

The Association Between Filial Piety and Suicidal Ideation: Findings From a Community-Dwelling Chinese Aging Population

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Background. Suicidal ideation is a public health issue that has a significant impact at the individual, family, community, and societal levels. This study aimed to examine the association between filial piety and suicidal ideation among U.S. Chinese older adults.

Methods. Guided by a community-based participatory research approach, 3,159 community-dwelling Chinese older adults in the Greater Chicago area were interviewed in person between 2011 and 2013. Independent variables were expectations and receipt of filial piety from the older adult's perspective. Dependent variables were suicidal ideation in the last 2 weeks and last 12 months. Logistic regression analyses were performed.

Results. Of the 3,159 participants interviewed, 58.9% were female and the mean age was 72.8 years. After adjusting for age, sex, education, income, medical comorbidities, and depressive symptoms, lower receipt of filial piety was associated with increased risk for 2-week suicidal ideation (odds ratio: 1.07, 95% confidence interval: 1.03–1.11) and 12-month suicidal ideation (odds ratio: 1.07, 95% confidence interval: 1.04–1.11). The lowest tertiles of filial piety receipt was associated with greater risk for 2-week suicidal ideation (odds ratio: 1.95, 95% confidence interval: 1.12–3.38) and 12-month suicidal ideation (odds ratio: 2.17, 95% confidence interval: 1.35–3.48). However, no statistically significant associations were found between overall filial piety expectations and suicidal ideation in the last 2 weeks or in the last 12 months.

Discussion. This study suggests that filial piety receipt is an important risk factor for suicidal ideation among U.S. Chinese older adults. Future longitudinal studies are needed to quantify the temporal association between filial piety and suicidal ideation.

Key Words: Suicidal ideation—Filial piety—Chinese aging.

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SUICIDAL ideation may lead to lower quality of life (1), worsened physical and mental health, and even mortality (2). It is estimated that 3.7% of adults aged ≥ 18 years in the U.S. experienced suicidal ideation (3). Compared with younger adults, older adults may be particularly vulnerable to suicidal ideation because of their higher risk for medical comorbidity, psychological disorders, physical and cognitive functional impairment, and social isolation (4,5). Yet, suicidal ideation among older adults has received relatively less attention than it has among younger adults (6).

Suicidal ideation is a substantial public health burden among Chinese older adults. The prevalence of suicidal ideation is high among Chinese older adults—ranging from 6.0% to 41.2% depending on the study settings, sampling strategies, and the time periods assessed (7–9). Suicidal ideation among Chinese older adults has been found to be associated with a number of demographic and psychosocial

risk factors (10). Specifically, prior studies suggested that female gender, poor physical health, and mental health—especially depressive symptoms—contributed significantly to suicidal ideation among Chinese older adults (8,11). In addition, risk and protective factors associated with suicidal ideation in long periods of time may be different from more recent ones. Although there has been an increased interest in elucidating the risk factors for suicidal ideation among Chinese older adults, very few studies have explored the cultural determinants of suicidal ideation at different time periods.

Filial piety is the primary virtue in Confucianism that has been deeply rooted in Chinese culture. The basic ideology of filial piety lies upon children being respectful, obedient, and obligated to provide adequate care and support for their older parents both emotionally and financially. The practice of filial piety has determined parent–child relationship,

shaped the pattern of elderly care in Chinese communities, and thus plays an important role in the well-being of older adults. Existing empirical evidence suggests that filial piety is a protective factor against depression among Chinese older adults (12). In addition, older adults who perceived their children as filial reported decreased utilization of health care services (13). Yet, modernization and industrialization in recent years may change the cultural values of younger generations and erode the practice of filial piety in Chinese societies. In addition, changes in the expectation and receipt of filial piety are likely to take place in the context of immigration (14). A prior qualitative study found that Chinese immigrant older adults have shifted their expectations of filial piety away from children and towards friends and neighbors (15). Another qualitative study found that U.S. Chinese older adults' expectations of filial piety were different from what they actually received, which may affect their well-being (14). However, our understanding of the expectations and receipt of filial piety among U.S. older adults are mainly based on qualitative analyses. Very few studies have offered quantitative evidence concerning the expectation and receipt of filial piety and how these may impact the psychological well-being of U.S. Chinese older adults.

The Chinese community represents the largest and oldest Asian population in the United States, with an estimated population of 4 million (16,17). Because of substantial language and cultural barriers, Chinese American older adults may be at risk for suicidal ideation (18,19). Understanding the association between filial piety and suicidal ideation could shed light on the development of culturally sensitive intervention programs for suicidal ideation among Chinese older adults.

Building on the existing literature, this study aimed to (i) describe the expectations and receipt of filial piety among Chinese older adults and (ii) examine the associations between suicidal ideation and expectation and receipt of filial piety. Our central hypotheses were that older adults with suicidal ideation have lower levels of filial piety and that filial piety is independently associated with increased risk for suicidal ideation among Chinese older adults.

METHODS

Population and Settings

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 conducted in the Greater Chicago area. In brief, the purpose of the PINE study is to examine the key cultural determinants of health and well-being among U.S. Chinese older adults. The project was initiated by a synergistic community-academic collaboration among the Rush Institute for Healthy Aging, Northwestern University, and many Greater Chicago area community-based social service agencies and organizations.

To ensure the study's relevance to the well-being of the Chinese community and increase community participation, the PINE study was guided by a community-based participatory research (CBPR) approach. A community advisory board (CAB) played a pivotal role in providing insights for our research activities. Board members were community stakeholders and residents enlisted from over 20 civic, health, and social advocacy groups, community centers and clinics in the city and suburbs of Chicago. The board worked extensively with the investigative team to develop and test study instruments to ensure cultural sensitivity and appropriateness.

Study Design and Procedure

The research team implemented a targeted community-based recruitment strategy by first engaging community centers in the Greater Chicago area. Over 20 social service agencies, community centers, health advocacy agencies, faith-based organizations, senior apartments, and social clubs served as the basis of study recruitment sites. Community-dwelling older adults aged ≥ 60 years who self-identified as Chinese were eligible to participate in the study. Out of 3,542 eligible older adults approached, 3,159 agreed to participate in the study, yielding a response rate of 91.9%. Details of the PINE study design are published elsewhere (20).

Trained multicultural and multilingual interviewers conducted face-to-face home interviews with participants in their preferred language (English or Chinese) and dialect (eg, Cantonese, Taishanese, Mandarin, and Teochew). 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, the PINE study is a representative of the Chinese aging population in the Greater Chicago area (21). The study was approved by the Institutional Review Board of the Rush University Medical Center.

Measurements

Sociodemographics.—Basic demographic information collected included age, sex, education, and annual personal income. To assess medical comorbidities, participants were asked if they had been told by a doctor, nurse, or therapist that they had: (i) heart disease, heart attack, coronary thrombosis, coronary occlusion, or myocardial infarction; (ii) stroke or brain hemorrhage; (iii) cancer, malignancy, or a tumor of any type; (iv) high cholesterol; (v) diabetes, sugar in the urine, or high blood sugar; (vi) high blood pressure; (vii) a broken or fractured hip; (viii) thyroid disease; or (ix) osteoarthritis or inflammation or problems with joints. The number of medical comorbidities was calculated by totaling the number of "yes" responses to the nine items listed earlier.

Depressive symptoms.—We used the Patient Health Questionnaire-9 (PHQ-9) to assess depressive symptoms among Chinese older adults (22). Participants were asked if they had the following symptoms in the last 2 weeks: (i) changes in sleep; (ii) changes in appetite; (iii) fatigue; (iv) feelings of sadness or irritability; (v) loss of interest in activities; (vi) inability to experience pleasure, feelings of guilt or worthlessness; (vii) inability to concentrate or making decisions; or (viii) feeling restless or slowed down. The Cronbach's alpha of PHQ-9 in the PINE study was .82 (23).

Suicidal ideation.—A 2-week suicidal ideation was assessed by the ninth item of the PHQ-9. Participants were asked how often over the last 2 weeks they would be better off dead, or of hurting themselves in some way. Response categories included: (i) not at all, (ii) several days, (iii) more than half the days, and (iv) nearly every day. Any affirmative response to categories 2, 3, or 4 was defined as having 2-week suicidal ideation. A 12-month suicidal ideation were measured by the Geriatric Mental State Examination-Version A (GMS-A), which was a semistructured interview guide designed for the elderly (24). Participants were asked: "have you ever felt suicidal or wished to be dead sometime in the last 12 months?" A "yes" response to the aforementioned question classified a respondent as having 12-month suicide ideation. The Chinese version of GMS-A had been validated in earlier studies (8).

Filial piety.—We assessed six domains of filial piety, including respect, make happy, care, greet, obey, and financial support (25). To assess *expectations* 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 five-point scale (1 = very little, 2 = rather little, 3 = average, 4 = rather a lot, and 5 = very much). Filial piety expectation was divided into three groups based on the score: low expectation (6–18), medium expectation (19–24), and high expectation (25–30).

Perceived *receipt* of filial piety was then assessed by asking participants how much respect, happiness, care, greeting, obedience, and financial support they have actually received from their adult children, based on the five-point scale (1 = very little, 2 = rather little, 3 = average, 4 = rather a lot, and 5 = very much). Internal consistency reliability was 0.88 for the filial piety measures in our study sample. Filial piety receipts were divided into three groups based on the score: low receipts (6–20), medium receipts (21–24), and high receipts (25–30).

Statistical Analysis

t tests were used to compare differences in filial piety expectation and receipt between older adults with and without suicidal ideation during the last 2 weeks and

12 months. Chi-squared tests were used to compare the differences in tertiles of filial piety expectation and receipt between older adults with and without suicidal ideation. To examine the association between filial piety expectation and receipt and 2-week and 12-month suicidal ideation, we utilized multivariate logistic regression models to control for potential confounding factors. Model A was adjusted for basic sociodemographic characteristics, including age and sex. The next model (Model B) added additional socioeconomic variables, including education and income. In Model C, we added the number of medical comorbidities to the previous model. In the final model, we included depressive symptoms as a potential confounder. Moreover, all of the above models (Models A–D) were repeated using tertiles of filial piety expectation and receipt with respect to suicidal ideation outcomes. Odds ratios (ORs), 95% confidence intervals (CIs), and significance levels were reported for multivariate analyses. All statistical analyses were conducted using SAS, Version 9.2 (SAS Institute Inc., Cary, North Carolina).

RESULTS

Of the 3,159 Chinese older adults interviewed, mean age was 72.8 years ($SD = 8.3$, range = 60–105) and 58.9% were female. Table 1 presents the expectation and receipt of filial piety by 2-week and 12-month suicidal ideation. No significant differences were found between older adults with and without 2-week or 12-month suicidal ideation for overall expectations of filial piety. However, when specific domains of filial piety expectations were examined, we found that older adults with 12-month suicidal ideation had significantly higher expectation that their children provide care than those without 12-month suicidal ideation ($M: 3.65$ vs. 3.36 , $p < .05$). We found no statistically significant differences between older adults with and without 2-week and 12-month suicidal ideation using tertiles of filial piety expectation.

With regard to filial piety receipt, older adults with 2-week or 12-month suicidal ideation reported significantly lower receipt of filial piety than those without suicidal ideation. Similar trends were found for all filial piety domains assessed, including respect, make happy, care, greet, obey, and financial support. Older adults with 2-week and 12-month suicidal ideation were more likely to report receiving the lowest tertile of filial piety.

The association between expectations of filial piety and suicidal ideation is presented in Table 2. Expectations of filial piety was not associated with 2-week or 12-month suicidal ideation after adjusting for age, sex, education, income, medical comorbidities, and depressive symptoms. However, perceived receipt of filial piety was significantly associated with suicidal ideation (Table 3). In the fully adjusted model (Model D), every one point lower in filial piety receipt score was associated with increased risk

Table 1. Presence of Perceived Expectation and Receipt of Filial Piety (FP) by Suicidal Ideation

	Yes, <i>M (SD)</i>	No, <i>M (SD)</i>	<i>t/χ²</i>	<i>df</i>	<i>p</i>
2-wk suicidal ideation					
Overall expectation of filial piety	21.19 (6.46)	20.71 (6.06)	-0.80	3070	.43
Domains of FP					
Respect	3.91 (1.32)	4.01 (1.18)	0.83	3078	.41
Make happy	3.76 (1.23)	3.74 (1.24)	-0.19	3079	.85
Care	3.62 (1.34)	3.36 (1.41)	-1.84	3076	.07
Greet	3.83 (1.29)	3.78 (1.25)	-0.38	3077	.70
Obey	3.61 (1.30)	3.56 (1.30)	-0.43	3078	.67
Financial support	2.49 (1.25)	2.26 (1.19)	-1.85	3077	.06
Overall receipt of filial piety	19.52 (5.90)	22.27 (4.89)	5.56	3070	<.001
Domains of FP					
Respect	3.67 (1.19)	4.19 (0.90)	5.72	3079	<.001
Make happy	3.28 (1.28)	3.84 (1.03)	5.27	3079	<.001
Care	3.30 (1.19)	3.68 (0.17)	3.27	3077	.001
Greet	3.57 (1.02)	4.01 (1.02)	4.30	3078	<.001
Obey	3.19 (1.30)	3.76 (1.06)	5.27	3077	<.001
Financial support	2.47 (1.23)	2.79 (1.22)	2.59	3076	.01
Levels of filial expectations					
Low expectation	34 (33.0)	1,004 (33.8)			
Medium expectation	30 (29.1)	1,050 (35.4)			
High expectation	39 (37.9)	915 (30.8)	2.71	2	.26
Levels of filial receipts					
Low receipt	56 (54.4)	1,030 (34.7)			
Medium receipt	25 (24.3)	866 (29.2)			
High receipt	22 (21.4)	25 (24.3)	17.83	2	<.001
12-mo suicidal ideation					
Overall expectation of filial piety	21.09 (6.35)	20.71 (6.06)	-0.73	3070	.46
Domains of FP					
Respect	3.95 (1.29)	4.01 (1.18)	0.59	3078	.55
Make happy	3.71 (1.25)	3.74 (1.24)	0.23	3079	.82
Care	3.65 (1.33)	3.36 (1.42)	-2.47	3076	.01
Greet	3.82 (1.31)	3.78 (1.25)	-0.36	3077	.72
Obey	3.51 (1.34)	3.56 (1.30)	0.48	3078	.63
Financial support	2.46 (1.25)	2.26 (1.19)	-1.98	3077	.05
Overall receipt of filial piety	19.72 (5.86)	22.30 (4.88)	6.10	3070	<.001
Domains of FP					
Respect	3.69 (1.16)	4.20 (0.90)	6.60	3079	<.001
Make happy	3.34 (1.25)	3.84 (1.03)	5.58	3079	<.001
Care	3.35 (1.19)	3.69 (1.17)	3.34	3077	.001
Greet	3.58 (1.18)	4.01 (1.02)	4.93	3078	<.001
Obey	3.17 (1.25)	3.77 (1.06)	6.52	3077	<.001
Financial support	2.57 (1.24)	2.79 (1.22)	2.11	3076	.04
Levels of filial expectations					
Low expectation	48 (33.8)	990 (33.8)			
Medium expectation	43 (30.3)	1,037 (35.4)			
High expectation	51 (35.9)	903 (30.8)	2.13	2	.34
Levels of filial receipts					
Low receipt	75 (52.8)	1,011 (34.5)			
Medium receipt	38 (26.8)	853 (29.1)			
High receipt	29 (20.4)	1,066 (36.4)	22.78	2	<.001

for 2-week suicidal ideation (OR: 1.07, 1.03–1.11) and 12-month suicidal ideation (OR: 1.07, 1.04–1.11).

We repeated similar logistic models to examine the association between tertiles of expectations and receipt of filial piety and suicidal ideation (Tables 4 and 5). In the fully adjust model (Table 4, Model D), no statistically significant association was found between tertiles of filial piety expectation and 2-week and 12-month suicidal ideation. As for the association between tertiles of filial piety receipt

and suicidal ideation (Table 5, Model D), the lowest tertile of filial piety receipt was associated with greater risk for 2-week suicidal ideation (OR: 1.95, 1.12–3.38) and 12-month suicidal ideation (OR: 2.17, 1.35–3.48).

DISCUSSION

This study demonstrates that lower filial piety receipt was associated with increased risk for suicidal ideation during the last 2 weeks and last 12 months among Chinese

Table 2. Association Between Filial Piety Expectation and Suicidal Ideation

	Model A	Model B	Model C	Model D
	OR (95% CI)			
Outcome: 2-wk suicidal ideation				
Age	1.02 (0.99, 1.04)	1.02 (1.00, 1.04)	1.01 (0.99, 1.04)	1.01 (0.98, 1.03)
Female	2.57 (1.61, 4.12)***	2.57 (1.59, 4.14)***	2.34 (1.45, 3.80)***	1.96 (1.17, 3.28)*
Years of education		0.98 (0.94, 1.02)	0.97 (0.94, 1.02)	0.98 (0.94, 1.02)
Income		0.61 (0.45, 0.83)**	0.60 (0.44, 0.82)**	0.67 (0.48, 0.95)*
Medical comorbidities			1.25 (1.10, 1.43)**	1.12 (0.97, 1.29)
Depressive symptoms				1.27 (1.22, 1.31)***
Filial piety expectation	0.99 (0.96, 1.03)	1.00 (0.96, 1.03)	1.00 (0.97, 1.03)	0.98 (0.95, 1.01)
Outcome: 12-mo suicidal ideation				
Age	1.02 (1.00, 1.04)	1.02 (1.00, 1.04)	1.01 (0.99, 1.04)	1.01 (0.99, 1.03)
Female	2.58 (1.73, 3.85)***	2.57 (1.71, 3.87)***	2.40 (1.59, 3.62)***	2.08 (1.35, 3.21)***
Years of education		0.99 (0.96, 1.02)	0.98 (0.95, 1.02)	0.99 (0.95, 1.03)
Income		0.73 (0.57, 0.93)**	0.72 (0.57, 0.92)**	0.81 (0.63, 1.04)
Medical comorbidities			1.19 (1.06, 1.33)**	1.07 (0.95, 1.22)
Depressive symptoms				1.24 (1.20, 1.28)***
Filial piety expectation	0.99 (0.97, 1.02)	1.00 (0.97, 1.03)	1.00 (0.97, 1.03)	0.98 (0.95, 1.01)

Notes: Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, education, income, and medical comorbidities; Model D adjusted age, education, income, medical conditions, and depressive symptoms.

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

Table 3. Association Between Filial Piety Receipt and Suicidal Ideation

	Model A	Model B	Model C	Model D
	OR (95% CI)			
Outcome: 2-wk suicidal ideation				
Age	1.02 (1.00, 1.05)	1.02 (1.00, 1.05)	1.02 (0.99, 1.04)	1.01 (0.99, 1.04)
Female	3.02 (1.88, 4.87)***	2.97 (1.83, 4.83)***	2.73 (1.68, 4.45)**	2.07 (1.24, 3.48)**
Years of education		0.97 (0.93, 1.01)	0.96 (0.92, 1.00)	0.97 (0.93, 1.01)
Income		0.58 (0.42, 0.79)**	0.57 (0.42, 0.79)***	0.66 (0.46, 0.93)*
Medical comorbidities			1.27 (1.11, 1.45)***	1.13 (0.98, 1.31)
Depressive symptoms				1.25 (1.20, 1.30)***
Filial piety receipt	1.12 (1.08, 1.16)***	1.13 (1.09, 1.17)***	1.13 (1.01, 1.18)***	1.07 (1.03, 1.11)**
Outcome: 12-mo suicidal ideation				
Age	1.03 (1.00, 1.05)*	1.02 (1.00, 1.05)*	1.02 (1.00, 1.04)	1.02 (0.99, 1.04)
Female	3.01 (2.00, 4.52)***	2.96 (1.96, 4.48)*	2.78 (1.83, 4.21)***	2.23 (1.44, 3.45)***
Years of education		0.98 (0.95, 1.01)	0.97 (0.94, 1.01)	0.98 (0.94, 1.02)
Income		0.69 (0.54, 0.88)**	0.69 (0.54, 0.88)**	0.79 (0.61, 1.02)
Medical comorbidities			1.20 (1.07, 1.35)**	1.09 (0.96, 1.23)
Depressive symptoms				1.22 (1.19, 1.26)***
Filial piety receipt	1.12 (1.08, 1.15)***	1.12 (1.09, 1.16)***	1.12 (1.09, 1.16)**	1.07 (1.04, 1.11)***

Notes: Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, education, income, and medical comorbidities; Model D adjusted age, education, income, medical conditions, and depressive symptoms.

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

older adults in the Greater Chicago area. In addition, the lowest tertile of filial piety receipt was associated with a 2-fold increased risk for suicidal ideation. On the contrary, overall filial piety expectation was not significantly associated with risk for 2-week and 12-month suicidal ideation.

Our findings expand existing understandings of filial piety and suicidal ideation in a number of different ways. First, this study is the largest study that examined the association between filial piety and suicidal ideation among U.S. Chinese older adults. Second, although suicidal ideation may be a sensitive topic in Chinese communities, our utilization of CBPR approaches is likely to have diminished

under-reporting problems. Because of our collaboration with local communities groups, participants were likely more comfortable conversing in their preferred dialects, thus they were more trusting of our research assistants, and more willing to express emotions and acknowledge their feelings. Third, this study conceptualized filial piety in terms of expectation and actual receipt, and examined their associations with suicidal ideation separately, thus depicting a more comprehensive picture regarding the relationship between filial piety and suicidal ideation.

After controlling for key demographic characteristics, socioeconomic factors, medical conditions, and depression,

Table 4. Association Between Tertiles of Filial Piety Expectations and Suicidal Ideation

	Model A	Model B	Model C	Model D
	OR (95% CI)			
Outcome: 2-wk suicidal ideation				
Age	1.02 (0.99, 1.04)	1.02 (1.00, 1.04)	1.01 (0.99, 1.04)	1.01 (0.98, 1.03)
Female	2.55 (1.59, 4.08)***	2.55 (1.58, 4.11)***	2.33 (1.44, 3.78)**	1.96 (1.17, 3.29)*
Years of education		0.98 (0.94, 1.02)	0.98 (0.94, 1.02)	0.98 (0.94, 1.02)
Income		0.61 (0.45, 0.83)*	0.60 (0.44, 0.82)*	0.67 (0.48, 0.96)*
Medical comorbidities			1.25 (1.10, 1.43)**	1.12 (0.97, 1.30)
Depressive symptoms				1.27 (1.22, 1.31)***
High expectation	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)
Medium expectation	0.72 (0.44, 1.17)	0.75 (0.46, 1.22)	0.75 (0.46, 1.23)	0.75 (0.44, 1.28)
Low expectation	0.85 (0.54, 1.37)	0.90 (0.56, 1.45)	0.93 (0.57, 1.50)	0.68 (0.40, 1.15)
Outcome: 12-mo suicidal ideation				
Age	1.02 (1.00, 1.04)	1.02 (1.00, 1.04)	1.01 (0.99, 1.04)	1.01 (0.99, 1.03)
Female	2.56 (1.72, 3.83)*	2.56 (1.70, 3.85)***	2.39 (1.58, 3.61)***	2.08 (1.35, 3.21)***
Years of education		0.99 (0.95, 1.02)	0.98 (0.95, 1.02)	0.99 (0.95, 1.03)
Income		0.73 (0.58, 0.93)**	0.73 (0.57, 0.92)**	0.81 (0.63, 1.05)
Medical comorbidities			1.19 (1.06, 1.34)**	1.08 (0.95, 1.22)
Depressive symptoms				1.24 (1.20, 1.28)***
High expectation	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)
Medium expectation	0.79 (0.52, 1.20)	0.81 (0.53, 1.23)	0.81 (0.53, 1.24)	0.83 (0.53, 1.30)
Low expectation	0.93 (0.62, 1.39)	0.96 (0.63, 1.45)	0.98 (0.65, 1.49)	0.77 (0.49, 1.20)

Notes: Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, education, income, and medical comorbidities; Model D adjusted age, education, income, medical conditions, and depressive symptoms.

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

Table 5. Association Between Tertiles of Filial Piety Receipt and Suicidal Ideation

	Model A	Model B	Model C	Model D
	OR (95% CI)			
Outcome: 2-wk suicidal ideation				
Age	1.02 (1.00, 1.04)	1.02 (1.00, 1.05)	1.01 (0.99, 1.04)	1.01 (0.98, 1.04)
Sex	2.82 (1.76, 4.53)***	2.81 (1.74, 4.54)***	2.59 (1.59, 4.19)***	2.06 (1.23, 3.45)**
Years of education		0.97 (0.94, 1.01)	0.97 (0.93, 1.01)	0.97 (0.93, 1.01)
Income		0.59 (0.43, 0.80)**	0.58 (0.42, 0.80)***	0.67 (0.47, 0.95)*
Medical comorbidities			1.28 (1.12, 1.46)***	1.13 (0.98, 1.31)
Depressive symptoms				1.25 (1.21, 1.30)***
High receipt	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)
Medium receipt	1.47 (0.82, 2.63)	1.55 (0.86, 2.77)	1.56 (0.87, 2.81)	1.13 (0.60, 2.11)
Low receipt	2.96 (1.79, 4.91)***	3.22 (1.94, 5.34)***	3.34 (2.01, 5.56)***	1.95 (1.12, 3.38)*
Outcome: 12-mo suicidal ideation				
Age	1.02 (1.00, 1.04)*	1.02 (1.00, 1.04)*	1.02 (0.99, 1.04)	1.01 (0.99, 1.04)
Sex	2.82 (1.88, 4.22)***	2.81 (1.86, 4.23)***	2.63 (1.74, 3.97)***	2.18 (1.41, 3.37)***
Years of education		0.98 (0.95, 1.02)	0.98 (0.94, 1.01)	0.98 (0.95, 1.02)
Income		0.70 (0.55, 0.89)**	0.70 (0.55, 0.89)**	0.79 (0.61, 1.02)
Medical comorbidities			1.21 (1.08, 1.36)**	1.09 (0.96, 1.23)
Depressive symptoms				1.22 (1.18, 1.26)***
High receipt	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)	1.0 (Reference)
Medium receipt	1.71 (1.05, 2.81)*	1.78 (1.08, 2.92)*	1.80 (1.09, 2.95)*	1.42 (0.84, 2.40)
Low receipt	3.06 (1.97, 4.76)***	3.26 (2.09, 5.07)***	3.35 (2.15, 5.23)***	2.17 (1.35, 3.48)**

Notes: Model A adjusted age and sex; Model B adjusted age, sex, education, and income; Model C adjusted age, education, income, and medical comorbidities; Model D adjusted age, education, income, medical conditions, and depressive symptoms.

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

filial piety receipt was significantly associated with 2-week and 12-month suicidal ideation, lending support to prior studies that show the close association between filial piety and the psychological well-being of older adults. It is worth noting that, although medical conditions were often found

to be associated with suicidal ideation, the association between medical conditions and suicidal ideation turns out to be insignificant after adding filial piety receipt, further emphasizing the important role of filial piety in Chinese older adults' well-being. A survey of 2,002 Chinese older

adults in Beijing found that filial piety was a significant risk factor for depression (26). Filial piety—and respect in particular—was also a significant predictor for older adults' psychological well-being in a study of 164 Chinese older adults in Hong Kong (27). However, the mechanisms through which receipt of filial piety influences suicidal ideation require further exploration. Given the great value of filial piety in the Chinese community, lower filial piety receipt may carry social stigma that may affect the well-being of older adults. In contrast, older adults who received higher levels of filial piety may develop higher self-esteem and perceive higher life satisfaction, which in turn may reduce the sense of hopelessness and risks for suicidal ideation.

One intriguing finding of this study was that overall filial piety expectation was not significantly associated with increased risk for 2-week or 12-month suicidal ideation. The finding is in contrast to a prior study in mainland China, which found that higher filial piety expectation was associated with better psychological well-being (28). Although U.S. Chinese older adults may continue to attach great importance to the value of filial piety, their expectations of filial piety may change as they adjust to U.S. culture, which greatly emphasizes individualism and independence. Therefore, it is possible that U.S. Chinese older adults may have lower expectations of filial expectations when compared with if they were in China. In addition, parents may place less filial piety expectations on adult children to avoid adding too much burden on their children who may struggle to make ends meet after immigration. Consequently, filial piety expectations may play insignificant roles in older adults' psychological well-being. We also suspect that as compared to filial piety receipt, filial piety expectations were conceptualized by older adults themselves and thus may be less likely to reflect children's actual filial behaviors. Future studies should continue to explore the association between expectations of filial piety and the psychological well-being of Chinese older adults.

The findings of our study should be interpreted with caution. First, although our study examined a representative sample of Chinese older adults in the Greater Chicago area, the finding may not be generalizable to Chinese older adults in other geographic areas. Second, although we controlled for depressive symptoms, we did not have information on clinical psychiatric diagnoses that might have increased a participant's risk for suicidal ideation. Third, we did not have information on number of children, which may exert influences on filial piety receipt and expectation. In addition, this study utilized a cross-sectional design and we are not able to postulate on potential temporal relationships. Future longitudinal studies should be conducted to improve our understanding of causal mechanisms between filial piety and suicidal ideations.

Despite the limitations, our study has important research and policy implications. This study found that filial piety receipt was significantly associated with risk for suicidal

ideation, implying that future studies of suicidal ideation among Chinese older adults should take the impact of filial piety receipt into account. Second, health care professionals should improve their understanding of important culture norms when caring for Chinese older patients. In addition, this study's findings emphasize a need for public education and awareness programs in the Chinese community to nurture the value of filial piety. Lastly, given the significant association between filial piety receipt and suicidal ideation, mental health policies and programs developed by the Substance Abuse and Mental Health Service Administration and other relevant federal departments should rest on the keen appreciation of the cultural value and facilitate the ability of family members to offer adequate support to Chinese older adults.

CONCLUSION

In summary, our study found that lower levels of filial piety receipt were associated with increased risk of suicidal ideation among U.S. Chinese older adults. However, overall filial piety expectation was not associated with risk for suicidal ideation. Future longitudinal studies are needed to explore the temporal associations between filial piety and suicidal ideation.

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