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The Perceptions, Social Determinants, and Negative Health Outcomes Associated With Depressive Symptoms Among U.S. Chinese Older Adults

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Purpose of the Study: Recent demographic growth of the U.S. Chinese aging population calls for comprehensive understanding of their unique health needs. The objective of this study is to examine the perceptions, social determinants of depressive symptoms as well as their impact on health and well-being in a community-dwelling U.S. Chinese aging population in Chicago. ***Design and Methods:*** A community-based participatory research approach was implemented to partner with the Chicago Chinatown population in a geographically defined community. Data were collected from questionnaires and semistructured focus group interviews with 78 community-dwelling Chinese older adults. ***Results:*** Our findings suggest that the depressive symptoms were common among older adults. It was frequently identified through feelings of helplessness, feelings of dissatisfaction with life, feelings of getting bored, loss of interests in activities, suicidal ideation, and feelings of worthlessness. Societal conflicts, family conflicts, financial constraints, personality, and worsening physical health may be associated with greater depressive symptoms. In addition, depressive symptoms may be detrimental to the overall health and well-being of Chinese older adults. ***Implications:*** This study has wide implications for health care professionals, social services agencies, and policy makers. Our results call for improved public health education and awareness programs to highlight the health impact of depressive symptoms on Chinese older adults. Future prospective studies are needed to investigate the prevalence of depressive symptoms among U.S. Chinese older adults. Longitudinal research is needed to quantify the risk and protective factors of depressive symptoms.

Key Words: Aging, Psychological well-being, U.S. Chinese population

Asian American community is one of the fastest growing minorities in the United States. As the population increases steadily, older Asian Americans are disproportionally affected by mental health issues and psychological distress. Social isolation, stressful life events, length of immigration, poor perceived health, and dissatisfaction with family are among the unique psychosocial stressors concerning older Asian Americans (Kuo, Chong, & Joseph, 2008; Mui & Shibusawa, 2008). There exists an urgent need in examining specific Asian subgroups to accurately reflect the mental health disparities.

Among Asian American population, Chinese is the oldest and largest subgroup with an estimate of 3.6 million people (Barnes & Bennett, 2002). One in four Asian Americans is of Chinese descent. Compared with other immigrant groups, the U.S. Chinese community is older in average age and less acculturated (Shinagawa, 2008). It is reported that more than 80% of Chinese older adults are foreign born. More than 30% of Chinese older adults immigrated after the age of 60 (Mui et al., 2008). Prior studies suggest that there are significant health disparities among Chinese persons, including chronic diseases, cancer, and psychological distress associated with acculturation and migration stress (McCracken et al., 2007; Yu, Kim, Chen, & Brintnall, 2001).

Depression is reported to be the most common psychological disorders among Chinese older adults (Casado & Leung, 2001; Mui, 1996a). Due to the scarcity of systematic studies, the prevalence of depression in U.S. Chinese older adults varies depending on the diagnostic criteria, screening instruments, and communities being studied. Compared with those reported in Western samples, Chinese older adults reported lower prevalence rates of severe depression (Lim et al., 2011). However, evidence suggests that the clinical prevalence rates of depressive symptoms among Chinese older adults approach those of most Western countries or even higher in some studies. It is reported that 18%–29.4% of U.S. Chinese older adults were found to have depressive symptoms (Mui, 1996a; Stokes, Thompson, Murphy, & Gallagher-Thompson, 2001). In a North American sample, Chinese older adults were found to have higher prevalence of depressive symptoms than that of general aging population (Lai, 2004a).

More importantly, depression among older adults has been associated with increases in suicidal ideation. In the United States, Chinese older adults have the highest suicide rate than any other racial groups nationwide. Specifically, the suicide rate among U.S. Chinese older women is a higher leading cause of death compared with the general population (Centers for Disease Control and Prevention, 2010). A prior study noted a 3-fold higher suicide rate among U.S. Chinese women aged 65–74 years, 7-fold higher suicide rate among the U.S. Chinese women aged 75–84 years, and 10-fold higher suicide rate among the U.S. Chinese women aged 85 or older compared with White women of the same age groups (Liu & Yu, 1985).

Existing studies in the People's Republic of China suggest that poor physical health, financial concerns, unhealthy lifestyle, as well as insufficient social support, particularly a lack of emotional support from family members, are associated with depression among older adults (Chi et al., 2005; Zhang et al., 1997). Furthermore, depression may be a risk factor of elder mistreatment (Dong, Simon, Odwazny, & Gorbien, 2008).

To a large extent, culture may determine and shape psychological distress as well as its symptoms, treatment, and help-seeking behavior. Heavily influence by Confucianism, Chinese older adults perceive the balanced interconnection between mental outlook and physical health as a successful model for aging (Hsu, 2007). Studies suggest that the Confucian tradition of correct social behavior and the emphasis on inhibition of emotions influences the ways in which Chinese express psychological distress (Ots, 1990). This belief was found to result in a tradition of expressing emotions in somatic metaphors (Kleinman, Eisenberg, & Good, 1978). Whereas Chinese older adults perceive self as interconnected to others through mutually understood commitments, they tend to integrate social relationships in the conceptualization of depression. Due to the result of cultural shaping of symptom conceptualization and expression, existing studies support that conceptualization of distress, types of depressive disorders, and the presentation of depressive symptoms may differ between Chinese groups and other ethnic groups (Tabora & Flaskerud, 1994). This presents a scenario in which misdiagnosis of depression may be probable among Chinese older adults. The reporting of depression among Chinese population may still be affected by cultural values, however, recent review studies suggest that Western influences on Chinese society and on the detection and identification of depression are likely to have modified the expression of depressive illness sharply since the early 1980s (Parker, Gladstone, & Chee, 2001). It is critical to administer depression screening instrument that captures symptoms in a culturally appropriate manner to accurately reflect depression prevalence and incidence rates of Chinese older adults.

Compared with their counterparts, U.S. Chinese older adults may be more prone to psychological distress. For minority older adults, depression occurs frequently in older immigrants because they have limited resources, yet they are faced with physical frailty and stressful life events (Gelfand &

Yee, 1991). In the case of U.S. Chinese older adults, research has documented that poor physical health, poor life satisfaction, lack of social support, health care service barriers, and less adequate financial situation are underlying contributors to depression (Stokes et al., 2001; Wu, Chi, Plassman, & Guo, 2010).

Researchers have speculated that numerous migration variables, such as acculturation stress, language problems, and social isolation may increase the risk of depression for immigrants. Acculturation is a multidimensional process (Mills & Henretta, 2001). There exists inconsistent information on the impact of acculturation on depression among Chinese immigrants in the U.S. Studies show that the immigrants who have lived in the United States longer and have a higher command of English tend to have lower depressive scores (Lam, Pacala, & Smith, 1997). The level of acculturation, including years in the United States and command of English, is inversely related to depressive symptoms among U.S. Chinese older adults (Lai, 2004a; Lam et al., 1997). However, other studies demonstrate that a longer length of residence in the United States may serve as a stress-related predictor of depression, which is possible due to the differences of family responsibility perceptions among foreign-born older adults and U.S.-born adult children. Moreover, there exist factors unique to U.S. Chinese older adults that may influence their health needs (Dong et al., 2010). During the course of immigration, traditional social relationships may be disrupted due to the vast cultural, social, and economic changes. U.S. Chinese older adults may find it increasingly difficult to maintain desired relationships. Inadequate care from immigrant family members, exacerbated by linguistic and cultural barriers, may render U.S. Chinese older adults at high risks of depression (Tam & Neysmith, 2006).

The high proportion of older adults in Chicago's Chinese community warrants our attention. According to the latest census data, Asian American population in the state of Illinois has increased by 39% in the past 10 years. This rapid growth marks Asian community as the fastest growing ethnic groups state wide, whereas other ethnic groups have reported an overall decline. Located in the near south side of Chicago, the Chinatown community of Armour Square has increased by 11.2% in the past decade, which makes the Chinese community one of the fastest growing ethnic communities in Chicago (U.S. Census Bureau, 2011). Currently, the greater Chicago area has one of the largest Chinese communities in the United States with more than 67,000 Chinese persons (Simon et al., 2008).

Despite its rapid demographic growth, there exists incomplete knowledge in how U.S. Chinese older adults perceive depressive symptoms as well as their perceptions on the contributing factors of depressive symptoms. Systematic research on depression in U.S. Chinese older adults may be hindered by several factors. Evidence indicates that Chinese community have posed mistrust toward government and federal-sponsored activities due to anti-Chinese sentiment in the past (C. Lee, 1992). Vast subgroup diversity in cultures and languages has further presented challenges (Lauderdale, Kuohung, Chang, & Chin, 2003). In order to bridge the knowledge gap, the purpose of this study is to: (a) Explore U.S. Chinese older adults' perceptions of depressive symptoms, (b) Understand the contexts in which older adults perceive depressive symptoms, and (c) Explore the impact of depressive symptoms on the health and well-being of community-dwelling U.S. Chinese older adults.

Methods

Conceptual Framework

In this qualitative study of depressive symptoms among U.S. Chinese older adults, a sociocultural framework was used to access the interplay of multiple life stressors including health and immigration impact, potential coping resources, and the perception of depressive symptoms among Chinese older adults (Mui et al., 2008). This framework sheds light on the importance of personal and environmental life stressors and their effects on one's psychosocial well-being (Mui & Kang, 2006). Based on the sociocultural framework, this study explores how U.S. Chinese older adults perceive and interpret depressive symptoms that may be influenced by different cultural values, beliefs, practices, as well as the social circumstance of the community at large.

Community-Based Participatory Research Approach

This study was part of the National Institutes of Health-funded Partner in Research project. The strength of community-based participatory research (CBPR) approach has been noted as a

paradigm shift in epidemiological research (Leung, Yen, & Minkler, 2004). CBPR is described as "a systematic inquiry with the participation of those affected by the issue being studied, for the purpose of education and taking action or affecting social change" (Green & Mercer, 2001). With the complexity of health determinants and disparities experienced by marginalized older adults and ethnic minorities, evidence-based interventions often benefit from the knowledge of and respect for community's cultural values (Israel, 2000; Minkler, 2005). By equitably engaging both community and academic partners in an action-driven investigation, CBPR approach effectively addresses the interplay of complex cultural and social factors affecting one's health and therefore enhances the quality and quantity of research.

Guided by CBPR principles, our community-academic partnership is a synergetic effort between Chinese American Service League (CASL) and Rush University Medical Center. During the initial phase of the study, the study team and investigators invited community through civic, health, social groups, advocacy, community centers, community physician, and residents. These stakeholders constituted the Community Advisory Board (CAB) which served a pivotal role to foster community support and to guide the overall examination of health issues in the community. Conducting CBPR approach allows researchers to gain knowledge and cultural awareness of community health concerns and the ability to develop appropriate research instruments. This synergetic collaboration increases the community's understanding toward research mechanism that lays the foundation of sustainable partnership. During CAB meetings, one of the pressing health issues identified by members was depression.

Study Design and Procedure

This study utilized survey questionnaires and semistructured focus group methods to investigate depressive symptoms among U.S. Chinese older adults. Depressive symptoms were assessed based on the five-question Geriatric Depression Scale (GDS). Depression was defined as three or more positive answers to the five screening questions. The five questions used have been validated in different settings and are commonly used to screen for depression in the geriatric populations (Almeida & Almeida, 1999). A prior study (Rinaldi et al., 2003) demonstrated that this five item instrument has good sensitivity (94%), specificity (81%), positive (81%), and negative (94%) predictive values. Furthermore, this scale has a positive likelihood ratio of 4.92 and a negative likelihood ratio of 0.07; it also has good interrater reliability (k = 0.88) and test-retest reliability (k = 0.84). Evaluations of the usefulness of the GDS as a device to detect depression in Chinese populations indicates that the GDS is a reliable and valid screening tool for assessing depression in this population (Chan, 1996; H. C. B. Lee, Chiu, & Kowk, 1993; Mui, 1996b).

Participants were further invited to attend focus group discussions. This technique is well suited to explore relatively unexplored community health issues (Morse & Field, 1995). Whereas questions about health, illnesses, care, and interventions are highly culturally mediated, focus group design helps to unearth the unique cultural beliefs, values, and motivations affecting one's health behavior and well-being. The results from focus group interviews often offer valuable insights on the health of understudied population (Krueger, 1994).

Our focus group recruitment process benefited from the collaborative community-academic partnership. We approached participants after their attendance in CASL-sponsored cultural classes, such as calligraphy and Tai-Chi, according to the following eligibility criteria: (a) aged 60 years or older, (b) self-identified as Chinese, and (c) resided in Chicago. Of the 80 participants approached, 78 Chinese older adults aged 60 and older gave consent to the study. All materials were prepared in simplified Chinese, traditional Chinese, and English. Participants were then divided into focus groups according to their dialect of preference (Mandarin or Cantonese) in order to ensure cultural sensitivity of the study (Suh, Kagan, & Strumpf, 2009). Participants were encouraged to openly share their opinions on depression, which may or may not be grounded in their own lived experience. In total, six focus groups were conducted in Cantonese and two in Mandarin. Each focus group lasted for 60 min.

Data Analysis

For analysis purpose, a bilingual research assistant first transcribed audio recordings into Chinese transcripts (different dialects use the same Chinese characters) and then translated the transcripts into English. Another assistant subsequently back translated the English transcript into Chinese.

Texts were further examined by bilingual principal investigator to ensure the accuracy of meaning.

The English transcripts were imported into NVivo software (NVivo, version 8) for data management. Two independent coders followed grounded theory to analyze data (Glaser & Strauss, 1967; Strauss & Corbin, 1990). Each coder first independently labeled the texts with key words and phrases. An iterative process of analysis was followed, and constant comparison was in place to identify patterns and commonalities within and across participants' responses. The key words were coded, tabulated, and analyzed for emerging themes. A theme emerges with three of more participants that voiced the same thoughts. Clusters of themes were developed from associated illuminating quotes from transcripts. Two coders then compared and discussed their sets of categories collectively to evolve dominant categories. If coders initially disagreed, rationales were discussed until consensus was reached about which coding best fit the data. The categorization of each response was not finalized until two coders reached consensus. In all cases, consensus was achieved. Each category was then reviewed and a short summary was written for each category. Quotes from the English transcripts that captured participants' opinions were incorporated to support each theme (Glaser and Strauss 1967; Strauss and Corbin 1990).

Results

Characteristics of the Study Population by the Level of Depressive Symptoms

A total of 78 older adults participated in the study. With regards to the level of specific depressive symptoms, 13 participants (16.7%) reported feeling bored, 16 participants (20.5%) reported feeling hopelessness, 9 participants (11.5%) reported not feeling satisfied with life, 22 participants (28.2%) preferred to stay at home, and 13 participants (16.7%) reported feeling worthlessness. There were 17 participants (21.8%) who reported positive to three or more questions and 37 participants (47.4%) who reported positive to at least one question.

In the group of participants with three or more depressive symptoms, the majority was married (76.5%). There were more men than women (53% vs. 47%). They mostly understood or spoke little English (94.2%). In the group of participants without any depressive symptoms, there were more women than men (56% vs. 44%). With regards to age, the proportion of participants over the age of 80 was higher in the group of three or more symptoms (35.3%), compared to the group with one or more symptoms (29.7%) and no symptoms (12.2%). The proportion of participants with more than five children was higher in the group of three or more symptoms (23.5), compared with that of one or more symptoms (16.2%) and no symptoms (14.6%). Regarding self-reported change in health in the past year, participants with three or more symptoms reported proportionally higher in being worse or significantly worse (29.4%), compared with the group of one or more symptoms (24.3%) and no symptoms (19.5%). For detailed characteristics of the study population by the level of depressive symptoms, see Table 1.

Perceptions of Depressive Symptoms

Participants' perceptions of depressive symptoms fall into six categories, including feelings of helplessness, feelings of dissatisfaction with life, feelings of getting bored, loss of interests in activities, suicidal ideation, and feelings of worthlessness (Table 2).

Participants most often described the feelings of helplessness as a depressive symptom. As one participant reported, "Depression (*Yì Yù Zhèn*) is like when you feel helplessness, especially when it concerns personal issues, and you have few people to talk with." Many older adults may often shy away from the issue, and "end up not talking about your problems and feel even worse than you really are."

Participants articulated depressive symptoms in terms of feeling dissatisfied with life. One participant observes the following: "In our building, there is an old lady. She is never satisfied with her life and is always complaining and whining about everything. For the last two decades, she never visited downtown . . ." In addition, participants identified depressive symptoms with respect to the loss of interests in activities or loss of interests to "interact with other people." In some extreme cases, participants described depressive symptoms in relation to suicidal ideation, such as suicidal thoughts of "better to die and die fast."

Social Determinants of Depressive Symptoms

This study asked participants to reflect upon contextual factors in which depressive symptoms

Table 1. Characteristics of the Study Population by the Level of Depressive Symptoms

	3 or more (*N* = 17)	1 or more (*N* = 37)	None (*N* = 41)
Age group, number (%)			
60–69	4 (23.5)	9 (24.3)	11 (26.8)
70–79	7 (41.2)	17 (46)	25 (61)
80+	6 (35.3)	11 (29.7)	5 (12.2)
Sex, number (%)			
Men	9 (53)	19 (51)	18 (44)
Women	8 (47)	18 (48)	23 (56)
Marital status, number (%)			
Married	13 (76.5)	24 (66.7)	28 (77.8)
Single	0 (0)	1 (2.8)	0 (0)
Widowed	4 (23.5)	11 (30.6)	8 (22.2)
Number of children, number (%)			
0–1	2 (11.8)	5 (13.5)	5 (12.2)
2–4	11 (64.8)	29 (70.3)	30 (73.2)
5 or more	4 (23.5)	6 (16.2)	6 (14.6)
People in the household, number (%)			
1	9 (53)	19 (51.4)	12 (29.3)
2–3	7 (41.2)	17 (46)	27 (65.9)
4 or more	1 (5.9)	1 (2.7)	2 (4.9)
Country of origin, number (%)			
Mainland	12 (70.6)	25 (67.6)	31 (75.6)
Hong Kong	4 (23.5)	11 (29.7)	7 (17)
Taiwan	1 (5.9)	1 (2.7)	1 (2.4)
Others	0 (0)	0 (0)	2 (4.9)
Years in the United States, number (%)			
1–10	3 (17.7)	8 (21.6)	8 (20)
11–20	5 (29.4)	14 (37.8)	18 (45)
21–30	5 (29.4)	8 (21.6)	10 (25)
31 or more	4 (23.5)	7 (18.9)	4 (10)
Ability to understand English, number (%)			
Well or very well	0 (0)	1 (2.8)	2 (4.9)
Fair	1 (5.9)	1 (2.8)	0 (0)
Poor or very poor	16 (94.2)	34 (94.4)	38 (95.1)
Ability to speak English, number (%)			
Well or very well	0 (0)	1 (2.7)	1 (2.5)
Fair	1 (5.9)	1 (2.7)	1 (2.5)
Poor or very poor	16 (94.2)	35 (94.6)	39 (95)
Overall health status, number (%)			
Very good or excellent	4 (23.5)	8 (21.6)	10 (24.4)
Fair or good	13 (76.5)	27 (73)	30 (73.2)
Poor	0 (0)	2 (5.4)	1 (2.4)
Quality of life, number (%)			
Good or very good	5 (29.4)	12 (32.4)	17 (41.2)
Fair	12 (70.6)	24 (64.9)	24 (58.8)
Poor or very poor	0 (0)	1 (2.7)	0 (0)
Change in health in the past year, number (%)			
Improved or significantly improved	4 (23.5)	9 (24.3)	11 (26.8)
No change	8 (47)	19 (51.35)	22 (53.7)
Worse or significantly worse	5 (29.4)	9 (24.3)	8 (19.5)

may occur among themselves or people they know of. We found that societal conflicts, family conflicts, financial constraints, personality, and physical health were main contributing factors to depressive symptoms (Table 3). Among all vignettes given by participants, societal conflicts, and family conflicts were most commonly mentioned.

Participants described that societal conflicts including social isolation, migration stress, difficulties with health system, and perceived discrimination that contribute to depressive symptoms. As one participant commented, "[Psychological distress] is due to the lack of resources for seniors. They don't even have the means of transportation

Table 2. Perceptions of Depressive Symptoms

Themes	Subthemes	Sample statements
Feelings of helplessness	Feeling sad and helplessness	"[Depression is when] you feel helplessness, especially when it concerns personal issues, and you have few people to talk with. You feel sad."
		"We Cantonese care about face. You would end up not talking about your problems and feel even worse than you really are. One would just close the door and cry, and feel bad about oneself."
Feelings of dissatisfaction with life	Psychological distress	"In our building there is an old lady. She is never satisfied with her life and is always complaining and whining about everything. For the last two decades she never visited downtown. It is because she does not know how to get there."
	Immigration distress	"For those who are here for over a couple of decades, they can have retirement benefits, food coupons and Medicare. These are very nice. But for me who has only been here for three years, having no money and being dependent on your children is no fun in your daily life. For me this is very depressing."
Feelings of getting bored	Having nothing to do	"Old people don't feel happy because old people here tend to feel bored in their apartments."
		"Depression is when one has nothing to do. Or when one has too much free time and does not know what to do and has nothing to do. If one has nothing to do, it will make a person bored and sad."
Loss of interests in activities	Abandoning interest in hobbies and activities	"A depressed person would be like my husband's brother-in-law. He had no interest in learning new things. He did not read like he used to. He watched TV all day. He did not exercise. He did not interact with other people. He lost track of time and did not eat meals at regular time."
Suicidal ideation	Suicidal thoughts and attempts	"I heard one old man say that it is better to die and die fast. But he is still alive. Actually I could relate to the feeling of that person."
		"I wanted to die at that time when I was really ill and upset. I needed someone to help me take a bath. I needed someone to help me clean myself after using the washroom. But it was not right to get help all the time."
Feelings of worthlessness	Loss of self-worth	"I have experienced a time when I was not able to be independent. I did feel like giving up because I felt so worthless . . . . I knew I was sick."

to go out. They have nowhere to go . . . . They sometimes even need help to get to the grocery stores." Besides transportation challenges, language barrier was reported.

Furthermore, participants reported that depressive symptoms may be triggered by family conflicts in the form of discrepancies in responsibility expectations, habits and lifestyle, household standards or maintenance, as well as caregiver neglect. Family matters were often referred to as "a difficult problem (*Nán Tí*)". Older adults rendered the modified expectations on adult children's family obligations as necessary on the foreign soil. However, it may still induce frustrations on older adults.

Impact of Depressive Symptoms on Health and Well-being

We elicited participants' reflections regarding the health consequences of depressive symptoms (Table 4). For many participants, depressive symptoms were associated with deteriorating health in the forms of worsened health conditions, physical function decline, cognitive function impairment, and abnormal weight changes. As one participant reported, "seniors need to be healthy psychologically; that is, if seniors are distressed, their health will be in trouble." Other participants described the impact of depressive symptoms in light of physical and cognitive function decline, stating that depressed older adults may feel that "even a minor ailment could turn out to be a big problem that leads to more functional decline."

When probed further, participants associated depressed older adults with suicidal thoughts and attempts. One participant commented: "You might not agree with me. But sometimes when I feel bad about things I would rather swallow a pill and die as long as it is not too painful." In

Table 3. Social Determinants of Depressive Symptoms

Themes	Subthemes	Sample statements
Societal conflicts	Social isolation	"It is due to a lack of resources for seniors. They do not have the means of transportation to go out . . . . They have nowhere to go. They sometimes even need help to get to the grocery stores."
		"Due to language barrier, the housing staff does not provide Chinese TV despite our suggestions to them . . . . Here the old people feel isolated during the week days with the exception of Saturday and Sunday when their children pay them an occasional visit."
	Migration stress	"New immigrants do not have anything. They rely heavily on their family. Wouldn't you say it is a stressful situation for the family and for seniors themselves?"
		"No one would willingly choose such a way of living unhappily. This is a matter of the environment."
	Difficulties with health system	"Some are caused by doctor's appointment. Now our problem to see the doctor is that we don't speak English. How do we explain our illness to the doctor? How to translate the doctor's diagnosis to the old people? This unsatisfactory situation cannot be resolved. It is frustrating."
		"As we age, the most critical thing is medical treatment and benefits. Getting your white card, it would not be a big deal even if you are sick. We depend on the medical supply by mail. It is tough to see a doctor . . . . Everything is more challenging here than in Canton where I am originally from. It makes me really upset."
	Perceived discrimination	"I know a friend who got fired at year end. He has been in the U.S. for forty years . . . . He worked in the company as a manager for ten years and was fired. It is racism. It is helplessness. He was sad ever since."
Family conflicts	Family responsibility expectations	"Family matters could be a difficult problem. For example, nowadays your sons and daughter have to make a living. If he is not sufficient, we need to understand them . . . . You have to change your expectations toward your children. They cannot support you in the way you had hoped for. I know a lot of my friends may be depressed because of that. But what can you do?"
		"Some family members have to work and have a tough time. Some lost their jobs and some have problems with their children. Their education methods are different. We have to keep in mind that the needs of parents and children are different."
	Caregiver neglect	"I depend on my children's support and money. It is nice if they give it to you. Otherwise it would be bad when they scold you for requesting money. So we feel unhappy as we are old!"
		"If the children are neglecting their parents, then getting sick is a big problem. I feel like a big burden."
	Habits and lifestyle choices	"There are a lot of differences. Living habits are different and there are differences in dresses, eating, living and traveling. Of course old people may feel unhappy."
	Household standards or maintenance	"Obviously it is a problem of the diet [that causes family conflicts]. Now the old folks have to move out. They cannot live together with the younger generation. [The reason is] because the living habits are different. The young ones are born here and we come from the East."
Financial constraints	Financial concerns could trigger psychological distress among older adults	"Like we have to pay for everything. [As new immigrants,] we have nothing and yet we need to pay for the medication expenses. How can we afford it?"
		"The problems of old people are many. One of those is financial issue. Like I went to Chinatown for some x-rays of my rheumatism. But they charge so much money and I could not afford it."
Personality	The attitude of older adults is attributable to depression	"Each person has his own way of dealing with the ups and downs in life. It depends on the person's character."
		"When you live in this world, you need to take things easy . . . . Take things easy and you could avoid negative thoughts about yourself. Otherwise you would take it serious and feel unhappy."
Worsening physical health	Poor physical health in the forms of functional impairment	"When seniors get sick they naturally feel painful and distressed. It is as simple as that."
		"The most important thing for seniors is health. Without it you would be in trouble . . . . Everything is dependent on health. A mobile person is happy."

Table 4. Impact of Depressive Symptoms on Health and Well-being

Themes	Subthemes	Sample statements
Overall health	Worsening of health conditions	"Seniors need to be healthy psychologically, that is, if seniors are distressed, their health will be in trouble. Their distress would cast a toll on their general well-being."
		"The older we get, the more self-centered and opportunistic we become. I think the sad mood we have will soon make us suffer more from illnesses."
	Physical function decline	"We need to keep a calm mind. That will keep us happy, and fit. If not, then we might feel that even a minor ailment would turn out to be a big problem that leads to more functional decline."
		"Our mindset needs to be nice and sound. If our mindset is depressed, then our body function suffers."
	Cognitive function impairment	"My husband's brother-in-law had dementia. His family members did not send him to a nursing home. No one accompanied him to a doctor's office. He was very sad. He was not properly cared for. I think his depression may make the situation worse."
	Abnormal weight changes	"At the time when I was unhappy, I ate a lot. I couldn't help it. I was much larger than I am now."
Worsening social isolation	Psychological distress may impact social well-being	"I think for those who are depressed, our apartment manager may provide help. Whoever has a problem he can seek help. But for most of the cases I know of, these people would just sit at home and not talk about it or seek help."
		"When old people have a problem, they won't tell anybody. Maybe because their children have to go to work. You need to take care of yourself. Don't feel isolated."
Suicidal ideation	Having suicidal thoughts and attempts	"You might not agree with me. But sometimes when I feel bad about things I would rather swallow a pill and die as long as it is not too painful."
		"I didn't want to live. I wanted to die. I didn't know what to do with myself. I felt trapped here."
Elder mistreatment	Depressed older adults may suffer from mistreatment	"My thought is that unhappy seniors may sit at home, not wanting to talk to anyone. What if then they are ill-treated by their children? That would make the situation even alarming. So I think it is important to let the old people vent and voice their complaints. It helps them to have an outlet."
Barriers to health services utilization	Older adults may be hesitant to reach out to formal health care services	"The psychiatrist cannot do too much. How can one advise unhappy people? How much change would that bring?"
		"Many people would not seek formal help. Feeling depressed is shameful. So they do not want others to know about their shameful situations."

addition, depressed older adults may be prone to being mistreated by adult children. Other negative consequences that fall into the category of barriers to health care utilization were also reported.

Similarities and Variations of the Perception, Social Determinants, and Impact of Depressive Symptoms by the Level of Depressive Symptoms

Based on the number of depressive symptoms reported by participants, this study compared the similarities and differences in perceptions on depressive symptoms, social determinants of depressive symptoms, and health impact associated with depressive symptoms (Table 5). Compared with participants who reported one to two symptoms or none to any symptoms, participants who reported three or more symptoms tend to report more severe scenarios regarding the perception, social determinants, and impact of depressive symptoms. Regarding the perceptions of depressive symptoms, feelings of helplessness and worthlessness were commonly expressed across the board, including those who reported three or more symptoms, one to two symptoms, or none to any symptoms. However, suicidal ideation was only present in the group of participants who reported three or more symptoms.

Regarding the determinants of depressive symptoms, all three groups identified family conflicts and worsening physical health as contributing factors to depressive symptoms. For participants who reported three or more symptoms, financial constraint was articulated as a contributing factor as well. Last, overall health was commonly identified among all groups regarding the impact of

Table 5. Similarities and Variations of the Perception, Social Determinants, and Impact of Depressive Symptoms by the Level of Depressive Symptoms

Level of depressive symptoms	None	One or two symptoms	Three or more symptoms
Perceptions of depressive symptoms			
Feelings of helplessness	x	x	x
Feelings of dissatisfaction with life		x	
Feelings of getting bored	x		
Loss of interests in activities	x		x
Feelings of worthlessness	x	x	x
Suicidal ideation			x
Social determinants of depressive symptoms			
Societal conflicts[a]	x		x
Family conflicts[b]	x	x	x
Worsening physical health	x	x	x
Personality[c]		x	
Financial constraints			x
Impact of depressive symptoms on health and well-being			
Overall health[d]	x	x	x
Worsening social isolation	x	x	
Elder mistreatment		x	x
Suicidal ideation			x
Barriers to health services utilization			x

Notes: [a]Societal conflicts refer to social isolation, migration stress, difficulties with health system, and perceived discrimination.
[b]Family conflicts refer to differences in family responsibility expectations, caregiver neglect, habits and lifestyle choices, household standard or maintenance.
[c]Personality refers to the personal attitude of older adults may be attributable to depressive symptoms.
[d]Overall health refers to worsening health conditions, physical function decline, cognitive function impairment, and abnormal weight changes.

depressive symptoms on health and well-being. However, elder mistreatment was reported by participants with at least one depressive symptom. Suicidal ideation was expressed only by participants in the group of three and more depressive symptoms.

Similarities and Variations of the Perception, Social Determinants, and Impact of Depressive Symptoms by Level of Acculturation

In addition, this study investigated the association of depression and acculturation in terms of years present in the United States and ability to understand and speak English. Compared with participants who have resided in the United States for 1–10 years or 10–20 years, participants who have resided for more than 20 years identified all six depressive symptoms. Feelings of worthlessness and suicidal ideation were only identified by participants who have resided more than 20 years. Regarding social determinants of depressive symptoms, all three groups had identified societal conflicts, family conflicts, worsening physical health, and personality. However, financial constraints were identified only by participants who resided in the Unites States for <20 years. Regarding impact of depressive symptoms, all three groups identified the impact on overall health and worsening social isolation. However, only participants who resided more than 20 years identified suicidal ideation.

Our qualitative analysis suggests that regarding the ability to understand and speak English, only those who understand or speak poor or very poor English identified all the themes. This is likely due to the skewed distribution for this question of our study population, and most of the participants (95%) understand and speak poor or very poor English.

Discussion

Summary

Our results suggest that depressive symptoms were common in this CBPR study of U.S. Chinese older adults. It was frequently identified through feelings of helplessness, feelings of dissatisfaction with life, feelings of getting bored, loss of interests in activities, suicidal ideation, and feelings of worthlessness. Societal conflicts, family conflicts, financial constraints, personality and worsening physical health could contribute to depressive symptoms.

In addition, depressive symptoms may be detrimental to the overall health and well-being of this vulnerable group of immigrant older adults.

Contribution to Existing Literature

First, our findings contribute to the knowledge base available to researchers and health care professionals on depressive symptoms. Our quantitative data provide insights on the issues of depressive symptoms in the community-dwelling population and further confirm the urgent need to reduce mental health disparities among Chinese older adults. In addition, the qualitative explorative data complements contextual understandings relating to depressive symptoms. Whereas the epidemiological studies on Chinese elderly depression have demonstrated a variation in the reported prevalence rates in different Chinese communities around the globe, special attention should be given to improve the understanding of the risk factors as well as to establish culturally sensitive depression screening instruments within this vulnerable population.

Second, our findings shed light on depression predictors in relation to the unique sociocultural environment of U.S. Chinese older adults. This study supports that poor physical health has a significant impact on depression (Wu et al., 2010). In congruence with previous literature, our findings confirm that Chinese older adults are sensitive toward social factors contributing to depressive symptoms. The lack of social support is associated with depression (Chi & Chou, 2001; Lam et al., 1997). However, whereas older adults may perceive depression as a consequence of insufficient social support, participants in our study placed more emphasis on the absence of a satisfying intergenerational relationship. For minority older immigrants, their cultural values and beliefs are particularly relevant to health status (Lai, 2004b). Studies among Chinese older adults in China indicate violation of traditional family values produce psychological distress among older adults (Zhang et al., 1997), and family support was found to exert a direct effect on psychological distress than did social support from friends (Chou & Chi, 2003). Our qualitative analysis further illustrates that older adults associated dissatisfying family household arrangements with depression. Furthermore, the discrepancies of family responsibility expectations and the actual receipt of care may affect their well-being. This suggests that for depression preventions among U.S. Chinese older adults, agreement in family expectations is as critical as the actual receipt of family support. Future study is needed to investigate the mechanism.

In addition, our analysis shows that participants who reside in the United States longer were likely to identify more depressive symptoms and were more likely than recent immigrants to associate depressive symptoms with adverse health outcomes such as suicidal ideation. A potential cultural explanation is that the longer the older adults live in the Unites States, the more likely they would have US-born children and grandchildren whose acculturation and family expectations differ from the foreign-born parents (Mui & Kang 2006). Another potential reason could be the different levels of social well-being of these participants in terms of social network, social support, and/or social participation. In addition, different levels of health literacy and help-seeking behaviors may have also influenced the identification of depressive symptoms. Future studies are needed to investigate levels of acculturation not only in terms of length of residence, language proficiency, but also in terms of family responsibility expectations and the perceptions of generational differences between older adults and adult children.

Third, this study confirms that depressive symptoms are associated with adverse health consequences from physical, cognitive, and mental health perspectives. Our qualitative results suggest that participants with depressive symptoms were likely to associate depression with suicidal thoughts and elder mistreatment than those who did not report any symptoms. Prior studies suggest that elder mistreatment may be a major contributing factor in depression, although conversely, depression may also lead to increase the risks of elder mistreatment of older adults (Dong, Chang, Wong, & Simon, 2010; Dong, Simon, Gorbien, Percak, & Golden, 2007). Our findings show that participants were more likely to perceive depressed older adults with the experience of elder mistreatment.

Last, strictly guided by CBPR principles, this explorative study contributes in producing locally relevant and context-specific findings, which is critical in designing preventions and interventions of depression in Chinese aging community (Leung et al., 2004). With community's full engagement, our academic-community partnership facilitated the design of culturally and linguistically appropriate research measures. Furthermore, participants were comfortable in conversing in their dialects of

preferences with trusting study staff. As a result, researchers were able to collect insightful responses on culturally sensitive issues of depression.

Limitations

There are limitations in our present study. First, our study is specific to the Chicago Chinese community. Therefore, the findings may not be generalizable to other Chinese subgroups,, including Chinese ethnic minority groups, suburban or rural Chinese populations, as they may be subjected to varying degrees of social and economic influence (Chen, 1992; Li, 2009). Due to the small sample size and the qualitative nature of our findings, we did not have comparison group data regarding the impact of the immigration or gender on depressive symptoms. Further research is needed to investigate the associations of acculturation, numbers of years present in the United States, gender differences, and depressive symptoms. Second, there is an urgent need for population-based studies of Chinese older adults in order to firmly establish the prevalence of depression in this group of older adults. Particularly, longitudinal studies that examine predictors of depression and differences in trajectories of depression over time will enhance researchers' understanding of factors that contribute to depression pertaining to Chinese older adults.

Third, this study did not address how older adults may wish to be assisted in combating depression, which may be more helpful in determining intervention strategies with culturally appropriate measures. Last, our transcripts were translated into English before being coded. Whereas some unique cultural insights and terminology may have been deemphasized in the process, our bilingual and bicultural coders made their best efforts to translate the transcripts to ensure accuracy and relevancy. Future studies should consider coding transcripts directly from its original language. Nevertheless, our present study provides unique window on exploring the perceptions of depressive symptoms among older adults that lays the groundwork for future research on the well-being of Chinese aging population.

Implications

This explorative study has implications for health care professionals, social services agencies, and policy makers. First, depressive symptoms are common among U.S. Chinese older adults. The results underline the need for public awareness and professional education and training of this issue. Health care professionals and relevant disciplines should be aware of the perceptions, social determinants, and negative impact of depressive symptoms on Chinese older adults. With our increasingly diverse aging population, understanding cultural nuances related to depressive symptoms could be critical to improve the quality of care in Chinese older adults.

Second, future interventions efforts could be directed toward enhancing social support of Chinese older adults, particularly in the form of family support. Social services agencies and community organizations working with Chinese older adults should pay special notice to older adults' social connectedness to adult children, intergenerational exchange, cultural expectations, as well as satisfaction with family. Consideration of these variables could be important to the design of culturally appropriate interventions.

In addition, community service centers with bilingual services and staff may play a pivotal role. On the one hand, social workers may help Chinese older adults establish improved social network, better supporting relationships, and physical and mental health, thus reducing the levels of depression. On the other hand, social services agencies could contribute in facilitating the capacity of family members of Chinese older adults to offer adequate care and prevent older adults from being isolated. Building a stronger association with people in their own community will provide emotional, social, and practical support for the older immigrants.

Last, this study has implications for the provision of culturally sensitive older adult care to the underserved populations. It is imperative to integrate cultural sensitivity training into the current health care professional training and education. We suggest that such curriculum could also encourage health professionals to become better listeners and students of the patients, which are essential steps to comprehend the cultural variations of health and aging (Chang, Simon, & Dong, 2010). Whereas continued rigorous research is needed to advance our understanding of the social and cultural determinants of health, culturally appropriate health services should be promoted to eliminate mental health disparities. From the policy perspectives, communities, cities, and states could take a critical lead in reducing social isolation and increasing social networks and companionship for this group of older adults.

Conclusion

We conclude that depressive symptoms are existing health concerns among U.S. Chinese older adults. Our results underscore the need for public health education and awareness programs that highlight the health impact of depressive symptoms on aging communities. Future prospective studies are needed to investigate the prevalence of depressive symptoms among U.S. Chinese older adults. Longitudinal research is needed to quantify the risk and protective factors of depressive symptoms.

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