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The Association Between Filial Piety and Depressive Symptoms Among U.S. Chinese Older Adults

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Abstract

Background: Depressive symptoms are detrimental to the overall health and well-being of older adults. This study aimed to examine the association between filial piety and depressive symptoms among U.S. Chinese older adults. **Method**: Data were derived from the Population Study of Chinese Elderly in Chicago (PINE), a community-engaged, population-based epidemiological study of U.S. Chinese older adults aged 60 years and above in the Greater Chicago area. The Patient Health Questionnaire-9 (PHQ-9) was adopted to measure depressive symptoms. Six domains of filial piety were evaluated, involving respect, happiness, care, greeting, obedience, and financial support. Regression analyses were performed. **Results:** After adjusting for age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities, every one point lower in filial piety expectation score was associated with increased risk of depressive symptoms (RR [rate ratio] = .96, .95-.98). And every one point lower in filial piety receipt score was associated with increased risk of depressive symptoms (RR = .94, .93-.95). **Discussion**: This study provides insights to research on filial piety and depressive symptoms by examining expectation and perceived receipt of filial piety. Future studies are needed to investigate the association between filial discrepancy and depressive symptoms.

Keywords

filial piety, depressive symptoms, older adults, Chinese

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Depressive symptoms have become an international public health problem affecting 121 million people worldwide (BioMed Central, 2011), and are detrimental to the overall health and well-being of Chinese older adults (Dong, Chang, Wong, & Simon, 2012a) . It is 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 (Dong et al., 2012a). Behavioral, psychodynamic, and cognitive aberrations; societal and family conflicts; financial constraints; and personality may be associated with greater depressive symptoms (Blazer, 2003; Dong et al., 2012a). However, the studies on depressive symptoms among Chinese immigrant older adults in the United States are limited. One study reported that Chinese immigrant older adults in the United States had fewer depressive symptoms than their counterparts in China (Wu, Chi, Plassman, & Guo, 2010). Another study indicated that foreign-born Chinese had higher depressive symptom scores than Chinese Americans born in the United States (Ying, 1988).

Chinese family is recognized for the strong sense of filial obligations and familism compared with Western culture, which emphasizes individualism (Tang, Li, & Liao, 2007). Filial piety is the dominating concept that regulates children's behavior, such as being responsible for material and mental well-being of aged parents, taking care and to discipline one's self to bring honor to the family (Dong & Xu, 2016). Previous research mainly focused on the dimension of filial piety receipt. Filial piety receipt was found to be strongly associated with life satisfaction in East Asia (Huang, 2012), and it was a protective factor against depressive symptoms among Chinese older adults (N. Li et al., 2011). However, some studies found that being mainly a recipient of help from adult children was related to a lower level of life satisfaction (Katz, 2009; C. Li et al., 2015). Other studies reported that filial support receipt was weakly related to well-being

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in older adults (Merz, Schulze, & Schuengel, 2010). With regard to filial piety expectation, studies have consistently shown that the older generations have even lower filial expectation for the younger generations than the latter have for themselves (Hsu, Lew-Ting, & Wu, 2001; Zhan, 2004).

The Chinese community represents the largest and oldest Asian population in the United States, with an estimated population of 4 million (American Community Survey, 2011). Due to language, culture, and transportation barriers, Chinese American older adults may be at risk of depressive symptoms (Dong, Chen, Li, & Simon, 2014; Mui & Kang, 2006). Understanding the association between filial piety expectation and depressive symptoms, and between filial piety perceived receipt and depressive symptoms could shed light on how filial piety affects psychological well-being of older adults.

Studies that investigated the relationship between filial piety and depressive symptoms were surprisingly lacking, not to mention the association between different dimensions of filial piety and depressive symptoms. Thus, this study aimed to (a) describe the expectation and perceived receipt of filial piety among Chinese older adults, (b) examine the associations between filial piety expectation and depressive symptoms, and (c) examine the associations between filial piety perceived receipt and depressive symptoms.

Method

Sample

The Population Study of Chinese Elderly in Chicago (PINE) is a community-engaged, population-based epidemiological study of U.S. Chinese older adults aged 60 years and above in the Greater Chicago area. The PINE study is a representative of the Chinese aging population in the Greater Chicago area as it is based on the available data drawn from the U.S. Census 2010 and a random block census project conducted among the Chinese community in Chicago (Dong, 2014). Culturally appropriate community recruitment strategies guided by community-based participatory research (CBPR) approach was used to ensure community participation (Dong, Chang, Simon, & Wong, 2011). The study was approved by the institutional review board of the Rush University Medical Center (Simon, Chang, Rajan, Welch, & Dong, 2014).

Out of 3,542 eligible older adults who were approached, 3,157 agreed to participate in the study, yielding a response rate of 91.9%. Details of the PINE study design were published elsewhere (Dong, Wong, & Simon, 2014). Face-to-face home interviews were conducted by trained multicultural and multilingual interviewers. Preferred language (English or Chinese) and dialect (e.g., Cantonese, Taishanese, Mandarin, and Teochew) for participants were used during the interview.

Measurements

Sociodemographics. Basic demographic information collected included age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, and years in the community. To evaluate medical comorbidities, participants were asked if they had been told by a doctor, nurse, or therapist that they had (a) heart disease, heart attack, coronary thrombosis, coronary occlusion, or myocardial infarction; (b) stroke or brain hemorrhage; (c) cancer, malignancy, or a tumor of any type; (d) high cholesterol; (e) diabetes, sugar in the urine, or high blood sugar; (f) high blood pressure; (g) a broken or fractured hip; (h) thyroid disease; or (i) osteoarthritis or inflammation or problems with joints. The number of medical comorbidities was calculated by summing up the number of "yes" responses to the nine items listed earlier (Dong, Chen, & Simon, 2014).

Depressive symptoms. The Patient Health Questionnaire-9 (PHQ-9) was adopted to measure depressive symptoms among Chinese older adults (American Psychiatric Association, 1994). Participants were asked if they had the following symptoms in the last 2 weeks: (a) changes in sleep; (b) changes in appetite; (c) fatigue; (d) feelings of sadness or irritability; (e) loss of interest in activities; (f) inability to experience pleasure, feelings of guilt or worthlessness; (g) inability to concentrate or making decisions; (h) feeling restless or slowed down; or (i) suicidal thoughts. The answer for each item was rated on a 4-point scale (0 = *not at all*, 1 = *several days*, 2 = *more than half of the days*, and 3 = *nearly every day*). The total score ranges from 0 to 27, with higher score indicating higher level of depressive symptoms. The Cronbach's alpha of PHQ-9 in the PINE study was .82.

Filial piety. We evaluated six domains of filial piety, involving respect, happiness, care, greeting, obedience, and financial support (Gallois et al., 1999). These six domains have been recognized as key components of filial piety. This measurement was widely used in empirical studies and found to be reliable (Cheng & Chan, 2006; Liu, Ng, Weatherall, & Loong, 2000; Yue & Ng, 1999). In the present study, to assess expectation of filial piety, participants were asked how much respect, happiness, care, greeting, obedience, and financial support they expected their children to provide. Participants indicated their answers using a 5-point scale (1 = *very little*, 2 = *rather little*, 3 = *average*, 4 = *rather a lot*, and 5 = *very much*).

Perceived receipt of filial piety was then measured by asking participants how much respect, happiness, care, greeting, obedience, and financial support they have actually received from their adult children, based on the 5-point scale (1 = *very little*, 2 = *rather little*, 3 = *average*, 4 = *rather a lot*, and 5 = *very much*). Internal

Table 1. Presence of Expectation of Filial Piety by Depressive Symptoms.

	No depressive symptoms (n = 1,424)	Any depressive symptoms (n = 1,716)	χ^2	df	p
Overall expectation of filial piety	21.3 (5.4)	20.3 (6.5)	9.29	1	< .01
Care	3.4 (1.4)	3.4 (1.4)	0.04	1	.837
Respect	4.2 (1.0)	3.9 (1.3)	26.4	1	< .001
Make happy	3.9 (1.1)	3.6 (1.3)	20.6	1	< .001
Greet	3.9 (1.1)	3.7 (1.3)	19.3	1	< .001
Obey	3.7 (1.2)	3.4 (1.4)	27.0	1	< .001
Financial support	2.2 (1.2)	2.3 (1.2)	3.9	1	< .05

Note. No depressive symptoms = participants did not report any item in PHQ-9; any depressive symptoms = participants reported any item in PHQ-9. PHQ-9 = Patient Health Questionnaire-9.

consistency reliability was .88 for the filial piety measures in the study sample.

Statistical Analysis

Kruskal–Wallis ANOVA was used to compare differences in each item and overall filial piety between the group with any depressive symptoms and the group without any depressive symptoms. To examine the association between filial piety and depressive symptoms, regression models were employed to control for potential confounding factors. Model A was adjusted for basic sociodemographic characteristics, including age and sex. Model B added additional socioeconomic variables, including education and income. Marital status, living arrangement, and number of children were added in Model C. In Model D, we added years in the United States and years in the community. Model E added the number of medical comorbidities to the previous model. In addition, all of the above models (Models A-E) were repeated using filial piety expectation or filial piety receipt with respect to depressive symptoms outcomes. Rate ratios (RRs), 95% confidence intervals (CIs), and significance levels were reported. All statistical analyses were conducted using SAS, Version 9.2 (SAS Institute Inc., Cary, North Carolina).

Results

Sample Characteristics

The older adults in the study sample had a mean age of 72.8 years (SD = 8.3, range = 60-105) and 58.9% were female. The majority of participants (78.9%) had equal or less than a high school education. Most of them (85.1%) had an annual income less than US$10,000. 71.3% of participants were married, whereas 24.5% were widowed. More than half of the participants (55.6%) averagely had three or more children. 21% of participants lived alone. 26.7% of the participants had been in the United States for less than 10 years and 57.5% had been in the community for less than 10 years. In the last 2 weeks 1,716 (54.6%) participants had depressive symptoms. Details of the sample characteristics have been described elsewhere (R. Chen, Simon, Chang, Zhen, & Dong, 2014; Dong, Zhang, & Simon, 2014).

Expectation of Filial Piety

Overall, the expectation of filial piety was significantly higher for the group of older adults without any depressive symptoms than the group with any depressive symptoms (Table 1). As for six domains of filial expectation, respect was the highest expectation for both groups of older adults with and without any depressive symptoms. The group without any depressive symptoms had significantly higher expectation of respect than the group with any depressive symptoms. Financial support was the least expectation for both groups. The group without any depressive symptoms had significantly lower expectation of financial support than the group with any depressive symptoms. The groups without any depressive symptoms had higher expectation of happiness, greet, and obedience than the group with any depressive symptoms. The expectation of care was the only domain not differed by group with or without any depressive symptoms.

Perceived Receipt of Filial Piety

The perceived receipt of filial piety was significantly higher for the group of older adults without any depressive symptoms than the group with any depressive symptoms (Table 2). In terms of six domains of filial receipt, respect was the highest perceived receipt for both groups of older adults with and without any depressive symptoms. The group without any depressive symptoms had significantly higher perceived receipt of respect than the group with any depressive symptoms. Financial support was the least perceived receipt for both groups. The perceived receipt of financial support did not significantly differ by group with or without any depressive symptoms. The groups without any depressive symptoms had higher perceived receipt of

Table 2. Presence of Perceived Receipt of Filial Piety by Depressive Symptoms.

	No depressive symptoms (n = 1,424)	Any depressive symptoms (n = 1,716)	χ^2	df	p
Overall perceived receipt of filial piety	22.7 (4.6)	21.7 (5.1)	24.5	1	< .001
Care	3.7 (1.2)	3.6 (1.2)	2.6	1	.107
Respect	4.3 (0.8)	4.1 (1.0)	33.1	1	< .001
Make happy	4.0 (1.0)	3.7 (1.1)	53.1	1	< .001
Greet	4.1 (1.0)	3.9 (1.1)	22.9	1	< .001
Obey	3.9 (1.0)	3.6 (1.1)	47.4	1	< .001
Financial support	2.8 (1.2)	2.8 (1.2)	0.7	1	.410

Note. No depressive symptoms = participants did not report any item in PHQ-9; any depressive symptoms = participants reported any item in PHQ-9. PHQ-9 = Patient Health Questionnaire-9.

happiness, greet, and obedience than the group with any depressive symptoms. The perceived receipt of care did not significantly differ by group with or without any depressive symptoms.

Association Between Expectation of Filial Piety and Depressive Symptoms

The association between expectation of filial piety and depressive symptoms was presented in Table 3. Expectation of filial piety was significantly associated with depressive symptoms after adjusting for age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities. In the fully adjusted model (Model E), every one point lower in filial piety expectation score was associated with higher risk of depressive symptoms (RR = .96, .95-.98).

Association Between Perceived Receipt of Filial Piety and Depressive Symptoms

We repeated similar regression models to examine the association between perceived receipt of filial piety and depressive symptoms (Table 4). It showed perceived receipt of filial piety was also significantly associated with depressive symptoms after controlling age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities. In the fully adjusted model (Model E), every one point lower in filial piety receipt score was associated with higher risk of depressive symptoms (RR = .94, .93-.95).

Discussion

This study found the expectation and perceived receipt of filial piety differed significantly by depressive symptoms. The expectation and perceived receipt of filial piety were negatively associated with depressive symptoms after controlling age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities.

Our study goes beyond the existing literature on filial piety and depressive symptoms in the following ways. First, this is the largest study that tested the association between filial piety and depressive symptoms among U.S. Chinese older adults. Second, this study conceptualized filial piety as the dimension of expectation and the dimension of perceived receipt, and investigated their associations with depressive symptoms separately.

The expectation of filial piety was significantly higher for the group of older adults without any depressive symptoms than the group with any depressive symptoms. Specifically, the group without any depressive symptoms had significantly higher expectation of respect, happiness, greet, and obedience than the group with any depressive symptoms, whereas the group with any depressive symptoms had higher expectation of financial support than the group without any depressive symptoms. The expectation of care did not differ significantly by group with or without any depressive symptoms. With respect to the six domains of filial expectation, respect was the highest expectation and financial support was the least expectation for both groups of older adults with and without any depressive symptoms. A study conducted in Hong Kong also found respect was a significant predictor for depressive symptoms of older adults and financial support was the least expectation of aging parents (Cheng & Chan, 2006). The different levels of expectation on the instrumental and emotional domains of filial piety have been observed in early qualitative study among Chinese older adults in the United States (Dong, Chang, Wong, & Simon, 2012b).

The perceived receipt of filial piety was significantly higher for the group of older adults without any depressive symptoms than the group with any depressive symptoms. In light of the six domains of filial receipt, respect was the highest perceived receipt for both groups of older adults with and without any depressive symptoms. Specifically, the group without any depressive

Table 3. Association Between Filial Piety Expectation and Depressive Symptoms.

Outcome: Depressive symptoms					
	Model A	Model B	Model C	Model D	Model E
	RR (95% CI)				
Age	1.02 [1.01, 1.02]***	1.02 [1.01, 1.03]***	1.02 [1.01, 1.03]***	1.02 [1.01, 1.03]***	1.01 [1.00, 1.02]**
Female	1.40 [1.24,1.58]***	1.41 [1.24, 1.59]***	1.36 [1.20, 1.55]***	1.37 [1.20, 1.55]***	1.33 [1.17, 1.51]***
Years of education		1.00 [0.99, 1.01]	1.00 [0.99, 1.01]	1.00 [0.99, 1.01]	1.00 [0.98, 1.01]
Income		0.86 [0.82, 0.91]***	0.86 [0.81, 0.91]***	0.86 [0.81, .91]***	0.86 [0.81, 0.92]***
Married			0.89 [0.76, 1.02]	0.89 [0.77, 1.03]	0.91 [0.79, 1.06]
Children alive			0.99 [0.95, 1.03]	0.98 [0.94, 1.03]	0.98 [0.94, 1.03]
Living arrangement			0.99 [0.96, 1.03]	0.99 [0.96, 1.03]	1.00 [0.96, 1.03]
Years in the United States				1.01 [1.00, 1.01]	1.01 [1.00, 1.01]
Years in the community				.99 [0.98, 1.00]**	1.21 [1.15, 1.27]***
Medical comorbidities					.98 [.97, .99]***
Filial expectation	0.98 [0.97, 0.99]***	0.98 [0.97, 0.99]***	0.98 [0.97, 0.99]***	0.98 [0.97, 0.99]***	0.96 [0.95, 0.98]***

Note. Depressive symptoms range = 0-27; filial expectation range = 6-30. Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, sex, education, income, marital status, living arrangement, and number of children; Model D adjusted age, sex, education, income, marital status, living arrangement, number of children, years in the United States, and years in the community; Model E adjusted age, sex, education, income, marital status, living arrangement, number of children, years in the United States, years in the community, and medical comorbidities. CI = confidence interval;
RR = rate ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4. Association Between Filial Piety Perceived Receipt and Depressive Symptoms.

Outcome: Depressive symptoms					
	Model A	Model B	Model C	Model D	Model E
	RR (95% CI)				
Age	1.02 [1.01, 1.03]***	1.02 [1.01, 1.03]***	1.02 [1.01, 1.03]***	1.03 [1.02, 1.03]***	1.02 [1.01, 1.03]***
Female	1.46 [1.29, 1.64]***	1.46 [1.29, 1.65]***	1.44 [1.27, 1.63]***	1.44 [1.27, 1.64]***	1.41 [1.24, 1.59]***
Years of education		1.00 [0.99, 1.01]	1.00 [0.99, 1.01]	1.00 [0.98, 1.01]	.99 [0.98, 1.01]
Income		0.85 [0.80, 0.90]***	0.85 [0.81, 0.90]***	0.97 [0.81, 0.91]***	0.86 [0.81, 0.91]***
Married			0.94 [0.81, 1.09]	0.95 [0.82, 1.09]	0.97 [0.84, 1.12]
Children alive			0.99 [0.95,1.04]	0.99 [0.94, 1.03]	0.99 [0.95, 1.03]
Living arrangement			1.01 [0.98, 1.05]	1.01 [0.97, 1.04]	1.01 [0.98, 1.05]
Years in the United States				1.00 [1.00, 1.01]	1.00 [1.00, 1.01]
Years in the community				0.99 [0.98, 0.99]***	0.98 [0.98, 0.99]***
Medical comorbidities					1.22 [1.16, 1.28]***
Filial piety receipt	0.95 [0.94, 0.96]***	0.94 [0.93, 0.96]***	0.86 [0.85, 0.88]***	0.94 [0.93, 0.95]***	0.94 [0.93, 0.95]***

Note. Depressive symptoms range = 0-27; filial piety receipt range = 6-30. Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, sex, education, income, marital status, living arrangement, and number of children; Model D adjusted age, sex, education, income, marital status, living arrangement, number of children, years in the United States, and years in the community; Model E adjusted age, sex, education, income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities. CI = confidence interval;
RR = rate ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

symptoms had significantly higher perceived receipt of respect, happiness, greet, and obedience than the group with any depressive symptoms. The perceive receipt of care and financial support did not differ significantly by group with or without any depressive symptoms. This is in contrast with a prior study conducted in Spain, which found that a lack of emotional care may cause higher depression of older adults (Zunzunegui, Beland, & Otero, 2001). It is probably because the perception of filial behaviors by older adults is different under different culture.

Consistent with existing research (X. Chen & Silverstein, 2000; Cheng & Chan, 2006; Levitt, Guacci, & Weber, 1992; Zunzunegui et al., 2001), our study found that every one point lower in perceived receipt of filial piety was associated with higher risk of depressive

symptoms after controlling age, sex, education, annual personal income, marital status, living arrangement, number of children, years in the United States, years in the community and medical comorbidities. Prior studies also reported that emotional care and financial support were found to be positively associated with well-being of older adults (X. Chen & Silverstein, 2000; Zunzunegui et al., 2001). The perceived quality of support was also regarded as an important factor for the psychological well-being of older adults (Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006). Other studies on filial piety and psychological well-being of older adults reported that lower receipt of filial piety was associated with increased risk of perceived stress (Dong & Zhang, 2016) and suicidal ideation (Simon, Chen, et al., 2014).

The association between filial expectation and depressive symptoms has rarely been examined in previous research. Compared with Western older adults, Chinese older adults had a stronger sense of filial expectation, but the effect of filial expectation remains unclear. Our study found that expectation of filial piety was negatively associated with depressive symptoms. Similarly, a prior study in mainland China reported that higher filial piety expectation was associated with better self-esteem of older adults (Wang, Laidlaw, Power, & Shen, 2009). This could be because when older adults have a good relationship with adult children, they are more likely to have higher filial expectation. Future studies are needed to examine the mechanism through which filial expectation affects on depressive symptoms.

Conclusion

In summary, this study found that every one point lower in both of the expectation and perceived receipt of filial piety was associated with increased risk of depressive symptoms. Previous research dominantly emphasized on the receipt of filial piety, while the expectation of filial piety may also be associated with subjective well-being of older adults. Our research expanded previous understanding by examining the relationship between filial piety and depressive symptoms of older adults, particularly focusing on the dimensions of filial piety expectation and filial piety perceived receipt. Future studies may further explore the gap between filial piety expectation and filial piety perceived receipt, and the association between filial discrepancy and depressive symptoms. This was a cross-sectional study, so the direction of causality would be strengthened by a longitudinal study. In addition, future research would explore the moderating factors in the relationship between filial piety and depressive symptoms.

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