

PINE STUDY II: Research Article

# Grandparent Caregiving and Psychological Well-Being Among Chinese American Older Adults—The Roles of Caregiving Burden and Pressure

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## Abstract

**Background:** Though ample research on grandparent caregiving and psychological well-being outcomes exist in Western literature, little attention has been focused on Chinese American grandparents. Based on role enhancement and role strain theories, this study examined grandparent caregiving and psychological well-being among Chinese American older adults and tested whether caregiving burden or pressure from adult children moderated such association.

**Methods:** We used the data from the Population Study of ChInese Elderly in Chicago (PINE), a population-based survey of community-dwelling Chinese older adults in the Greater Chicago area. Grandparents with grandchildren younger than 16 years old were selected for present study ( $N = 2,775$ ). Negative binomial regression and logistic regression models were used to test the relationships of grandparent caregiving time and psychological well-being measured by depressive symptoms and quality of life.

**Results:** Grandparents reported an average of 11.96 hours a week for caring for grandchildren. Caregiving time had a significantly negative association with depressive symptoms, but not with quality of life. The association between grandparent caregiving and depressive symptoms was moderated by the perception of caregiving burden. No moderating effect of caregiving pressure from adult children was found.

**Conclusions:** More time spending on grandparent caregiving is generally beneficial to Chinese American grandparents' psychological well-being, thus supporting role enhancement theory. However, this association depends on whether this experience is a burden to the grandparents, therefore role strain theory is also supported. Policies and programs are discussed to address the grandparenting experience in the Chinese American older adults.

**Keywords:** Grandparenting—Depressive symptoms—Caregiving burden/ pressure—PINE

Across the world, grandparents are principal caregivers or supplement other forms of extra family care and this experience may have an effect on their psychological well-being. Theoretically, both negative and positive effects on grandparent caregivers' well-being are plausible based on role strain (1) and role enhancement (2) theories. Role strain arises or increases when role obligations exceed one's physical and psychological resources, thus affecting one's health (3). According to role strain theory, a lot of stress from the grandparent role involvement, such as intensive caregiving to grandchildren may negatively affect psychological well-being. Empirical studies in Western literature found that taking care of grandchildren is a

stressful and therefore contributes negatively to psychological well-being, such as increased depression or distress (4,5). On the other hand, role enhancement refers to the psychological benefits of occupying multiple roles (6). Based on this theory, empirical Western literature has shown that caregiving to grandchildren benefits the grandparents psychologically as it provides them a sense of purpose and meaning in life and strengthens ties between grandparents, the link parents, and grandchildren (7–9).

In China, grandparents are intensely involved with childcare because grandparent caregiving is one form of intergenerational support that is emphasized in Chinese families and Confucian culture

(10). Among the limited literature on Chinese grandparents, research suggests that grandparenting experiences were a mixture of enjoyment and hard work (11). However, the majority of studies have found that rather than considering caring for grandchildren as a burden or a disruption to their daily life, Chinese grandparents are more likely to think of caring for grandchildren as a source of “family happiness” which enables them to achieve intergenerational reciprocity (12), thereby having a beneficial effect on their psychological well-being for older adults in Taiwan and Hong Kong (13,14), as well as in rural China where grandparents are more likely to live together with grandchildren because of massive out migration of the middle generation (15–18).

Overall, Chinese American grandparent caregivers have been mostly ignored in the existing literature. Chinese American older adults are straddling two cultures that differ in terms of values emphases and orientations (19). Due to immigration status and cultural differences, older Chinese American grandparents may have different caregiving experiences than their counterparts in the home country and differ from other racial/ethnic groups. While grandparents may maintain some of the Chinese culture norms or practice after immigration, they may have to cope with various acculturation challenges, including cultural adaptation, language barriers, financial difficulty and dependence, housing, and childcare burden (20). Therefore, it is important to examine grandparent caregiving experience in relation to psychological well-being and to improve our understanding of whether grandparent caregiving is a rewarding or stressful experience for older Chinese Americans.

Studies show that most Chinese American grandparents are extensive caregivers who provide a significant proportion of their grandchildren’s day care while the parents are at work (21). The limited research on grandparent caregiving and health outcomes suggests that grandparenting had both rewards and challenges among Chinese immigrant grandparents in Canada (22) and in the United States (23), and that grandparents overall considered their caregiving experiences positive after adaptation and adjustment in the United States (24). However, all of these studies, to our knowledge, were of qualitative, exploratory nature. No quantitative study has been conducted to examine the association between grandparent caregiving and psychological well-being among Chinese American older adults. This study addressed this research gap by using the first population-based, epidemiological study of the U.S. Chinese older adults.

In addition, the correlation between grandparenting and psychological well-being might be beyond a simple harmful or beneficial effect. Western literature has shown the psychological well-being effect of grandparent caregiving was dependent on their experience of caregiving burden (25). It is unknown whether such moderating role of caregiving burden in Western literature applies to Chinese American grandparents since the literature has reported that some Chinese American grandparents experienced burden in caring for grandchildren (26). In addition, Chinese culture values intergenerational reciprocity. Adult children may expect or even demand their aging parents to help with childcare. Such pressure from adult children, however, may become a source of stress of the grandparents and moderate the psychological outcomes of grandchildren caregiving.

Psychological well-being is a multi-dimensional construct (27). In this study, we examined two psychological well-being indicators: depressive symptoms and quality of life. Depression is the most commonly used psychological well-being indicator in both Western and Chinese grandparent caregiving literature (28). Quality of life represents a cognitive dimension of psychological well-being (27).

It integrates subjective values and objective conditions and involves an overall assessment of multiple domains of life (27,29).

In summary, this study investigated the association between grandparent caregiving and psychological well-being among Chinese American grandparents. Specifically, we examined whether and how grandparent caregiving time was associated with depressive symptoms and quality of life, and how caregiving burden and pressure from adult children moderated the association between grandparent caregiving and psychological well-being. We hypothesized that (1) a culturally expected role of caregiving among Chinese American grandparents results in role enhancement, that is, greater involvement in the grandparent role, indicated by spending more time caring for grandchildren, should increase sense of purpose and meaning in life and thus be beneficial for the psychological well-being of grandparents. We also hypothesized that (2) grandparents’ psychological well-being benefits are conditional on whether caring for grandchildren becomes a burden for them and whether they feel pressure to provide care from their adult children.

## Method

### Sample

We used the data from the Population Study of ChINese Elderly in Chicago (PINE), a community-engaged, epidemiological study of U.S. Chinese adults age 60 and older. The PINE study was conducted between 2011 and 2013 in the Greater Chicago area, with the purpose to examine the key cultural determinants of health and well-being in the Chinese American older population. The PINE study was implemented by a community-academic team of the Rush Institute for Healthy Aging, Northwestern University Medical Center, and many community-based social services agencies and organizations. According to the U.S. Census 2010 and a random block census project, the PINE study was representative of the Chinese aging population in the Greater Chicago area. Details of the sampling method have been published and available elsewhere (26). Among 3,542 eligible older adults who were approached, 3,159 participated in the study, reaching a very high response rate of 91.9%. In this study, we limited our sample to older adults who had grandchildren that were younger than 16 at time of survey ( $N = 2,775$ ).

## Measures

### Dependent variable

The dependent variable was psychological well-being that was measured through quality of life and depressive symptoms. Quality of life was measured by a single question asking older participants how their life quality is from 1 (very good) to 4 (poor). This item was dichotomized into 1 = poor quality of life, 0 = very good/good/fair due to the skewed distribution. Depressive symptoms were measured by the Patient Health Questionnaire-9 scale, which contains nine questions and is appropriate for screening late-life depression with the advantages of brevity and validity (30). Also, the Patient Health Questionnaire-9 scale contains the somatic domains that are common in Asian older adults with depressive symptoms (31). Respondents were asked how often they had been bothered during the past 2 weeks by such feelings as little interest in doing things, feeling down, trouble sleeping, feeling tired, poor appetite, feeling bad about oneself, and trouble with concentration. Responses were scaled from 0 (not at all) to 3 (nearly every day). The standardized Cronbach’s alpha for depressive symptoms was .82 in the study.

A summary score of nine items were used, with higher scores indicating more symptoms (range 0–27). The scores of 5, 10, 15, and 20 represent outpoints for mild, moderate, moderately severe and severe depression, respectively (32).

### Independent variables

Independent variables in this study included grandparent caregiving time, caregiving burden, and caregiving pressure. Caregiving time was a continuous variable (range 0–168), which was measured by the response to the question, “How many hours a week do you spend taking care of grandchildren?” Caregiving burden was indicated by the respondents’ feeling of burden to take care of their grandchildren, with responses from 0 (never) to 4 (always). Caregiving pressure was measured by the response to the question, “How often do you feel pressured by your sons/daughters to take care of their children?” Responses ranged from 0 (never) to 4 (always). Caregiving burden and pressure were dichotomized (0 = never, 1 = little/some/often/always) due to their skewed distributions. Interpretation of findings involving moderating effects is also clearer with dichotomous variable.

### Control variables

Sociodemographic characteristics were controlled in the regression analyses. Sociodemographic variables included age (in years, range 60–104), gender (male or female), education (in years, range 0–25), personal income (1 = less than \$5,000 to 10 = \$45,000 or more), marital status (married, or not married), number of grandchildren (range 0–15), living with grandchild (yes or no), years living in United States (range 1–90), and functional limitation of activities of daily living (ADLs) (range 0–24).

### Data Analysis

First, we used descriptive analyses to summarize sociodemographic characteristics, caregiving experience, and psychological well-being of the study sample. Then, for the dependent variable of quality of life, logistic regression models were used. For the dependent variable of depressive symptoms, because of its skewed distributions, we applied negative binomial regression models without losing information by dichotomizing it to use logistic regression (33). The negative binomial regression model has greater variability than expected under a Poisson distribution (34). It can improve the model fit to the data and account better for over-dispersion than the Poisson regression model that assumes the mean and variance are the same (35). Model results were reported as Incidence Rate Ratios (IRR), indicating the change in the incident rate of the outcome variable per unit change in the independent variable, while controlling for all other covariates. In both regressions, six models were used with grandparent caregiving time in the first model, followed by caregiving burden in the second model. Interaction term between caregiving time and burden were added in the third model. Similarly, caregiving pressure and its interaction with caregiving time were entered in the fourth and fifth models respectively, after controlling for sociodemographic covariates. All study variables as well as significant product terms were entered in the final model. The analyses were conducted using SAS 9.4.

### Results

On average, the grandparents were age 72.46 ( $SD = 8.16$ ), had 8.53 years of education ( $SD = 5.05$ ), and lived in the United States for about 19.7 years ( $SD = 12.94$ ). The majority of them were

grandmothers (59.8%), married (70.3%), and had an annual income of \$5,000–\$9,999. The grandparents were quite healthy with few functional limitations ( $M = 0.40$ ,  $SD = 2.13$ ). Among these 2,775 grandparents, 9.8% of them lived with grandchildren, and they spent 11.96 hours of caregiving in the past week. Over 80% reported no burden to take care of grandchildren or never felt pressured by adult children (90.4%). Grandparent caregivers had good psychological well-being, with relatively low levels of depressive symptoms ( $M = 2.63$ ,  $SD = 4.10$ ), 80.0% reporting no depressive symptoms and only 11.9% reporting poor quality of life (see Table 1).

For depressive symptoms, results in Table 2 showed that caregiving time was significantly associated with depressive symptoms at all 6 models. More specifically, the more time they spent on grandparent caregiving, the less likely they got depressive symptoms ( $IRR = 0.99$ ,  $p < .001$ ). Caregiving burden was associated with depressive symptoms ( $IRR = 1.36$ ,  $p < .05$ ). In particular, caregiving burden was associated with about 36% increase rates in depressive symptoms after controlling for sociodemographics. Caregiving burden also moderated the association between caregiving time and depressive symptoms (odds ratio [OR] = 1.01,  $p < .05$ ). It meant that when the caregiving was a burden to the grandparents, one-unit increase in caregiving time was associated with 1% increase rate in depressive symptoms. Therefore, the beneficial effect of caregiving time on depressive symptoms was conditional on whether it was a burden for the grandparents. Caregiving pressure had a direct effect on depressive symptoms ( $IRR = 1.55$ ,  $p < .001$ ), which indicated that caregiving pressure was related to 55% increase rate in depressive symptoms. However, no indirect moderating effect of caregiving pressure was found in model 5.

**Table 1.** Sample Characteristics ( $N = 2,775$ )

	<i>M (SD)</i>	%	Range
Age	72.46 (8.16)		60–104
Gender			
Female		59.8	
Male		40.2	
Years of education	8.53 (5.05)		0–25
Marital status			
Being married		70.3	
Separated/divorced/widowed		29.6	
Functional limitations (ADL sum)	0.40 (2.13)		0–24
Income	1.90 (1.1)		1–10
Years in the United States	19.71 (12.94)		1–90
Live with grandchildren		9.8	
Number of grandchild	4.50 (3.50)		0–15
Grandparent caregiving time	11.96 (24.92)		0–168
Grandparent caregiving burden	0.61 (1.57)		
Never		81.7	
Little/some/often/always		18.3	
Grandparent caregiving pressure			
Never		90.4	
Little/some/often/always		9.6	
Depressive symptoms	2.63 (4.10)		0–27
None		80.0	
Mild		12.0	
Moderate		5.5	
Moderately severe		1.7	
Severe		0.8	
Quality of life			
Poor		11.9	
Very good/good/fair		88.1	

Note: ADL = activity of daily living.

**Table 2.** Results of Negative Binomial Regressions on Depressive Symptoms (N = 2,254)

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	IRR	95% CI	IRR	95% CI	IRR	95% CI	IRR	95% CI	IRR	95% CI	IRR	95% CI
Age	1.01	0.98–1.02	1.02	1.01–1.03	1.00	0.99–1.01	1.00	0.99–1.01	1.00	0.99–1.01	1.00	0.99–1.01
Being female	1.39 <sup>§</sup>	1.21–1.60	1.39 <sup>§</sup>	1.27–1.69	1.39 <sup>§</sup>	1.25–1.60	1.39 <sup>§</sup>	1.27–1.69	1.39 <sup>§</sup>	1.27–1.69	1.38 <sup>§</sup>	1.20–1.59
Education	1.00	0.99–1.02	1.01	0.99–1.02	1.01	0.99–1.02	1.01	0.99–1.02	1.01	0.99–1.02	1.01	0.99–1.02
Being married	0.86	0.74–1.02	0.87 <sup>*</sup>	0.77–1.06	0.87	0.74–1.03	0.86 <sup>*</sup>	0.74–1.02	0.86 <sup>*</sup>	0.74–1.02	0.87 <sup>*</sup>	0.74–1.02
Income	0.84 <sup>§</sup>	0.78–0.91	0.84 <sup>§</sup>	0.79–0.92	0.84 <sup>§</sup>	0.79–0.92	0.85 <sup>§</sup>	0.79–0.92	0.84 <sup>§</sup>	0.78–0.91	0.84 <sup>§</sup>	0.78–0.91
Functional limitation	1.05 <sup>§</sup>	1.04–1.06	1.05 <sup>§</sup>	1.04–1.06	1.05 <sup>§</sup>	1.04–1.06	1.05 <sup>§</sup>	1.04–1.06	1.05 <sup>§</sup>	1.04–1.06	1.05 <sup>§</sup>	1.04–1.06
Years in the United States	1.01	0.99–1.02	1.00	0.99–1.00	1.00	0.99–1.00	1.00	0.99–1.00	1.00	0.99–1.00	1.00	0.99–1.00
Live with grandchild	0.99	0.97–1.01	0.99	0.96–1.01	0.99	0.97–1.01	0.99	0.96–1.01	0.99	0.96–1.01	0.99	0.96–1.01
Number of grandchild	1.04	0.89–1.22	1.05	0.90–1.23	1.06	0.91–1.24	1.05	0.90–1.23	1.06	0.90–1.23	1.06	0.90–1.23
Caregiving time	0.99 <sup>†</sup>	0.99–1.00	0.99 <sup>§</sup>	0.99–1.00	0.99 <sup>§</sup>	0.99–1.00	0.99 <sup>§</sup>	0.99–1.00	0.99 <sup>§</sup>	0.99–1.00	0.99 <sup>§</sup>	0.99–1.00
Caregiving burden			1.36 <sup>†</sup>	1.13–1.63	1.22 <sup>†</sup>	0.99–1.51		0.69–1.24		0.69–1.24	1.12 <sup>†</sup>	0.99–1.24
Caregiving pressure								1.14–2.32		1.14–2.32	1.47 <sup>†</sup>	1.14–2.32
Time x burden					1.01 <sup>†</sup>	1.00–1.01					1.01 <sup>†</sup>	1.00–1.01
Time x pressure												
Intercept	2.87 <sup>§</sup>	2.20–3.73	2.77 <sup>§</sup>	2.12–3.61	2.80 <sup>§</sup>	2.15–3.64	2.78 <sup>§</sup>	2.13–3.62	2.79 <sup>§</sup>	2.14–3.64	2.79 <sup>§</sup>	2.14–3.64

Notes: CI = confidence interval; GOF = Goodness of Fit; IRR = incidence rate ratios.

<sup>\*</sup>p < .10, <sup>†</sup>p < .05, <sup>‡</sup>p < .01, <sup>§</sup>p < .001.

**Table 3.** Results of Logistic Regressions on Poor Life Satisfaction of Grandparents (N = 2,312)

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	IRR	95% CI	IRR	95% CI
Age	0.95 <sup>‡</sup>	0.92–0.98	0.96 <sup>‡</sup>	0.93–0.98	0.96 <sup>‡</sup>	0.93–0.98	0.96 <sup>‡</sup>	0.93–0.98	0.95 <sup>‡</sup>	0.92–0.98	0.96 <sup>‡</sup>	0.93–0.98
Being female	0.57 <sup>‡</sup>	0.38–0.85	0.57 <sup>‡</sup>	0.38–0.85	0.57 <sup>‡</sup>	0.38–0.85	0.58 <sup>‡</sup>	0.38–0.85	0.57 <sup>‡</sup>	0.38–0.85	0.58 <sup>‡</sup>	0.39–0.86
Education	0.89 <sup>§</sup>	0.86–0.93	0.89 <sup>§</sup>	0.86–0.93	0.89 <sup>§</sup>	0.86–0.93	0.89 <sup>§</sup>	0.86–0.93	0.89 <sup>§</sup>	0.86–0.93	0.89 <sup>§</sup>	0.86–0.93
Being married	1.03	0.65–1.63	1.03	0.64–1.62	1.02	0.64–1.62	1.02	0.65–1.62	1.03	0.65–1.62	1.04	0.66–1.65
Income	0.92	0.78–0.91	0.93	0.79–1.09	0.93	0.79–1.09	0.92	0.79–1.09	0.92	0.79–1.09	0.93	0.79–1.09
Functional limitation	1.08 <sup>§</sup>	1.03–1.13	1.08 <sup>§</sup>	1.03–1.13	1.08 <sup>§</sup>	1.03–1.13	1.08 <sup>§</sup>	1.03–1.13	1.08 <sup>§</sup>	1.03–1.13	1.08 <sup>§</sup>	1.03–1.13
Years in the United States	1.01	0.99–1.03	1.01	0.99–1.03	1.01	0.99–1.03	1.01	0.99–1.03	1.01	0.99–1.03	1.01	0.99–1.03
Live with grandchild	0.98	0.91–1.05	0.97	0.91–1.04	0.97	0.91–1.04	0.98	0.91–1.04	0.97	0.91–1.04	0.97	0.91–1.04
Number of grandchild	1.02	0.65–1.62	1.02	0.64–1.62	1.02	0.64–1.62	1.02	0.64–1.62	1.01	0.64–1.62	1.02	0.64–1.62
Caregiving time	0.99	0.99–1.00	0.99*	0.98–1.00	0.99	0.98–1.00	0.99	0.98–1.00	0.99	0.98–1.00	0.99	0.98–1.00
Caregiving burden			2.11 <sup>†</sup>	1.19–3.73	2.24 <sup>†</sup>	1.11–4.54					2.09*	0.95–4.61
Caregiving pressure							2.00 <sup>†</sup>	0.90–4.74	2.73*	0.95–7.88	1.22	0.47–3.17
Time x burden			1.00	0.98–1.01								
Time x pressure									1.00	0.97–1.01		
-2 Log L	817.73		810.28		810.19		814.43		813.32		811.29	
Hosmer-Lemeshow GOF	$\chi^2(8) = 3.01$		$\chi^2(8) = 6.05$		$\chi^2(8) = 4.66$		$\chi^2(8) = 1.98$		$\chi^2(8) = 2.25$		$\chi^2(8) = 6.25$	

Notes: CI = confidence interval; IRR = incidence rate ratios; OR = odds ratios.  
<sup>†</sup>p < .10, <sup>‡</sup>p < .05, <sup>§</sup>p < .01, <sup>\*</sup>p < .001.



Results in Table 3 showed that caregiving time was not significantly associated with poor quality of life, though the results showed that more time spent on grandparent caregiving was negatively associated with poor quality of life. Both caregiving burden ( $OR = 2.11, p < .05$ ) and pressure ( $OR = 2.00, p < .05$ ) had a direct effect on poor quality of life. In particular, caregiving burden or pressure was associated with about 111% or 100% increase in the likelihood, respectively, of poor quality of life after controlling for sociodemographics. No moderating effects were found for either caregiving burden or pressure on the association between caregiving time and poor quality of life.

## Discussion

Using the first population-based, epidemiological study of the U.S. Chinese older adults in great Chicago area, this study examined the association between grandparent caregiving and psychological well-being and how caregiving burden and pressure from adult children moderated this relationship. This study builds and improves upon existing literature on grandparenting and psychological well-being outcomes. It contributes to the scarce research on grandparent caregiving in an understudied population, and advances our knowledge about grandparenting and psychological well-being outcomes among Chinese American grandparents.

First, this study showed that grandparent caregiving time was significantly related to having fewer depressive symptoms, but not poor quality of life. Thus, results confirmed the role enhancement theory and partially supported our first research hypothesis that grandparent caregiving was beneficial to psychological well-being. To the best of our knowledge, our study is one of the first to provide empirical quantitative evidence on this topic. Thus, our results added to previous qualitative studies, which suggested that grandparenting is generally a rewarding experience for Chinese immigrant grandparents (22–24). The rewarding health outcomes of grandparent caregiving have also been documented in the studies on grandparents in China (14–18) as well as in Western society (7,8). Similar to the majority of Chinese elders, Chinese American older grandparents may view caregiving as a family obligation that brings in family togetherness, generation continuity, emotional connections with younger generations, and future older-age support. Taking care of grandchildren may also help older Chinese American grandparents buffer the stress of acculturation or dissolution of traditional Confucian values and adapt to age-related role losses, such as retirement from paid work, death of a spouse, or reduced family roles, thus bringing in compensatory effects on psychological well-being. In addition, grandparent caregiving also increases the opportunities for informal and formal support and social bonds that may also bring favorable psychological outcomes (36).

However, the association between caregiving and depressive symptoms was dependent on whether grandparents perceived their caregiving was a burden. In other words, grandparents who had negative experiences or feelings about caregiving were more vulnerable to negative psychological well-being. Caring for grandchildren would not be beneficial to grandparents' psychological well-being if grandparents are not able to integrate the caregiver role in their lives and the caregiving has become a burden for them. Thus, part of our second hypothesis was supported that caregiving burden played a moderating role in the association between grandparent caregiving and psychological well-being. This finding supported the role strain theory and implied that self-appraisal of caregiving is important for psychological well-being. When grandparent role overloads or exceeds an individual's physical and psychological capacity, then it could be a burden or the source of a "chronic stressor" that is harmful to health (3).

Unexpectedly, grandparent caregiving was not significantly correlated with quality of life. This might be due to the single item measurement of quality of life. Though many single item scales can be reliable and can predict outcomes effectively (37), using a scale to measure quality of life is still preferred because it is generally multidimensional (27,29). Future studies could use a well-established quality of life scale and test the effect of grandparenting. Second, quality of life is a complex concept that may require respondents to sum multiple aspects of their lives. While caring for grandchildren is one aspect, there may be many other aspects of life not considered and controlled in the model that influence quality of life of the respondents. Another reason might be that grandparenting role in this study is just to assist parents or a fun seeker, rather than being custodial grandparents or surrogate parents, which would not contribute to quality of life for older adults.

This study also did not find the hypothesized moderating effect of pressure from adult children in the association between grandparent caregiving and psychological well-being. This might be due to the reality that few grandparents (9.6%) felt some pressure from their adult children in taking care of grandchildren. After immigration, adult children may not have high expectations of child care from older parents as a result of the influence of feelings of independence and other different cultural orientations in the United States (19).

This study improves our understanding of the relationships between grandparent caregiving and psychological well-being among Chinese American grandparents. This study also offers important policy insights for Chinese American grandparents. Given the fast growth of the Chinese American population and a rising trend of grandparents caring for grandchildren, there is an urgent need to understand the psychological impact on caregivers. Given the important role of grandparent caregivers among Chinese American older adults, it is crucial to assess their needs, specific problems, strengths, and resources in order to help them maintain health and well-being. Since a positive impact was found for Chinese American grandparent caregivers, encouraging grandparents' involvement with grandchildren would mean both psychological benefits for older parent generation, as well as additional help to the middle generation. However, both grandparent and middle parent generations should be aware that grandparent caregiving is of a choice, not an obligation. Providing grandchild care should be a way to cope with acculturation stress and age related role loss, rather result in extra work for grandparents. When burden is perceived in caring for grandchildren, specific efforts are needed to identify and reach out to grandparent caregivers who are in need of help. It is important for service providers to be familiar with the traditional and changed cultural norms, embrace a family-centered perspective, and provide culturally appropriate services when working with Chinese American grandparents. Finally, grandparent caregiving need to be recognized as a policy issue. It might bring more psychological benefits if current policies and programs in the United States that intend to support primary grandparent caregivers are extended to extensive grandparent caregivers and their families (21), like those implemented in Singapore (38).

We note several limitations of the present study. First, this study is limited in its generalizability. Although we used a representative sample of Chinese older adults in the large metropolitan area of Chicago, the findings from this study cannot be generalized nationally or internationally. Second, another study limitation lies in using cross-sectional data that cannot establish the causal relationship between caregiving and psychological well-being. Longitudinal data or experimental designs are needed to test the causal relationship in future research. Third, measurement of grandparent caregiving has limitations. Caregiver status was defined in this study by the weekly hours spent on childcare. We lack relevant information about

caregiving status (ie, temporary or primary caregiver; custodial or non-custodial caregivers), length of caregiving time, types of caring responsibilities, living arrangement with the grandchildren or adult children, and the number and characteristics of grandchildren being cared for by the grandparents. Thus, interpreting results of present study should be cautious. It would be preferable to use more comprehensive measure of grandparent caregiving in future research.

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