HHS Public Access

Author manuscript

J Relig Health. Author manuscript; available in PMC 2019 February 01.

Published in final edited form as:

J Relig Health. 2018 February ; 57(1): 266–278. doi:10.1007/s10943-017-0447-4.

The Relationship of Anxiety and Depression to Subjective Well-Being in a Mainland Chinese Sample

Christopher Malone, M.A.[a] and **Amy Wachholtz, Ph.D., MDiv, MS**[a,b]

[a]Department of Psychiatry University of Massachusetts Medical School, Worcester, USA, 55 North Lake Ave, Worcester, MA 01655

[b]Department of Psychology University of Colorado-Denver, Denver, USA, 1200 Larimer St Denver, CO 80217-3364

Abstract

This pilot study examines anxiety, depression, and well-being in a mainland Chinese sample and discusses the implications for mental healthcare. The Hospital Anxiety and Depression Scale, Functional Assessment of Chronic Illness Therapy–Spiritual Wellbeing, and the Body Mind Spirit Well-Being Inventory were administered to 60 mainland China residents. Correlational analyses revealed significant relationships among depression, anxiety, and every domain of well-being except the faith domain. Levels of depression and anxiety are inversely related to levels of well-being in a mainland Chinese sample. Chinese culture was expected to moderate this relationship; however, this was not confirmed by the results.

Keywords

anxiety; depression; mainland Chinese; mental health; well-being

Introduction

Recent findings on depression and anxiety have demonstrated high costs to both the individual and society in countries around the world (Murray et al., 2012). Both anxiety and depressive disorders have been found to negatively impact a variety of areas of an individual's life including: perceived well-being, satisfaction in relationships (Stein & Heimberg, 2004), decreased productivity (Simon et al., 2000), social isolation, and medical noncompliance (DiMatteo, Lepper, & Croghan, 2000). These disorders also negatively

Corresponding author: Amy Wachholtz, PhD, MDiv, MS., Dept of Psychology, CU-Denver, Campus Box 173, PO Box 173364, Denver, CO 80217-3364, Amy.Wachholtz@ucdenver.edu, Phone: 303-556-6327.

Conflict of Interest: Christopher Malone declares that he has no conflict of interest Amy Wachholtz declares that she has no conflict of interest.

Compliance with Ethical Standards

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

impact society through higher health care costs and physical and economic burden on others (DiMatteo et al., 2000).

Depression has been found to be the leading cause of disability worldwide (WHO, 2012), and anxiety has been found to be among the most prevalent mental disorders (Kessler et al., 1994). Further, these disorders have also been found to be highly comorbid (Kessler et al., 2003).While effective interventions exist for both anxiety and depression, they tend to be underutilized with less than one third of affected individuals estimated to receive care for their disorder (Ohayon, Shapiro, & Kennedy, 2000). Both anxiety and depression are chronic in nature and have a very low chance of resolving in the absence of an intervention (Collins, Westra, Dozois, & Burns, 2004). A variety of barriers that serve to obstruct interventions have been discussed in the literature such as: cultural values, fear of stigma, lack of knowledge about available treatments, having time to commit to the treatment, undiagnosed illness, and limited mental healthcare resources (Collins et al., 2004). The nature and severity of the barriers to receiving mental health services vary across cultures and countries. One of the largest barriers to treating anxiety and depression in any population is the identification of the disorder.

An individual with depression or anxiety may not understand their disease as a psychological illness and may instead be somaticized to physical pain (Henningsen, Zimmerman, & Heritbert, 2003). Further, these same individuals may reject the characterization of their pain as psychological (Kleinman & Kleinman, 1985). For these reasons, the psychological interview is not always the most efficient method to identify psychological or somaticized disorders in cultures which highly stigmatize mental illness. Psychiatric screening instruments have been developed to identify anxiety and depression in a variety of settings. Many of these tools have been shown to be reliable and accurate across cultures and languages. The importance of these tools is emphasized in areas where mental health knowledge and trained clinicians may not be prevalent, or where cultural stigma may hamper disclosure of symptoms during in-person interviews.

Additional challenges for the identification and treatment of anxiety and depression exist in non-western countries. Common problems in the delivery of mental health services such as a lack of qualified professionals and competing public health priorities are exacerbated in low and middle income countries (Saraceno et al., 2007). Cultural values and beliefs also take on added significance in the absence of western medical knowledge. For example, traditional Chinese culture stresses the importance of moderation and privacy in emotional expressions which may discourage people who suffer from emotional disorders to seek professional help (McLaughlin & Braun, 1998; Wynaden et al., 2005). The impact of Chinese cultural values has been observed in recent Chinese immigrants who tend to use fewer mental health services than domestic residents (Chen & Kazanjian, 2005).

The transition from communism to market oriented economics has caused mainland China to undergo significant social and political changes over the past 60 years. Although social change can be a major prodromal feature of mental illness (Murphy, 1961), elevated rates of mental illness in China have not been observed (Shen et al., 2006). The stigma of mental illness in China as well as cultural prohibitions against revealing mental health problems

creates difficulties in both collecting mental health information and identifying people who would benefit from mental health services. While some epidemiological studies have found lower prevalence rates for mental illness in China, other studies have found prevalence rates similar to those found in other countries (Shen et al., 2006). Further, the majority of China is underserved from a mental health standpoint, with a shortage of mental health practitioners and training programs (Jianlin, 2000) which can lead to the underdiagnoses of mental health disorders and an increase in suicide (Wei, 2011).

Researchers compensate for these cultural barriers through the use of structured surveys, many of which were translated from western-developed measures. Prior research examining Chinese mental health has typically been conducted in areas, such as Hong Kong and Taiwan, where historical events have led to significant cultural differences with mainland China. Previous studies conducted in western nations have demonstrated a negative relationship between anxiety and depressive disorders and quality of life (Mittal, Fortney, Pyne, Edlund, & Wetherell, 2006). The few studies which have attempted to replicate this in mainland China have examined individuals who present to a hospital with severe medical conditions (So et al., 2009). Much of the publicly available information concerning mental illness in mainland China is specifically related to major mental illnesses, such as suicide, however very little data exists for milder forms of mental illness such as depression or anxiety (Jianlin, 2000). Further, data collected through academic research has suffered from methodological problems such as relying on individual household interviews by lay personnel (Shen et al, 2006). This research is frequently confounded by issues such as social stigma surrounding mental illness, inexperience administering psychological interviews, and selection bias that ignores some of the economic and social realities of mainland China.

When viewed together, cultural, social, and logistical barriers serve to inhibit the use of mental health services both in mainland China and in Chinese expatriate communities. Recent research has found that mental healthcare in China is most frequently used by those with major mental illness but even this population is vastly underserved (Wang, et al. 2007). These findings speak to the difficulty of providing psychotherapy and other mental health services to the mainland Chinese people. However, due to lack of research on many forms of mental illness in mainland China, it may be the case that milder forms of mental illness manifest differently in China compared to many other countries due to unique characteristics of mainland Chinese culture and society.

Present Study

In the present pilot study, the authors examine the relationship between depression, anxiety, and psychological well-being in a medically healthy mainland Chinese sample. The authors hypothesize that there is a negative relationship between levels of anxiety and depression to well-being in a Chinese sample but that the degree of relationship will be moderated by unique aspects of mainland Chinese culture. For the purposes of this paper ‘culture’ will be defined as: a set of core values and beliefs which underlie social interaction and remain relatively stable over time (Fan, 2000).

Method

Procedure

Ethics oversight for this study was provided by Renmin University and University of Massachusetts Medical School Institutional Review Board. Potential subjects were approached and consented at public locations and anonymously completed measures which were then placed in an unmarked envelope and submitted directly to research staff. Informed consent was obtained from all individual participants included in the study.

Subjects

60 mainland Chinese residents were recruited by summer research assistants at Renmin University who had completed a research course. The mean age of the participants was 29.6 years (SD=10.13) and the sample was 60% male. Additional information about participant characteristics can be found in Table 1.

Measures

Hospital Anxiety and Depression Scale—The Hospital Anxiety and Depression Scale (HADS) was administered to assess for psychological symptoms of depression and anxiety. This measure has two subscales, anxiety and depression using 14 questions. Responses generate subscale scores ranging in value between 0 and 21 with higher scores signifying greater symptomology. Given the confounding impact that environmental, cultural, and ecological differences may exert on the relative incidence of conditions which may be due to either somaticized mental disorders or an organic medical condition, a particular strength of the HADS is that it does not contain any questions assessing somatic symptoms of depression or anxiety (Zigmond & Snaith, 1983). Thus, the results of this measure can be understood as a more accurate assessment of anxiety and depression levels in a sample which may have differential exposure to these conditions. For example, headache is a commonly somaticized symptom of depression; however, headaches are also a common result of air pollution, noise, or sleep quality (Aragones, Labad, Pinol, Lucena, & Alonso, 2005). In addition, somaticized symptoms of anxiety and depression are not uniform across international ethnic Chinese sub-cultures (Parker, Cheah, & Roy, 2001). Previous research has found that even people who experience psychological distress primarily through somatic symptoms are able to reliably identify psychological causes in structured questionnaires (Kirmayer, 2001).The Chinese language version of the HADS was used which was validated in a previous study with a Cronbach's alpha of 0.85 and a test-retest correlation coefficient of 0.90 (Wang, Chair, Thompson, & Twinn, 2008).

Functional Assessment of Cancer Therapy – Spiritual Well-Being Scale—The Functional Assessment of Cancer Therapy – Spiritual Well-Being Scale (FACIT-Sp-NI) assessed both the quality of life and spirituality of a participant. The FACIT-Sp-NI assesses functioning domains including: Physical Well-Being, Social/Family Well-Being, Emotional Well-Being, Functional Well-Being, and Spirituality. This self-report 39 question instrument uses a 5 point Likert scale. Higher scores signify a higher level of well-being in that domain. The FACIT-Sp has been linguistically validated in Chinese (Bredle, Salsman, Debb, Arnold,

& Cella, 2011), and has a Cronbach's alphas ranging from 0.81–0.88 (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002).

Body Mind Spirit Well-Being Inventory—The Body Mind Spirit Well-Being Inventory (BMSWBI) was developed to serve as a multidimensional measure of quality of life in a Hong Kong Chinese sample by assessing personal attributes, such as spirituality and affect, as well as mental and physical health factors. This measure is composed of 56 items which are responded to using a 10 or 11 point scale. The BMSWBI is composed of four subscales (Physical Distress, Daily Functioning, Affect, and Spirituality) which are scored by adding up the total value of their composite items. A higher score indicates better health. This instrument was constructed and validated among Hong Kong Chinese with Cronbach's alphas ranging from .87–.92 (Ng, Yau, Chan, Chan, & Ho, 2004).

Data Analysis

All data analysis was conducted using SPSS 22.0. All measures were scored according to their guidelines. Pearson R correlation analyses and independent sample T-tests examined the relationship between survey data. Independent sample T tests were conducted by both gender and age. A split median identified 26 years as the median sample age. Additional T-tests compared well-being subscales among those with likely clinical depression and anxiety.

Results

Degree of Depression and Anxiety

Table 2 shows the HADS scores for the total sample. The mean total score for the anxiety measure was 6.9 (SD=2.90) and for the depression measure was 5.85 (SD=3.362). For males, the mean anxiety score was 6.8 (SD=3.06) and their mean depression score was 5.9 (SD=3.34). For females, the mean anxiety score was 7.2 (SD=2.70) and their mean depression score was 5.7 (SD=3.55). When split by median age, the younger group was found to have a mean anxiety score of 7.3 (SD=2.61) and a mean depression score of 5.3 (SD=2.88). The older group was found to have a mean anxiety score of 6.4 (SD=3.24) and a mean depression score of 6.6 (SD=3.86). HADS anxiety and depression scores were found to be significantly correlated with each other $p<0.01$ level (See Table 3).

Relationship between anxiety, depression, and well-being measures

Table 3 shows the results of the correlation analyses of HADS scores on the five measured areas of subjective well-being: physical, social, functional, emotional, and spiritual. Both anxiety and depression were found to be strong negative predictors in every measured domain ($p<0.01$) of subjective well-being on the FACIT-SP with the exception of the Faith subscale, which found a significant negative relationship ($p<0.05$) between anxiety and faith but found no relationship with respect to depression. Both anxiety and depression have a negative relationship ($p<0.01$) with each of the Spirituality and Daily Functioning subscales of the BMSWBI. Depression and anxiety also have a positive relationship ($p<0.01$) with each of the Physical Distress and Affect subscales of the BMSWBI.

Additional analyses were conducted stratifying the data by both gender and age. The age groups were defined using a split median age of 26. Independent samples T-tests were conducted to assess whether there were significant differences between men and women and the age groups. No significant differences (p=NS) occurred between age groups or genders on any measure (see Table 4).

Analyses comparing well-being scores among those with HADS scores indicating likely depression or anxiety can be found in Table 5–Table 6. Participants whose HADS score indicated likely clinical depression or anxiety had significantly lower scores on most well-being measures ($p<.01$). The FACIT-Sp Faith measure was the only measure by which the difference between the clinically impaired and not clinically impaired groups was not significant different at the $p<.01$ level. On this measure, the difference between the anxiety group and the non-anxiety group was significant ($p<.05$); the difference in average score of this measure between the depressed and the non-Depressed groups was not significant (p=NS).

Discussion

This initial study examined the degree and relationship of anxiety and depression to well-being measures in a mainland Chinese sample. The authors hypothesized that anxiety and depression would be inversely related to measures of well-being but that the effect would be moderated by the impact of mainland Chinese culture.

Levels of anxiety and depression were found to be inversely correlated with measures of physical, social, functional, and affective well-being and the measured levels of well-being were found to be significantly lower for participants whose HADS score indicated the presence of depression or anxiety. The relationship between anxiety and depression to spiritual well-being was less robust with the two measures used indicating different relationships; specifically, the FACIT-Sp Faith subscale resulted in ambiguous relationship between affective measures and measured faith. Eastern and Western developed measures of spiritual well-being found markedly different relationships between anxiety and depression and spirituality. This suggests that the BMSWBI and FACIT-Sp may be measuring different aspects of spirituality and that while the FACIT-Sp was linguistically translated into Chinese, the Faith subscale may not have been conceptually translated to be understood by a mainland Chinese population. This finding supports the growing body of literature which suggests that applying that western developed spirituality scales to non-western cultures may be inappropriate (Chan, Ho, & Chan, 2007). This may be due to the western emphasis of religious faith, which is commonly associated with a religious institution and strongly theistic in focus, rather than spiritual beliefs which tend to be less associated with an organizational structure and have a non-theistic emphasis.

To summarize, western developed measures of some culturally bound psychological states may be linguistically translated to be administered to members of other cultures, however, comparisons to locally developed measures suggest that translated western measures may fail to tap into the same target concept in non-western populations. The temptation to linguistically translate existing western measures into other languages is prevalent among

cross-cultural researchers as it allows for direct comparison across samples. The results of this initial study suggest that the generalizability of western measures may be confounded by the complexity of the target domain. To illustrate, the results of the western measure used in this study replicated cross-cultural findings among domains where data can be captured with relatively simple statements such as functional health (e.g., “I am able to work”, “I am sleeping well”) or physical health (e.g., “I have a lack of energy”, “I have nausea”) compared to the more abstract nature of spiritual well-being queries (e.g, “I am able to reach down deep into myself for comfort”, “I feel a sense of purpose in my life”).

It is likely inappropriate to rely solely on a translated western developed instrument to measure complex or highly abstract psychological or spiritual concepts across cultures as the translated instrument is unlikely to have the same psychometric specificity for the target concept across cultures. The authors of the present study recommend that cross cultural psychology researchers imitate the approach taken in the present study by employing both translated western measure and more locally developed instruments so as to control for possible type 1 or type 2 errors when assessing a complex psychological variable. Future research should explore the nature of the relationship between concept complexity between cultures as understanding this psychometric relationship is relevant and valuable for the measurement of a vast array of healthcare and social programs across the globe. Cross-culturally it may be easier to study explicit behaviors (e.g. I pray 3 times per day), that avoids complex psychological or spiritual conceptualizations (e.g. My soul finds comfort in prayer). While this research format loses the richness and depth that comes when anthropologically studying psycho-spiritual conceptualizations among individual cultures, it does allow for greater cross cultural comparisons.

Chinese culture is incredibly rich and historied and so it would be disingenuous for these writers to attempt to address all of its complexities in this paper, however some characteristics warrant discussion. Defining characteristics of Chinese culture include: bearing hardship, egalitarianism, conformity, collectivism, Confucian philosophical ideals, contentedness with position in life, and fatalism (Fan, 2000). A discussion of the recent history of China is complicated by similar difficulties. In the past 60 years, China has undergone significant social changes domestically. Nearly every aspect of daily life for a mainland Chinese person has been affected by economic, political, or environmental shifts. Chinese government policies have dramatically shaped conceptions of gender and family through its One Child Policy. Further, the level of exposure to foreign influences has increased dramatically for mainland Chinese with the gradual opening of the economy over the past 30 years and this has been accompanied by decreasing, but albeit high, levels of government control over decisions such as family planning, career, and political leadership.

In light of the influences of Chinese culture and social experiences, the authors had hypothesized that the degree of relationship between the affective and well-being measures would be impacted by participants’ age and gender. This hypothesis was not confirmed by the results of the study. Neither the age nor gender of the participants was found to have an impact on the degree of relationship between the measured anxiety, depression and other well-being measures. This finding is surprising and suggests that in spite of the dramatic

social changes that have occurred in China, generational and gender differences in subjective well-being are not dramatic, at least within an urban mainland Chinese sample.

The findings of this pilot study parallel previous findings of the relationship between anxiety, depression, and well-being conducted in other cultures. Similar relationships have been found in the United States (Mittal et al., 2006; Rapaport, Clary, Fayyad, & Endicott, 2005), Germany, Japan, and South Korea (Shim et al., 2006). This study extends the literature by both expanding the literature to a Chinese sample and describing the strength of the relationship across a variety of domains of well-being. The effect sizes found in the present study can serve as a valuable basis for future studies exploring unique characteristics of mental illness in mainland China which may contribute to the conversation about the widely varying prevalence estimates of depression and anxiety currently found in the literature. It also provides insight into instrument selection for future studies in the area of health and well-being among this population. Further, this study offers unique psychological measures of a mainland Chinese sample which are rarely collected due to cultural, social, and political barriers.

Although social, political, and logistical factors serve as barriers to the delivery of mental health care in a mainland Chinese population, the finding that anxiety and depression impact this population similarly as in other populations suggest that psychotherapy is underutilized in the treatment of the mainland Chinese population. The findings of this initial study suggest that psychotherapy may have a similarly beneficial impact to those with anxiety and depression in mainland China as this treatment has been effective in the treatment of anxiety and depression in other mental-health treatment resistant communities with a similar relationship between anxiety, depression, and well-being. Given the increasing travel and emigration out of mainland China, the unique aspects of treating individuals from mainland China will be encountered more frequently in clinical practices around the world.

Limitations and Future Directions

There are some limitations to be considered in the present study. Principally, the small, urban sample may limit the generalizability of the results to the entire mainland Chinese population, many of whom are less educated and more remote than the study sample. Future studies can (and should) expand the sample sizes beyond this initial foray into the links among mental, physical, and spiritual health and well-being of mainland Chinese individuals.

Conclusion

The results from this pilot study expand upon previous findings of the relationship among depression, anxiety, and subjective well-being by focusing specifically on the relationship among mental, physical and spiritual health in a mainland Chinese sample. Similar to studies conducted in western and other Asian countries, higher levels of anxiety and depression were found to be significantly correlated to lower levels of measured physical, emotional, functional, and affective well-being. Given the cultural constraints of emotional expression by mainland Chinese persons and the well-known difficulties of psychological interviews in non-western cultures, these results support the validity of using affective psychological

measures in mainland Chinese samples. However, this study also identifies challenges in using western developed spirituality measures in a mainland Chinese population. The results of this study suggest that the emphasis of western measures on statements of 'faith' is inappropriate in areas where a culture of 'spirituality' predominates. The generalizability of linguistically translated western measures, without conceptual translation, to other cultures is likely confounded by the complexity of the target concept. This study expands upon the sparse research concerning less severe forms of mental illness in mainland China as well as confirms that depression and anxiety can negatively affect multiple aspects of subjective well-being in a mainland Chinese sample.

Acknowledgments

Funding: This work was supported by the National Institutes of Health under Grant K23DA030397 (awarded to AW).

Christopher Malone, M.A, is a doctoral student in Clinical Psychology at William James College. His past research projects dealt primarily with topics such as chronic migraine headache, meditation, and memory. Dr. Amy Wachholtz is an Assistant Professor of Psychology at the University of Colorado-Denver, Denver, USA. Her clinical specialties include health psychology, addiction, pain, and spirituality. She was recently awarded a NIDA K23 grant to study co-morbid opioid addiction and chronic pain. Her current research interests include opioid use, chronic pain, spirituality, and the relationship between culture and concepts of mental and physical health.

References

Aragones E, Labad A, Pinol JL, Lucena C, Alonso Y. Somatized depression in primary care attenders. Journal of Psychosomatic Research. 2005; 58:145–151. [PubMed: 15820842]

Bredle JM, Salsman JM, Debb SM, Arnold BJ, Cella D. Spiritual well-being as a component of health-related quality of life: The functional assessment of chronic illness therapy - spiritual well-being scale (FACIT-Sp). Religions. 2011; 2:77–94.

Chan THY, Ho RTH, Chan CLW. Developing an outcome measurement for meaning-making intervention with Chinese cancer patients. Psycho-Oncology. 2007; 16:843–850. [PubMed: 17149786]

Chen AW, Kazanjian A. Rate of mental health service utilization by Chinese immigrants in British Columbia. Canadian Journal of Public Health. 2005; 96(1):49–51. [PubMed: 15682696]

Collins KA, Westra HA, Dozois D, Burns D. Gaps in accessing treatment for anxiety and depression: Challenges for the delivery of care. Clinical Psychology. 2004; 24:583–616.

DiMatteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment. Arch Intern Med. 2000; 160:2101–2107. [PubMed: 10904452]

Fan Y. A classification of Chinese culture. Cross Cultural Management. 2000; 7(2):3–10.

Henningsen P, Zimmerman T, Sattel H. Medically unexplained physical symptoms, anxiety, and depression: A meta-analytic review. Psychosom Med. 2003; 65(4):528–33. [PubMed: 12883101]

Jianlin J. Suicide rates and mental health services in modern China. Crisis. 2000; 21(3):118–121. [PubMed: 11265837]

Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman Kendler KS. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Study. Arch Gen Psychiatry. 1994; 51(1):8–19. [PubMed: 8279933]

Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas Wang PS. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). JAMA. 2003; 289(23):3095–3105. [PubMed: 12813115]

Kirmayer LJ. Cultural variations in the clinical presentation of depression and anxiety: implications for diagnosis and treatment. Journal of Clinical Psychiatry. 2001; 62:22–30.

Kleinman, A., Kleinman, J. Culture and depression: Studies in the anthropology and cross-cultural psychiatry of affect and disorder. Berkley, CA: University of California Press; 1985.

McLaughlin LA, Braun KL. Asian and pacific islander cultural values: Considerations for health care decision making. Health & Social Work. 1998; 23:116–126. [PubMed: 9598394]

Mittal D, Fortney JC, Pyne JM, Edlund MJ, Wetherell JL. Impact of comorbid anxiety disorders on health-related quality of life among patients with major depressive disorder. Psychiatric Services. 2006; 57(12):1731–1737. [PubMed: 17158487]

Murphy H. Social change and mental health. The Milbank Memorial Fund Quarterly. 1961; 39(3):385–445. [PubMed: 14477424]

Murray C, Vos T, Lozano R, Naghavi M, Flaxman AD, Michaud Lopez AD. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: A systematic analysis for the Global Burden of Disease Study 2010. The Lancet. 2012; 380:2197–2223.

Ng, SM., Yau, JKY., Chan, CLW., Chan, CHY., Ho, DYF. The measurement of body-mind-spirit well-being: Toward multidimensionality and transcultural applicability. University of Hong Kong; China: 2004.

Ohayon MM, Shapiro CM, Kennedy SH. Differentiating DSM-IV anxiety and depressive disorders in the general population: Comorbidity and treatment consequences. Can J Psychiatry. 2000; 45(2): 166–72. [PubMed: 10742876]

Parker G, Cheah YC, Roy K. Do the Chinese somaticize depression? A cross-cultural study. Social Psychiatry and Psychiatric Epidemiology. 2001; 36:287–293. [PubMed: 11583458]

Peterman AH, Fitchett G, Brady M, Hernandez L, Cella D. Measuring spiritual well-being in people with cancer: The Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being Scale (FACIT-Sp). Ann Behav Med. 2002; 24(1):49–58. [PubMed: 12008794]

Rapaport MH, Clary C, Fayyad R, Endicott J. Quality-of-life impairment in depressive and anxiety disorders. Am J Psychiatry. 2005; 162:1171–1178. [PubMed: 15930066]

Saraceno B, van Ommeren M, Batniji R, Cohen A, Gureje O, Mahoney Underhill C. Barriers to improvement of mental health services in low-income and middle-income countries. Lancet. 2007; 370:1164–1174. [PubMed: 17804061]

Shen YC, Zhang MY, Huang YQ, He YL, Liu ZR, Cheng H, Tsang A. Twelve-month prevalence, severity and unmet need for treatment of mental disorders in metropolitan China. Psychological Medicine. 2006; 36:257–267. [PubMed: 16332281]

Shim EJ, Mehnert A, Koyama A, Cho S, Inui H, Paik N, Koch U. Health-related quality of life in breast cancer: A cross-cultural survey of German, Japanese, and South Korean patients. Breast Cancer Res Treat. 2006; 99:341–350. [PubMed: 16685589]

Simon GE, Revicki D, Heiligenstein J, Grothaus L, VonKorff M, Katon WJ, Hylan TR. Recovery from depression, work productivity, and health care costs among primary care patients. General Hospital Psychiatry. 2000; 22:153–162. [PubMed: 10880708]

So WKW, Marsh G, Ling WM, Leung FY, Lo JCK, Yeung M, Li GKH. Anxiety, depression and quality of life among Chinese breast cancer patients during adjuvant therapy. European Journal of Oncology Nursing. 2009; 14(1):17–22. [PubMed: 19734087]

Stein MB, Heimberg RG. Well-being and life satisfaction in generalized anxiety disorder: Comparison to major depressive disorder in a community sample. Journal of Affective Disorders. 2004; 79:161–166. [PubMed: 15023490]

Wang P, Aguilar-Gaxiola S, Alonso J, Angermeyer M, Borges G, Bromet E, Wells JE. Use of mental health services for anxiety, mood, and substance disorder in 17 countries in the WHO world mental health surveys. The Lancet. 2007; 370:841–850.

Wang W, Chair SY, Thompson DR, Twinn SF. A psychometric evaluation of the Chinese version of the Hospital Anxiety and Depression Scale in patients with coronary heart disease. Journal of Clinical Nursing. 2008; 18:1908–1915.

Wei, D. Underdiagnosed depression among young rural women in Mainland China; Conference proceedings of the 11th annual International Symposium of Social Scientific Study of Religion; Beijing, China. 2011.

World Health Organization. Depression (N°369) [Fact sheet]. 2012 Oct. Retrieved from http://www.who.int/mediacentre/factsheets/fs369/en/

Wynaden D, Chapman R, Orb A, McGowan S, Zeeman Z, Yeak S. Factors that influence Asian communities access to mental health care. International Journal of Mental Health Nursing. 2005; 14:88–95. [PubMed: 15896255]

Zigmond AS, Snaith RP. The hospital and depression scale. Acta Psychiatr Scand. 1983; 67:361–370. [PubMed: 6880820]

Table 1

Demographic Characteristics

	N	%		
Gender				
Male	36	60		
Female	23	38.3		
Missing	1	1.7		
Marital Status				
Unmarried	45	75		
Married	14	23.3		
Missing	1	1.7		
Educational Level				
Middle School	3	5		
Vocational School	2	3.3		
College (Bachelor)	9	15		
Graduate School (Master/Doctorate)	46	76.7		
	N	Range	M	SD
Age	60	19–62	29.57	10.125

Table 2

HADS Results

	M	SD
HADS Depression		
Total Sample	5.85	3.362
Gender		
Males	5.94	3.338
Females	5.73	3.548
Age		
<=25 years	5.29	2.877
>26 years	6.60	3.862
HADS Anxiety		
Total Sample	6.92	2.896
Gender		
Males	6.81	3.060
Females	7.18	2.702
Age		
<=25 years	7.26	2.609
>26 years	6.44	3.241
HADS Indications Frequency	n(%)	
Anxiety		
Likely Diagnosis	34(56.7)	
Not Likely	24(41.7)	
Missing	1(1.7)	
Depression		
Likely Diagnosis	45(75.0)	
Not Likely	14(23.3)	
Missing	1(1.7)	

Table 3

HADS Pearson R Correlation Analysis

	HADS: Anxiety	HADS: Depression
HADS: Anxiety		0.691**
HADS: Depression	0.691**	
BMSWBI: Physical Distress	0.555**	0.404**
BMSWBI: Daily Functioning	−0.617**	−0.666**
BMSWBI: Affect	0.743**	0.651**
BMSWBI: Spirituality	−0.689**	−0.686**
FACIT-Sp: Functional	−0.571**	−0.590**
FACIT-Sp: Emotional	−0.586**	−0.532**
FACIT-Sp: Physical	−0.571**	−0.590**
FACIT-Sp: Social	−0.443**	−0.419**
FACIT-Sp: Meaning/Peace	−0.454**	−0.592**
FACIT-Sp: Faith	−0.282*	−0.230

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4

Independent Sample Tests

Age		
	t(df)	**Sig. (2-tailed)**
HADS: Anxiety	1.082(57)	0.284
HADS: Depression	−1.490(57)	0.142
FACIT-Sp: Functional	−0.804(58)	0.425
FACIT-Sp: Emotional	−1.783(57)	0.080
FACIT-Sp: Physical	−0.804(58)	0.425
FACIT-Sp: Social	−1.153(58)	0.254
FACIT-Sp: Meaning/Peace	−0.090(58)	0.928
FACIT-Sp: Faith	−1.451(58)	0.152
BMSWBI: Physical Distress	−1.208(57)	0.232
BMSWBI: Daily Functioning	−0.969(57)	0.336
BMSWBI: Affect	−0.027(55)	0.978
BMSWBI: Spirituality	0.074(58)	0.941
Gender		
HADS: Anxiety	−0.474(56)	0.637
HADS: Depression	0.235(56)	0.815
FACIT-Sp: Functional	−0.127(57)	0.899
FACIT-Sp: Emotional	−0.901(56)	0.371
FACIT-Sp: Physical	−0.127(57)	0.899
FACIT-Sp: Social	−0.290(57)	0.773
FACIT-Sp: Meaning/Peace	−0.637(57)	0.527
FACIT-Sp: Faith	0.070(57)	0.944
BMSWBI: Physical Distress	−0.957(56)	0.342
BMSWBI: Daily Functioning	0.811(56)	0.421
BMSWBI: Affect	−0.656(54)	0.515
BMSWBI: Spirituality	0.227(57)	0.821

Table 5

Independent Samples T-Test (HADS Anxious vs Not Anxious)

	t(df)	Sig. (2-tailed)
BMSWBI: Physical Distress	−4.020(56)	0.000
BMSWBI: Daily Functioning	4.659(56)	0.000
BMSWBI: Affect	−5.686(54)	0.000
BMSWBI: Spirituality	5.349(57)	0.000
FACIT-Sp: Functional	4.436(57)	0.000
FACIT-Sp: Emotional	4.156(57)	0.000
FACIT-Sp: Physical	4.436(57)	0.000
FACIT-Sp: Social	3.230(57)	0.002
FACIT-SP: Meaning/Peace	4.517(57)	0.000
FACIT-SP: Faith	2.014(57)	0.049

Table 6

Independent Samples T- Test (HADS Depressed vs Not Depressed)

	t(df)	Sig. (2-tailed)
BMSWBI: Physical Distress	−3.546(56)	0.001
BMSWBI: Daily Functioning	4.085(56)	0.000
BMSWBI: Affect	−3.560(54)	0.001
BMSWBI: Spirituality	5.371(57)	0.000
FACIT-Sp: Functional	4.583(57)	0.000
FACIT-Sp: Emotional	3.270(57)	0.002
FACIT-Sp: Physical	4.583(57)	0.000
FACIT-Sp: Social	2.395(57)	0.020
FACIT-SP: Meaning/Peace	2.822(57)	0.007
FACIT-SP: Faith	1.168(57)	0.248