

Social Participation and Subjective Well-Being Among Retirees in China

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Abstract The current study examined the predictive roles of social participation for subjective well-being among Chinese retirees. The Philadelphia Geriatric Center Morale Scale and the self-developed Social Participation Questionnaire were employed to assess subjective well-being and social participation, respectively. Social participation included four aspects: frequency of social activities, roles in social activities, working state, and participation in activities of former employing units (these activities often include all kinds of parties for festivals, meetings and recreations arranged by former employing units). Ultimately, 22,019 city retirees ranging in age from 50 to 99 ($M = 69.7$, $SD = 8.1$) completed the questionnaires. Results indicated that retirees tend to report positive subjective well-being; the effects of social participation, excluding work state, on subjective well-being were significant. That is, individuals with more frequent participation in social activities, more active roles in social activities, and more frequent participation in activities of former employing units reported higher subjective well-being, even when controlling for the roles of physical health, income, and other socio-demographic variables. Physical health and income were two robust factors in predicting subjective well-being in analysis models. The effects of other socio-demographic variables were also analyzed. The current study provides further empirical support for the role of social participation in quality of life of the elderly.

Keywords Chinese retirees · Social participation · Subjective well-being · Physical health · Income

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1 Introduction

Owing to declines in fertility rate and increasing life expectancy, China's population is aging at an unprecedented pace. Accompanying this aging tendency, the number of retirees has kept growing at a rate of six percent per year in China. By 2011, the number of retirees reached 62 million and accounted for one-third of the whole elderly population (National Bureau of Statistics of China 2011). In China, retirees are those who once worked as regular staff in enterprises, institutions, and government organizations. Compared with other elderly groups, such as those living in rural areas, retired city people, as the main component of the Chinese retired population, often enjoy stable pensions, high welfare, and sufficient medical security. The relative superiority of retired city people in intellect, social status, leisure time, and financial resources gives them more opportunities to access various social activities and groups. According to the resource perspective of adjusting to retirement, the number and content of activities as a resource may have a direct impact on retirees' adaptation to post-retirement life (Wang et al. 2011). Retirement life is a new period for the majority of old people, whose changes both in physical health and social roles can affect social participation. Psychological and epidemiological studies suggest that maintaining necessary social activities is an indicator of successful aging (Rowe and Kahn 1997; Berkman et al. 2000). The potential health benefits of social participation include higher self-rated physical health (Sirven and Debrand 2008; Gilmour 2012), better cognitive function (Barnes et al. 2004; Engelhardt et al. 2010), reduced risk of mental disorders (Fiori et al. 2006; Glass et al. 2006), and higher well-being (Betts et al. 2011).

1.1 Social Participation and Psychological Well-Being of the Elderly

Previous studies explored from different perspectives the role of social activities in subjective well-being among the elderly. It was decades ago that Okun et al. (1984) explored the relationship between social activities and subjective well-being and concluded that quality and quantity of social activity participation are the important factors for enhancing psychological function of the elderly after retirement. Only in the past decade, a number of studies have suggested that social interaction not only promoted physical health and longer life (Mendes de Leon et al. 2003; Ertel et al. 2008; Thomas 2011) but also related to subjective well-being of older people (Baker et al. 2005; Li and Liang 2007; Berry and Welsh 2010; González-Herero and García-Martín 2012). Baker et al. (2005) found that productive activities as an important type of social participation, was beneficial to older persons' well-being, and both increasing numbers of productive activities and increasing time commitment predict higher levels of happiness. Using nationally representative data, Berry and Welsh (2010) found that community participation and social connectedness were positively associated with three forms of health, including general health, mental health and physical functioning, and the correlation was particularly strong to mental health. Li and Liang (2007) examined the relationship between social participation and happiness from the perspective of social exchange among older Chinese. Generally, results suggested that both social support and negative interactions have significant contributions to life satisfaction and depressed affect. González-Herero and Extremera (2010) also reported that older participants who participated in more social activities had higher subjective well-being and found that social activities partially mediated the relationship between personality variables, such as self-esteem and optimism, and subjective well-being. A study of women found (González-Herero and García-Martín 2012) that social participation in daily life activities significantly predicted life satisfaction and positive affect, and there were

significant differences in subjective well-being between women with different working statuses. Levasseur et al. (2004) found a weak relationship between general quality of life and social participation among older adults with physical disabilities. As the categories of social participation, interpersonal relationships, responsibilities, fitness, and recreation were most associated with quality of life, and social roles were more associated with quality of life than daily activities.

A meta-analysis of Pinquart and Sörensen (2000) that synthesized findings from 286 empirical studies indicated that social contact is strongly related to subjective well-being in the elderly; having contact with friends is more strongly related to subjective well-being than having contact with adult children. Epidemiological studies on mental health of older adults globally suggest that activity, including numbers and frequencies of participation in social activities, is positively related to well-being (Lampinen et al. 2006; Dai et al. 2013). Of course, not all research found the positive relationship between social participation and subjective well-being. Bjørnskov (2008) found no significance for informal social interaction on happiness in his cross-sectional design among American samples. Another study found that formal social interaction, such as participating in a professional group, were negatively correlated with happiness (Pichler 2006).

1.2 Theoretical Perspective on Link Between Social Participation and Subjective Well-Being

As a type of behavioral aspect of social capital, social participation could be conducive to the development of one's social networks and formation of social integration sense (Szreter and Woolcock 2004; Swaroop and Morenoff 2006). According to the social integration perspective, individuals need to adjust their social roles at different stages of life to maintain social integration, which is a prerequisite for psychological well-being. As individuals age and retire, they more likely lose originally formal roles (work roles) and take new social roles, whereas engaging in social activities may become a more important source of social integration after retirement (Evandrou and Glaser 2004; Thomas 2011). According to Thomas (2011), those older adult who participated in more social activities and spent more time on these social activities may have access to more resources, a greater sense of purpose, and more motivation to practice health-promoting behaviors, all of which could contribute to better health. This is because quantity and quality of social participation largely determine one's social integration and further affect one's psychological health. Putnam (2000) thought that informal social interaction with friends and neighbors led to a greater social embeddedness and a strong feeling of belonging and integration in community.

Previous researchers have discussed both direct and indirect influences of social network on subjective well-being. Social contagion theory of Fowler and Christakis (2008) suggested that like other social behaviors and emotion, happiness could be transferred from one individual to another throughout the social network through mimicry and emotional contagion. This means that one person's happiness depends on the others with whom they are connected. Fowler and Christakis (2008) found that individuals who are connected directly (such as friends and neighbors) or indirectly (such as friends' friends) by those happy people and those who are central in the social network are more likely to become happy in the future. Based on the social contagion perspective, positive participation in social activities can enlarge one's social network and further enhance subjective well-being.

After reviewing previous literature, we conclude that the link between social participation and subjective well-being is based on four points. First, social participation provides immediate emotional benefits through interaction or communication with others and enhances one's social support (Berkman et al. 2000; Ferlander 2007). Second, positive roles in social activities, such as community service and volunteer behaviors, shape one's identity and self-worth (Borgonovi 2008; Thoits and Hewitt 2001). Third, greater social participation makes an individual more responsive to social influence (i.e., social norms and peer pressure), which can strongly influence one's subjective well-being (Fowler and Christakis 2008). Finally, participating in social activities could increase the frequency and number of outdoor recreation and exercises of the elderly people and indirectly enhance their physical and psychological health (Pinquart and Sörensen 2000).

1.3 Physical Health, Economic Status, and Subjective Well-Being

Previous studies suggested that the subjective well-being of the elderly largely depends on two primary categories: matter conditions (including physical status and economic status) and social conditions (including social participation and family relationship). Health and financial status were often identified as two of the most important sources of subjective well-being (Pinquart and Sörensen 2000; Angner et al. 2013; Gana et al. 2013). And, physical health and economic status could also indirectly influence one's subjective well-being. They allow retirees to have a greater probability or more opportunity to participate in various social activities and further enhance their subjective well-being (Gilmour 2012; Pinquart and Sörensen 2000). In this study, on one hand, we hope to verify the independent roles of physical and economic conditions in subjective well-being and on the other hand, examine whether these two key factors could completely explain the relationship between social participation and subjective well-being.

1.4 Hypotheses and Aims

Up to now, although participating in various social activities is commonly considered as a key factor for maintaining and enhancing mental health, existing studies related to this issue remain deficient for elucidating the relationship of social participation and subjective well-being at a macro level. In addition, the conclusions of existing research are mainly based on data derived from samples in the United States or other Western developed nations, and relevant evidence coming from other areas is relatively sparse. According to Li and Liang (2007), China differs from many Western societies not only in cultural values but also in social and economic development status, such as striking economic increase, the increasing gap between poor and rich, and rapid aging. Thus, China provides a special social and cultural background for exploring the interaction of social participation and well-being in later life. However, few studies systematically examine this issue among Chinese retired people, who make up almost the largest retired population in the world. Based on the above background, the primary aims of the current study were threefold: (1) what are the effects of general social participation in different perspectives on subjective well-being among China's retirees; (2) what are the effects of physical health and economic condition on subjective well-being among China's retirees; and (3) after controlling for physical health, economic condition, and other socio-demographic variables, do the effects of social participation on subjective well-being remain significant?

We hypothesize that general participation in social activities can enhance subjective well-being of retirees—that is, quantity and quality of social participation are positively

and significantly associated with subjective well-being—and that, after controlling for physical condition, individual income, and main socio-demographic factors (such as age, sex, marital status, ethnicity, religious belief, educational level, and family relationship), the above relationship will remain significant. We also predict that physical health and income are important factors influencing subjective well-being.

2 Methods

2.1 Participants and Procedures

The sample was drawn from a research project on the physical and mental health of Chinese retirees, which was funded by Chinese Academy of Sciences. This survey was conducted in 46 of the 284 municipal-level cities distributed in 17 provincial-level regions (include provinces, provincial-level autonomous regions, and provincial-level cities) in mainland China. Of the 17 provincial-level regions, six lie in the eastern region of China (highly developed), five in the central region (moderately developed), and six in the western region (less developed). The survey data were collected by two modes: individual (retirees were contacted and investigated individually, such as home visits) and group measures (retirees were investigated by various collective activities organized by their communities and local Bureau of Retired Personnel). Investigators consisted of psychologists, sociologists, and well-trained workers of the local Bureau of Retired Personnel and local communities. Those retirees who suffered from dementia, disability, severe psychotic illness, and were completely unable to participate in this interview because of chronic physical illness were excluded. Some participants who had difficulty in understanding the written questionnaires completed the survey with the aid of investigators. The survey data were collected between August and December 2011. A total of 25,000 questionnaires were handed out, and 22,019 were validly completed, with a valid response rate of 88.1 %. Participants ranged in age from 50 to 99 ($M = 69.7$, $SD = 8.1$). Of all valid samples, there were 16,318 men, 5,414 women, and 287 did not report their sex. The ratio of participating male retirees (75.1 %) significantly exceeded that of female retirees (24.9 %). Nonetheless, this ratio basically reflected the real gender structure of employment status in China for the past several decades. According to the data of the Fifth National Population Census, the ratio of retirees in the general population aged 65 years and over was approximately 28.0 %, and ratios of male and female retirees at this stage were 41.6 and 13.8 %, respectively (National Bureau of Statistics of China 2011). Table 1 shows more detailed demographic and socioeconomic variables and the missing ratio of each variable.

2.2 Instruments

2.2.1 Subjective Well-Being

Subjective well-being was assessed using the Philadelphia Geriatric Center Morale Scale (PGCMS). The PGCMS was originally developed by Lawton (1975). In the current study, the PGCMS with 15 items revised by Liang and Bollen (1983) was used as a measure of psychological well-being in the elderly population. Chinese version of PGCMS showed good test–retest reliability (Yao et al. 1995). The PGCMS contains three subscales: agitation (six items), attitude toward own aging (five items), and dissatisfaction (four items). All 15 items require a dichotomous response, and total score ranges from 0 to 15 with

Table 1 Demographic characteristics of retired sample

Variable	n	Valid %	Mean (SD)
Gender			
Male	16,318	75.1	
Female	5,414	24.9	
Missing	287		
Age			
59 and younger	2,023	9.3	69.7 (8.1)
60–69 years	8,903	41.0	
70–79 years	7,888	36.3	
80 and older	2,893	13.4	
Missing	312		
Ethnicity			
Han	21,466	98.5	
Minorities	326	1.5	
Missing	121		
Educational level			
Elementary or lower	1,151	5.3	
Junior high school	4,387	20.1	
Senior high school	8,692	39.8	
Junior college or higher	7,592	34.8	
Missing	197		
Marital status			
Widowed/unmarried/divorced/separated	2,208	10.1	
Married	19,593	89.9	
Missing	218		
Religious belief			
No	20,309	97.6	
Yes	494	2.4	
Missing	1,216		
Physical health			
Very poor	362	1.7	
Poor	1,883	8.6	
Fair	9,670	44.2	
Good	8,120	37.1	
Excellent	1,836	8.4	
Missing	148		
Monthly income^a			
Valid	20,613	93.6	3,355 (500) RMB
Missing	1,406	6.4	
Mode of aged-care			
Family	18,661	86.2	
Social institutions	717	3.3	
Community and family	2,262	10.5	
Missing	379		

Table 1 continued

Variable	n	Valid %	Mean (SD)
Whom live with			
Living alone	1,471	6.8	
Spouse	14,341	66.2	
Children	1,609	7.4	
Spouse and children	4,234	19.6	
Missing	364		

higher total scores indicating higher levels of morale or psychological well-being. In the current study, the internal consistency of the total scale was 0.83, and those of agitation, attitude toward own age, and dissatisfaction subscale were 0.82, 0.68, and 0.67, respectively.

2.2.2 Social Participation

Social participation often refers to many interpersonal or social activities (Wang et al. 2002; Minhat and Amin 2012; Dai et al. 2013). In this study, only general social participation was assessed using four items that reflect different aspects of social participation: (a) Compared to others your own age, your frequency of participation in social activities is (1) less, (2) similar, or (3) more. (b) What is your part in the social activities in which you participate?: (1) less positive, (2) fairly positive, or (3) very positive. Those retirees with more positive role often are organizers or core members or active participants of social activities. In the questionnaire instructions, participants were prompted that “social activities” often refers to organizational, group, community, and interpersonal activities for functions of recreation, public welfare, social interaction, communication, and individual hobbies. The above two items, to some extent, reflect quantity and quality of social participation, respectively. (c) To what degree after retirement were you still in a work state by shouldering some part-time paid or unpaid work?: (1) completely or basically relinquished the work state, (2) maintained work state to some extent, or (3) largely maintained work state. (d). How about your participation in the activities of former employing units in which you once worked?: (1) scarcely or no, (2) sometime, (3) often. It should be pointed out that the official retirement age is generally 60 years for men and 50 or 55 years for women in China, but many old people with good health and vibrant energy still engage in various forms of productivity, such as part-time jobs or working after retirement. Thus, the third item reflects an important component of social participation. In addition, the fourth item, which refers to participating in activities of former employing units, may be a special phenomenon for China. In the time of the planned economy, nearly every aspect of an employees’ life, including birth, health, death, and children’ education, was dependent on work affiliation, even after retirement. In the past two decades, socialization of old age support for retired personnel is advancing steadily, however, many management and service works toward retired personnel were still shouldered by former work affiliation of retirees, such as visiting retirees in some important festivals and arranging retirees’ death affairs. The

state enterprises, institutions, and government organizations often have special bureaus for retired personnel to communicate information with retirees, organizing group activities of retirees, and smoothing out various problems of retirees. Thus, connection with former work affiliation is still an important mode of social participation for retired people. The four social participation items were briefly named “frequency of social activities,” “role in social activities,” “work state,” and “participation in activities of former employing units.” Since these items reflect different perspectives of social participation, the relationship between each item and subjective well-being was analyzed separately in this study. Three options for each item represent no or low social participation, moderate social participation, and high social participation.

2.2.3 Physical Health, Economic Condition, and Other Socio-Demographic Variables

In this study, using a single-item self-rating of overall health, participants were asked the following: “Compared to people your own age, please rate your physical health on the whole on a five-point scale: excellent, good, fair, poor, or very poor.” Participants reported individual monthly income as an indicator of retirees’ economic status on a 16-grade income list (from “less than 1000 RMB” to “more than 8000 RMB” per 500 RMB increase); the mid-value of every grade that participants reported represented participants’ individual income. The grade scores of self-rated physical health and income were used as the continuous variables in analysis.

Main demographic and social variables included age, sex, ethnicity (Han or other minorities), education (elementary school or less/junior middle school/senior high school/junior college or higher), marital status (married and unmarried [separated/divorced, widowed, and never married]), and religious belief (yes or no). Age was recorded as a classified variable (10-year intervals) to make a comparison of dependent variables between difference age groups.

The traditional Chinese concept of happiness especially emphasizes harmonious family relationships. Family relationship and family care, such as living with a spouse or children, are often relevant to quality of life in one’s late years in China (Chyi and Mao 2012; Dai et al. 2013). While family relationship and mode of care could also enhance or weaken retirees’ motivation to participate in various activities. In this study, two items were used to examine the role of family relationships: “mode of aged-care” (family/social institutions/community aged-care) and “whom they live with” (living alone/only living together with spouse/only living together with children/living with both spouse and children). So-called community aged-care refers to situations in which the community plays a more important role in managing and serving the elderly, while these elderly still live in home.

2.3 Statistical Analysis

SPSS for Windows with version 19 (SPSS Inc., Chicago, Ill, USA) was used for data analyses of description, correlations, regressions, and mean difference test. Analyses of variances (ANOVAs) were used to compare the differences in PGCMS scores across different demographic variables, physical health status, socioeconomic status, family relationship, and social participation. Multivariate regression analyses were used to explore the independent role of social participation in subjective well-being while adjusting for the roles of socio-demographic variables.

3 Results

3.1 Descriptive Findings

3.1.1 Subjective Well-Being

Results showed that on the whole, Chinese retirees tended to report more positive well-being ($M = 10.55$, $SD = 3.63$) relative to middle values of potential total scores (7.5 scores). More specifically, most retirees reported less agitation ($M = 4.33$, $SD = 1.92$) relative to middle value (3.0 scores), higher satisfaction ($M = 3.04$, $SD = 1.57$) relative to middle value (2.5 scores), and more positive attitude toward own age ($M = 3.15$, $SD = 1.07$) relative to middle value (2.0 scores) (see also Table 2).

3.1.2 Social Participation of Retirees

Preliminary analyses revealed level of social participation from four aspects among Chinese retirees. Approximately 80 % of retirees reported that compared to others of the same age, they participated in social activities at similar or higher frequency. About two-thirds of retirees reported that they participated in social activities with a fairly positive (54.1 %) or very positive (12.6 %) attitude. About 12.5 % of retirees reported that they engaged in part-time jobs or working after retirement. In addition, about 90 % of retirees reported that they participated in various activities of former employing units often (38.5 %) or sometimes (51.6 %) (see also Table 3).

3.2 Social Participation and Subjective Well-Being

A series of ANOVA indicated that retirees with higher social participation levels have higher subjective well-being. Specifically, retirees with more frequent participation in social activities, more active roles in social activities, more frequent participation in activities of former employing units, and greater extent maintaining work state by engaging in part-time job, reported stronger subjective well-being (see Table 3). However, the relationship between work state and subjective well-being may not be linear. In other words, doing some moderate but not intensive work after retirement contributes to subjective well-being. It must be noted that these ANOVA tests do not address unmixed roles of various social participations in subjective well-being, given that other factors were not controlled in analyses.

3.3 Multiple Regression Analyses

3.3.1 Social Participation and Subjective Well-Being

Multiple regression analyses indicated that social participation, controlling for demographic and socioeconomic variables predicted subjective well-being. Specifically, frequency of participating in social activities ($B = 0.350$, $\beta = 0.071$, $p < .001$) and positive role in social activities ($B = 0.280$, $\beta = 0.050$, $p < .001$) are important indicators of social participation influencing subjective well-being. In addition, participating in activities of former employing units ($B = 0.139$, $\beta = 0.024$, $p < .01$) also positively predicted retirees'

Table 2 Descriptive information of PGCMS

Scale	Items	Cronbach a	M (SD)	Middle value	PGCMS	1	2
PGCMS	15	0.83	10.55 (3.63)	7.5	1		
1. Agitation ^a	6	0.81	4.33 (1.92)	3.0	0.857 ^{***}	1	
2. Attitude toward own aging ^a	5	0.68	3.04 (1.57)	2.5	0.762 ^{***}	0.403 ^{***}	1
3. Dissatisfaction ^a	4	0.67	3.15 (1.07)	2.0	0.752 ^{***}	0.538 ^{***}	0.409 ^{***}

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

^a Those subscales with negative meaning were reversely scored, thus, higher scores represent less agitation, more positive attitude toward own aging, and higher satisfaction

Table 3 Relationship between social participating and subjective well-being

Variables	n	Valid %	PGCMS
Frequency of social activities			F = 252.08, $p < .001$
Less	4,386	20.3	9.52 (3.80)
Similar	9,122	42.2	10.42 (3.64)
More	8,089	37.5	11.20 (3.40)
Missing	422		
Role of social activities			F = 191.88, $p < .001$
Less positive	6,889	33.2	9.82 (3.71)
Fairly positive	11,220	54.1	10.91 (3.54)
Very positive	2,618	12.6	11.15 (3.41)
Missing	1,292		
Working state			F = 31.21, $p < .001$
Completely or basically relinquish the work state	18,403	87.5	10.50 (3.62)
Keep work state some extent	1,439	6.8	11.21 (3.47)
Keep work state in large	1,195	5.7	11.02 (3.55)
Missing	982		
Participation in activities of former employing units			F = 76.87, $p < .001$
Scarcely or no	1,948	9.9	9.83 (3.58)
Sometime	10,147	51.6	10.48 (3.64)
Often	7,584	38.5	11.00 (3.47)
Missing	2,340		

subjective well-being. However, work state ($B = 0.045$, $\beta = 0.007$, $p = .420$) was not significantly related to subjective well-being (see Table 4).

3.3.2 Physical Health and Income and Subjective Well-Being

Multiple regression analyses indicated that physical health ($B = 1.126$, $\beta = 0.258$, $p < .001$) and monthly income ($B = 0.091$, $\beta = 0.070$, $p < .001$) were positively associated with subjective well-being when social-demographic variables were controlled. When roles of social participations were further controlled, physical health ($B = 1.033$,

Table 4 Multiple regression analysis of subjective well-being on social participation

	Model 1		Model 2		Model 3	
	B	β	B	β	B	β
	Constant	24.551		20.411		22.204
Sex	0.005	0.001	0.101	0.012	0.108	0.013
Age	-0.087*	-0.020*	-0.019	-0.004	0.017	0.004
Ethnicity	0.379	0.012	0.394	0.012	0.310	0.010
Religious belief	-0.511	-0.019*	-0.537	-0.020*	-0.524	-0.020*
Material status	0.267	0.022	0.204	0.017	0.194	0.016
Education ^a						
Junior high school	0.304	0.073***	0.150	0.036*	0.146	0.035*
Senior high school	0.085	0.010	0.124	0.014	0.117	0.013
Junior college or higher	-0.027	-0.004	0.040	0.005	0.053	0.007
Live with who ^b						
Spouse	0.491	0.065	0.355	0.047**	0.345	0.046*
Children	-0.218	-0.016	-0.225	-0.016	-0.155	-0.011
Both spouse and children	0.089	0.010	-0.024	-0.003	0.018	0.002
Mode of aged-care ^a						
Social institutions	0.155	0.013	0.139	0.012	0.155	0.013
Community and family	-0.233	-0.011	-0.305	-0.014	-0.281	-0.013
Monthly income			0.091	0.070***	0.079	0.060***
Physical health			1.126	0.258***	1.033	0.237***
Social participation						
Frequency of social activities					0.350	0.071***
Role of social activities					0.280	0.050***
Working state					0.045	0.007
Participation in activities of former employing units					0.139	0.024**

Table 4 continued

	Model 1	Model 2	Model 3
	B	B	B
	β	β	β
ΔR^2	0.013***	0.071***	0.013***

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

^a Reference groups were those retirees with elementary or lower education, family aged-care, and living alone, respectively

$\beta = 0.237, p < .001$) and income ($B = 0.079, \beta = 0.060, p < .001$) were nearly the two robust factors related to subjective well-being.

3.3.3 Roles of Socio-Demographics Factors in Subjective Well-Being

Results indicated that religiosity was negatively associated with subjective well-being ($B = -0.524, \beta = -0.020, p < .05$). Retirees with junior middle education seemed more likely to report higher subjective well-being ($B = 0.146, \beta = 0.035, p < .05$). Compared with retirees living alone, those living with a spouse had higher subjective well-being ($B = 0.345, \beta = 0.046, p < .05$), even higher than those living only with children and those living with both spouse and children(see Table 4).

4 Conclusion and Discussion

Using data from a national sample, the current study explored whether and how social participation, physical health, and economic status relate to the subjective well-being of the Chinese retired city population. The central aim was to clarify the roles of different aspects of participating in social activities in affecting retirees' subjective well-being.

4.1 Physical Health and Income and Subjective Well-Being

In analysis models, physical health and income were the two robust factors related to subjective well-being, which was consistent with previous studies (Zhan et al. 2009; Gilmour 2012). This supported previous literature that physical status and economic conditions often play a preponderant role in enabling participation and wellbeing in older age (Angner et al. 2013; Tomaszewski 2013). Studies that supported resources hypotheses also showed that physical health, economic condition, and family relationship are the important sources of subjective well-being for middle-age and older people (Steverink et al. 2001; Dai et al. 2013).

4.2 Social Participation and Subjective Well-Being

Three aspects of social participation were significantly and positively related to subjective well-being. Specifically, retirees with higher frequency of social participation, more active roles in social activities, more participation in various activities of former employing units had stronger subjective well-being. These findings concur with the conclusions of previous research that it is not only the quantity (frequencies of participating in social activities) but also quality (roles in social activities) of social activity participation that matters for the relationship with subjective well-being (Pinquart and Sörensen 2000; Melchior et al. 2003; Betts et al. 2011; Gilmour 2012).

Although participating in productive activities are important aspects of social participation, results indicated that work state was not closely associated with subjective well-being. The *F*-test analysis based on bivariate level indicated that retirees with moderate but not intense work state reported greater subjective well-being. This means a proper balance between leisure and work may be particularly important for maintaining psychological well-being of the elderly. The existing research findings on the relationship between paid work and subjective well-being are somewhat equivocal. A cross-sectional study found

that work is insignificant to positive or negative affect for old people (McIntosh and Danigelis 1995), while another study supported a positive relationship between work and happiness (Aquino et al. 1996). Engaging in productive activities or bridge employment may be conducive to retirees' physical and mental health (Zhan et al. 2009). However, for many retirees, continuing productive activities was not of their own free selection, but out of economic reasons. We believe that retirees' work motivation and desire may be also relevant to their subjective well-being.

The overwhelming majority of Chinese retirees to some extent keep in contact with their former employing units by participating in various activities. Furthermore, this special type of social participation was positively associated with subjective well-being. First, keeping in long-term contact with a special organization enhanced retirees' emotional attachment, social identity, and sense of belonging, which further maintains their subjective well-being. Second, many retirees, especially those with rich experience and excellent technique, remain involving in the affairs of former employing units. Contributing to one's remaining energy to former employing units increases their self-efficacy and self-worth and decreases their negative attitude toward aging. Third, some former employing units, including enterprises, institutions, and government organizations, attempt to make these retired personnel feel warmth and happiness by implementing colorful cultural, recreational, visit, and tour activities. Given the special socio-historical context of China, the above views remained to be further demonstrated. Additionally, it is worth noting that the bond between affiliation and retirees is gradually weakening with the speeding up of socialization of management and services for retirees in China; thus, special attention should be paid to the influence of this social change in subjective well-being and mental health of retirees in future researches.

4.3 Other Socio-Demographical Variables and Subjective Well-Being

The roles of several social-demographic variables in positively and negatively affecting subjective well-being are notable. Religiosity was negatively associated with subjective well-being. This finding opposes many relevant studies based on samples from both developed and developing countries (Kim 2003; Rule 2007; Mochon et al. 2011; Pokimica et al. 2012), including those among elderly populations (Koenig et al. 1988), but is consistent with a study on Chinese elderly (Brown and Tierney 2009). Brown and Tierney (2009) found a strong negative relationship between religious faith and happiness among the elderly of China after controlling for demographics, physical health, living arrangements, economic conditions, lifestyle, and location. First, significant imbalance of sample proportion between non-believers (97.6 %) and believers (2.4 %) may bias the results given the absence of a representative sample of believers. Second, since this is a cross-sectional study, we cannot rule out the possibility that some elderly people who often experience unhappiness and misery are more likely to seek spiritual consolation in religion. In addition, historically, China is not a country with a strong religious culture or tradition, and believing in a religion is often seen as a passive behavior and an evasion from the real world. Certainly, all explanations need further evidence.

Retirees with middle education reported higher subjective well-being. This result seems to show a nonlinear relationship between education and quality of life. Although many studies find a positive relationship between education and psychological well-being (Di Tella et al. 2001; Cunado and de Gracia 2012), the empirical evidence on the link between these two is not conclusive, few studies refer to this issue among the elderly. Another notable finding is that retirees' living arrangements (whom they live with) was significantly

related with subjective well-being. Living with family, especially spouse and children, is often a protective factor for mental health and a positive predictor of subjective well-being in the elderly (Pinquart and Sörensen 2000). Compared with retirees living alone, those living with a spouse had significantly higher subjective well-being, even higher than those living with children and live with both spouse and children. However, there was no difference in subjective well-being between living alone and living with children or living with both spouse and children. This suggests that living with children has a negative effect on retirees' subjective well-being. Chyi and Mao (2012) reported similar findings among China's elderly population. In China, the family size has become smaller, and the nucleus family (usually consisting of the parents and the only child) is becoming the main form of Chinese families. Thus, both older people and their adult children hope to have more personal space. As Chyi and Mao (2012) suggested, living with children provides emotional and daily life support for older people, however, this also can create tensions and conflicts owing to intergenerational differences in values.

4.4 Theoretical and Practical Implications

The current study is one of the few attempts to explore the relationship between social participation and psychological well-being with Chinese retirees as a sample. First, the enormous size and wide distribution of retirees permits the conclusions to be generalized to the retiree population of China. Although rural areas have larger elderly population than city areas, retirees of city areas make up main body of retired population. Second, although this study focuses on the role of social participation, many important factors related to subjective well-being of the elderly, including physical health, income, and other socio-economic variables, were integrated into analysis models. This can contribute to a comprehensive understanding of the determinants of subjective well-being while helping to examine a purer role of social participation in subjective well-being. Third, in this study, the assessment of participation in social activities reflected not only quantity and quality of social participation on a macro level, such as frequency of social activities and roles in social activities, but also special social participations relevant to actual status of Chinese retirees' social activities, such as participation in former employing units. Results also showed universality of this type of special social participation and its significance for life quality of Chinese retirees.

The current study has important practical implications. Policy-makers should carefully take into account retirees' social participation and its determinants when developing policies and measures for increasing retirees' happiness. These results also suggest that increasing retirees' life quality requires the concerted efforts of government, community, former employing units, and family. Some specific recommendations should be put forward for retirees.

4.5 Limitations of Current Study

This study has several limitations. First, it is a cross-sectional survey. The results do not permit us to make causal inferences, such as that increase of social participation causes higher subjective well-being. The opposite direction could be also true; that is, higher subjective well-being could result in higher desire and motivation to participate in social activities. Thus, a longitudinal design in the future is necessary to examine an explicit causal relationship. Second, the definition and scope of social participation is very vague and inconsistent. The focus of the current study is mainly social participation on the macro

level, and assessment of social participation is relatively simple and general. As a result, the different types of social activities could be confounded. After all, different kinds of social activities could exert different influences on mental health and subjective well-being in the elderly. In addition, the absence of specificity also undermined to some extent the practical value for policy interference toward enhancing retirees' life quality. Third, the current study revealed the relationship between social participation and subjective well-being but did not explain why social participation relates to or potentially influences retirees' subjective well-being. Further study would be required to explore the mental mechanism of the above relationships. Fourth, some important policy factors were not considered in the analysis. For example, the "dual pension scheme," which still persists in China, reflects inequality of retirees' economic status. The "dual pension scheme" refers to civil servants and other public employees entitled to much higher pensions and other benefits than citizens retired from non-public entities. The economic treatment of retirees depends on their working age and nature of former employing units. In addition, those retirees who began work before the founding of New China on October 1, 1949 were called "honorary retirees" and often enjoy some special benefits from the government, such as high wages, high welfare, free medical care, and full pay after leaving work. At the same time, some retired workers enjoy relatively little pension. The gap in economic and political status can enhance unhappiness of the elderly with low income.

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