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The Role of Psychosocial and Cultural Factors as Correlates of Depressive Symptoms in Chinese-American Older Adults

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Building upon the literature showing the negative impact of physical health constraints on depressive symptoms, this study examined the role of health and psychosocial and cultural factors as correlates of depressive symptoms in community-dwelling Chinese-American older adults. Data were drawn from surveys with 108 older Chinese Americans living in the Tampa and Orlando areas of Florida (M age = 70.6 years, SD = 7.70). Results from hierarchical regression analysis suggest the importance of chronic health conditions and functional status as correlates of depressive symptoms. In addition, high levels of sense of mastery and acculturation were also found to be significant. Findings highlight the importance of psychosocial and cultural factors and suggest that such factors need to be considered in efforts to promote the mental health of ethnic minority older adults. Limitations and clinical implications of the findings are discussed.

KEYWORDS *acculturation, Chinese-American older adults, depressive symptoms*

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The size of the Asian-American population is increasing more than four times faster than that of the total population in the United States (U.S. Census Bureau, 2012). At the same time, the Asian-American population is aging rapidly. Between 2000 and 2007, the percentage of Asian Americans aged 65 years and older had increased 58.1% (Mui & Shibusawa, 2009). It is estimated that the number of Asian-American elders will continue to increase to 15% of the total ethnic minority elderly population by 2050 (Stokes, Thompson, Murphy, & Gallagher-Thompson, 2002). Chinese Americans are the largest Asian-American subgroup, accounting for more than one fifth of the Asian-American population (U.S. Census Bureau, 2012). However, information regarding Chinese older adults remains scarce. One of the primary reasons is that they are often excluded from public surveys due to cultural and language barriers. Also, existing studies tend to aggregate subcategories of Asian Americans into one homogenized group and overlook issues and problems specific to each subgroup (Misra, Kwon, & Yoo, 2009).

In the limited literature available at this time, Chinese-American older adults are shown to be, in general, well educated (Sakamoto, Goyette, & Kim, 2009; Su & Conaway, 1995). However, reflecting the "model minority myth," they show a heightened vulnerability to mental health issues (Stokes et al., 2002; Ying, 1988; Yu, 1986). Compared with those of the general older population, rates of depression are notably higher in older Chinese Americans (Lai, 2004; Yu, 1986). Depression incidence rates among older Chinese Americans range from 18% to 46% in various US cities (Lam, Pacala & Smith, 1997; Mui, 1999; Mui and Kang, 2006; Stokes et al., 2002). New immigrated Chinese elders, in general, have a higher rate of depression than long-time immigrants do (Bagley, 1993). Given that depression in old age is a risk factor highly associated with suicide, evidence was also found indicating a higher rate of suicide among older Chinese females than older White females (Liu & Yu, 1985; Mui, 1996). Given the need for mental health research among these populations, the present study aims to explore certain factors associated with depressive symptoms, considering both physical and psychosocial/cultural aspects.

The overall approach of the present study is guided by the stress and coping literature (e.g., Lazarus & Folkman, 1984). Decline in physical health is recognized as one of the most common concerns and sources of stress among older populations (Blazer, Landerman, Hays, Simonsick, & Saunders, 1998; Bruce, 2001). Older individuals with chronic conditions and functional disability are shown to be more prone to symptoms of depression (Chiriboga, Black, Aranda, & Markides, 2002; Johnson & Wolinsky, 1999), and such findings hold across diverse racial/ethnic groups and social classes.

A growing body of literature demonstrates that individuals with positive coping resources are likely to fare well when faced with life stress. Among various coping resources, the sense of mastery or a feeling of control over

one's life and environment has received particular attention (e.g., Pearlin & Schooler, 1978). An impressive body of literature has demonstrated the beneficial role of sense of mastery, and there is consensus that sense of mastery is an indicator of psychological resilience that can facilitate adaptation to changes, overcome negative consequences, and promote physical and mental well-being (Lachman & Weaver, 1998; Roberts, Dunkle, & Haug, 1994). Also, there is general consensus regarding the positive roles of social network in responding to life stress and enhancing well-being. Studies have consistently shown that older individuals with strong social ties and social interactions are in better physical and mental health (Kaufman & Uhlenberg, 1998; Mui, 1996).

Another important factor of special relevance when studying immigrant populations is acculturation. The term acculturation is generally used in reference to the degree to which a person from another culture has learned the language and behaviors expected of persons who live in the host culture (e.g., Myers & Rodriguez, 2002; Phinney & Flores, 2002; Rogler, Cortes, & Malgady, 1991). The level of acculturation attained in a host society has been known to be closely connected with the mental health and well-being in immigrant populations (Chiriboga et al., 2002; Myers & Rodriguez, 2002). Individuals with low acculturation may be more likely to encounter difficulties in day-to-day experiences and to have diminished self-confidence and mental health. Despite the importance of acculturation in the mental health of immigrant populations, most studies have tended to focus on immigrant families and children, and little attention has been paid to older adults (Chiriboga et al., 2002). Given the lack of information on factors associated with depressive symptoms in Chinese older adults, the present study assessed the predictive roles of physical health-related factors (chronic conditions and functional disability) and psychosocial and cultural factors (sense of mastery, social network, and acculturation).

METHODS

Sample

Surveys of older Chinese Americans were conducted during September 2010 to April 2011 in two major cities in the State of Florida: Tampa and Orlando. Based on a power analysis for the regression model employed in the project, a volunteer-based quota sampling method was used to recruit a minimum of 106 participants. To be eligible for the survey, participants needed to be adults of Chinese ethnicity aged 60 or older who had sufficient cognitive ability to understand and complete the survey. Individuals originally from Taiwan, China, Hong Kong, and other areas were included. The original survey was developed in English by the third author and translated

by the first author into both traditional Chinese and simplified Chinese. Back translation was conducted by a graduate level researcher who is proficiently bilingual in Chinese and English to ensure the accuracy of the Chinese survey.

Because of the underrepresentation of ethnic minorities in public databases (e.g., census data, telephone directories), standard sampling methods may miss a substantial portion of immigrant elderly populations. In addition, immigrant populations are often hard to identify by any single approach and a single-source sampling frame may lead to bias (Curry & Jackson, 2003). Therefore, we combined several sampling methods as a strategy for recruitment. We contacted potential sources of the target elders, including local religious groups and elderly and ethnic associations. When contacts were made, the first author visited the sites and arranged for surveys to be conducted. The survey instrument consisted of a standardized questionnaire. While designed to be self-administered, the researcher was available for anyone who needed assistance. The research sites included two Chinese churches, one Buddhist temple, one elder association, four Chinese/Taiwanese associations. To outreach individuals who were not affiliated in those groups or organizations, the first author actively recruited participants in local Asian restaurants and grocery stores. Referrals from respondents as well as other individuals associated with our primary data collection sites were also sought. For individuals recruited by other methods than visits, mail surveys were conducted. A packet including a cover letter and a set of questionnaire and pre-stamped return envelope was mailed to these potential participants. In a few cases, the researcher visited the participants' homes in the company of the references to administer the survey. All participants were paid \$10 for their participation. A total of 108 individuals were included in the survey, and none of them had more than 10% of missing in their responses.

Measures

DEPRESSIVE SYMPTOMS

The Geriatric Depression Scale-Short Form (GDS-SF; Sheikh & Yesavage, 1986) includes 15 items (e.g., "Are you satisfied with your life?," "Do you feel happy?," "Do you feel that your life is empty?," and "Do you feel helpless?") with a yes/no response format. The total score was calculated by counting the number of endorsed symptoms of depression. The total scores could range from 0 (no depressive symptoms) to 15 (severe depressive symptoms). A score of 5 or higher is considered as probable depression (Sheikh & Yesavage, 1986). The GDS-SF has been translated into Chinese, and its psychometric properties have been validated (Lee, Chiu, Kowk, Leung, & Al, 1993). Cronbach's alpha in the present sample was .77.

PHYSICAL HEALTH-RELATED FACTORS

Chronic health conditions and functional disability were included as physical health-related variables. Individuals were asked to report existing medical conditions using a 9-item list of chronic diseases and conditions commonly found among older populations (e.g., arthritis, stroke, heart problems, diabetes, and cancer), using a yes/no format. The list was drawn from the Older Americans Resources and Services Questionnaire (OARS) (Fillenbaum, 1988). A summated score was used for the analysis, where a high score indicates more chronic health conditions.

Functional status was assessed with a composite measure of the Physical Activities of Daily Living (PADL; Fillenbaum, 1988), Instrumental Activities of Daily Living (IADL; Fillenbaum, 1988), Physical Performance Scale (Nagi, 1976), and Functional Health Scale (Rosow & Breslau, 1966). The 20 items cover a wide range of activities without duplicity including eating, dressing, traveling, managing money, carrying a bag of groceries, and reaching out above head with arms. Participants were asked whether they could perform each activity. The responses were coded as 0 (*without help*), 1 (*with some help*), or 2 (*unable to do*). Responses for individual items were summed for total scores. The possible range for disability was 0 (*no disability*) to 40 (*severe disability*). Cronbach's alpha in the present sample was .94.

PSYCHOSOCIAL AND CULTURAL FACTORS

These variables include sense of mastery, social network, and acculturation. Sense of mastery was measured with the Pearlin and Schooler's (1978) Mastery Scale. Respondents described their feelings about seven items (e.g., "I cannot solve my problems" and "My future mostly depends on me") on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Responses to negatively worded items were reverse-coded. Summary scores ranged from 7 (*low mastery*) to 28 (*high mastery*). Cronbach's alpha in the present sample was .79.

Social network was measured with six items from the Lubben's (1988) Social Network Scale. Questions included the number of relatives or friends seen at least once a month (0 to 9 or more), frequency of contact (less than monthly to daily), and the number of relatives or friends the participant felt close to (0 to 9 or more). Cronbach's alpha for social network in the present sample was .75.

The level of acculturation to mainstream American culture was assessed with a 12-item acculturation inventory (Jang, Kim, Chiriboga, & King-Kallimanis, 2007). The inventory covered language use, media consumption, food consumption, social relations, sense of belonging, and familiarity with culture. Each response was coded from 0 to 3. Total scores could range from 0 to 36, with a higher score indicating a greater level of acculturation

to mainstream American culture. Cronbach's alpha in the present sample was .89.

DEMOGRAPHIC VARIABLES

Sociodemographic information included age (in years), gender (1 = male, 2 = female), marital status (1 = married, 2 = not married), and educational attainment (1 = college education or more, 2 = less than college education). Birth place and length of residence in the United States were also asked; however, due to their high correlations with the acculturation level, they were not included in the major analysis.

Analytic Strategies

To understand underlying associations among study variables, bivariate correlations were first assessed. Hierarchical regression models of depressive symptoms were then tested by sequentially entering the following independent blocks of predictors: (1) demographic variables, (2) physical health-related factors (chronic health conditions and functional disability), and (3) psychosocial and cultural factors (sense of mastery, social network, and acculturation level). In order to maintain a sufficient ratio between the number of predictor variables and the sample size, each psychosocial and cultural factor was entered separately. Following the formula $50 + 8m$, where m is the number of independent variables to be entered in a regression model (Tabachnick & Fidell, 1996), 106 subjects are suggested as an adequate sample size with 7 predictive variables.

RESULTS

Descriptive Information of the Sample

Descriptive information for the sample is presented in Table 1. The ages of 108 participants ranged from 60 to 94 years, with an average of 70.6 ($SD = 7.7$) years. More than half were female (56.5%), and about 15% were unmarried. About 20% of the participants obtained less than a college education. The number of years lived in the United States averaged 32.9 years ($SD = 14.6$) with a range from one year to 62 years. More than 66% of the participants were from Taiwan, 24.3% from mainland China, and the rest from Hong Kong and other areas.

On average, participants reported only 1.12 ($SD = 1.04$) chronic health conditions. The score for functional disability averaged 0.73 ($SD = 1.60$), which suggests low levels of functional disability. For psychosocial and cultural measures, average scores for sense of mastery, social network,

TABLE 1 Descriptive Characteristics of the Sample ($n = 108$)

Characteristic	$M \pm SD$ (range) or %
Age, years	70.6 \pm 7.70 (60–94)
Gender (female)	56.5%
Marital status (not married)	14.8%
Education (<college)	20.4%
Number of years in the U.S.	32.9 \pm 14.6 (1–62)
Place of birth	
Taiwan	66.1%
Mainland China	24.3%
Hong Kong and other	9.6%
Number of chronic health conditions ^a	1.12 \pm 1.04 (0–4)
Functional disability ^a	0.73 \pm 1.60 (0–8)
Sense of mastery ^a	19.2 \pm 3.31 (12–28)
Social network ^a	19.9 \pm 5.56 (8–35)
Degree of acculturation ^a	32.4 \pm 6.36 (13–44)
Depressive symptoms (GDS-SF) ^a	1.99 \pm 2.26 (0–13)

^aHigher scores indicate more of the construct being measured.

and acculturation were 19.27 ($SD = 3.31$), 19.89 ($SD = 5.56$), and 32.42 ($SD = 6.36$), respectively. The scores were geared towards positive sides, indicating overall high levels of psychosocial resources and acculturation. The mean score of the GDS-SF was 1.99 ($SD = 2.26$), which is in the normal range. Applying the suggested cut-off (≥ 5), more than 11% of the sample fell in the category of probable depression.

Association Among Study Variables

Table 2 summarizes bivariate correlations among study variables. All variables were associated in the expected directions, and no sign of collinearity was observed (all $r_s < .43$).

Higher levels of depressive symptoms were associated with more chronic health conditions, greater functional disability, and lower levels of sense of mastery, social network, and acculturation.

Hierarchical Regression Models of Depressive Symptoms

In multivariate analysis (Table 3), none of the demographic variables reached statistical significance. But both chronic health conditions and functional disability were found to be significant factors for depressive symptoms. The addition of these physical health-related factors increased the amount of variance explained by 15%. In subsequent models with psychosocial and cultural factors, physical health-related factors remained significant. Each entry for sense of mastery and acculturation was also found to be significant, explaining 5% and 2% of additional variance, respectively. Individuals with

TABLE 2 Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Age	—	-.19*	.21*	-.14	.43***	.42***	.28**	-.01	-.01	.03
2. Female		—	.16	.11	-.03	.16	.00	.33**	-.01	-.03
3. Not married			—	.04	.09	.08	.18	.21*	-.06	.00
4. Less than college education				—	.01	-.05	.02	.15	-.42***	-.06
5. Chronic conditions					—	.32**	.00	-.13	-.11	.21*
6. Functional disability						—	-.03	-.17	-.21*	.32**
7. Sense of mastery							—	.23*	.18	-.36***
8. Social network								—	-.19	-.22*
9. Acculturation									—	-.24*
10. Depressive symptoms										—

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

TABLE 3 Hierarchical Regression Models of Depressive Symptoms

Predictor	Standardized coefficient (β)				
Age	.07	-.15	-.02	-.13	-.12
Gender (female)	-.09	-.16	-.12	-.10	-.13
Marital status (not married)	.07	.07	.12	.08	.07
Education (< college)	-.07	-.08	-.03	-.06	-.13
Chronic conditions		.25*	.21*	.23*	.22*
Functional disability		.30*	.22*	.36*	.23*
Sense of mastery			-.29**	—	—
Social network				-.15	—
Acculturation					-.24*
Δ <i>R</i> ²	.03	.15*	.05*	.01	.02*
Overall <i>R</i> ²	.03	.18*	.23**	.19*	.20**

p* < .05, *p* < .01

greater levels of sense of mastery or acculturation were less likely to have symptoms of depression. The significance of social network disappeared in the multivariate model. The total variance explained was 23%, 19%, and 20% for the model with sense of mastery, social network, and acculturation, respectively.

DISCUSSION

Despite the fact that the Asian American population is fast growing and that Chinese Americans are the largest Asian subgroup (Mui & Shibusawa, 2009; U.S. Census Bureau, 2012), relatively little is known about the mental health of Chinese American older adults. This study explored predictors of depressive symptoms among Chinese American older adults, focusing on physical health-related factors (chronic health conditions and functional disability) and psychosocial and cultural factors (sense of mastery, social network, and degree of acculturation).

Results from our study are in line with the gerontological literature, showing that older individuals with chronic conditions and functional disability are prone to depressive symptoms (Blazer et al., 1998; Bruce, 2001; Chiriboga, et al., 2002; Johnson & Wolinsky, 1999). In studies with Chinese older adults, the greater likelihood of depression among physically challenged individuals has also been reported (e.g., Chou & Chi, 2003; Kang, Boyas & Salehim, 2012; Wu, Chi, Plassman, & Guo, 2010). The need to depend on family members for daily activities and the reduced social and physical activities resulting from physical health constraints seem to contribute to their greater vulnerability to mental health issues (Chou & Chi, 2003; Wu et al., 2010).

The current analysis suggests that certain psychosocial and cultural factors may also be associated with higher levels of depressive symptoms. In a number of studies on the mental health of immigrants, a high level of sense of mastery was consistently found to be beneficial in reducing the negative effects of life stress (Dalgard, Thapa, Hauff, Mccubbin, & Syed, 2006; Jang, Chiriboga, Lee, & Cho, 2009; Kim, Han, Shin, Kim, & Lee, 2005). As a psychological asset, feelings of control seem to facilitate older immigrants' positive adaptations to life, which then protect them from mental health issues. Acculturation has been less well studied in relation to depression and other mental health issues among immigrant populations (Chiriboga et al., 2002; Hovey, 2000; Myers & Rodriguez, 2002). Similar to previous studies, our findings support the vulnerability of less acculturated Chinese-American older adults to symptoms of depression. Chinese-American older adults with poor English skills and lack of knowledge about the new culture are likely to have difficulties adjusting to their lives in the United States and become prone to symptoms of depression (Casado & Leung, 2002; Kang, Boyas & Salehim, 2012; Kuo & Roysircar, 2004; Ying, 2001). It is notable that the effect of sense of mastery and level of acculturation on depressive symptoms remained significant after controlling for the physical health-related variables. The negative association of social network with depressive symptoms was significant at bivariate level; however, it became nonsignificant in the multivariate model. Given its marginal significance, the role of social network should be explored further in additional research. Along the same lines, the nonsignificant contribution of demographic variables to depressive symptoms observed in the present analysis should be revisited with larger samples of Chinese-American older adults.

Some additional limitations need to be noted. The use of a sample of convenience and a cross-sectional design suggests that caution must be exercised in generalizing the findings and inferring causality. Despite the efforts to recruit diverse older adults representing a wide array of socioeconomic status and health, our final sample was biased toward those with more advantageous characteristics (e.g., well-educated, healthy, highly acculturated individuals). Also, due to small numbers of ethnic subgroups, we were

not able to explore within ethnic group differences. Although statistically significant, the regression coefficients and the total variance explained were small. The model needs to be further investigated with a larger sample and more explanatory factors. Given that the present study used the general term “sense of mastery,” future studies need to consider using situation-specific terms, such as health locus of control and health-related self-efficacy. Also, the use of positively oriented outcomes (e.g., life satisfaction, quality of life) is recommended to better understand different domains of psychological well-being. Finally, the study would benefit from qualitative examinations of adaptational processes of aging, acculturation, and health in older Chinese immigrant populations. Despite these limitations, the present study expands the knowledge base of the correlates of depressive symptoms in understudied ethnic minority older adults. The findings provide important implications in a clinical setting that serves Chinese-American older adults. Given the association of depressive symptoms with chronic health conditions and functional disability, attention needs to be paid to potential mental health issues among Chinese-American elderly who are physically challenged. Given the critical roles of sense of mastery and acculturation, intervention programs designed to facilitate older immigrants’ psychological empowerment and cultural adaptation are recommended as a means to protect and promote their mental well-being.

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