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Aging & Mental Health

ISSN: 1360-7863 (Print) 1364-6915 (Online) Journal homepage: http://www.tandfonline.com/loi/camh20

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To cite this article: Chengbo Li, Iris Chi, Xu Zhang, Zhaowen Cheng, Lei Zhang & Gong Chen (2015) Urban and rural factors associated with life satisfaction among older Chinese adults, Aging & Mental Health, 19:10, 947-954, DOI: 10.1080/13607863.2014.977767

To link to this article: https://doi.org/10.1080/13607863.2014.977767

Aging & Mental Health, 2015
Vol. 19, No. 10, 947–954, http://dx.doi.org/10.1080/13607863.2014.977767

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Urban and rural factors associated with life satisfaction among older Chinese adults

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(*Received 12 January 2014; accepted 13 October 2014*)

Objective: This study compared urban and rural factors associated with life satisfaction among older adults in mainland China.
Method: Study data were extracted at random from 10% of the Sample Survey on Aged Population in urban/rural China in 2006 for 1980 participants aged 60 and older, including 997 from urban cities and 983 from rural villages.
Results: In this study, 54.6% of urban older adults and 44.1% of rural older adults reported satisfaction with their lives. Binary logistic regression analysis showed that financial strain, depressive symptoms, filial piety, and accessibility of health services were significantly associated with life satisfaction for both urban and rural participants, but age and financial exchange with children were only associated with life satisfaction among urban older adults.
Conclusion: Findings are consistent with some previous studies that indicated the importance of financial strain, depressive symptoms, filial piety, and accessibility of health services to life satisfaction among the older adults in both urban and rural areas. This study also demonstrated the importance of age and family financial exchange to the life satisfaction of urban older adults.

Keywords: life satisfaction; urban–rural comparison; older Chinese adults

Introduction

Life satisfaction is defined as an overall assessment of one's life, including current status (Bowling, 1990; Chou & Chi, 1999; Neurgarten, Havighurst, & Tobin, 1961). Life satisfaction is of particular interest in the study of subjective well-being among older adults because it is an enduring component of subjective well-being (Gana et al., 2013), a central aspect of well-being, and a subjective expression of successful aging (Ghubach et al., 2010; Ní Mhaoláin et al., 2012).

Many studies have focused on factors associated with life satisfaction among older adults, with findings indicating six main factors: demographic characteristics, physical and psychological health, family support, family relations, health care factors, and participation in activities. Studies have found that many demographic attributes of older adults are associated with life satisfaction. For instance, age negatively affects life satisfaction among older adults (Meléndez, Tomás, Oliver, & Navarro, 2009) and is particularly associated with life satisfaction among older Korean people (Kim & Sok, 2012). Aging and the experience of older adulthood often result in a lower life satisfaction among individuals 75 years of age or older (Hermann, 2007; Mollaoğlu, Tuncay, & Fertelli, 2010); research also found a slightly higher life satisfaction for men (Ferring et al., 2004). Educational attainment is positively and significantly related to life satisfaction (Heo & Cho, 2008; Lee & Lee, 2011, 2013; Li, Chi, & Xu, 2013; Zhang & Liu, 2007). Marital status is strongly related to life satisfaction; widowhood in particular is negatively associated with life satisfaction and married older adults typically have higher levels of life satisfaction than non-married individuals (Hsu, 2012; Liu & Guo, 2008; Mroczek & Spiro, 2005). Some studies have shown that living arrangements are consistently related to life satisfaction among the older adults; specifically, living alone is associated with lower life satisfaction (Liao, Chang, & Sun, 2012; Silverstein, Cong, & Li, 2006; Zhang & Liu, 2007). Research has also demonstrated that financial strain or financial adequacy is a strong predictor of life satisfaction (Bishop, Martin, Johnson, & Poon, 2003; Chen & Silverstein, 2000; Katz, 2009). Financial strain is consistently negatively related to life satisfaction among older adults in economically underdeveloped countries (Chen & Silverstein, 2000). Moreover, some research has shown that the direction of the relationship between financial strain and life satisfaction is unclear, although the relationship may be reciprocal (Li, Aranda, & Chi, 2007).

Having better physical and psychological health is a predictor of greater life satisfaction (Hsu, 2012), as are self-rated health and physical functional impairment (Deeg & Bath, 2003; Gutiérrez, Tomás, Galiana, Sancho, & Cebrià, 2013; Katz, 2009; Kim & Sok, 2012; Li et al., 2013; Li & Liang, 2007; Silverstein et al., 2006; Wilhelmson, Fritzell, Eklund, & Dahlin-Ivanoff, 2013). Having a depressive disorder is more strongly associated with less life satisfaction than physical frailty (Ghubach et al., 2010; Meléndez et al., 2009; Ní Mhaoláin et al., 2012). Family support is positively associated with life satisfaction among older adults (Kim & Sok, 2012). Research

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found that financial support from children contributes to life satisfaction among rural older adults in China (Li et al., 2013; Silverstein et al., 2006). Providing support to adult children and capacity to provide support can enhance self-esteem and life satisfaction among older adults, whereas filial norms and being mainly a recipient of help from adult children are related to a lower level of life satisfaction (Katz, 2009; Lee, Netzer, & Coward, 1995; Lowenstein, Katz, & Gur-Yaish, 2007). Relationships with adult children are also an important determinant of life satisfaction among older adults (Katz, 2009). Family harmony and filial piety are strongly associated with life satisfaction in East Asia (Huang, 2012; Jung, Muntaner, & Choi, 2010; Zhang & Yu, 1998).

A national health insurance program has enhanced life satisfaction among older adults in Taiwan (Liao et al., 2012). Access to medical services has been consistently related to life satisfaction among older adults in China (Zhang & Liu, 2007). In addition, some studies indicated that regular activities including physical and leisure activities are significantly related to life satisfaction among older adults, whereas not participating in activities is associated with life dissatisfaction (Helvik, Engedal, Krokstad, & Selbæk, 2011; Inal, Subasi, Ay, & Hayran, 2007).

Among studies on factors associated with older adults' life satisfaction, there is a large volume of literature regarding differences from various perspective, such as gender, age, education, marital status, and living arrangements (Oshio, 2012). However, few studies have examined regional differences. One study conducted in Halifax, Canada, found that life satisfaction varied significantly by urban−rural zones, including the inner city, suburbs, inner commuter belt, and outer commuter belt (Millward & Spinney, 2013). Researchers found that physical health was associated with life satisfaction among older adults in the inner city and suburbs, feeling unsafe after dark was only associated with life satisfaction in the suburbs, and travel-related (i.e., travel time, travel by car) variables were associated with older adults' life satisfaction in the inner commuter belt (Millward & Spinney, 2013).

We identified 12 articles involving life satisfaction among older Chinese adults: 8 from mainland China, 2 from Taiwan, and 2 from Hong Kong. Of those conducted in mainland China, three articles focused on rural communities (Li et al., 2013; Liu & Guo, 2008; Silverstein et al., 2006) and only one article examined differences in the association between family relationships and life satisfaction based on agricultural versus non-agricultural *hukou*, a household registration system overseen by the Chinese government that identifies individuals as official residents of a particular region. In mainland China, having agricultural hukou is equivalent to living in rural areas and having non-agricultural hukou indicates urban status. This study found that filial support was associated with life satisfaction among older adults with both agricultural and non-agricultural hukou, satisfaction with family support and filial discrepancy was associated with life satisfaction among older adults with agricultural hukou, and family harmony was associated with life satisfaction among those with non-agricultural hukou (Huang, 2012). Few studies have examined urban−rural differences in the association between family relationships and life satisfaction, much less other factors that may influence life satisfaction. However, in most countries, the proportion of older individuals is higher in rural areas than in urban areas, access to basic social and health services tends to be more limited in rural areas, and poverty rates are generally higher compared to urban locations (United Nations, 2009). These disparities highlight the importance of comparing factors associated with life satisfaction among older adults in rural and urban areas.

Moreover, in addition to the scarcity of research on regional differences associated with life satisfaction among older adults, previous studies have had other notable limitations. Some studies were conducted in certain communities, such as Halifax, Canada (Millward & Spinney, 2013); Putian, China (Huang, 2012); Taiwan (Hsu, 2012; Liao et al., 2012); Hong Kong (Chou & Chi, 1999; Yeung & Fung, 2007); and Beijing, China (Zhang & Yu, 1998). Other studies were limited to specific regions such as rural areas in mainland China (Li et al., 2013; Liu & Guo, 2008; Silverstein et al., 2006) or certain populations in particular communities such as ethnic minority older adults in Yunnan, China (Li et al., 2007). All of these studies relied on samples from local areas. In addition, the study sample sizes were typically too small to represent the overall population in China.

China is a typical dual urban−rural division society, which has a macro effect on rural and urban older adults. In the present study, we compared factors associated with life satisfaction among older Chinese adults living in urban and rural areas.

Method

Data

Study data were extracted from the Sample Survey on Aged Population in Urban/Rural China (SSAPUR) conducted by the China Research Center on Aging in December 2006. Using a stratified multistage quota sample design, researchers randomly selected 19,947 adults aged 60 or older who lived in urban ($n = 10{,}016$) and rural ($n = 9931$) areas of mainland China. First, to ensure all geographical regions (north, northeast, east, south central, southwest, and northwest) were appropriately represented, the Chinese Research Center on Aging randomly selected 20 administrative divisions from all provinces or municipalities throughout China. Second, within each province or municipality, four urban areas and four rural areas were randomly selected according to the size of the older population. Third, 16 blocks in urban areas and 16 rural townships in rural areas were randomly selected within each province or municipality. Fourth, 50 urban residential communities and 50 rural residential communities were randomly selected within each province or municipality. Fifth, 10 households were randomly selected within each urban and rural residential community. In the case of households with more than one person aged 60 years or

older, one individual was selected at random using the Kish table. Therefore, approximately 500 urban and 500 rural households were selected in each province (Chinese Research Center on Aging, 2010).

For this study, a 10% subsample was extracted at random from the SSAPUR in 2006, resulting in data for 1980 adults aged 60 or older, including 997 urban participants and 983 rural participants. No significant differences emerged between the study subsample and the SSAPUR sample in terms of gender, age, marital status, education level, living environment (urban vs. rural), and living arrangements; therefore, the study sample had the same level of national representativeness as the SSAPUR.

Measures

Based on the previous studies, we explored potentially predictive factors including socio-demographic variables (gender, age, education, marital status, living arrangements, financial strain), physical and psychological health (self-rated health, functional impairment, depressive symptoms), family support (financial support, instrumental support), family relations (family harmony, filial piety), health care factors (health care coverage, accessibility of health services), and participation in activities. These attributes were selected because they were found to be associated with life satisfaction among older adults in a substantial number of studies. We used a representative sample of older Chinese adults to contribute to the understanding of various predictive factors associated with life satisfaction among older adults in urban and rural areas.

Demographic variables

Demographic information consisted of gender (0 = *male*, 1 = *female*), age (in years), education (years of education completed), marital status (0 = *not married*, 1 = *married*), living alone (0 = *no*, 1 = *yes*), and financial strain, which was measured by a single item: 'How do you assess your economic condition?' Respondents rated their financial status on a five-point Likert scale (1 = *more than enough*, 2 = *good enough*, 3 = *approximately enough*, 4 = *somewhat difficult*, 5 = *very difficult*).

Life satisfaction

Life satisfaction was measured by a single item: 'Overall, how satisfied are you with your present life?' Respondents were asked to rate this item on a five-point Likert scale (1 = *very unsatisfied*, 2 = *fairly unsatisfied*, 3 = *fair*, 4 = *fairly satisfied*, and 5 = *very satisfied*). To produce more meaningful results, we collapsed this variable into two categories: *unsatisfied* (unsatisfied, fairly unsatisfied, and fair) and *satisfied* (fairly satisfied and very satisfied).

Physical health and psychological health

Self-rated health was measured by a single item: 'How do you think of your health situation now?' Respondents rated their health on a five-point Likert scale (1 = *very bad*, 2 = *bad*, 3 = *fair*, 4 = *good*, and 5 = *very good*). Functional impairment was measured using two well-established instruments of functional status: activities of daily living (ADLs; Mahoney & Barthel, 1965) and instrumental activities of daily living (IADLs; Lawton & Brody, 1969). ADL items in the present sample were bathing, dressing, going to the toilet, transferring from bed to chair, and eating. IADL items were using a telephone, traveling via car or public transportation, shopping for food or clothes, preparing meal, performing housework, and managing money. All ADL and IADL items were rated on a three-point Likert scale (1 = *not difficult at all*, 2 = *a little bit difficult*, and 3 = *unable to perform the task*). Scores were summed to create total ADL and IADL scores. The internal consistencies of the ADL and IADL measures were .89 and .88, respectively. An overall score of functional impairment (combining ADLs and IADLs) was calculated, with a range of 11−33. Higher cumulative scores indicated more limited functional ability.

Depressive symptoms were assessed using the 15-item Geriatric Depression Short Form Scale (GDS-15; Sheikh & Yesavage, 1986). Participants were asked whether they had experienced certain feelings or behaviors (basic satisfaction with life; dropping many activities and hobbies; feeling that life is empty; often getting bored; in good mood most of time; afraid that something bad is going to happen; feeling happy most of time; often feeling helpless; preferring to stay at home rather than going out and trying something new; feeling that their memory is worse than other old people; thinking it is wonderful to be alive now; feeling not helpful; feeling full of energy; feeling that their situation is hopeless; thinking that most people are better off) during the one-week period preceding the interview. The 15 items were scored on a two-point scale and summed to create an overall score with a range of 0−15. Cronbach's alpha for the GDS-15 in the present sample was .79.

Family support

Family support was defined as financial and instrumental support exchange between older adults and their children. Financial support exchange was assessed by asking whether participants received financial support from their children (0 = *no*, 1 = *yes*) and provided financial support to their children (0 = *no*, 1 = *yes*) during the previous 12 months.

Receiving instrumental support from children was measured by asking respondents whether their children accompanied them when they needed to visit the doctor and whether their children helped them with shopping when needed. Each item was measured dichotomously (0 = *no*, 1 = *yes*). Providing instrumental support to children was measured by asking respondents whether they helped their children with house sitting, household chores, and child care. Each item was measured dichotomously (0 = *no*, 1 = *yes*).

Family relationships

Family relationships were measured in terms of family harmony and filial piety. Family harmony was assessed

by asking the respondents to indicate whether their family was harmonious, using a single item with two categories (0 = *disharmonious*, 1 = *harmonious*). Filial piety was measured by asking the respondents to indicate whether their children followed filial norms, using a single item with five categories (1 = *not at all*, 2 = *not very much*, 3 = *fair*, 4 = *fairly*, 5 = *very much*).

Health care factors

Health care factors included health insurance coverage and accessibility of health services. Health insurance coverage was measured by a single question: 'Are you entitled to receive health insurance?' (0 = *no*, 1 = *yes*). Accessibility of health services was measured by a single item: 'Do you think it's convenient for you to see a doctor?' Respondents were asked to rate this item on a three-point scale (0 = *not convenient*, 1 = *fair*, 2 = *convenient*).

Participation in activities

Engagement in various activities was measured by asking participants, 'Do you often take part in the following activities?' The activities were taiji (or tai chi), physical exercise, listening to broadcast radio, watching television, reading, playing majiang (or mah-jongg), playing cards or chess, playing ball, watching a movie or opera, gardening or caring for household plants or pets, painting or calligraphy, traveling, singing or dancing, collecting stamps or other items, visiting the park, learning about computers, and taking a walk.

Analysis

The first stage of the analysis consisted of calculating detailed descriptive (means and standard deviations or percentages) and *t*-test or chi-square tests results for all measures of life satisfaction and their potential predictors. A *t*-test or chi−square test was used to compare means or percentages between rural and urban populations. Second, inter-correlation analysis was conducted between life satisfaction and all predictive variables for rural and urban respondents, separately. Third, because the dependent variable of life satisfaction was a two-category variable, a binary logistic regression modeling approach was applied to analyze the relationship and direction of the association between life satisfaction and all predictive factors. Statistical significance was set at .05. All analyses were performed using SPSS 16.0.

Results

Table 1 displays descriptive statistics of the sample (means and standard deviations or percentage distributions and *t*-test or chi-square test results for all variables); 54.6% of urban older adults and 44.1% of rural older adults reported satisfaction with their lives. There were

Table 1. Characteristics of the sample by region.

	Rural $n = 983$	Urban $n = 997$ % or *M* (SD)	Total $n = 1\,980$	χ^2 or *t*
Life satisfaction (satisfied)	44.1	54.6	49.4	21.55**
Gender (male)	54.2	48.4	51.3	6.61*
Age (range: 60−102 years)	71.44 (7.26)	71.02 (6.61)	71.23 (6.94)	1.35
Education (range: 1−24 years)	4.77 (2.55)	7.93 (3.98)	6.70 (3.81)	−15.74**
Married	58.6	68.7	63.7	21.89**
Living alone	45.4	53.5	49.4	12.33**
Financial strain (range: 1−5)	3.37 (0.84)	3.15 (0.80)	3.26 (0.83)	5.89**
Self-rated health (range: 1−5)	2.89 (0.93)	3.06 (0.88)	2.97 (0.91)	−0.47**
Functional impairment (range: 11−33)	14.80 (4.89)	13.34 (4.61)	14.06 (4.80)	6.80**
Depressive symptoms (range: 0−15)	6.25 (3.45)	4.83 (3.28)	5.54 (3.44)	62.10**
Received financial support	63.5	38.6	51.0	123.60**
Provided financial support	38.0	59.1	48.3	83.54**
Received instrumental support	94.6	93.8	94.2	0.56
Provided instrumental support	82.5	62.9	72.6	95.77**
Harmonious family	95.3	96.5	95.9	1.87
Filial piety (range: 1−5)	2.12 (0.80)	1.93 (0.87)	2.02 (0.84)	5.09**
Health insurance coverage	96.1	51.9	73.8	32.75**
Accessibility of health services				91.24**
Not convenient	18.2	12.0	15.1	
Fair	18.1	17.1	17.6	
Convenient	63.6	70.9	67.3	
Participation in activities	91.7	96.5	94.1	20.78**

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

Table 2. Correlations between life satisfaction and study variables by rural or urban status.

	Rural	Urban
Gender	−.02	−.08**
Age	−.01	−.04
Education	.12**	.07
Marital status	.05	.08*
Living alone	.05	.07*
Financial strain	−.35**	−.32**
Self-rated health	.26**	.24**
Functional impairment	−.17**	−.15**
Depressive symptoms	−.38**	−.40**
Received financial support	.07*	.08*
Provided financial support	.17**	.22**
Received instrumental support	.09**	.12**
Provided instrumental support	.05	.01
Harmonious family	.12**	.12**
Filial piety	.28**	.26**
Health insurance coverage	.02	.06
Accessibility of health services	.21**	.17**
Participation in activities	.04	.11**

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

Table 3. Binary logistic regression model of factors associated with life satisfaction among rural older adults.

	Rural		
	B	Exp(*B*)	95% CI
Gender	−0.04	0.96	0.56, 1.64
Age	−0.03	0.97	0.94, 1.01
Education	0.04	1.04	0.95, 1.15
Marital status	0.35	1.42	0.83, 2.45
Live alone	0.46	1.58	0.98, 2.57
Financial strain	−0.87***	0.42	0.29, 0.62
Self-rated health	0.13	1.14	0.83, 1.57
Functional impairment	−0.01	0.99	0.93, 1.07
Depressive symptoms	−0.15***	0.86	0.79, 0.94
Received financial support	0.13	1.14	0.70, 1.85
Provided financial support	0.12	1.13	0.70, 1.80
Received instrumental support	0.88	2.41	0.67, 8.70
Provide instrumental support	0.02	1.02	0.48, 2.17
Harmonious family	0.98	2.67	0.54, 13.16
Filial piety	0.38*	1.46	1.07, 1.99
Health insurance coverage	0.67	1.96	0.66, 5.82
Accessibility of health services	0.34*	1.41	1.01, 1.96
Participation in activities	0.08	1.09	0.37, 3.16
Constant	1.89	6.64	
−2 log link	455.49		
Cox and Snell R^2	26.10		

Note: The difference between the coefficients that are significant in the rural and urban logistic regression models is −0.07. The 95% CI values correspond to Exp(*B*).
*$p < .05$, **$p < .01$, ***$p < .001$.

statistically significant rural−urban differences in 16 variables: life satisfaction, gender, years of education, marital status, living alone, self-rated health, functional impairment, depressive symptoms, financial strain, receiving financial support, providing financial support, providing instrumental support, filial piety, health insurance coverage, accessibility of health services, and participation in activities.

Table 2 shows correlations between study variables and life satisfaction among rural and urban respondents. Among rural respondents, life satisfaction was significantly associated with all but four variables (gender, age, marital status, and living alone). Life satisfaction was highly associated with depressive symptoms, financial strain, filial piety, and self-rated health.

Among urban respondents, life satisfaction was significantly associated with all but two predictive variables (age and years of education). Moreover, similar to rural respondents, life satisfaction was highly associated with depressive symptoms, financial strain, filial piety, and self-rated health.

The results of the logistic regression analysis for rural and urban respondents are presented in Tables 3 and 4. Before conducting the regression models, we checked multicollinearity among all independent variables. The results showed that all of the tolerance values of the independent variables were greater than the common threshold of .1 (Hair, Tatham, Anderson, & Black, 1998), meaning that multicollinearity was at an acceptable level. In addition, the proportions of the independent information provided by all 18 selected variables were more than 60% of the variance.

The variables used in the regression analyses explained approximately 26% of the variance for rural participants and 22% for urban respondents in terms of life satisfaction. Among rural respondents, depressive symptom score ($B = -.15$, $p < .001$), financial strain ($B = -.87$, $p < .001$), filial piety ($B = .38$, $p < .05$), and accessibility of health services ($B = .34$, $p < .05$) were significantly associated with life satisfaction. Specifically, rural respondents with higher levels of depressive symptoms and greater financial strain reported lower levels of life satisfaction, whereas rural respondents with greater filial piety and greater access to health services reported higher levels of life satisfaction.

Among urban respondents, age ($B = -.04$, $p < .05$), depressive symptoms ($B = -.20$, $p < .001$), financial strain ($B = -.57$, $p < .001$), receiving family financial support ($B = .36$, $p < .05$), providing family financial support ($B = .42$, $p < .05$), filial piety ($B = .41$, $p < .001$), and accessibility of health services ($B = .37$, $p < .05$) were significantly associated with life satisfaction. Specifically, urban respondents of older age, with higher levels of depressive symptoms, and with greater financial strain reported lower levels of life satisfaction. Urban respondents who received financial support from and provided financial support to children, those with greater family filial piety, and those with greater access to health services reported higher levels of life satisfaction.

Table 4. Binary logistic regression model of factors associated with life satisfaction among urban older adults.

	Urban		
	B	Exp(*B*)	95% CI
Gender	−0.09	0.91	0.60, 1.38
Age	−0.04*	0.96	0.93, 1.00
Education	0.00	1.00	0.95, 1.05
Marital status	0.07	1.07	0.65, 1.77
Live alone	0.07	1.07	0.71, 1.62
Financial strain	−0.57***	0.57	0.42, 0.77
Self-rated health	0.16	1.17	0.90, 1.52
Functional impairment	0.00	1.00	0.94, 1.06
Depressive symptoms	−0.20***	0.82	0.76, 0.88
Received financial support	0.36*	1.43	0.98, 2.11
Provided financial support	0.42*	1.51	1.02, 2.24
Received instrumental support	0.35	1.42	0.54, 3.74
Provide instrumental support	0.17	1.19	0.77, 1.82
Harmonious family	1.54	4.65	0.75, 28.83
Filial piety	0.41***	1.51	1.20, 1.90
Health insurance coverage	0.12	1.13	0.78, 1.63
Accessibility of health services	0.37*	1.44	1.07, 1.94
Participation in activities	0.43	1.53	0.21, 11.13
Constant	−0.88	0.42	
−2 log link	690.29		
Cox and Snell R^2	22.40		

Note: The difference between the coefficients that are significant in the rural and urban logistic regression models is −0.07. The 95% CI values correspond to Exp(*B*).
*$p < .05$, **$p < .01$, ***$p < .001$.

Discussion and implications

Discussion

In this study, 54.6% of urban older adults and 44.1% of rural older adults reported satisfaction with their lives. One of the possible reasons for this discrepancy might be that China is a typical dual urban−rural society, with vast differences separating urban areas from rural areas. Despite rapid economic development and social change at the national level, rural communities still lag behind in income distribution, access to affordable healthcare systems, social welfare programs and benefits, education, and other areas (Zimmer & Kwong, 2004). A majority of older people in urban areas have a pension and enjoy other social welfare privileges (Huang, 2012; Wang, 2005). Therefore, urban older adults have higher life satisfaction than rural older adults.

The principal goal of this study was to compare factors associated with life satisfaction among older Chinese adults living in urban and rural areas. According to binary logistic regression analyses, four significant predictors of life satisfaction existed among rural respondents: financial strain, depressive symptoms, filial piety, and accessibility of health services. Among urban respondents, seven significant predictors of life satisfaction were found: age, financial strain, depressive symptoms, filial piety, receiving financial support from children, providing financial support to children, and accessibility of health services. Financial strain, depressive symptoms, filial piety, and accessibility of health services were significantly associated with life satisfaction regardless of urban or rural status, whereas age and financial support exchange with children (receiving financial support from children and providing financial support to children) were only associated with life satisfaction among urban older adults.

The present study findings show that financial strain is a significant predictor of life satisfaction, highlighting the role of depressive symptoms (an important indicator of psychological health) and filial piety (one of the components of family relationships) in life satisfaction among urban and rural older adults in mainland China. Financial strain is consistently related to lower levels of life satisfaction in underdeveloped countries (Chen & Silverstein, 2000). Older adults with higher levels of financial strain in the present study reported a lower level of satisfaction with life, a finding that is consistent with previous cross-sectional and longitudinal studies (Liet al., 2013; Li et al., 2007; Zhang & Liu, 2007) and western studies (Bishop et al., 2003; Katz, 2009). Consistent with other studies (Ghubach et al., 2010; Meléndez et al., 2009; Ní Mhaoláin et al., 2012), we found that older adults with more depressive symptoms were more likely to report being unsatisfied with life. Consistent with previous findings (Cheng & Chan, 2006; Huang, 2012; Silverstein et al., 2006; Yeung & Fung, 2007), we found that family relationships are important to older adults in the Chinese society.

These findings also highlight the significant association between accessibility of health services and life satisfaction among urban and rural older adults. Consistent with a previous study (Zhang & Liu, 2007), we found that older adults with greater access to medical services were more likely to report satisfaction with life. Reducing the gap in health care outcomes between rural and urban areas in China has been a focus of the central government's health reform efforts since 2002, as evidenced by substantial improvements at the national level in terms of insurance coverage and the use of health services by both urban and rural residents (Jian, Chan, Reidpath, & Xu, 2010). Government health reform policies and initiatives have had a strong effect on accessibility of health services, which has contributed to life satisfaction among residents in rural and urban areas (Zhang & Liu, 2007).

However, several differences emerged regarding factors associated with life satisfaction between urban and rural older adults in China. Age was only associated with life satisfaction among urban older adults. This may be because living environments and lifestyles are different between urban and rural older adults in China. Urban older adults may have greater awareness of age due to the obligatory retirement system. Perceiving oneself as younger functions as a self-enhancing positive illusion that promotes life satisfaction, a youthful subjective age is associated with higher life satisfaction because it is related to higher evaluation of health and memory self-efficacy (Stephan, Caudroit, & Chalabaev, 2011).

In addition, financial support exchange with children was only associated with life satisfaction among urban older adults. This finding is not consistent with previous study findings. Studies have found that receiving financial

support from children contributes to life satisfaction among rural older adults (Li et al., 2013). The reason for this inconsistent finding may be differences in study samples. Li et al. (2013) used rural data from the SSAPUR in 2000, whereas the present study used national data from the SSAPUR in 2006. China experienced significant socioeconomic changes from 2000 to 2006; the Chinese government established the New Rural Cooperative Medical Care System in 2003 and an agricultural tax-free policy in 2004 (Jin et al., 2006). With these new policies, rural older adults could retain their entire agricultural income and receive national medical benefits, thus improving their economic status. Because they were able to support themselves, financial support from their children may have been less necessary.

Furthermore, providing support to adult children and capacity to provide support can enhance self-esteem and life satisfaction among older adults, whereas filial norms and being mainly a recipient of help from adult children are related to a lower level of life satisfaction (Katz, 2009; Lee et al., 1995; Lowenstein et al., 2007). Urban older adults and their children may have had a higher capacity to exchange financial support, and adult children in urban areas often have better pensions and social benefits than those in rural areas.

Implications

These findings have several policy and practice implications. Results suggest that older adults' life satisfaction can be maintained or promoted by providing economic security and accessible health services; nourishing good family relationship, especially filial piety support; preventing depressive symptoms; and promoting the mental health of older adults in both rural and urban areas. The government should improve pension and health care coverage and accessibility and usage of hospital and clinic services near residential areas by comprehensively and profoundly reforming the hukou system, especially in rural communities.

Limitations

This study had several limitations. First, we measured life satisfaction with a single item rather than multidimensional measurements; thus life satisfaction may have been influenced by the mood of respondents during the interview and other situational factors (Schwarz & Strack, 1999). Second, the present study was cross-sectional in nature, preventing the determination of cause and effect between various factors and life satisfaction among older adults. Future longitudinal studies will be needed to establish causal relationships between potential predictive factors and life satisfaction among older adults. Other variables such as religious belief and ethnicity could also be included in future studies.

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