Social Engagement Among U.S. Chinese Older Adults— Findings From the PINE Study

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Background. Social engagement is a key indicator of older adults' later life quality and health status, but few studies have comprehensively examined social engagement patterns of U.S. Chinese older adults. This study assesses social engagement patterns among U.S. Chinese older adults.

Methods. Data were collected by the Population Study of Chinese Elderly project, a cross-sectional population-based study of 3,159 U.S. Chinese older adults aged 60 and older in the greater Chicago area. Social engagement patterns were examined with a list of 16 social engagement activity related questions. Analysis of variance and Pearson or Spearman correlation coefficients were used to examine correlations between sociodemographic and health characteristics and social engagement.

Results. Age was negatively associated with social engagement activities for Chinese older adults. Although education had a significant positive correlation on older adults' participation in social engagement activities, income did not show any significant correlation. Perceived health status and quality of life were also positively correlated with social engagement. Chinese older adults were more likely to visit community centers than any other social or cultural venues.

Conclusions. This study highlights the important role community centers play in the lives of Chinese older adults. Further, longitudinal studies are also necessary to understand the predictors and outcomes of social engagement levels among Chinese older adults.

Key Words: Social participation—Population-based—Chinese American.

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THE elderly aged 65 and older account for 13.7% of the U.S. population in 2012 and projected to exceed 20.3% by the year 2030 (1,2), which calls for additional attention to the needs and well-being of older adults. Although Disengagement Theory indicates that it is natural for older adults to gradually decrease their social interactions with others (3), many researchers and health organizations support Activity Theory, which emphasizes that continuing participation in all kinds of activities can improve the well-being of older adults in late life and achieve successful aging (4).

With recognition of the importance for older adults to maintain an active life style, research in social engagement has flourished. Researchers have focused on different aspects of social engagement, such as social participation, social networks, and social support (5). Generally speaking, social participation refers to engagement in daily social activities. Studies of social networks examine older adults' interactions with friends, relatives, and groups; studies of social support focus on assistance; and resources provided to individuals.

Social engagement activities range from watching TV to volunteering. Depending on research aims, data availability, and cultural diversity, researchers may include different activities in their studies (6,7). Some studies examined social engagement patterns, characteristics, and associations at the group level. Social engagement activities that focus on information processing and require less social interaction or physical movement have been categorized as cognitive activities (eg, reading, playing games, listening to radio) (8–10). Activities requiring less mental exercise but more social interaction have often been grouped as social activities (eg, visiting friends, participating in cultural events, joining social organizations). The productive activity category usually includes attending work on a regular basis and completing assigned tasks such as gardening and volunteering.

Categorization of social engagement activities is “intuitively meaningful,” (11) and may lead to a better understanding of social engagement patterns of older adults and how these activities may impact health. For example, one study found that older adults in Malaysia were unlikely to

participate in different categories of activities, which calls for efforts to promote diversification of activities among older adults so that they can enjoy better physical well-being (10). In a study of community-dwelling Chinese older adults in Singapore, productive activities were more strongly associated with preserving cognitive functions than social activities (11).

Prior studies found that social engagement levels are associated with sociodemographic characteristics such as age, education, income, and physical health. In comparison with younger people, older people were found to participate in fewer activities (12), especially activities with high physical and mental demands (13). On the other hand, older adults with higher educational attainment more frequently dined out and attended cultural activities (14). In addition, older adults with more education, higher income, and better health were more likely to have social networks with multiple contacts (15).

Although several studies have examined social engagement patterns and its association with the older adults' health outcomes, most of these studies focused on the general population in the United States or Scandinavia (5). The Chinese community is the largest and fastest growing Asian American group in the United States, but because of its unique cultures, traditions, and values, the social engagement patterns of Chinese Americans may be different from those of the general population. Although there are some studies of leisure activities (16,17), social networks (18), and social support (19) for Chinese Americans, few studies have comprehensively examined elderly Chinese Americans' social engagement patterns. To fill in the knowledge gap, this study examines the social engagement patterns among community-dwelling Chinese older adults in the greater Chicago area and the correlates of social engagement in Chinese older adults.

METHODS

Population and Settings

The Population Study of Chinese Elderly in Chicago (PINE) is a community-engaged, population-based epidemiologic study of U.S. Chinese older adults aged 60 and older in the greater Chicago area. Briefly, the purpose of the PINE study is to collect community-level data of U.S. Chinese older adults to examine the key cultural determinants of health and well-being. The project was initiated by a synergistic community-academic collaboration among the Rush Institute for Healthy Aging, Northwestern University Medical Center, and many community-based social services agencies and organizations throughout the greater Chicago area (20).

The PINE study implemented culturally and linguistically appropriate community recruitment strategies guided

by community-based participatory research approach (21). Out of 3,542 eligible older adults approached, 3,159 agreed to participate, yielding a response rate of 91.9%. Based on available data drawn from U.S. Census 2010 and a random block census project conducted in the Chinese community in Chicago, the PINE study is representative of the Chinese aging population in the greater Chicago area with respect to key demographic attributes (22). The study was approved by the Institutional Review Board of the Rush University Medical Center.

Measurements

Sociodemographics and self-reported health status.—Sociodemographic characteristics assessed included age, sex, education, personal income, marital status, number of alive children and grandchildren, living arrangement, country of origin, years in the United States, and years in the community. Overall health status and quality of life were measured on a 4-point scale (1 = poor, 2 = fair, 3 = good, 4 = very good). Health changes over the last year was measured on a 3-point scale (1 = worsened; 2 = same; 3 = improved).

Social Engagement Scale.—Social engagement was assessed with 16 questions regarding social engagement activities (see Table 2). For questions, "How often do you watch TV, listen to the radio, read newspapers, read magazines, read books, play games such as cards, checkers, crosswords, or other puzzles or games, play mahjong, go out to a movie, restaurant, or sporting event, visit relatives, friends or neighbors, have friends or relatives for a dinner or a party and go on day trips or overnight trips?," a 4-point scale was used (0 = once a year or less, 1 = several times a year, 2 = several times a month, 3 = several times a week and 4 = every day or almost every day). For questions, "In the past five years, how many times have you visited a museum, attended a concert, play, or a musical, visited a library, visited community centers?," the 4-point scale was used (0 = never, 1 = 1 to 2 times, 2 = 3 to 9 times, 3 = 10 to 19 times, and 4 = 20 or more times). For question "How much time do you spend reading each day?," the 5-point scale was used (0 = none, 1 = a few minutes, 2 = half an hour, 3 = 1–2 hours, 4 = 2–3 hours and 5 = more than 3 hours).

The 16 social activities were further clustered into two groups (cognitive activities and social activities) to better reveal Chinese older adults' social engagement patterns at group levels. The cognitive activity cluster comprises of activities requiring more mental exercise and less social interaction and physical strength, whereas the social activity cluster includes activities requiring relatively less mental exercises but more social interaction and physical strength. Cognitive activities included watching TV, listening to

radio, reading newspapers, magazines and books, daily reading time, playing games, and playing mahjong. The overall scale for the cognitive activity group ranged from 0 to 33. Social activities included the remaining eight activities, with the scale ranging from 0 to 32. The standardized alpha ranged from .6 to .75.

Data Analysis

Demographic information of the participants by age was presented with descriptive statistics. Means and standard deviations were used to describe the social engagement level of Chinese older adults in cognitive activities and social activities. In addition to analysis of variance, Pearson correlation coefficients for sex, marital status and country of origin, and Spearman correlation coefficients for the remaining characteristics were generated to identify correlates of social engagement level. Statistical analyses were conducted using SAS, Version 9.2 (SAS Institute Inc., Cary, NC).

RESULTS

Sample Characteristics

The PINE study interviewed 3,159 Chinese adults over the age of 60. The mean age was 72.8 ($SD = 8.3$), with 58% over 70 years old. Nearly 60% of the participants were female, 79% of the cohort had less than 12 years of education, and only 20% had an annual income more than \$10,000 (Table 1).

Social Engagement Activities

Watching TV was the most frequently reported cognitive activity. More than 80% of participants reported they watched TV everyday or almost everyday, although 65% of participants reported spending at least half an hour per day reading. In comparison, playing mahjong (17.9%) and other games (8%) for several times or more every month was less common, and only 10% of participants listened to radio more than once every year. Chinese older adults also visited community center more frequently than other social/cultural places (Table 2).

Social Engagement Level

Social engagement levels differed significantly by sociodemographic characteristics. Adults between the ages of 65 and 74 were more socially active than other age groups (22.5 and 23.3, respectively). Chinese older adults also tended to be more socially active if they had no children. Social engagement level among older adults born in China was lower than that of those born in other countries (20.6 vs 23.8). Moreover, participants who have lived in the United States for less than 10 years or more than 30 years had higher social engagement levels (Table 3).

Table 1. Sociodemographic Characteristics of PINE Study Participants by Age

	60–69 (<i>N</i> = 1,323)	70–79 (<i>N</i> = 1,163)	80 and Over (<i>N</i> = 673)	χ^2	<i>df</i>	<i>p</i> Value
Sex, numbers (%)						
Male	555 (42.0)	489 (42.1)	282 (41.9)			
Female	768 (58.0)	674 (57.9)	391 (58.1)	0	2	1.0
Education level, numbers (%)						
0	35 (2.7)	70 (6.0)	90 (13.6)			
1–6	500 (37.9)	372 (32.1)	307 (46.2)			
7–12	579 (43.9)	378 (32.6)	146 (22.0)			
13–16	172 (13.1)	291 (25.1)	113 (17.0)			
17 and over	32 (2.4)	47 (4.1)	8 (1.2)	234.0	8	<.001
Income (USD), numbers (%)						
\$0–\$4,999	548 (41.7)	372 (32.3)	121 (18.4)			
\$5,000–\$9,999	476 (36.2)	664 (57.7)	477 (72.5)			
\$10,000–\$14,999	180 (13.7)	85 (7.4)	45 (6.8)			
\$15,000–\$19,999	51 (3.9)	7 (0.6)	10 (1.5)			
Over \$20,000	59 (4.5)	23 (2.0)	5 (0.8)	286.2	8	<.001
Marital status, numbers (%)						
Married	1,107 (84.6)	810 (69.9)	320 (47.8)			
Separated	25 (1.9)	22 (1.9)	10 (1.5)			
Divorced	45 (3.4)	20 (1.7)	9 (1.4)			
Widowed	132 (10.1)	307 (26.5)	330 (49.3)	377.2	6	<.001
Living arrangement, numbers (%)						
0	125 (9.5)	296 (25.5)	258 (38.4)			
1	506 (38.3)	532 (45.7)	280 (41.6)			
2–3	290 (21.9)	122 (10.5)	68 (10.1)			
4+	401 (30.3)	213 (18.3)	67 (10.0)	357.5	6	<.001
Number of children alive, numbers (%)						
0	64 (4.9)	42 (3.6)	22 (3.3)			
1	191 (14.5)	103 (8.9)	47 (7.0)			
2–3	854 (64.7)	646 (55.6)	247 (36.9)			
4+	211 (16.0)	371 (31.9)	353 (52.8)	300.2	6	<.001
Country of origin, numbers (%)						
China	1,207 (91.2)	1,092 (93.9)	634 (94.2)			
Others	116 (8.8)	71 (6.1)	39 (5.8)	9.0	2	<.05
Years in the United States, numbers (%)						
0–10	506 (38.3)	289 (24.9)	45 (6.8)			
11–20	402 (30.5)	403 (34.7)	164 (24.7)			
21–30	255 (19.3)	275 (23.7)	237 (35.8)			
31 and more	157 (11.9)	194 (16.7)	217 (32.7)	337.5	6	<.001
Years in the community, numbers (%)						
0–10	852 (64.6)	712 (61.3)	247 (37.0)			
11–20	288 (21.8)	259 (22.3)	193 (28.9)			
21–30	130 (9.9)	124 (10.7)	134 (20.1)			
31 and more	50 (3.8)	67 (5.8)	93 (13.9)	186.1	6	<.001
Overall health status, numbers (%)						
Very good	71 (5.4)	49 (4.2)	20 (3.0)			
Good	488 (36.9)	391 (33.6)	218 (32.4)			
Fair	538 (40.7)	514 (44.2)	268 (39.8)			
Poor	226 (17.1)	209 (18.0)	167 (24.8)	27.0	6	<.001
Quality of life, numbers (%)						
Very good	77 (5.8)	102 (8.8)	37 (5.5)			
Good	526 (39.8)	553 (47.6)	304 (45.3)			
Fair	665 (50.3)	477 (41.0)	315 (46.9)			
Poor	55 (4.2)	31 (2.7)	15 (2.2)	37.5	6	<.001
Health changes over the last year, numbers (%)						
Improved (1,2)	122 (9.2)	123 (10.6)	32 (4.8)			
Same (3)	701 (53.0)	528 (45.4)	306 (45.5)			
Worsened (4,5)	499 (37.8)	512 (44.0)	334 (49.7)	41.8	4	<.001

Table 2. PINE Study Participants' Social Engagement Activity Summary

		Frequency of Participation				
		Once a Year or Less	Several Times a Year,	Several Times a Month,	Several Times a Week,	Everyday or Almost
		Numbers (%)	Numbers (%)	Numbers (%)	Numbers (%)	Everyday, Numbers (%)
Cognitive activity	How often do you conduct the following activities?					
	Watch TV	140 (4.4)	28 (0.9)	94 (3.0)	267 (8.5)	2,624 (83.2)
	Listen to radio	2,774 (88.2)	27 (0.9)	47 (1.5)	88 (2.8)	210 (6.7)
	Read newspaper	768 (24.4)	96 (3.1)	283 (9.0)	568 (18.0)	1,436 (45.6)
	Read magazines	1,690 (53.7)	185 (5.9)	432 (13.7)	383 (12.2)	460 (14.6)
	Read books	1,942 (61.7)	155 (4.9)	222 (7.1)	242 (7.7)	589 (18.7)
	Play games (cards, checkers, crosswords, etc.)	2,854 (90.7)	39 (1.2)	76 (2.4)	80 (2.5)	97 (3.1)
	Play mahjong	2,478 (78.7)	106 (3.4)	192 (6.1)	242 (7.7)	130 (4.1)
		None, Numbers (%)	A Few Minutes, Numbers (%)	Half an Hour, Numbers (%)	One or Two Hours, Numbers (%)	Two or More Hours, Numbers (%)
Social activity	How much time do you spend reading each day?	688 (21.9)	413 (13.1)	711 (22.6)	903 (28.7)	428 (13.7)
	How often do you conduct the following activities?					
	Going out (movie, restaurant, etc.)	530 (16.8)	1,266 (40.2)	984 (31.2)	288 (9.1)	83 (2.6)
	Visit friends, neighbors, and relatives	798 (25.3)	856 (27.2)	869 (27.6)	394 (12.5)	234 (7.4)
	Invite guests for dinner or party	537 (17.0)	1,254 (39.8)	838 (26.6)	295 (9.4)	227 (7.2)
	Go on day or overnight trips	2,720 (86.3)	402 (12.8)	20 (0.6)	6 (0.2)	5 (0.2)
		Never, Numbers (%)	1 to 2 Times, Numbers (%)	3 to 9 Times, Numbers (%)	10 to 19 Times, Numbers (%)	20 or More Times, Numbers (%)
	In the past 5 years, how many times have you conducted the following activities?					
	Visit museum	2,190 (69.6)	543 (17.2)	317 (10.1)	53 (1.7)	46 (1.5)
	Attend concert, play, or musical	2,345 (74.4)	405 (12.9)	287 (9.1)	62 (2.0)	51 (1.6)
	Visit library	1,598 (50.7)	324 (10.3)	331 (10.5)	210 (6.7)	689 (21.9)
	Visit community center	1,021 (32.4)	310 (9.8)	507 (16.1)	235 (7.5)	1,079 (34.2)

Correlation Between Sociodemographic, Health and Life Quality Related Factors, and Social Engagement Level

Sex, education, marital status, number of children, years in community, country of origin, overall health status, quality of life and health status changes over the last year were significantly correlated with both cognitive activity participation and social activity participation (Table 4). Age and years in the United States were negatively correlated to only social activity participation ($r = -.17, p < .001$; $r = -.07, p < .001$, respectively). Income was not significantly correlated with either cognitive or social activity participation.

DISCUSSION

Social Engagement Patterns and Activities

This cross-sectional study with face-to-face interviews with 3,159 participants is the first large scale evaluation of older Chinese adults' social engagement patterns in the United States. Our findings indicate that overall social engagement level for U.S. Chinese older adults was relatively low.

We found that watching TV and reading were the two most common social engagement activities among our sample of Chinese older adults, which is consistent with prior studies of older adults' social engagement patterns (14,16,23). Listening to radio—reported by only 10% of participants—is much lower than radio listening rates reported in other studies (8).

Playing mahjong is a Chinese traditional leisure activity. As a multiplayer versatile table game, mahjong offers opportunities for older adults to spend their leisure time socializing with friends, neighbors, and relatives (24). In our study, 18% of participants reported that they played mahjong at least several times a month, which is consistent with rates reported in studies of Chinese older adults in Hong Kong and Singapore (11,23). Mahjong's popularity among Chinese groups may in part be due to its proven effect in preserving and improving older adults' cognition function (25), as mahjong requires brain exercises such as remembering rules, identifying winning strategies, calculating the odds, and observing other players.

One finding worth emphasizing is that Chinese older adults visited community centers more frequently than

Table 3. PINE Study Participants' Social Engagement Level

	Social Engagement Activity (TV, Radio, Newspaper, Magazines, Books, Reading, Games, Mahjong, Movie-Restaurant, Friends-Neighbor, Guests, Trips, Museum, Concert-Play-Music, Library, Community Center); Full Scale (0-65)					Cognitive Activity (TV, Radio, Newspaper, Magazines, Books, Reading, Games, Mahjong); Full Scale (0-33)					Social Activity (Movie-Restaurant, Friends-Neighbor, Guests, Trips, Museum, Concert-Play-Music, Library, Community Center); Full Scale (0-32)				
	Mean	SD	F Value	df	p Value	Mean	SD	F Value	df	p Value	Mean	SD	F Value	df	P value
Age															
60-64	20.0	8.5				11.1	5.5				8.9	4.6			
65-69	22.5	8.9				12.5	5.7				10.0	4.6			
70-74	23.3	8.9				13.4	5.8				10.0	4.7			
75-79	21.3	9.3				12.2	6.0				9.1	4.8			
80-84	18.8	9.1				11.4	5.9				7.4	4.7			
85 and over	15.2	8.8	41.05	5	<.001	9.6	6.2	20.9	5	<.001	5.6	4.3	49.9	5	<.001
Sex															
Male	22.5	8.6				13.3	5.4				9.2	4.8			
Female	19.6	9.4	76.0	1	<.001	11.0	6.1	120.4	1	<.001	8.6	4.8	11.5	1	<.001
Education (years)															
0	10.9	6.7				5.5	4.4				5.3	3.9			
1-6	16.7	7.5				9.3	4.9				7.4	4.1			
7-12	22.9	8.0				13.4	5.2				9.6	4.5			
13-16	27.3	8.2				16.1	5.0				11.3	5.1			
17 and over	28.9	8.4	302.9	4	<.001	16.4	5.3	294.7	4	<.001	12.4	5.0	124.9	4	<.001
Income (USD)															
\$0-\$4,999	21.0	9.1				12.0	6.0				9.0	4.8			
\$5,000-\$9,999	20.2	9.2				11.6	5.8				8.6	4.8			
\$10,000-\$14,999	21.5	8.7				12.1	5.7				9.4	4.6			
\$15,000-\$19,999	20.4	8.7				12.1	5.4				8.3	4.6			
Over \$20,000	27.6	7.7	14.3	4	<.001	16.1	5.3	12.2	4	<.001	11.4	4.4	8.9	4	<.001
Marital status															
Married	21.4	8.9				12.4	5.7				9.0	4.7			
Separated	23.5	8.8				13.3	5.7				10.2	4.9			
Divorced	22.7	10.2				12.6	6.3				10.2	5.5			
Widowed	18.5	9.6	22.1	3	<.001	10.4	6.1	22.8	3	<.001	8.1	4.9	11.0	3	<.001
Living arrangement															
0	20.7	9.8				11.8	6.2				8.9	5.1			
1	21.6	9.2				12.6	5.9				9.1	4.8			
2-3	20.9	9.1				12.0	6.0				8.8	4.8			
4+	19.3	8.4	9.6	3	<.001	10.8	5.5	14.0	3	<.001	8.5	4.5	2.2	3	.09
Number of children alive															
0	24.4	9.8				14.1	6.6				10.2	5.3			
1	23.4	8.7				13.3	5.5				10.1	5.0			
2-3	21.6	9.1				12.5	5.8				9.2	4.7			
4+	17.8	8.7	56.7	3	<.001	10.1	5.6	47.5	3	<.001	7.6	4.6	34.7	3	<.001
Country of origin															
China	20.6	9.1				11.8	5.9				8.8	4.8			
Others	23.8	9.2	26.6	1	<.001	14.0	5.9	29.2	1	<.001	9.9	5.0	10.6	1	<.01
Years in the United States															
0-10	21.6	9.1				12.0	5.8				9.6	4.8			
11-20	20.7	9.0				11.9	6.0				8.7	4.5			
21-30	19.8	9.3				11.5	5.9				8.3	4.9			
31 and more	21.4	9.2	6.0	3	<.001	12.6	5.8	3.8	3	<.01	8.9	5.0	9.9	3	<.001
Years in the community															
0-10	21.2	9.2				12.1	5.9				9.1	4.8			
11-20	20.3	8.7				11.6	5.7				8.7	4.6			
21-30	20.1	9.6				11.6	6.1				8.4	5.0			
31 and more	20.8	9.7	2.7	3	<.05	12.3	6.0	2.0	3	.11	8.6	5.1	3.6	3	<.05
Overall health status															
Very good	24.3	9.7				13.5	6.2				10.7	4.9			
Good	21.8	8.6				12.3	5.7				9.5	4.6			
Fair	21.0	9.1				12.1	5.8				9.0	4.8			
Poor	17.7	9.5	34.9	3	<.001	10.6	6.3	14.6	3	<.001	7.1	4.9	43.1	3	<.001
Quality of life															
Very good	24.6	9.0				14.2	5.9				10.4	5.0			
Good	21.8	9.1				12.4	5.8				9.4	4.9			
Fair	19.4	8.9				11.3	5.8				8.2	4.6			
Poor	18.7	10.9	31.6	3	<.001	10.9	7.1	21.3	3	<.001	7.8	5.3	25.6	3	<.001
Health changes over the last year															
Improved (1,2)	23.2	9.3				13.2	6.1				10.0	5.0			
Same (3)	21.0	8.8				11.9	5.7				9.1	4.6			
Worsened (4,5)	20.0	9.5	14.5	2	<.001	11.7	6.1	7.2	2	<.001	8.3	4.9	17.2	2	<.001

Table 4. Correlations Between Sociodemographic Characteristics and Social Engagement Activity

	Age	Sex	Edu	Income	MS	Living	Children	Yrs in U.S.	Yrs in Com	Origin	OHS	QOL	HC	SEA	CA	SA
Age	1															
Sex	.01	1														
Edu	-.12***	-.21***	1													
Income	.05**	.00	.01	1												
MS	-.33***	-.32***	.22	-.03	1											
Living	-.35***	-.07***	.02	.16***	.24 ***	1										
Children	.32***	.09 ***	-.38***	.00	-.13***	-.07***	1									
Yrs in U.S.	.35 ***	.03	-.10***	.35***	-.2***	-.31***	.15***	1								
Yrs in com	.23 ***	.02	-.11***	.24***	-.13***	-.18***	.10 ***	.66***	1							
Origin	.04*	-.01	-.08***	-.20	.05 **	.05**	.04*	-.2***	-.15***	1						
OHS	-.08***	-.06 **	.06***	.12***	.05**	.00	-.01	.00	.05**	-.04*	1					
QOL	.06***	.06***	.09***	.08***	-.03	-.01	.04*	.02	-.01	-.04*	.32***	1				
HC	-.11***	-.03	.02	.05**	.07***	.01	-.04*	-.02	.04*	-.01	.35***	.15***	1			
SEA	-.1***	-.15***	.54***	.03	.10***	-.06***	-.26***	-.03	-.06**	-.09***	.16***	.17***	.10***	1		
CA	-.03	-.19***	.54***	.03	.11***	-.07***	-.23***	.01	-.04*	-.10***	.10***	.13***	.06***	.89***	1	
SA	-.17***	-.06***	.36***	.02	.05**	-.03	-.20***	-.07***	-.07***	-.06**	.19***	.15***	.12***	.82***	.47***	1

Notes: CA = cognitive activities; Children = number of children; Edu = education; HC = health changes over the last year; Living = living arrangement; MS = marital status; OHS = overall health status; Origin = country of origin; QOL = quality of life; SEA = social engagement activities; SA = social activities; Yrs in com = years in the community; Yrs in U.S. = years in the United States.

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

other social or cultural venues. This may be partially attributed to language and cultural barriers faced by our study participants. Musicals, plays, theater performances, and museum exhibitions are generally held in English. Community centers on the other hand, especially those in Chinese neighborhoods, may be more appealing to Chinese older adults as community centers have Chinese-speaking staff and hold culturally tailored social activities and Chinese holiday celebrations. Another possible explanation of Chinese older adults' preference in visiting community centers may be related to their changing support-seeking behaviors. Asian Americans have traditionally relied on family, especially children, when they need help or face difficulties (26). However, this reliance has been challenged by social changes such as the young generation working far from their parent's homes and diminishing filial piety values. Chinese older adults may be drawn to community centers for supportive information, services, and other social resources (27).

Social Engagement Level and Sociodemographic Factors

Our study indicates that social engagement is significantly related with sociodemographic factors—such as age, sex, education, marital status, living arrangement, number of children, years in the United States, years in the community, and country of origin—but not income. Although most of our findings are consistent with previous studies for older adults, our findings about age and income warrant further discussion.

Age was significantly and negatively associated with the overall social engagement level in this study, which is

consistent with previous studies (12). However, although Chinese older adults' participation in social activities declined with age, there was no significant association between age and involvement in cognitive activities. One possible explanation may be related to reduced physical mobility with age and Chinese older adults' low ownership of cars. With fewer transportation tools, participating in out-of-home social/cultural/productive activities may become more difficult with older age. To fill their free time, aging Chinese older adults may increase their participation in homebound cognitive activities with sedentary nature. As a result, the increase in homebound activities caused by a lack of access to outdoor activities may offset the generally observed decrease of cognitive activity participation caused by aging, making the relation between age and cognitive activity participation insignificant among Chinese older adults.

Although education could be a proxy for income in evaluating the relationship between sociodemographic characteristics and leisure activity participation (14), our study of U.S. Chinese older adults found that education and income impacted cognitive and social activity participation levels differently. Consistent with previous research among Asian populations (10), our study suggests that education positively impacted involvement in cognitive activities and social activities, whereas income was not significantly associated with social engagement level. This inconsistency may be explained by the lack of a positive association between education and income in our study, where a majority of participants received education overseas. Moreover, when Chinese older adults immigrated to the United States, many found themselves lacking the necessary language proficiency, cultural familiarity, and social connections to obtain high salary jobs.

Limitations and Implications

The findings from this study are subject to several major limitations. First, although the subjects in this study were representative of Chinese older adults in the greater Chicago area, prudence is required to generalize the study results to other geographic areas or other Asian minority groups. Second, in our measurements of social engagement, we did not consider the length of participation in each activity type. Third, our research focused on Chinese older adults' participation in cognitive activities and social activities, which may be narrow to assess social engagement level. Future comparative studies may want to incorporate productive activities such as voluntary work and faith-based activities to more comprehensively study social engagement patterns of Chinese older adults.

This study, the first to depict social engagement patterns for Chinese older adults, has implications for researchers, health care professionals, social workers, community care practitioners, and policy makers. Additional research, with longitudinal designs, may be needed to identify specific barriers for social engagement. To address low levels of social engagement and its impact on health, health care professionals should educate and encourage Chinese older adults to participate in social engagement activities. In addition, culturally appropriate strategies—such as providing more culturally diverse services at community centers—are needed to increase Chinese older adults' social engagement level. The findings from this study will also assist related local, state, and federal government agencies create programs that accommodate Chinese older adults' unique needs and social engagement patterns.

CONCLUSIONS

In summary, this study indicates that the overall social engagement level is relatively low among Chinese older adults in the greater Chicago area. Age, sex, education, marital status, living arrangement, number of children, years in the United States, years in the community, and country of origin are associated with social engagement levels. However, further longitudinal studies are necessary to identify risk factors and outcomes associated with social engagement for Chinese older adults.

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