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## Life Satisfaction and Social Capital of the Chinese Elderly

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### ABSTRACT

As the elderly population in China is expected to rise to 300 million by 2025, the life satisfaction of the elderly is of great interest among Chinese researchers. This study tries to examine whether the social capital of the elderly has effects on their life satisfaction, and, if it has, which components of social capital between the structural component and the cognitive component have more effects on the elderly in Chengdu, China. The results of multiple regression analysis on the life satisfaction of the elderly show that only the health status of the elderly is statistically significant. On the contrary, social capital has several statistically significant factors on their life satisfaction. Among the structural component of social capital, informal participation, formal participation, and formal social networks are statistically significant on the life satisfaction of the elderly. Among the cognitive factors of the social capital, norms of reciprocity and interpersonal trust are statistically significant factors. The cognitive component factors may not be easily changed by social interventions such as social services. In other words, providing social services would not improve the elderly's levels of norms of reciprocity or interpersonal trust since these factors are cognitive. On the contrary, the structural component factors of social capital could be improved by social service programs. Therefore, the government and the society need to provide various social service programs to improve participation levels of the Chinese elderly.

< Key-words >

the Chinese elderly, life satisfaction, social capital, norms of reciprocity, participation, social services

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## I. Introduction

The Chinese population aged 60 years and over was approximately 222 million in 2015, which accounted for 16.1% of the total population, and is expected to exceed 243 million by the end of 2020, and 300 million by the year of 2025 (NWCA, 2013; Zhang, 2015). The aging phenomenon in China is particularly evident recently in southwestern China, including Chengdu. In addition, the elderly population increased gradually. The elderly in Chengdu was approximately 2.6 million in 2015, accounting for 21.2% of the total population of Chengdu (NWCA, 2016).

As the elderly population is aging rapidly, the life satisfaction of the elderly is of great interest among Chinese researchers. Life satisfaction is one of the most well-known constructs in gerontology (Mannell and Dupuis, 1996). Moreover, life satisfaction has been considered as an important factor in successful aging and as an indicator of efficacy in the old age (Freund and Baltes, 1998).

Increased risks for losses in health and income in old age suggest that old people may have lower levels of life satisfaction than young people. Liu (2005) found the decline in the health of the elderly could lead to a variety of diseases which might result in a sharper decline in health. According to Tan (2016), the elderly might experience feelings of loneliness, helplessness, anxiety and other negative emotions as results of declining income and social status after their retirement. These problems would reduce their life satisfaction. Gwozdz and Sousa (2010) found that the lowest absolute levels of life satisfaction were recorded for the eldest members. On the contrary, Pinquart and Sorensen (2000) found that older adults' life satisfaction was not lower than younger adults'.

Then, what kind of factors affect the life satisfaction levels of the elderly in China? Clearly, individual characteristics such as gender, age, educational level, health status, marital status, and whether or not living with children have impacts on their life satisfaction. Borg et al. (2006) observed gender and age had an impact on the life satisfaction of old people; women had lower life satisfaction than men, and older people had lower life satisfaction than younger people. Litwin and Shiovitz (2011) observed that educational levels were associated with the life satisfaction of the elderly. In other words, the higher their educational levels were, the higher their life satisfaction levels were. Health status seems to play an important role in their life satisfaction, also. Han et al. (2013) observed there was a relationship between health status and the life satisfaction of the elderly. Stephan et al. (2011) and Gwozdz and Sousa (2010) also reported that health status was a predictor of life satisfaction of the elderly.

In addition, being married or living alone was associated with life satisfaction (Belvis et al., 2008). However, marital status might have different effects for older men and women (Chipperfield and Havens, 2001). Gabriel and Bowling (2004) insisted that having a good relationship with children enhanced the life satisfaction of the elderly. Lin

et al. (1999) and Shen et al. (2011) also found that living with their children has been associated with the life satisfaction of the elderly in South Korea. On the contrary, Chyi and Mao (2012) found that the Chinese elderly living with their own children reduced their elderly's happiness.

Financial situations may have influences on the elderly's life satisfaction. According to Senik (2004) and Inal et al. (2007), income had positive effects on their life satisfaction. The elderly with lower income had significantly lower life satisfaction than those with moderate/high income. Those with higher income were happier and more satisfied with their life (Kaliterna et al., 2007).

In addition to income, the subjective economic status may also influence the life satisfaction of the elderly. Hsu (2010) reported subjective economic status was associated with life satisfaction based on four waves of a survey of health and living status of the elderly in Taiwan. Also, Hu et al. (2005) study showed that subjective low economic status increased psychological distress. Specifically, subjective economic status has been shown to be associated with depression and life satisfaction of the elderly.

Social capital has been also proved to be effective factors on the life satisfaction the elderly (Gwozdz and Sousa, 2010; Angelini and Cavapozzi, 2012; Lim and Putnam, 2010; Norstrand and Xu, 2012; Kim and Harris, 2013; Cramm et al., 2013). There is a growing body of literature examining the life satisfaction of the elderly in context of social capital recently in China (Chen and Silverstein, 2000; Silverstein et al., 2006). Chen et al. (2009) even insisted that social capital had the most significant explanatory power for life satisfaction of the elderly.

Though social capital has become an important factor for the elderly's life satisfaction, there are many definitions and a wide range of measures about social capital (Stephens, 2008). Defining social capital, some emphasized social relationships among groups of people (Onyx and Bullen, 2000). Following Putnam's influential work (1995), social capital is defined in terms of the trust, social networks and norms of reciprocity (Ferlander, 2007).

Most conceptualizations of social capital include both structural and cognitive aspects (Yamaoka, 2008). The former includes social networks and social participation, which focuses on structural and more objective aspects of social capital, while the latter includes trust, social rule, and norms of reciprocity, which focuses on the less tangible side of social capital (Bain and Hicks, 1998).

Social networks provide frequent interaction with neighbors (Gray, 2009), which may lead to influencing the life satisfaction of the elderly. Grundy and Sloggett (2003) reported strong social networks had positive effects of on the psychological health of the elderly. Participation is also related to the life satisfaction of the elderly. Gabriel and Bowling (2004) found that participation, such as attending educational programs or volunteering, not only brought enjoyment to the elderly but also improved their life satisfaction. Park and Cannon (2012) and Lee et al. (2014) also found that the elderly's

participation, especially in leisure activities, significantly improved their life satisfaction.

Trust, one of the cognitive components of social capital, is also associated with life satisfaction of the elderly. It includes social trust in unspecific people as well as special trust in acquaintances or formal institutions (Paldam, 2000). Wenger et al. (2001) showed that the elderly had trusted in and depended mainly on family members for their personal care whilst the elderly had trust in friends and neighbors to talk to when feeling depressed.

Other perceived social capital, such as social rule, has effects on life satisfaction (Lin and Peek, 1999; Lin et al., 1999). The Chinese elderly, Kim et al. (2015) found, also showed higher life satisfaction when they tended to follow the social rule.

Norms of reciprocity have been also proved to have an influence on the life satisfaction of the elderly in South Korea (Lin, 2009). Chen and Yang (2016) also found that reciprocity in parent-child exchange was related to the life satisfaction of the elderly. This study tries to examine whether the social capital of the elderly has effects on their life satisfaction, and, if it has, which components of social capital between the structural component and the cognitive component have more effects in Chengdu, China.

## II. Research Methods

A survey was conducted for respondents who were aged 60 years and over without severe physical conditions in 15 communities of Jinjiang, Wuhou, Qingyang, Chenghua, and Jinniu administrative districts in Chengdu, China from December 20, 2016, to January 25, 2017.<sup>1</sup> Thus, 300 were sampled, and among them, 297 respondents returned their questionnaires.

A dependent variable of this study is the elderly's life satisfaction, which is measured by Cui (1986)'s scale for the life satisfaction of the elderly. The scale consists of 20 items which examine respondents' past, present, and future life situation. Levels of life satisfaction were calculated as averages of 20 items. It is a 5-point Likert scale (1 = "very unsatisfied"; 2 = "unsatisfied"; 3 = "fair"; 4 = "satisfied"; 5 = "very satisfied"). The reliability in this study was good with Cronbach's  $\alpha = 0.821$ .

A key independent variable is social capital, which consists of structural components and cognitive components. The former includes informal social networks, formal social networks, informal participation, and formal participation, while the latter includes interpersonal trust, public trust, social rule, and norms of reciprocity.

Informal social networks were evaluated with the following 6 questions (Lin, 2009;

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<sup>1</sup> The respondents were sampled through the following procedure. First, each community in the administrative districts was numbered 1 to 100 according to its English spelling, and 15 communities were selected. Second, 20 people aged 60 years and over were randomly selected in each selected community.

Jiang, 2015). “How many children give you money or gifts?” “How many relatives give you money or gifts?” “How many times have you contacted with your children for a month?” “How many times have you contacted with your relatives for a month?” “How many friends or neighbors can help you when you are in trouble?” “How many neighbors are willing to invite you to eat or help you?” The scale of informal social networks had a high reliability with Cronbach’s  $\alpha = 0.824$ .

Formal social networks were measured with following two questions (Lin, 2009; Jiang, 2015): “How many kinds of collective activities have you participated in?” and “How many times did you meet with your collective activities members for a month?” The scale of formal social networks had a relatively low reliability with Cronbach’s  $\alpha = 0.603$ .

Informal participation was measured with the following 2 questions (Lin, 2009; Jiang, 2015; Cheng, 2016): “Do you get together, go shopping or travel with your family?” and “Do you get together, go shopping or travel with your friends?” The scale of informal participation had a low reliability with Cronbach’s  $\alpha = 0.531$ .

Formal participation was measured with the following three questions (Lin, 2009; Jiang, 2015; Cheng, 2016): “Do you participate in collective activities held by the community?” “Do you attend community vote?” “Do you raise questions with your community?” The scale of formal participation had a medium-range reliability with Cronbach’s  $\alpha = 0.690$ . Both measures for informal and formal participation are 5-point Likert scale: 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, and 5 = all the time.

Interpersonal trust, one factor of the cognitive component, was evaluated with 5 items of family’ trust, relatives’ trust, friends’ trust, neighbors’ trust and strangers’ trust (Lin, 2009; Jin, 2012). The scale of interpersonal trust had a relatively high reliability with Cronbach  $\alpha = 0.700$ .

Public trust was evaluated with these 8 items of trust in: residents committee, educational institutions, medical institutions, local government, State Council, Public Security Bureau, mass media and Ministry of Justice (Lin, 2009; Jin, 2012). The scale of public trust had a high reliability with Cronbach  $\alpha = 0.837$ . Both scales for interpersonal and public trust were 5-point Likert scales: 1 = completely distrust, 2 = distrust, 3 = fair, 4 = trust, 5 = completely trust.

The social rule, another factor of the cognitive component, was measured with the following three questions (Lin, 2009; Jin, 2012): “Do you obey traffic regulations, queue up, and do not make noise and smoke in public places?” “Do you pay attention not to bring trouble to others?” “Will you call the police or report to relevant departments if you find security risks in the community?” The scale of the social rule had a medium-range reliability with Cronbach’s  $\alpha = 0.618$ .

Norms of reciprocity were evaluated with the following four questions: “Do you believe that someone who receives help from you will help you when you are in trouble?” “Will you help others who have helped you when they are in trouble?” “Have you been helped by someone else?” “Have you helped others?” Both scales of social rule and norms

of reciprocity are 5-point Likert scale: 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, and 5 = all the time. The scale of norms of reciprocity was reliable with Cronbach's  $\alpha = 0.678$ .

Socio-demographic variables and economic variables included as control variables were: gender, age, educational level, health status, marital status, whether living with children, individual monthly income, and subjective economic status.

### III. Results and Discussion

#### 1. Individual Characteristics of respondents

As Table 1 shows, there are more women (55.9%) than men (44.1%) of the total respondents. The respondents are grouped into three age brackets: 60-69 years 36.7%, 70-79 years 45.1%, and 80 years and older 18.2%. Educational levels of the Chinese elderly are generally low: 59.6% of them with middle school education or lower. Only 40.4% of them had educational achievements with high school or more. Low educational levels for the elderly are very natural since China focused on agricultural development during the 1950-1980 period. According to t-tests or one-way ANOVA statistics, gender, age, and educational levels have no effects on the elderly's life satisfaction levels.

The health statuses of the respondents are relatively good in that almost one-third of them had 'good' or 'very good' health and more than a half of them had 'fair' health. Unlike gender, age, and educational level, the health status has a statistically significant influence on the elderly's life satisfaction ( $p < .0005$ ). The elderly who have good health show higher life satisfaction levels than those who have poor or fair health.

Most of the Chinese elderly (98.7%) are married. However, the elderly who are living with their children are only 34.0%, while those who are not living with their children are 66.0%. Our investigation indicates that the elderly not living with their children have higher life satisfaction levels than those living with their children ( $p < .05$ ).

The elderly with individual monthly income of 1,500-3,000 RMB<sup>2</sup> or less are more than two-thirds of the respondents (70.7%), while those with 3,000 RMB or more monthly income accounted for 29.3% of the respondents.

Both of economic factors bring differences to the elderly's life satisfaction. The elderly with individual monthly income of 4,500 RMB or more show higher life satisfaction levels than those with 1,500-3,000 RMB and those with 1,500 RMB or less ( $p < .05$ ). Those who think their economic status as middle show higher life satisfaction levels than those who think their status as low ( $p < .001$ ).

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<sup>2</sup> USD 1 = 6.59 RMB(CNY) in September, 2017.

&lt;Table 1&gt; Individual characteristics of respondents

	%	Mean	SD	t/F
Gender				.850
Female	55.9	3.74	0.33	
Male	44.1	3.70	0.37	
Age				.442
60-69	36.7	3.72	0.47	
65-74	45.1	3.73	0.37	
> 75	18.2	3.69	0.30	
Educational level				1.091
None	6.1	3.63	0.24	
Elementary school	29.6	3.73	0.29	
Middle school	23.9	3.69	0.41	
High school	13.5	3.70	0.33	
Vocational degree	19.2	3.73	0.40	
Bachelor or above	7.7	3.85	0.40	
Health status				11.391***
Poor and Very poor <sup>a</sup>	10.4	3.33	0.11	
Fair <sup>b</sup>	53.5	3.66	0.34	c>a, b
Good and Very good <sup>c</sup>	36.0	3.84	0.37	
Marital status				.291
Married/cohabiting	98.7	3.72	0.35	
Divorced	1.0	3.63	0.65	
Single/widowed	0.3	3.50	-	
Whether living with children				2.481*
Yes	34.0	3.65	0.33	
No	66.0	3.76	0.36	
Personal monthly income				3.795*
< 1500 RMB <sup>a</sup>	17.2	3.66	0.33	
1500-3000 RMB <sup>b</sup>	53.5	3.70	0.32	d>a, b
3000-4500 RMB <sup>c</sup>	21.9	3.74	0.39	
> 4500 RMB <sup>d</sup>	7.4	3.95	0.42	
Subjective economic status				-4.570***
Low	48.5	3.63	0.34	
Middle	51.5	3.81	0.34	

\*p &lt; .05, \*\*\*p &lt; .0005

Mean, SD, and t/F show the results for the life satisfaction



## 2. Social capital of the Chinese elderly

As mentioned before, social capital has two components: structural and cognitive. The Chinese elderly showed higher informal participation (mean = 3.61) than formal information (mean = 3.20). As expected, they participated the most often informally with their families (mean = 3.87), while they participated the least often formally with raising questions to their communities (mean = 2.60).

Another factor of the structural component of social capital is social networks. Regarding informal social networks, the elderly people have 1.89 children in average who give them money or gifts, while they have 2.63 relatives in average who give them money or gifts. They have 5.19 friends or neighbors who can help them when they are in trouble, while they have 3.23 neighbors who are willing to invite you to eat something. They have 3.23 persons in average in their informal social networks. The elderly people contacted their children 13.67 times in average a month and their relatives 8.91 times in average a month. Overall, they contacted 11.29 times in average. Regarding formal social networks, the elderly people participated in 2.24 collective activities in average, and they met 8.12 times with their collective activity members for a month.

<Table 2> Structural social capital among respondents aged 60 and over in Chengdu, China

	M	SD
Informal participation		
Do you gather, go shopping or travel with your family?	3.87	0.81
Do you gather, go shopping or travel with your friends?	3.36	0.97
Average informal participation	3.61	0.74
Formal participation		
Do you participate in collective activities held by the community?	3.23	1.15
Do you attend community election?	3.78	0.96
Do you raise questions with your community?	2.60	1.12
Average formal participation	3.20	0.85
Informal social networks: number of persons		
How many children give you money or gifts?	1.89	1.22
How many relatives give you money or gifts?	2.63	3.45
How many friends or neighbors can help you when you are in trouble?	5.19	8.01
How many neighbors are willing to invite you to eat?	3.23	4.62
Average number of people	3.23	3.09
How many times do you contact with your children for a month?	13.67	10.92
How many times do you contact with your relatives for a month?	8.91	11.92
Average contact of informal social networks	11.29	8.70
Formal social networks		
How many kinds of collective activities do you participate in?	2.24	2.04
How many times do you meet with your collective activities members per month?	8.12	9.67
Average formal social networks	5.18	5.11

The second component of social capital is cognitive. The cognitive component consists of three factors: trust, social rule, and norms of reciprocity. The average trust level of public trust (4.00) is higher than that of interpersonal trust (3.60). Among the interpersonal trust factors, trust in the family is the highest (4.81) while trust in a stranger is the lowest. It is reasonable, but the gap is too big that the low trust in strangers may become a barrier to institutionalize welfare systems which depend on social trust. Among the public trust factors, trust in State Council is the highest (4.71) while trust in mass media is the lowest (3.40). This result is very interesting since most mass media in China is considered under the government control.

The social rule, another factor of the cognitive component, is very high in average among the elderly (4.75). Thus, the elderly people are expected to follow social rules related to welfare systems if the government imposes the rules.

Items of norms of reciprocity, which is the last factor of the cognitive component, show interesting results. The Chinese elderly people show higher average norms of reciprocity related to themselves (4.83, 4.20) than related to others (4.31, 3.82).

### **3. Effects of social capital on the life satisfaction of the Chinese elderly**

A multiple regression analysis is used to explore the effects of social capital on the life satisfaction of the Chinese elderly in Chengdu, China. Table 5 summarizes the results of the multiple regression on the life satisfaction of the elderly. The model has good explanatory power (Adj.  $R^2$ ) of 0.404. Among the control variables, only health status is statistically significant ( $\beta = .136$ ,  $p < .01$ ), which means the elderly people show higher life satisfaction if they are healthy. This finding is consistent with these previous studies. Rouch et al. (2014) found that the elderly's health status was significantly associated with their life satisfaction. Utilizing the data collected in the global aging survey from 2006-2007 in five major global regions, Khan and Raeside (2014) also found that older adults' health status was significantly associated with the quality of life among older adults. Pinqart and Sorensen (2000) also observed that health status might be related to subjective well-being. Moreover, Mossey and Shapiro (1982) found that better health status was associated with higher life satisfaction.

On the contrary, social capital has several statistically significant factors on the life satisfaction of the elderly. Among the structural component of social capital, both of informal participation ( $\beta = .184$ ,  $p < .01$ ) and formal participation ( $\beta = .195$ ,  $p < .001$ ) are statistically significant on the life satisfaction of the elderly. Therefore, they have a higher level of life satisfaction when they have higher informal participation or higher formal participation. Levels of formal social networks are also statistically significant on the life satisfaction of the elderly ( $\beta = .166$ ,  $p < .01$ ), while levels of informal social networks are not statistically significant. Among the cognitive component of social capital, norms of reciprocity are the most significant factor ( $\beta = .283$ ,  $p < .001$ ) among all the factors of social capital. Thus, the elderly people have higher life satisfaction when

they show a higher level of norms of reciprocity. Interpersonal trust is also statistically significant on the life satisfaction of the elderly ( $\beta = .102, p < .05$ ), while public trust is not.

<Table 3> Cognitive social capital among respondents aged 60 and over in Chengdu, China

	M	SD
Interpersonal trust		
Trust in family	4.81	0.52
Trust in relatives	4.17	0.73
Trust in friends	3.77	0.70
Trust in neighbors	3.67	0.62
Trust in strangers	1.60	0.73
Average interpersonal trust	3.60	0.45
Public trust		
Trust in residents committee	4.03	0.65
Trust in educational institutions	3.68	0.73
Trust in medical institutions	3.73	0.81
Trust in local government	4.10	0.68
Trust in State Council	4.71	0.54
Trust in National People's Congress	4.43	0.68
Trust in Public Security Bureau	4.07	0.54
Trust in mass media	3.40	0.80
Trust in Ministry of Justice	3.90	0.66
Average public trust	4.00	0.45
Social rule		
Do you obey traffic regulations, queue up, and do not make noise and smoke in public places?	4.80	0.43
Do you pay attention not to bring trouble to others?	4.74	0.48
Will you call the police or report to relevant departments if you find security risks in the community?	4.71	0.66
Average social rule	4.75	0.36
Norms of reciprocity		
Do you believe that someone who receives help from you will help you when you are in trouble?	4.31	0.70
Will you help others who have helped you when they are in trouble?	4.83	0.45
Have you been helped by someone else?	3.82	0.90
Have you helped others?	4.20	0.80
Average norms of reciprocity	4.30	0.52

<Table 5> Regression analysis on the life satisfaction of the Chinese elderly

Variable	b	β
Gender (male = 0)	-.057	-.080
Age (65-74 = 0)		
60-69	-.055	-.053
> 75	-.009	-.013
Educational level (elementary school = 0)		
None	-.034	-.023
Middle school	-.029	-.035
High school	-.007	-.007
Vocational degree	.013	.014
Bachelor or above	.084	.064
Health status	.076	.136*
Marital status (divorced = 0)		
Married/cohabiting	.186	.061
Single/widowed	.267	.044
Whether living with children (no = 0)	-.027	-.037
Individual monthly income (“< 1500 RMB” = 0)		
1500-3000 RMB	-.020	-.028
3000-4500 RMB	.030	.035
> 4500 RMB	.082	.061
Subjective economic status (low = 0)	.065	.092
Informal participation	.088	.184**
Formal participation	.082	.195***
Informal social networks: number of people	.004	.038
Informal social networks: number of contacts	.002	.047
Formal social networks	.125	.166**
Interpersonal trust	.112	.102*
Public trust	-.143	-.073
Social rule	.057	.080
Norms of reciprocity	.283	.200***
Constant	2.282	

R<sup>2</sup> = 0.452; Adjusted R<sup>2</sup> = 0.404 ; F = 9.346

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

The findings of the effects of social capital in this study are consistent with other studies. Regarding the factor of participation, Bryla et al. (2013) found that participating in family gatherings was associated with the life satisfaction of the elderly. Wei and Milman(2002) also found that the elderly tourist’s activity levels were significantly related to their quality of life. Serrat et al. (2017) found the political context of the elderly’s life experiences and participation were important in their life satisfaction in Australia and Spain. The World Health Organization (2007) also described active participation in society as means to support older people’s life satisfaction. Regarding the factor of social networks, Grundy and Sloggett (2003) identified the positive effects of strong social networks on the health and life satisfaction of the elderly. Regarding the cognitive social capital, Lu et al. (2016) examined indicators of individual-level cognitive social capital and found that norms of reciprocity were related to the life satisfaction of older adults. Yamaoka (2008) found that interpersonal trust was

associated with life satisfaction of the elderly and that lower interpersonal trust was related to poor life satisfaction in East Asia (Japan, South Korea, Singapore, five areas in Mainland China, and Taiwan).

#### **IV. Conclusion**

The results of the multiple regression show that social capital is very important to improve the life satisfaction of the elderly. Especially, norms of reciprocity, a factor of the cognitive social capital, have the highest impact on the life satisfaction of the elderly. However, the structural component factors of formal participation, informal participation, and formal social networks are also important factors affecting the elderly's life satisfaction.

The cognitive component factors may not be easily changed by social interventions such as social services. In other words, providing social services would not improve the elderly's levels of norms of reciprocity or interpersonal trust since these factors are cognitive. On the contrary, the structural component factors of social capital could be improved by social service programs. Therefore, the government and the society need to provide various social service programs to improve participation levels of the Chinese elderly.

It is a limitation of this study that the findings are not generalizable to other areas of China since the data were collected from Chengdu, China.

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