Original Article

Factors related to well-being among the elderly in urban China focusing on multiple roles

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Summary   **Although studies have suggested that having multiple roles is beneficial to well-being in Western society, little is known about the effect of multiple roles in non-Western subjects. We explored predictive factors contributing to well-being, focusing on multiple roles, among elderly Chinese subjects. A cross-sectional survey was conducted among 356 adults aged 60 and older who retired from one university and lived in urban China; participants completed a self-administered questionnaire and returned it by mail. Well-being, the dependent variable, was measured by the Satisfaction with Life Scale. Independent variables included demographics, physical health, financial status, self-efficacy, and the number and frequency of multiple roles. Gender-segregated multiple linear regression analyses were performed. For males, factors related to better well-being were older age, absence of chronic diseases, better financial status, higher self-efficacy, absence of conflict with others, and having grandchildren. For females, factors relating to better well-being were absence of severe illness of a significant other, absence of conflict with others, more roles, more contact with neighbors, and engaging in more group and personal recreational activities. In conclusion, our results highlight predictive factors contributing to well-being among elderly Chinese subjects, and indicate the presence of gender differences. In terms of multiple roles, having more roles, having more contact with neighbors, and engaging in more group activities were significantly related to better well-being for women, but not for men; having grandchildren was significantly related to better well-being for men, but not for women. It is necessary to consider gender when providing livelihood support to elderly Chinese subjects.**

Keywords: Elderly, gender, multiple roles, well-being, urban China

1. Introduction

The number of aging people is rapidly increasing in China, and improving their quality of life (QOL) is an important task. According to the State Council Information Office, by the end of 2005, there were close to 144 million people older than 60 years in China, accounting for 11% of the entire population; urban areas are already ahead of this schedule (*1*). The Chinese government has established some policies to meet the social welfare needs of the elderly and

improve their QOL in both urban and rural areas (*1*). For example, efforts have be made to improve and develop medical insurance and community health services as well as encourage the elderly to participate actively in society, including cultural education, work and learning programs, and exercise programs (*1*).

Kamitsuru suggests that QOL is defined as comprehensive well-being based on a personal standard, namely "subjective well-being" (*2*). In recent years, research into subjective well-being of the elderly has been attracting attention in China. Previous studies have identified several key factors that affect subjective well-being, such as age (*3,5*), gender (*3,5*), education (*3-5*), financial status (*3-4,6*), marital status (*4,5*), physical health (*5-7*), self-efficacy (*7*), personal activities (*8*), relationships with family members (*5-7*), and becoming a grandparent (*9*). In addition, subjective well-being changes during the various stages of life

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and is particularly affected by aging (*10*). The literature suggests that role loss, such as occurs with retirement, disease, injury, and death of a significant other, threatens the subjective well-being of both Western and Japanese elderly subjects (*11,12*). In contrast, acquiring new roles, such as participating actively in society and developing contacts outside the family, is thought to improve the subjective well-being of Western elderly subjects (*13,14*). However, little is known about how different roles might affect the subjective well-being of elderly Chinese subjects.

Two perspectives of multiple roles have been used frequently in previous studies: role strain (*15*) and role enhancement (*16,17*). These perspectives predict different outcomes for subjects who take on multiple roles. The role strain perspective suggests that multiple roles can make individuals feel overburdened, thereby having a detrimental effect on well-being. In contrast, the role enhancement perspective suggests that the accumulation of multiple roles can increase social integration, leading to an increase in "power, prestige, resources, and heightened sense of identity" (*16*). Based on this latter perspective, too few roles may be detrimental to mental well-being.

The role enhancement perspective has received great support from previous studies that indicate that multiple roles are beneficial for Western subjects' subjective well-being (*18,19*). However, few studies have been performed examining the effect of multiple roles on well-being in Chinese subjects.

The role strain perspective and the role enhancement perspective emphasize the total number of multiple roles, but ignore the frequency with which these roles are assumed. Several studies have indicated that the frequency of a specific role, such as engaging in paid work, volunteer, and care-giving activities, affects the well-being of middle- to late-aged Japanese or American adults (*20,21*). However, there are no reports regarding the frequency of multiple roles in China. On the other hand, previous studies suggested that multiple roles and well-being may be affected differently in different cultures (*6,20*). Therefore, investigating a relationship between multiple roles and well-being in Chinese subjects is important to gain information specific to Chinese subjects.

Chou's findings have suggested that predictors of life satisfaction vary by gender among older Chinese adults (*4*), and occupying multiple roles may be more beneficial to men's psychological well-being than to women's psychological well-being among Western and Japanese subjects (*18-20*). Because of these gender differences, separate analyses should be performed for men and women.

In addition to the factors listed above, other factors, such as physical health and financial status, should be considered when exploring predictive factors for well-being.

The purpose of the present study was to explore the predictive factors contributing to well-being among elderly Chinese subjects focusing on multiple roles. Furthermore, we examined gender differences in multiple roles and well-being. We tested the following hypotheses: (*i*) the number of multiple roles is associated with subjective well-being, and the more roles assumed, the higher well-being will be; and (*ii*) the higher the frequency of each role, the higher the well-being will be.

2. Methods

2.1. *Conceptual model*

Figure 1 depicts a conceptual model of our investigation, which examined the following categories: sociodemographic factors, personal resources, and environmental factors.
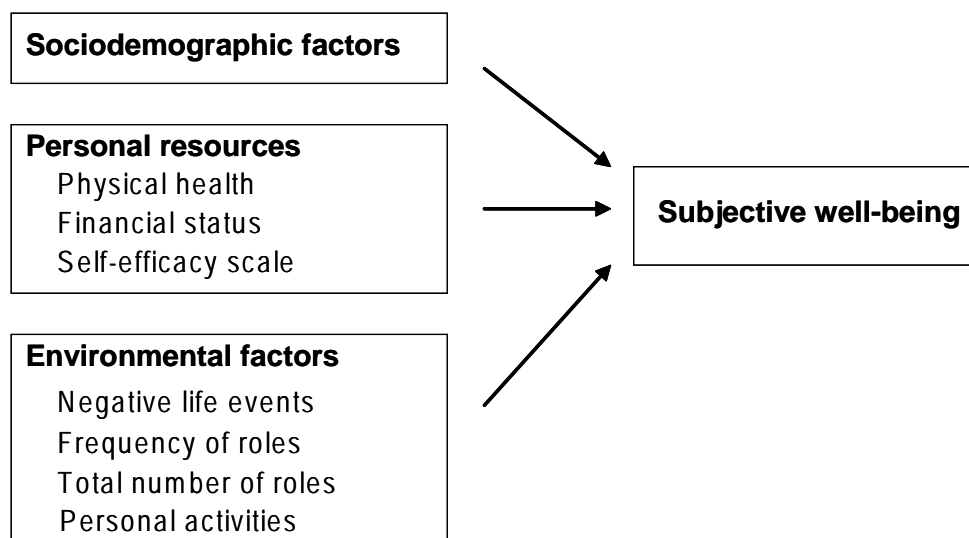

Figure 1. Conceptual model of the present study.

2.2. *Participants and procedures*

Participants were recruited from a register of members who retired from one comprehensive public university located in a city in Hebei Province, China. The main industry in this city was car manufacturing, chemical fiber manufacturing, and filmmaking, and the urban population was 950,000 in 2005 (*22*). According to the government office of the city (Committee on Age, personal communication, Aug 22, 2007), those aged 60 and older accounted for more than 13% of the population in 2006. Inclusion criteria were (*i*) aged 60 years and older, (*ii*) residing in an urban area, and (*iii*) having a clear registered address. Most participants resided in the same district.

An initial version of the questionnaire was tested with 10 community-dwelling elderly participants to identify potential problems; these participants retired from various offices and resided in the same district as present subjects, but were not included in the statistical analysis. A refined self-administered questionnaire and an invitation letter were distributed or mailed to each of the potential participants through the staff of the University between September and October 2007. Participants were instructed to return their voluntary and anonymous answers directly to the researcher in the prepaid envelope. Filling out the questionnaire constituted provision of informed consent. The present study was approved by the Ethics Committee of The University of Tokyo.

2.3. *Conceptual definitions*

The following conceptual definitions were used for this study. We defined "subjective well-being" as "satisfaction with life as a whole based on a personal standard". Drawing upon Nadel's role concept, we defined "role" as a "direct relation with others" and "role frequency" as "face-to-face contact frequency with others during the past year" (*23*). We defined 12 roles, drawing upon previous studies and Kurahashi's interpersonal role classifications: (*i*) child, (*ii*) spouse, (*iii*) parent, (*iv*) grandparent, (*v*) sibling, (*vi*) friend, (*vii*) relative, (*viii*) neighbor, (*ix*) worker, (*x*) group member, (*xi*) religious group member, and (*xii*) volunteer (*24,25*).

2.4. *Variables*

Subjective well-being was measured by the Chinese version of the Satisfaction with Life Scale (SWLS) (*26*). The SWLS is designed around the idea that one must make an overall judgment of his or her life to measure life satisfaction. The scale consists of five questions and each question is answered using a 7-point Likert scale, with possible scores ranging from 5 to 35, and higher scores indicating greater satisfaction. The Chinese

version of the SWLS has high reliability and validity (*27*), and in the present sample, the scale's alpha reliability was 0.87.

Sociodemographic factors consisted of age, gender, marital status (currently married as 1, not currently married as 0), education (years of school completed), former occupation (teacher, office worker, skilled laborer), and family structure.

2.4.1. *Personal resources*

Personal resources included physical health, financial status, and scores on the self-efficacy scale. Physical health was assessed using two items: self-rated health and the presence of chronic diseases. Self-rated health was measured by a single item that asked "How would you rate your health at the present time?" with four response categories from "very bad" to "excellent". We coded "very bad" and "bad" as 1 and "good" and "excellent" as 0.

For chronic disease, participants were asked whether they had been told by a doctor that they had any of the following illnesses: hypertension, heart disease, stroke, diabetes, respiratory disease, hepatitis or liver cirrhosis, kidney or urinary tract disease, stomach or bowel disease, arthritis or rheumatism, or other disease. The presence of any one of these diseases was coded as 1, and the absence was coded as 0.

Financial status was measured by a single self-rated item that asked, "How would you rate your financial condition at the present time?" with five response categories from "very bad" to "excellent". We coded "good" and "excellent" as 1 and other three responses as 0.

Self-efficacy was assessed using the Chinese version of Generalized Self-efficacy Scale (*28*). This scale assesses the strength of respondents' belief in their effectiveness in dealing with prospective tasks or situations. The scale consists of 10 questions and each question is answered using a 4-point Likert scale, with possible scores ranging from 10 to 40, and a higher score indicating a high level of self-efficacy. The Chinese version of the scale has been validated in an earlier study (*29*), and in the present sample the scale's alpha reliability was 0.91.

2.4.2. *Environmental factors*

Environmental factors included negative life events, frequency of roles, total number of roles, and personal activities. Negative life events drawing upon previous studies included the following clusters and were also coded (yes as 1 and no as 0): death of significant other, severe illness or injury of significant other, severe illness or injury of self, separation from children, conflict with significant other, moving of significant other or self, economic change, legal difficulties,

newly retired, and other sudden unexpected events (*11,12,30*).

Multiple roles consisted of the total number of roles and the frequency of each role. Twelve roles were coded from the dataset. The first eight roles were determined based on the question, "Do you currently have parents, spouse, children, grandchildren, siblings, friends, relatives, or neighbors?" The second four roles were determined based on the question, "Are you working for pay, undertaking unpaid/volunteer work (*e.g.* public-interest activity, planting trees, supporting community activities), engaging in any group activities (*e.g.* hobbies, learning, recreational activities), or active in any religious or political party?" Responses regarding each role were considered dichotomous variables (yes as 1, no as 0), and the number of roles was summed, with scores ranging from 0 to 12.

The frequency of the 12 roles was based on the following questions: (*i*) "For the first eight roles, how often did you have face-to-face contact during the past year?" with response categories "more than once a week", "a few times a month", "a few times a year or less", and "never"; and (*ii*) "For the second four roles, how often did you engage in work, unpaid work, group activities, or religious or political activities?" with response categories "more than once a week", "a few times a month", "a few times a year", and "never".

2.4.3. *Personal activities*

Participants were asked two questions regarding their personal activities: (*i*) "Did you perform any unpaid housework (*e.g.* home maintenance, cooking)?" and (*ii*) "Did you take part in any individual recreational activities not performed with other people (*e.g.* caring for animals, growing plants, reading, calligraphy)?" with response categories "nearly every day", "a few times a week", "a few times a month", "a few times a year", and "never". We coded "nearly every day" as 1 and others as 0.

2.5 *Statistical analysis*

Descriptive statistics were used for demographic characteristics, total number and frequency of roles, and scores of the SWLS. The student *t*-test and Fisher's exact probability test were used to compare differences between genders. The SWLS was used as a dependent variable in two separate models by gender. Bivariate analysis was used to select independent variables, and multiple linear regression analysis was used to identify significant predictors of life satisfaction. Pearson's product-moment correlation coefficient was used to analyze the correlation with metric variables. Nonparametric statistics, including the Mann-Whitney *U* test, and the Kruskal-Wallis test were used to analyze differences between subgroups. Independent variables

with p values less than 0.1 were considered candidate-associated factors of the SWLS, and were forced entered into the multiple linear regression model. Furthermore, multicollinearity among variables was checked. In this study, a p value less than 0.05 was considered statistically significant. All analyses were performed using the Statistical Package for the Social Sciences software, version 12.0 J (SPSS, Inc., Chicago, IL, USA) for Windows.

3. Results

A total of 562 questionnaires were distributed and 420 were returned, for a response rate of 75%. In China, the normal retirement age ranges from 50 to 60 years based on gender and occupation, and the term "elderly" refers to people aged 60 or older. Therefore, 57 participants aged 59 years and younger were excluded from the present study. Among 363 participants aged 60 years and older, seven participants were excluded because they did not fill out one third of the questionnaire, were in a care facility, or their questionnaires lacked information regarding age or gender.

3.1. *Sociodemographic characteristic, roles, and gender differences*

Characteristics of the 356 participants are shown in Table 1. More than half the participants (61.8%) were male. The mean age of participants was 68.4 years, and men were about 2 years older than women ($p < 0.01$). Participants had a mean education level of 13 years, with men having 1 more year of education than women ($p < 0.01$). About half the participants (52%) had a former occupation as a teacher. In general, subjective well-being among this sample was high in both groups, with men reporting significantly higher scores than women (24.6 ± 5.0 *vs.* 23.5 ± 5.4, respectively; $p < 0.05$).

Men reported significantly better physical health than women ($p < 0.05$; Table 2). There were no significant differences in any environmental factor between men and women (Table 3). Table 3 also shows the frequency of fulfilling different roles. Except for paid work, which showed a significant difference between men and women ($p < 0.05$), there were no gender differences in the frequency of roles. The mean number of roles occupied was 7.7 ± 1.8. Men assumed significantly more roles than women (7.8 ± 1.7 *vs.* 7.4 ± 1.6, respectively; $p < 0.05$).

3.2. *Factors related to well-being*

Table 4 shows the multiple regression analysis results from men. All candidate-associated factors of the SWLS were included in the regression model.

Table 1. Characteristics and well-being of participants overall and by gender

	Total (*N* = 356)	Males (*N* = 220)	Females (*N* = 136)	*P*	
	N (%) or Mean ± SD	*N* (%) or Mean ± SD	*N* (%) or Mean ± SD		
Age, y	68.4 ± 5.8	69.2 ± 6.0 * c)	67.0 ± 5.2	**	a)
60-69	216 (60.7)	117 (53.2)	99 (72.8)		
70-79	125 (35.1)	91 (41.4)	34 (25.0)		
80-	15 (4.2)	12 (5.5)	3 (2.2)		
Marital status				n.s.	b)
Married	318 (89.3)	199 (90.5)	119 (87.5)		
Single/divorced/widow/widower	38 (10.7)	21 (9.5)	17 (12.5)		
Education (Years of schooling completed)	13.2 ± 3.0	13.5 ± 3.0	12.6 ± 2.9	**	a)
Junior high school or less	48 (13.5)	26 (11.8)	22 (16.2)		
High school	52 (14.6)	21 (9.5)	31 (22.8)		
Junior or technical college	65 (18.3)	37 (16.8)	28 (20.6)		
College degree or more	191 (53.7)	136 (61.8)	55 (40.4)		
Former occupation				n.s.	b)
Teacher	185 (52.0)	118 (53.6)	67 (49.3)		
Office worker	124 (34.8)	77 (35.0)	47 (34.5)		
Skilled labor	47 (13.2)	25 (11.4)	22 (16.2)		
Family structure (multiple answers possible)				n.s.	b)
Alone	14 (3.9)	8 (3.6)	6 (4.4)		
Other	342 (96.1)	212 (96.4)	130 (95.6)		
Parent	10 (2.8)	8 (3.6)	2 (1.5)		
Spouse/partner	318 (89.3)	198 (90.0)	120 (88.2)		
Child	142 (39.9)	87 (39.5)	55 (40.4)		
Grandchild	118 (33.1)	70 (31.8)	48 (35.3)		
Other	4 (1.1)	3 (1.4)	1 (0.7)		
Well-being					
Satisfaction with Life Scale	24.2 ± 5.2	24.6 ± 5.0	23.5 ± 5.4	*	a)

* *P* < 0.05, ** *P* < 0.01.
a) Difference between males and females using *t* test; b) Difference between males and females using Fisher's exact probability test;
c) Relationship between age and well-being using Pearson's product-moment correlation method.

Table 2. Personal resources of participants overall and by gender

	Total (*N* = 356)	Males (*N* = 220)	Females (*N* = 136)	*P*	
	N (%) or Mean ± SD	*N* (%) or Mean ± SD	*N* (%) or Mean ± SD		
Physical health					
Self-rated health			* c)	*	a)
Good	302 (84.8)	194 (88.2)	108 (79.4)		
Bad	52 (14.6)	24 (10.9)	28 (20.6)		
Chronic disease		* c)		*	a)
Yes	279 (78.4)	164 (74.5)	115 (84.5)		
No	74 (20.7)	54 (24.5)	20 (14.7)		
Financial status					
Self-rated financial status		** c)	** c)	n.s.	a)
Good	117 (32.9)	74 (33.6)	43 (31.6)		
Bad	236 (66.3)	144 (65.4)	92 (67.6)		
Self-efficacy scale	26.5 ± 6.5	26.9 ± 6.4 ** d)	25.9 ± 6.5 * d)	n.s.	b)

* *P* < 0.05, ** *P* < 0.01.
a) Difference between males and females using Fisher's exact probability test; b) Difference between males and females using *t* test; c) Relationship of physical health, financial status, and well-being using the Mann-Whitney *U* test; d) Relationship between self-efficacy and well-being using Pearson's product-moment correlation method.

Table 3. Environmental factors of participants overall and by gender

	Total (N = 356)	Males (N = 220)	Females (N = 136)	P
	N (%) or Mean ± SD	N (%) or Mean ± SD	N (%) or Mean ± SD	
Negative life-events (multiple answers)				
Death of significant other (yes)	120 (33.7)	79 (35.9)	41 (30.1)	n.s.
Severe illness of significant other (yes)	95 (26.6)	60 (27.2)	35 (25.7) * c)	n.s.
Severe illness of self (yes)	27 (7.5)	14 (6.3)	13 (9.5)	n.s.
Separation from children (yes)	23 (6.4)	13 (5.9) * c)	10 (7.3)	n.s.
Conflict with significant other (yes)	9 (2.5)	4 (1.8) * c)	5 (3.6) * c)	n.s.
Moving of significant other or self (yes)	39 (10.9)	24 (10.9)	15 (10.9)	n.s. a)
Economic change (yes)	11 (3.0)	8 (3.6)	3 (2.2) † c)	n.s.
Legal difficulties (yes)	3 (0.8)	3 (1.3)	0 (0)	n.s.
Newly retired (yes)	8 (2.2)	8 (3.6)	0 (0)	*
Unexpected events (yes)	4 (1.1)	3 (1.3)	1 (0.7)	n.s.
Frequency of roles				
Child				n.s. a)
More than once a week	16 (4.4)	11 (5.0)	5 (3.6)	
A few times a month	10 (2.8)	6 (2.7)	4 (2.9)	
A few times a year or less	27 (7.5)	17 (7.7)	10 (7.3)	
Never	298 (83.7)	185 (84.0)	113 (89.6)	
Spouse				n.s. a)
More than once a week	311 (87.3)	193 (87.7)	118 (86.7)	
A few times a month	4 (1.1)	3 (1.4)	1 (0.7)	
A few times a year or less	3 (0.8)	2 (0.9)	1 (0.7)	
Never	38 (10.6)	22 (10.0)	16 (11.7)	
Parent				n.s. a)
More than once a week	205 (57.5)	121 (55.0)	84 (61.7)	
A few times a month	44 (12.3)	28 (12.7)	16 (11.7)	
A few times a year or less	95 (26.6)	64 (29.0)	31 (22.7)	
Never	3 (0.8)	2 (0.9)	1 (0.7)	
Grandparent		* d)		n.s. a)
More than once a week	185 (51.9)	117 (53.1)	68 (50.0)	
A few times a month	66 (18.5)	41 (18.6)	25 (18.3)	
A few times a year or less	48 (13.4)	30 (13.6)	18 (13.2)	
Never	47 (13.2)	25 (11.3)	22 (16.1)	
Sibling				n.s. a)
More than once a week	6 (1.6)	3 (1.3)	3 (2.2)	
A few times a month	41 (11.5)	24 (10.9)	17 (12.5)	
A few times a year or less	202 (56.7)	126 (57.2)	76 (55.8)	
Never	89 (25.0)	56 (25.4)	33 (24.2)	
Friend				n.s. a)
More than once a week	78 (21.9)	42 (19.0)	36 (26.4)	
A few times a month	67 (18.8)	44 (20.0)	23 (16.9)	
A few times a year or less	166 (46.6)	105 (47.7)	61 (44.8)	
Never	22 (6.1)	15 (6.8)	7 (5.1)	
Relative				n.s. a)
More than once a week	10 (2.8)	6 (2.7)	4 (2.9)	
A few times a month	47 (13.2)	32 (14.5)	15 (11.0)	
A few times a year or less	246 (69.1)	149 (67.7)	97 (71.3)	
Never	40 (11.2)	24 (10.9)	16 (11.7)	
Neighbor			* d)	n.s. a)
More than once a week	210 (58.9)	126 (57.2)	84 (61.7)	
A few times a month	51 (14.3)	31 (14)	20 (14.7)	
A few times a year or less	65 (18.2)	41 (18.6)	24 (17.6)	
Never	14 (3.9)	11 (5.0)	3 (2.2)	

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Worker						*	a)
More than once a week	36 (10.1)	29 (13.1)	7 (5.1)				
A few times a month	12 (3.3)	10 (4.5)	2 (1.4)				
A few times a year	19 (5.3)	13 (5.9)	6 (4.4)				
Never	288 (80.8)	168 (76.3)	120 (88.2)				
Group member				**	d)	n.s.	a)
More than once a week	107 (30.0)	60 (27.2)	47 (34.5)				
A few times a month	49 (13.7)	35 (15.9)	14 (10.2)				
A few times a year	32 (8.9)	22 (10.0)	10 (7.3)				
Never	165 (46.3)	101 (45.9)	64 (47.0)				
Member of religious group				**	d)	n.s.	a)
More than once a week	4 (1.1)	3 (1.3)	1 (0.7)				
A few times a month	16 (4.4)	12 (5.4)	4 (2.9)				
A few times a year	84 (23.5)	54 (24.5)	30 (22.0)				
Never	249 (69.9)	149 (67.7)	100 (73.5)				
Volunteer						n.s.	a)
More than once a week	11 (3.0)	8 (3.6)	3 (2.2)				
A few times a month	16 (4.4)	12 (5.4)	4 (2.9)				
A few times a year	61 (17.1)	44 (20.0)	17 (12.5)				
Never	265 (74.4)	155 (70.4)	110 (80.8)				
Total member of roles	7.7 ± 1.8	7.8 ± 1.7	7.4 ± 1.6 **	e)		*	b)
Personal activities							
Housework			†	c)		*	a)
Nearly every day	277 (77.8)	159 (72.2)	118 (86.7)				
Others	76 (21.3)	60 (27.2)	16 (11.7)				
Recreational activities				**	c)	n.s.	a)
Nearly every day	243 (68.2)	152 (69.0)	91 (66.9)				
Others	113 (31.7)	68 (30.9)	45 (33.0)				

† $P < 0.10$, * $P < 0.05$, ** $P < 0.01$.
a) Difference between males and females using Fisher's exact probability test;
b) Difference between males and females using t test;
c) Relationship of negative life-events, personal activities, and well-being using the Mann-Whitney U test;
d) Relationship between frequency of roles and well-being using the Kruskal-Wallis test;
e) Relationship between total number of roles and well-being using Pearson's product-moment correlation method.

However, the number of roles was not significantly related to well-being in the bivariable analysis of men. For men, significant predictors of better well-being were older age ($p < 0.05$), absence of chronic diseases ($p < 0.05$), better financial status ($p < 0.01$), higher self-efficacy ($p < 0.01$), absence of conflict with significant other ($p < 0.05$), and having contact with a grandchild more than once a week compared with not having a grandchild ($p < 0.05$). These factors explained 21% of the total variance in life satisfaction among men.

Table 5 shows the multiple regression analysis findings for women. Except for being a member of a religious group, which was excluded due to multicollinearity between that variable and the number of roles, all other candidate-associated factors of the SWLS were included in the regression model. For women, significant predictors of better well-being were absence of severe illness of significant other ($p < 0.05$), absence of conflict with significant other ($p < 0.05$), frequent contact with neighbors ($p < 0.01$), frequent involvement with group activities ($p < 0.05$), assuming more roles ($p < 0.01$), and taking part in more personal recreational activities ($p < 0.01$). These factors explained 34% of the total variance in life satisfaction.

4. Discussion

The present study identified factors related to life satisfaction among elderly Chinese subjects. Results of this study partly support the role enhancement perspective and the first hypothesis we considered. Among women, older adults occupying multiple roles experienced higher levels of subjective well-being than those with fewer roles. However, this relationship was not seen in men. These findings are consistent with Sugihara's findings in Japanese subjects, but not with Thoits and Adelman's findings in American subjects (*18-20*). Cheng found similar findings to this study, reporting that social relationships are a stronger determinant of life satisfaction in older Chinese women than in older Chinese men (*31*). It

Table 4. Regression of SWLS on sociodemographic variables and personal resources and environmental factors in men (*N* = 206)

	β	*P*
Sociodemographic variables		
Age	0.17	*
Personal resources		
Chronic diseases (yes = 1, no = 0)	–0.14	*
Financial status (good = 1, bad = 0)	0.24	**
Self-efficacy scale	0.22	**
Environmental factors		
Negative life events		
Conflict with significant other (yes = 1, no = 0)	–0.14	*
Separation from children (yes = 1, no = 0)	0.07	
Frequency of roles		
Grandparent		
More than once a week #		
A few times a month	–0.07	
A few times a year or less	–0.07	
Never	–0.16	*
Personal activities		
Housework (nearly every day = 1, other = 0)	–0.01	
R^2	0.25	
Adjusted R^2	0.21	**

* $P < 0.05$, ** $P < 0.01$. β: Standardized partial regression coefficient; #: Reference category.

Table 5. Regression of SWLS on sociodemographic variables and personal resources and environmental factor in women (*N* = 124)

	β	*P*
Personal resources		
Self-rated health (good = 1, bad = 0)	0.06	
Financial status (good = 1, bad = 0)	0.06	
Self-efficacy Scale	0.08	
Environmental factors		
Negative life events		
Severe illness of significant other (yes = 1, no = 0)	–0.19	*
Conflict with significant other (yes = 1, no = 0)	–0.18	*
Economic changes (yes = 1, no = 0)	0.14	†
Frequency of roles		
Neighbor		
More than once a week #		
A few times a month	0.00	
A few times a year or less	–0.25	**
Never	0.09	
Group member		
More than once a week #		
A few times a month	–0.21	*
A few times a year	–0.15	†
Never	–0.17	†
Number of roles	0.28	**
Personal activities		
Recreational activities (nearly every day = 1, other = 0)	0.25	**
R^2	0.41	
Adjusted R^2	0.34	**

† $P < 0.10$, * $P < 0.05$, ** $P < 0.01$. β: Standardized partial regression coefficient; #: Reference category.

is possible that gender differences in multiple roles and well-being might reflect characteristics of the different cultures studied. Another explanation for this finding is that there may be new specific role changes and role combinations in the present subjects, which may have a different effect on the subjects' well-being depending on gender. Sugihara and Menaghan's findings suggest that specific role combinations are meaningfully associated with the elderly well-being by gender (*20,32*). Future studies should examine these gender differences in specific role changes and role combinations among Chinese subjects.

Findings from this study also partly support the second hypothesis. Frequent contact with neighbors was a predictive factor related to better well-being among women. The result is in agreement with previous studies (*14,33*). Having frequent contact with neighbors allows women to share mutual concerns and understanding regarding their daily lives and helps confirm their own identity; it also provides a better sense of the neighborhood (*34,35*). In addition, the sample included in this study retired from the same university and many of them lived in the same apartment complex. It is likely that they knew each other for a long time and had multiple relationships, as both peers and acquaintances. These relationships may have led subjects to feel a greater emotional intimacy and gain a better sense of the neighborhood, therefore increasing their well-being.

Women who engaged in group activities more frequently had better well-being. This result is supported by the findings of Herzog, which showed that engaging in group activities could increase a person's well-being by improving their self-image (*36*). In addition, Boermel indicated that joining in group activities increased pleasure among the elderly and won them praise from their contemporaries (*37*).

In this study, being a grandparent was a predictive factor related to better well-being for men but not for women. One explanation for this finding is that a grandparent's role varies by gender. Although becoming a grandparent is a positive experience for Chinese subjects (*9,38*), the sense of responsibility and contribution to family and society that comes along with being a grandparent may be stronger in Chinese men than in Chinese women. Another explanation is that the beneficial gains of being a grandparent vary by gender. Filus' finding indicated that Chinese grandmothers engage in more activities concerning grandchildren than Chinese grandfathers (*9*). In this study, 73% of women were in their 60s and might have been looking after their grandchildren, taking on a greater caregiver burden than men. The beneficial gains of being a grandparent for women may therefore be partially offset by the burden they assume in this role. Future studies should examine these gender differences in terms of

benefits and burdens related to being a grandparent among Chinese subjects.

Gender differences were observed between specific roles and well-being. One explanation for this finding may be that carrying out the same multiple roles has a different meaning to men and women, as shown by Simon (*39*).

4.1. Implications for practice

The current findings may provide useful information for public health programs and policies aimed at maintaining well-being in later life. The morbidity prevalence rate of chronic diseases was 78% in the present subjects, and chronic diseases significantly decreased the well-being of men. Therefore, it is critical that the Government improve health services and community care, such as providing regular checkups for free or at low cost; develop and perform effective health education programs for people of all ages to increase their ability to take care of themselves; and attempt to help prevent the development of chronic diseases. In addition, having healthcare professionals or family members assess an older adult's conflicts with significant others may help promote better communication and subsequently increase the well-being of the elderly. For elderly Chinese women, improving childcare services to decrease care burden, offering information and places to engage in group actives, increasing contact with neighbors, and expanding recreational activities may have a positive effect on well-being.

4.2. Limitations and implications for future research

The present study has several limitations. First, generalization of these findings to other groups is limited, as most of the participants had a high education level. For example, the mean education level was 13 years in the present participants, compared with 9 years in Tang's community participants in Beijing (*7*) and 6.6 years in Li's community participants in Shanghai (*8*). In addition, all of the participants came from one university, and thus do not accurately represent all older adults in China. Second, by using a mailed survey, we limited our respondents to subjects in their 60s or early 70s who were in fairly good health, as those who were not healthy may not have been able to complete and return the questionnaire. Performing face-to-face interviews in the future may help capture a larger portion of the population and increase the accuracy of our research. Third, this was a cross-sectional study and thus it is not possible to determine cause and effect; for example, whether women with better well-being scores engaged in more roles, or having more roles increased a woman's well-being score. Longitudinal

studies are necessary to clarify any causal relation between roles and well-being.

5. Conclusion

The present study highlights predictive factors contributing to well-being among elderly Chinese subjects**,** and indicates the presence of gender differences. Having more roles, having more contact with neighbors, and engaging in more group activities were significantly related to better well-being for women, but not for men. Having grandchildren was significantly related to better well-being for men, but not for women. Except for paid work, there were no gender differences in the frequency of the multiple roles, but gender differences between specific roles and well-being did exist. It is thus necessary to consider gender when providing livelihood support to elderly Chinese subjects.

Acknowledgments

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