (Cheng, 2001). However, given that the emic approach focuses on examining a construct from within a specific culture and understanding that construct as the people from within that culture understand it (Schaffer & Riordan, 2003), the emic approach is particularly useful in understanding the relatively unique features of the manifestation of depressive symptoms and diagnosis in a given ethnic group.

For example, Patel and colleagues (2001) examined medical concepts of depression in Zimbabwe, and found that one culture-specific terminology, *kufungisissa* (thinking too much), has been shown to be closely linked to depression among Zimbabwean depressed patients. Similarly, some researchers with an emic approach have highlighted that each culture has its own somatic metaphors to describe depression: *nervios* (brain ache or uncontrollable) in Mexican Americans (Jenkins, 1988); *shenjing shuairuo* (neurasthenia) in Chinese (Parker, Gladstone, & Chee, 2001); *Sadri dayeq alayya* (My chest feels tight) and *Jesmi metkasser* (broken body) in Dubai (Sulaiman, Bhugra, & De Silva, 2001). Along the same lines, the emic approach has also influenced DSM-IV, which now includes an index of culturally defined syndromes, as well as statements describing how culture influences the prevalence, symptomatology, course, and clinical outcome of specific psychiatric disorders (Canino et al., 1997).

Emic studies of depression have succeeded in developing some indigenous depression instruments (Tanaka-Matsumi, 2001). For example, with an additional inclusion of five Hopi illness categories (translated as worry, sickness, unhappiness, drunken-like craziness, and disappointment), Manson, Shore, and Bloom (1985) developed the American Indian Depression Scale (AIDS) among Hopi Indians. Other examples of locally developed screening questionnaires include the Primary Care Psychiatric Questionnaire (PPQ; Stinivasan & Suresh,

1990) in India, the Shona Symptom Questionnaire (Patel, Simunyu, Gwanzura, Lewis, & Mann, 1997) in Zimbabwe, and the Chinese Health Questionnaire (CHQ; Cheng & Williams, 1986). Also, there are a few examples of indigenous structured interviews, including the Indian Psychiatric Survey Schedule (Shamasundar, Krishna Murthy, Prakash, Prabhakar, & Subbakrishna, 1986).

Although these indigenous depression measures share much with the questionnaires developed in Western culture and there is a high degree of agreement in care classification, the emic studies on depression have been criticized for neglecting the problem of observation bias (Canino et al., 1997). One of the critical issues in cross-cultural depression research with an emic approach is the lack of methodological homogeneity across studies focusing on different cultures. This can result in the inability to disentangle methodological from substantive factors when variability in cross-cultural comparisons is observed (Bravo, 2003). For example, as mentioned earlier, although Patel and colleagues (2001) suggested that culture-specific somatic symptoms are strongly associated with depression among Zimbabweans, criticisms may remain with respect to generalizability of the indigenous measurement and epidemiological testing of causal hypotheses on depression.

### **Etic Approach to Cross-Cultural Depression Research**

The main assumption with the etic cross-cultural research on depression is that the etiology of depression is universal and key constructs of depression exist equally across all cultures. Epidemiologists and cross-cultural researchers often use the etic approach for the cross-cultural comparative study of depression (e.g., Breslau, Aguilar-Gaxiola, Kendler, Su, Williams, & Kessler, 2005; Cole, Kawachi, Maller, & Berkman, 2000; Crockett, Randall, Shen, Russel, & Driscoll, 2005; Gonzalez, Haan, & Hinton, 2001; Iwata, Turner, & Lloyd, 2002; Kessler & Ustun, 2004; Nguyen, Kitner-Triolo, Evans, & Zonderman, 2004), emphasizing the search for equivalence across cultures and using similar methods, constructs, and measures across settings in order to increase the generalizability of the findings (Schaffer & Riordan, 2003; van de Vijver, 2001).

A prototypical etic study of depression is the international project of the World Health Organization (WHO; 1983) on the diagnosis and classification of depression in Switzerland, Canada, Japan, and Iran. The goal of this study was to test feasibility of using standardized instruments of depressive disorders. Using the Schedule for Standardized Assessment of Depressive Disorders (WHO/SADD) by psychiatrists, 573 patients were diagnosed with depression in this study. On the basis of 39 symptoms of depression, WHO (1983) found that more than 76% of the depressed patients reported core depressive symptoms that included "sadness, joylessness, anxiety, tension, lack of energy, loss of interest, loss of ability to concentrate, and ideas of insufficiency" (p. 61). Suicidal

ideation was also present in 59% of patients. The WHO project also discovered cross-cultural variation in the expression of depression, such as somatic complaints and obsessions which were not part of the original 39 symptoms of depression measured by the WHO/SADD. Variations existed both within and across cultures in this project.

More recently, WHO has also conducted several cross-national studies on depression. The cross-national depression study of Simon and his colleagues (2002) is an example. On the basis of the World Health Organization's Psychological Problems in General Health Care (PPGHC) study, they examined prevalence rates of depression in 14 countries. The PPGHC study used the Composite International Diagnostic Interview (CIDI) for psychiatric symptoms and diagnoses. The authors found evidence that prevalence rates of current major depression varied across cultures. They also reported that depression was universally associated with disability, but this association varied across cultures. They concluded that use of identical measures and diagnostic criteria might identify different levels of depression severity in different countries or cultures.

A number of studies with an etic approach have reported that even within the United States, prevalence estimates varied across racial/ethnic groups (e.g., Breslau et al., 2005; Dunlop et al., 2003; Gonzalez et al., 2001; Swenson, Baxter, Shetterly, Scarbro, & Hamman, 2000). For example, using a nationally representative sample from the National Comorbidity Survey Replication (NCS-R), Breslau and colleagues (2005) examined racial/ethnic variations in DSM-IV disorders. The Composite International Diagnostic Interview (CIDI) was used for the diagnostic assessment. Comparing non-Hispanic Whites, non-Hispanic Blacks, and Hispanics, the authors found significantly lower lifetime prevalence and risk of depression in both minority groups. Suggesting the presence of common protective factors across disorders for both minority groups, they concluded cultural differences might lead racial/ethnic minority groups to respond differently to the same survey questions regarding their psychiatric history despite similar levels of morbidity.

Reflecting on the importance of cultural influences on reporting depressive symptoms and the cultural appropriateness of measures, etic researchers have examined psychometric properties of depression measures (e.g., Crockett et al., 2005; Foley, Reed, Mutran, & DeVellis, 2002; Nguyen et al., 2004). For example, using exploratory factor analysis, Foley and colleagues (2002) did not confirm Radloff's original four-factor model in older African Americans. They found no distinction between somatic complaints and depressed affect, and they identified one new factor, "social well-being," that has not been reported in the general population. This suggests the presence of unique measurement properties of the CES-D in African Americans, as well as needs for additional research to assess the validity of CES-D across diverse cultural groups.

Etic studies of depression have developed a number of depression instruments. Assessment of depressive symptoms and disorder has been conducted with

self-report (e.g., Center for Epidemiologic Studies Depression, Beck Depression Scale, Zung Depression Scale, Geriatric Depression Scale) and interviewer or clinician rating scales (e.g., Hamilton Rating Scale for Depression, Structured Clinical Interview for DSM-IV, WHO Composite International Diagnostic Interview). Although these self-report and interviewer rating instruments are based on symptom criteria that is geared to Western culture patients, these instruments have been used as standards for depressive symptoms across ethnic and cultural groups. As a result, the etic approach has been criticized for emphasizing reliability at the expense of validity (Canino et al., 1997). It may impose the appearance of cross-cultural homogeneity at the expense of a constricted conceptualization embedded in the instrumentation (Bravo, 2003). This limitation has been called the "cultural fallacy," meaning the approach ignores cross-cultural differences in the nature or validity of depressive disorder (Bravo, 2003). For example, Medina-Mora and colleagues (2005) examined psychiatric disorders in Mexico using the CIDI instrument. However, given that culture-bound syndromes such as *nervios* exist in Mexico and may not be captured by the CIDI, the instrument based only on DSM-IV may have potential problems due to cultural fallacy.

### CONCEPTUAL ISSUES II: DSM CRITERIA FOR DEPRESSION ACROSS CULTURES

The diagnosis of a Major Depressive Episode, according to the DSM-IV, requires the presence of five significant symptoms, and must include either a predominantly depressed mood and/or loss of interest for at least a 2-week period of time (American Psychiatric Association, 1994; Kaiser, Katz, & Shaw, 1998). Other symptoms may include: significant change in weight or appetite; insomnia or hypersomnia; psychomotor retardation or agitation; fatigue or loss of energy; feelings of worthlessness or excessive guilt; diminished concentration; loss of clarity of thought or indecisiveness; and recurrent thoughts of death (Kaiser et al., 1998).

The National Comorbidity Survey (NCS) is a good example of using a DSM-based measure of Major Depressive Episodes. The NCS collected epidemiological data on selected psychiatric disorders defined by the DSM-III-R and provided evidence of ethnic/racial differences in major depression (e.g., Blazer, Kessler, McGonagle, Swartz, 1994; Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, et al., 1994). Using a fully structured CIDI instrument, the prevalence of 12-month major depression was 4.9% and the lifetime prevalence estimated in this study was 17.1% in a total sample (Blazer et al., 1994; Kessler et al., 1994). Higher prevalence rates for all ethnic groups were reported in this epidemiological study. The lifetime prevalence was 17.9% for Whites, 11.9% for African Americans, and 17.7% for Latinos. Also, in the NCS study, major depression was lower in African Americans than in Whites and Latinos, and the prevalence

rates did not differ between these last two ethnic groups (Blazer et al., 1994). The prevalence rates for Asian Americans and Native Americans were not estimated in the NCS data because these groups were not part of the sample. There is another example of DSM-based depression research in culturally diverse populations. Using the Health and Retirement Study (HRS), Dunlop and her colleagues (2003) estimated racial/ethnic differences in prevalence rates of DSM-based major depression as measured via the CIDI-Short Form. In the HRS data, 12-month major depression was most prevalent among Hispanics (10.8%), followed by African Americans (8.9%) and Whites (7.8%), and the differences was statistically significant for Hispanics.

The aforementioned DSM-based measures of depression assume that depressive symptoms have many similarities across racial/ethnic groups. Studies on the core symptoms of depression have reported that such symptoms were found in non-Western culture, but some differences have also been noted (e.g., Ulusahin, Basoglu, & Paykel, 1994; WHO, 1983). For example, as mentioned earlier on page 30, WHO conducted a cross-cultural study on depression in Canada, Iran, Japan, and Switzerland (WHO, 1983). The WHO Collaborative Study on the Assessment of Depressive Disorders reported that the most common symptoms (76% of cases) across countries were sadness, joylessness, anxiety, tension, lack of energy, loss of interest, loss of ability to concentrate, and ideas of insufficiency, inadequacy, and worthlessness. However, this study found some significant variations across four countries. Feelings of guilt and self-reproach were more prominent in Switzerland and Canada and suicidal ideation ranged from 41% in Japan to 70% in Canada. Somatic symptoms were most common in Iran and least frequent in Canada.

A number of researchers have found that even so-called "core" depressive symptoms may not be prominent in many cultures (e.g., Pang, 1998; Parker et al., 2001; Thakker & Ward, 1998). One of the most striking and consistent findings with regard to the relationship between culture and depression is the variation in somatic symptoms (e.g., Jenkins, 1988; Parker et al., 2001; Sulaiman et al., 2001). Somatization is relatively unusual in Euro-American Westerners, but very common in many non-Western populations, particularly in some Asian countries (Thakker & Ward, 1998). For example, Pang (1998) explored ways in which elderly Korean immigrants in the United States express depression and found evidence that Korean elders express emotions symbolically or physically and these physical terms are neither bodily or emotional, but somewhere between. As another example of somatic symptoms, Mexican culture includes a concept of *nervios*, an emotional affliction that is related to anxiety and depression but is recognized as distinct (Salgado de Snyder, Diaz-Perez, & Ojeda, 2000).

Along the same lines, the authors of DSM-IV have also recognized that culture plays a vital role in the expression and diagnosis of depressive symptoms, and they took several steps to increase the cross-cultural applicability of DSM-IV. For example, DSM-IV includes 25 culture-bound syndromes in an appendix and

an outline of cultural formulation for the evaluation of the individual's cultural context (American Psychiatric Association., 1994, Appendix I, p. 843). The cultural formulation was designed to provide a review of:

1. the individual's cultural background;
2. cultural explanations of the individual's illness (e.g., cultural idioms of distress);
3. cultural factors related to the psychosocial environment and levels of functioning;
4. cultural elements of the relationship between the individual and the clinician; and
5. the overall cultural assessment necessary for diagnosis and care (American Psychiatric Association, 1994; Tanaka-Matsumi, 2001).

A number of culture-bound syndromes have been reported to be associated with depressive symptoms, such as brain fag (West Africa), dhat (Indian), hwa-byung (Korean), nervios (Latinos), shenjing shairu (Chinese), and tawatl ye sni (Sioux Indian; American Psychiatric Association, 1994). DSM-IV states also that complaints of nerves and headaches (in Latino and Mediterranean cultures), of weakness, tiredness, or imbalance (in Chinese and Asian cultures), of problems of the "heart" (in Middle Eastern cultures), or of being "heartbroken" (among the Hopi) may express depressive experiences (American Psychiatric Association., 1994, p. 324).

Although the DSM-IV lists culture-bound syndromes as well as a cultural formulation as a supplement to the multi-axial assessment (American Psychiatric Association, 1994), it has been argued that the DSM-IV still represents Western concepts of illness (including depression) and might not be easily applicable to other culture (Bhugra & Mastrogiani, 2004). Most researchers agree that the Western classifications of depression proposed by both the International Classification of Disease (ICD-10) and the DSM- are not entirely satisfactory (e.g., U. S. Department of Health and Human Services, 2001). Given that the DSM-IV includes only a sampling of existing culture-bound syndromes and has a relatively incomplete depiction of the role of culture on symptom expressions, the current version of DSM may need to extend and elaborate concepts with regard to the role and importance of culture and ethnicity in the diagnostic process.

### CONCEPTUAL ISSUES III: ESTABLISHING MEASUREMENT EQUIVALENCE

One major issue related to assessing the cross-cultural comparability of depressive symptoms has been the equivalence of measures (Bravo, 2003; Crockett et al., 2005; Liang, 2002; van de Vijver, 2001). Although it may be less of a concern when more open-ended questions are administered by an interviewer, the equivalence issue is particularly serious when self-report screening measures

are involved (Liang, 2002). Valid and reliable questionnaire items in one language often lose meaning and context after translation. Even with accurate translation, the problem of different nuances unique to different cultures may not be resolved (Bravo, 2003). As mentioned already, even when using the DSM criteria for depression and a standardized depression instrument, cultural factors still affect the way individuals express their depressive symptoms. Failure to substantiate the equivalence in depression instruments is potentially serious because it may lead to inaccurate prevalence rate and misleading group comparisons (Vandenberg & Lance, 2000). Therefore, in order to make a meaningful comparison between cultures, researchers must establish equivalence of depression measures in addition to the traditional reliability and validity requirements of instruments.

Johnson (1998, 2006) reviewed articles on cross-cultural equivalence and reported that more than 60 specific terms of equivalence (e.g., conceptual equivalence, criterion equivalence, semantic equivalence, metric equivalence) have been discussed or mentioned in the available literature on cross-cultural research. According to these review articles, one of the most common equivalence addressed in the cross-cultural research was conceptual equivalence, followed by metric equivalence and structural equivalence (Johnson, 1998, 2006). Similarly, a number of researchers point out that cross-cultural measurement equivalence requires at least the abovementioned three interrelated conditions (Markides, Liang, & Jackson, 1990; van de Vijver, 2001). More importantly, these types of equivalence constitute a hierarchy in that both conceptual and metric equivalence are required for structural equivalence and metric equivalence assumes conceptual equivalence.

### Establishing Conceptual Equivalence

Conceptual equivalence is the most basic type of equivalence and implies that research materials or observed behaviors have the same meaning in two or more cultures (Liang, 2002). Hui and Triandis (1985) identify conceptual equivalence as a necessary condition for making cross-cultural comparisons. Thus, unless two or more cultural groups share the same basic concept of depression, there is little purpose in determining whether measures of that construct are equally valid across groups (Crockett et al., 2005). An example of a possible research question for evaluating conceptual equivalence might be: "Do minorities and Whites think of depression in the same way?"

Conceptual equivalence can be evaluated by using several methods, such as back-translation, focus groups, random probes, and in-depth interviews. A major requisite for conceptual equivalence may be fidelity of translation. Ramirez and colleagues (2005) suggest that qualitative methods may be best suited to assess conceptual equivalence of existing depression measures as well as to uncover indigenous idioms of depression and culture-bound syndromes. Qualitative methods, for example, can explore the relevance and appropriateness of

depression concepts as well as the way people from different racial/ethnic backgrounds give meaning to a particular domain.

### Establishing Metric Equivalence

Assuming conceptual equivalence, metric equivalence assures that a given measurement specification can be applied to different cultures (Liang, 2002). Metric equivalence occurs when the factor loadings of items in the depression instruments are invariant across cultural groups. A number of studies evaluating the metric equivalence of depression instruments have used exploratory factor analysis (EFA; e.g., Callahan & Wolinsky, 1994; Foley et al., 2002), confirmatory factor analysis (CFA; e.g., Crockett et al., 2005; Nguyen et al., 2004), and item response theory (IRT; e.g., Cole et al., 2000; Iwata & Buka, 2002; Kim, Jang, & Chiriboga, 2009; Yang & Jones, 2007).

As an example of the confirmatory approach, on the basis of two surveys of African Americans and one survey of Caucasians, Nguyen and colleagues (2004) tested the metric equivalence of the CES-D scale. Using confirmatory factor analysis, they demonstrated the equivalent number of factors and pattern of factor loadings across all three groups. Then, they tested the metric equivalence of the CES-D to see if the magnitudes of the factor loadings were equal across three groups. Significant loading differences were found between African American and Caucasian groups, while significant loading similarities were found between the two surveys of African Americans. The authors pointed out that a higher number of loading similarities between two African American groups were expected given the same ethnicity and cultural backgrounds. Loading differences between African Americans and Caucasians were found in a number of both somatic complaints and depressive affect items, such as "I felt everything I did was an effort," "My sleep was restless," "I had crying spells," and "I felt fearful."

The study on elderly Mexican Americans by Miller and his colleagues (1997) is another example. They argued strongly for a two-factor model of the CES-D among elderly Mexican Americans instead of the original four-factor model (Radloff, 1977) which was derived from samples of the general American population. This study presents a case for qualitative differences in factorial structure between two cultural groups. Their findings raise a serious question as to whether the CES-D can be used for analyzing differences in depressive symptoms between elderly Mexican Americans and the general American population.

One study (Kim et al., 2009) has presented results from both confirmatory factor analysis and item response theory to test metric equivalence of depressive symptom items. Kim and colleagues (2009) found a general lack of metric equivalence of the CES-D scale in comparisons of Mexican Americans versus Whites or Blacks. In contrast, they found that older Whites and Blacks were much more likely to be similar. The results from this metric equivalence test

highlights the importance of considering depressive symptoms that may be experienced and expressed differently by diverse cultural groups.

### Establishing Structural Equivalence

Assuming both conceptual and metric equivalence, structural equivalence refers to similarities in the causal mechanism between a construct of depression and its consequences across different racial/ethnic groups (Liang, 2002). Considering that the three types of equivalence constitute a hierarchy, depression instruments may be conceptually and metrically equivalent but not structurally equivalent across different racial/ethnic groups. Structural equation modeling (SEM; e.g., Crockett et al., 2005) and other techniques such as path analysis have been used to evaluate structural equivalence. A number of researchers point out that SEM is probably the most versatile approach to evaluating metric and structural equivalence simultaneously (Byrne & Watkins, 2003; Liang, 2002; MacCallum & Austin, 2000).

The study on Latino and Anglo adolescents of Crockett and colleagues (2005) is an example. The authors confirmed metric equivalence of a self-esteem measure across one Anglo and three Latino groups of adolescents, but not metric equivalence of the CES-D scale. They then tested structural equivalence of the CES-D between the four youth groups using multiple-group SEM. They identified similar relations between the CES-D and self-esteem across all four different groups (Anglo, Mexican, Cuban, and Puerto Rican) and concluded that results from the multiple-group SEM supported structural equivalence. However, it should be noted that this study is not a perfect example for structural equivalence because of the lack of metric equivalence of the CES-D scale across the Anglo and three-Latino groups in this study. However, it is relatively rare to find studies on the structural equivalence of depression measures across different cultural groups.

Although a sizable number of studies have been conducted with regard to the cross-cultural comparison of depression, when two or more cultural groups are compared, descriptive and analytical techniques have been applied often without addressing issues concerning conceptual, metric, and structural equivalence (Liang, 2002). Given the above review, assessing cross-cultural comparability of many widely used depression instruments seems to deserve the highest priority. Cross-cultural comparisons across racial/ethnic groups may not be justified without resolving these measurement concerns.

### IMPLICATIONS FOR DIFFERENT CONCEPTUALIZATIONS OF DEPRESSION

Given the abovementioned importance of equivalent measures of depression across cultures, cultural differences found in conceptualization, meaning, and symptom expression of depression have important implications for screening,

assessment, therapy, and public policy. First, when a nonequivalent instrument is used to screen for depression, researchers, clinicians, and practitioners should recognize the risk that people from particular cultural groups may be more or less likely to be misclassified, which in turn may lead to inaccurate prevalence rates. Such inaccuracies could also affect public policy decision making on the local or national level, which may result in unequal distribution of resources (Crockett et al., 2005). To avoid this situation, equivalent screening tools for depressive symptoms are essential.

Second, when a cultural group appears to experience different depressive symptom clusters than others, clinicians and therapists working with those groups may need to adjust their own concepts of depression to permit appropriate diagnosis and treatment. Cultural competence of clinicians and therapists is of particular importance because culturally aware therapists and clinicians know that language, goal setting, decision-making styles, and assessment tools are all culturally laden. Sue and colleagues (1991), for example, examined ethnically matched provider mental health services versus non-matched provider mental health services and found evidence that ethnic match of provider and patient showed longer duration of mental health treatment, as well as better patient response to treatment. Culturally informed researchers and clinicians may incorporate some cultural concepts, such as self-orientation, values, family structure, and individualism-collectivism orientations. Researchers and clinicians always keep in mind that people from diverse cultures may feel, express, and present their symptoms of depression differently.

Third, considering the abovementioned advantages and disadvantages of emic and etic approaches to cross-cultural research, a combined etic-emic approach may be useful not only for an improved understanding of unique cultural phenomena in specific context but also for enabling comparisons across cultures. This combined approach may allow the identification of cultural definitions of depression. Important cultural factors involved in the help-seeking process and culturally appropriate treatment outcomes can also be identified in this combined approach (Canino et al., 1997).

Finally, and perhaps most importantly, the use of reliable and culturally valid screening instruments to establish equivalence across cultures should be an essential component of culturally competent clinical practice, especially when differences in the lay conceptualization of depression are found within a given culture. Tanaka-Matsumi (2001) mentioned when we consider culture and depression, it may be helpful to ask some questions such as "what words and concepts are used to describe depression in a specific cultural group?" and "how does one communicate depression to others in the same culture?" Such questions may help to keep clinicians or therapists from imposing diagnostic categories and criteria developed in one culture on another. In addition, these questions immediately may call for testing and establishing the cultural validity of diagnostic categories and criteria. Application of culturally sensitive and valid assessments of

depression will produce culturally competent prevention and treatment for depression, and this will be eventually tailored to meet the needs of specific ethnic and cultural groups. The field of cross-cultural depression is in great need of evaluating the utility of culture-accommodating assessment and treatment practice.

### RECOMMENDATIONS FOR FUTURE RESEARCH: THE NEED FOR A CONCEPTUAL MODEL

A significant limitation of cross-cultural research conducted in the field of depression is that it lacks a clear theoretical framework. In order to advance cross-cultural comparative research on depressive symptoms, Sternberg's (2004) culture and intelligence analytic model presents as one of the more appropriate analytic frameworks, although it was originally developed with a focus on cross-cultural intelligence research. Sternberg (2004) proposed a fourfold typology to capture the possible relationship of culture to intelligence. The four cells of the typology differ in two key respects:

1. whether or not there are cross-cultural differences in the nature of the mental processes and representations involved in adaptation that constitute intelligence; and
2. whether there are differences in the instruments needed to measure intelligence (beyond simple translation or adaptation), as a result of cultural differences in the content required for adaptation (Sternberg, 2004, p. 326).

The typology can be applied to cross-cultural comparative research on depression by reframing the previous discussion of etic and emic paradigm and of depression instruments used in the previous cross-cultural depression research. Taking all the above-mentioned conceptual considerations into account, I propose four types of the relationship of culture to depression as shown in Figure 1. The four types are summarized as follows:

1. Type I, the nature of depression is the same across cultures and the instruments used to measure it are the same;
2. Type II, the nature of depression is different across cultures, but the instruments used to measure it are the same across cultures;
3. Type III, the nature of depression is the same across cultures, but the instruments are not the same;
4. Type IV, the nature of depression is different across cultures and the instruments used to measure it are different.

In Type I, both the instruments and the ensuing dimensions of depression are the same across cultures. Studies that found core depressive symptoms across cultures using DSM-based measures are good examples, such as a prototypically etic study of depression (WHO, 1983). Indeed, a number of WHO studies of cross-national prevalence rates using DSM criteria (e.g., Breslau et al., 2005) are

Instruments of Depression	Dimensions of Depression	
	Relation	Same
Same	Same	<p><b>Model I</b></p> <ul style="list-style-type: none"> <li>- Etic approach</li> <li>- Model I-based Depression Research                             <ul style="list-style-type: none"> <li>• Research on core depressive symptoms</li> <li>• Research on depression prevalence rates</li> <li>• Research on metric &amp; structural equivalence of depression measures</li> <li>• WHO projects based DSM-based measures</li> </ul> </li> </ul>
	Different	<p><b>Model III</b></p> <ul style="list-style-type: none"> <li>- Etic approach</li> <li>- Model III-based Depression Research                             <ul style="list-style-type: none"> <li>• Research on locally developed screening tools</li> <li>• Research on symptom expression within one culture</li> </ul> </li> </ul>
Different	Same	<p><b>Model II</b></p> <ul style="list-style-type: none"> <li>- Etic approach</li> <li>- Model II-based Depression Research                             <ul style="list-style-type: none"> <li>• Research on different factor structure of instrument</li> <li>• Research on different expression on depression</li> <li>• Research on metric &amp; structural non-equivalence of depression measures</li> <li>• Research on somatization and depression</li> </ul> </li> </ul>
	Different	<p><b>Model IV</b></p> <ul style="list-style-type: none"> <li>- Etic approach</li> <li>- Methods: focus groups, in-depth interview</li> <li>- Model IV-based Depression Research                             <ul style="list-style-type: none"> <li>• Research on culture-bound syndromes</li> <li>• Research on somatization and depression</li> <li>• Research on metric &amp; structural equivalence of depression measures</li> </ul> </li> </ul>

Figure 1. The typology of the relationship of culture to depression adopted from the Sternberg (2004) culture and intelligence model.

also based on this type. This line of research assumes that core depressive symptoms exist cross-culturally and cross-nationally and only levels of depressive symptoms are different across cultures. The argument based on Type I is that the nature of depression is precisely the same across cultures and that this nature can be measured identically without regard to culture using appropriate translations when necessary.

In Type II, the measures used to assess depression are the same across cultures, but the outcomes obtained from using those measures are structurally different as a function of culture. This type is close to a number of etic depression studies (e.g., Foley et al., 2002; Jang, Kim, & Chiriboga, 2005; Kim et al., 2009; Miller et al., 1997) identifying that the same depression measures given in different cultures suggested that people from different cultures express their depressive symptoms in different ways. For example, as mentioned earlier, Miller and his colleagues (1997) argued strongly for a two-factor model of the CES-D among elderly Mexican Americans instead of the classic four-factor model that was derived from samples of the general American population. They believed qualitative differences in factorial structure exist between the two cultural groups.

Type III posits that there is no difference in the nature of depression but that a difference in the instruments used to measure it is necessary. As mentioned already in the emic approach, studies that developed indigenous depression measures (e.g., the Chinese Health Questionnaire, the American Indian Depression Scale, the Shona Symptom Questionnaire in Zimbabwe) are examples for this Type III (e.g., Manson et al., 1985; Patel & Mann, 1997). This approach basically assumes that instruments for depression within a given culture must be emic derived from within the context of the culture rather than from outside it, and argues that when the same instruments are used across cultures, meanings for depression to be assigned to the scores would be different from one culture to another.

In Type IV, both the nature of depression and the instruments are different as a function of the culture being investigated. A number of culture-bound syndromes included in DSM-IV are examples: some of these culture-specific symptoms have been reported to be associated with depressive symptoms, such as brain fog (West Africa), dhat (Indian), nervios (Latinos), and shenjing shairu (Chinese). This type argues that depression can be understood and measured only as an emic construct within a given culture and nothing about depression is necessarily common across cultures.

## CONCLUSION

In conclusion, it is my opinion that the two major topics of the present review, "culture and depression," can be more fully understood, measured, and analyzed by applying the proposed typology of the relationship of culture to depression. Because research using the previously-mentioned emic-etic paradigm has not paid sufficient attention to differences in the instruments needed to measure



depression across cultures, the proposed typology may expand the traditional emic-etic approach by adding the key aspect of depression instruments used in cross-cultural research to the proposed typology. The proposed analytic framework has the potential for providing a broader understanding on racial/ethnic differences in depressive symptoms, as well as on the role of culture on depression. Additionally, the proposed analytic typology may be useful in the development of culturally sensitive and informed screening and assessment of depression within a given culture. Finally, the proposed analytic typology may serve as a basis for future studies designed to extend the topic to other mental health research areas.

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Direct reprint requests to:

Giyeon Kim, Ph.D.  
Center for Mental Health and Aging  
Department of Psychology  
The University of Alabama  
207 Osband Hall  
Box 870315  
Tuscaloosa, AL 35487  
e-mail: giyeon.kim@ua.edu

**EFFECTS OF ON-SITE COMPREHENSIVE SERVICE ACCESS WITH SERVICE COORDINATION ON SELECTED HEALTH OUTCOMES IN RETIREMENT COMMUNITIES IN THE U.S.A.\***

**YUCHI YOUNG, DR.PH**

**LINDA S. SPOKANE, BS**

**BENJAMIN A. SHAW, PH.D**

*State University of New York at Albany*

**MARK A. MACERA, MS**

*Longview, An Ithacare Community, Ithaca, New York*

**JOHN A. KROUT, PH.D**

*Ithaca College, New York*

**ABSTRACT**

Increasing numbers of older adults are entering congregate senior housing, such as continuing care retirement communities (CCRCs) and independent living communities (ILCs), where different levels of on-site comprehensive service access are provided. The purpose of this study was to examine the effects of on-site comprehensive service access on physical functioning and psychological well-being among older adults residing in two congregate senior housing facilities. In-person interviews were conducted with 140 residents living in independent apartments in a CCRC and an ILC. Multiple logistic regression showed that residents of the CCRC had a greater sense of

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