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Social Exchanges and Subjective Well-Being among Older Chinese: Does Age Make a Difference?

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Abstract

We examined the effects of social support and negative interactions on life satisfaction and depressed affect among older Chinese, and age differences in these associations. The sample consisted of 2,943 Chinese elders aged 60 to 94 years old. Structural equation modeling (SEM) results suggest that both social support and negative interactions have significant contributions to life satisfaction and depressed affect. Social support has stronger effects than negative interactions on life satisfaction; their effects on depressed affect are comparable. Further, depressed affect of old-old (70+) Chinese reacts more strongly to both social support and negative interactions than the young-old (60-69).

Keywords

Chinese elderly; social support; negative interactions; mental health; heterogeneity in old age

Social relationships have positive ("social support," e.g., emotional and instrumental support) and negative aspects ("negative interactions," e.g., criticism and demand), and both are related to older adults' well-being (Ingersoll-Dayton, Morgan, & Antonucci, 1997; Newsom, Nishishiba, Morgan, & Rook, 2003; Okun & Keith, 1998). However, few studies are based on data from developing nations. In addition, most previous investigations have treated older people of all ages as homogenous in terms of stage of development, in spite of evidence showing age variation in social relationships and physical and mental health within older persons (Krause, 2005; Nelson & Dannefer, 1992).

This study focuses on older adults in China. Similar to many developed nations, the Chinese population is aging rapidly (Kinsella & Velkoff, 2001). Family has been the primary institution for supporting older people in Chinese society. Confucian teaching emphasizes that children should take care of their parents (Leung, 1997). The lack of pensions and formal services in China also leaves many older persons no choice but depend on their families (Gu & Liang, 1994). While the economic reform since 1978 has led to a rapid economic growth, the Chinese government has not increased public support in old age (Hsiao & Liu, 1996; Jackson & Howe, 2004). Meanwhile, Chinese families are under stress to care for their elderly relatives, as a result of increasing migration to cities for jobs, an

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erosion of traditional status of the elderly, and a disintegration of the commune systems in the countryside (Leung, 1997; Jackson & Howe, 2004). In sum, China differs from many Western societies not only in cultural values and norms, but also in economic and social development. Thus, China provides an interesting test case for further research on social relationships and well-being in later life. This study aims to answer two questions: (1) What are the effects of social support and negative interactions on life satisfaction and depressed affect among older persons in China? (2) Do these effects vary between young-old and old-old Chinese?

Relationships between Social Exchanges and Well-Being

Controversy exists with regard to the relative importance of positive and negative social exchanges on older persons' well-being. Some suggest that negative exchanges have stronger emotional consequences than positive ones (Newsom et al., 2003; Rook, 1990); others suggest the reverse (Okun & Keith, 1998). Still others show that the effects of positive and negative exchanges are domain-specific in that each contributes to congruent dimensions of well-being, respectively (Ingersoll-Dayton et al., 1997). A meta analysis reports that the relative impact of positive and negative exchanges depends on how social support is measured (Finch, Okun, Pool, & Ruehlman, 1999). While the potency of negative exchanges seems to be larger than that of enacted support, perceived support measures are comparable to negative exchanges in their effects on psychological distress. Most prior studies have primarily used negative well-being indicators as outcomes, relatively fewer have also included positive well-being outcomes in their analyses (see Ingersoll-Dayton et al., 1997, and Rook, 1998, for reviews).

In this study, we include life satisfaction and depressed affect, representing positive and negative subjective well-being, respectively, as outcomes. We argue that, among older Chinese, both social support and negative interactions have significant contributions to life satisfaction and depressed affect. Respect for the old and family harmony are highly valued in Chinese society (Streib, 1987; Yang, 1965). Chinese expect and depend on their family in old age (Jackson & Howe, 2004). Greater support from their networks, therefore, should enhance Chinese elders' life satisfaction and decrease their feelings of distress. Negative interactions, on the other hand, not only violate social norms but also indicate that older adults "fail" to earn respect from those close to them and to keep the family in harmony, which may lead to psychological distress and negative evaluation of life (Ying & Zhang, 1995). With regard to the relative potency of social support and negative interactions, we hypothesize that when both are measured as perception, their effects on depressed affect are comparable (Finch et al., 1999). However, we hypothesize that social support has stronger effects than negative interactions on life satisfaction, as previous studies tend to suggest that positive exchanges have greater impacts than negative exchanges on positive well-being outcomes (e.g., Ingersoll-Dayton et al., 1997; Okabayashi, Liang, Krause, Akiyama, & Sugisawa, 2004).

Moderating Effects of Age

Several studies have suggested that positive indicators of social relationship are more important to "older" than "younger" seniors. For instance, Matt and Dean (1993) found that more friend support leads to less psychological distress for old-old (71+ years) than young-old (50-70) community residents; Yasuda et al. (1997) report that social network contacts and neighborhood integration reduce mortality risks for old-old (75+) but not young-old (65-74) urban women; Krause (2005) found that the stress-buffering effect of social support is more evident with advancing age, with the oldest-old benefiting the most from informal emotional support. Pinquart and Sorensen (2000) compared studies with a younger (55-70)

versus an older (70+) mean age and found that both quality and quantity of social interactions become more important for subjective well-being with higher ages.

Empirical work regarding age variation in the effect of negative interactions among elderly persons is scarce. Rook (2003) found that reactivity to negative exchange decreases with age among elderly persons, which she suggests as converging with the literature on emotion regulation in later life (Carstensen, Fung, & Charles, 2003). Nevertheless, others argue that people become more vulnerable to the adverse effects of negative interactions with advancing age because of changes in social networks and health (Krause, 1995). Other studies have shown that with older age, we are more selective in social relationships and more emotionally invested in the ones selected (Carstensen et al., 2003). Negative encounters in these invested relationships, therefore, may be particularly detrimental. Our social networks also become more kin-centered with advancing old age (van Tilburg, 1998), which may limit the potential to buffer interpersonal stress in one sector (e.g., family) by another sector (e.g., friends) (Lepore, 1992). In addition, with older age, the likelihood of negative life events and chronic stress (e.g., spousal loss, declining health) increases while personal coping capacity (e.g., cognitive function, finance) decreases, which make social support a more important coping resource (Krause, 2005).

Most older adults in China live with and receive financial and other types of assistance from their adult children (Gu & Liang, 1994; Leung, 1997). The Chinese elderly also participate actively in child care, shopping, and other household activities (Liang, Gu, & Krause, 1992; Shi, 1993). With advancing age and related decline of physical and mental functions, however, their capability to reciprocate diminishes whereas their need for support from the family increases (Jackson & Howe, 2004; Shi, 1993), which may heighten their sensitivity to the interactions with others. Accordingly, we hypothesize that social support and negative interactions have stronger effects on life satisfaction and depressed affect for the old-old than young-old Chinese.

Model Specifications

To test our hypotheses, a structural equation model is proposed (Figure 1). It specifies that both social support and negative interactions have direct effects on life satisfaction and depressed affect. Age, education, urban residence, household luxury items, gender, marital status, and health are covariates; each has direct effects on the two outcome variables. All exogenous variables are correlated; life satisfaction and depressed affect are also correlated.

METHODS

Sample and Data

Data came from the 1991 Survey of Health and Living Status of Elders in Wuhan, China. The survey involved a three-stage probability sample of 3,543 individuals age 60 years or more. Interviews were conducted in the respondents' homes. Questionnaire development involved translating scales and items from English into Chinese and modifying them in response to Wuhan's unique setting using focus groups, field observations and pilot studies (Gu & Guo, 1989; Gu & Wang, 1989).

With a response rate of 83%, 2,943 individuals completed the interviews. Reasons for nonresponse were death (34%), wrong address (31%), temporary absence (18%), and others (17%). Proxy respondents participated in 169 interviews. We ran all analyses with and without proxy and the results were similar. The findings reported below were based on all interviews (N=2,943). The respondents averaged 69 years old (SD=6.3 years; range= 60-94

years) and had a mean of 2.5 years (SD=3.9 years) of schooling; 55% were female; 45% lived in rural areas.

Missing values existed across various items, with the highest being 15%. We undertook multiple imputation using the NORM program (Schafer, 1999). Five imputed data sets were analyzed separately. The final estimates and standard errors were calculated using formulas that combine results from the five analyses (Schafer & Olsen, 1998). Relative to other methods of handling missing data, multiple imputation is a better method, in producing estimates that are consistent, asymptotically efficient, and asymptotically normal under the assumption of missing at random (Allison, 2002; Little & Rubin, 2002).

Variables and Measures

The model in Figure 1 was estimated with LISREL 8.3 (Joreskog & Sorbom, 1999). Several variables--including social support, negative interactions, life satisfaction, depressed affect, and health--were measured with multiple indicators. A confirmatory factor analysis suggests that the measurement model fits the data adequately. Although the chi-square statistic is significant [χ^2 (160, N=2943) = 1271.71; $p=.0$], as it often occurs in large samples, other fit indices suggest a good fit (e.g., the goodness-of-fit index, GFI=.96; the root mean square error of approximation, RMSEA=.05). The standardized factor loadings for the observed indicators range from .394 to .842 ($p < .001$ for all), with all except one exceed .500. We conclude that, in general, the measures used in this study are of reasonably good quality (Bollen, 1989).

Social support was measured by four indicators: care and concern, respect, sick care, and daily life assistance when needed ($\alpha = .76$). Respondents rated the extent to which their network members are willing to provide each type of support from 0=not at all to 4=very much.

Negative interactions were indicated by three questions that asked the extent to which the respondents feel that their network members demand too much, criticize too much, and cause financial burden ($\alpha = .47$); each was rated from 0=not at all to 4=very much. Prior investigators have used these items to measure negative interactions (e.g., Krause, 1995; Okabayashi et al., 2004; Okun & Keith, 1998).

Life satisfaction was assessed by asking the respondent to rate five items from 1=disagree to 3=agree ($\alpha = .78$). The items were: my life is better than others; I have the best year of my life; I am satisfied with life; I am doing interesting things; and my expectation of life is met. These items came from the Life Satisfaction Index-A (Neugarten, Havighurst, & Tobin, 1961).

Depressed affect was measured by five items from the Center for Epidemiological Studies-Depression scale (Radloff, 1977): feeling unhappy, depressed, lonely, sad, and feeling like crying ($\alpha = .82$). Respondents rated the frequency that each occurred during the previous two weeks from 0=no time to 3=often. Prior investigators have used some or all of these five items to measure depressed affect (e.g., Krause & Liang, 1993; Okabayashi et al., 2004).

Age was measured in chronological years. In the multi-sample analysis, the mean age (69.02) was used to form two comparable size groups: young-old (60-69 years old, $n=1,737$) and old-old (70 years old or more, $n=1,206$). Previous studies of Chinese elders have used similar age groupings (i.e., young-old=60-69, old-old=70+; Liang et al., 1992; Shi, 1993) and found that the old-old had fewer social relations and were less likely to provide but more likely to receive financial and other instrumental assistance than the young-old.

Socioeconomic status (SES), gender, marital status, and health were included as covariates. SES was represented by three measures: education in years of formal schooling; urban residence coded 1 for urban and 0 for rural; household luxury items being a count of 12 luxury items (e.g., telephone, refrigerator, washing machine) in the household. Income was not used to indicate SES because many respondents were no longer working. Gender was dichotomized (1=female). Marital status was coded 1=married, 0=unmarried (included widowed, divorced, separated, and never married). Health was measured by three indicators ($\alpha = .83$): self-rated health (1=excellent to 5=poor), health compared with peers (1=better to 3=worse), and satisfaction with health (1=completely satisfied to 5=not at all satisfied).

RESULTS

Effects of Social Support and Negative Interactions

While estimating the proposed model in Figure 1, we fix the scales for the exogenous (latent) variables by standardizing these variables, hence social support and negative interactions have the same unit of measurement (Table 1). The fit of the model is quite reasonable [χ^2 (250, $N=2,943$) = 1811.44, $p=.0$; GFI=.95; RMSEA=.05]; both social support and negative interactions have significant effects on life satisfaction and depressive affect. To test the relative effects of the two aspects of social exchanges, we recoded the social support variable (i.e., all observed indicators of social support were reversed coded) so that it had the same direction of effects as did negative interactions. Then we compared the baseline model with models that imposed equality constraint in the paths of social support and negative interactions to each of the outcomes. The results suggest that social support and negative interactions are equal in influencing depressed affect [constraining paths b and d in Figure 1 to be equal: χ^2 (251, $N=2,943$) = 1812.56; comparison with baseline model: $\Delta\chi^2$ (1, $N=2,943$) = 1.28, $p>.05$]. However, the same conclusion cannot be applied to their effects on life satisfaction [constraining a and c in Figure 1 to be equal: χ^2 (251, $N=2,943$) = 1824.14; comparison with baseline model: $\Delta\chi^2$ (1, $N=2,943$) = 12.71, $p<.05$]. Thus, the results suggest that the contribution of social support and negative interactions to depressed affect is not significantly different. However, their effects on life satisfaction are not the same—social support has stronger effects than negative interactions on life satisfaction, as shown in Table 1.

Age Variations in the Effects of Social Exchanges on Subjective Well-Being

To evaluate whether the effects of social exchanges on subjective well-being vary by age, we divided the sample into two age groups: young-old (60-69; $n=1,737$) and old-old (70+; $n=1,206$). Using multi-sample analysis in LISREL, we compared a baseline model which specified invariance in all parameters across the two groups [χ^2 (601, $N=2,943$) = 3088.52] with models in which only the paths from social support and negative interactions to life satisfaction and to depressed affect were allowed to differ between groups. Results of model comparison suggest that a model that relaxed the equality constraint of the paths from social support and negative interactions to depressed affect (i.e., allowing paths b and d in Figure 1 to differ between groups) fits the data the best [χ^2 (599, $N=2,943$) = 3072.60; $\Delta\chi^2$ (2, $N=2,943$) = 15.92, $p>.001$]. Estimation of the latter model shows that the effect (unstandardized regression coefficient) of social support on depressed affect for the young-old is -.184 whereas it is -.238 for the old-old. Regarding the effect of negative interactions on depressed affect, the coefficients for the young-old and old-old are .217 and .361, respectively. Hence, the analysis suggests that depressed affect of old-old Chinese reacts more strongly than the young-old to both social support and negative interactions.

DISCUSSION

We found that both social support and negative interactions have significant contributions to life satisfaction and depressed affect among older Chinese. Social support has stronger effects than negative interactions on life satisfaction; their effects on depressed affect are not significantly different. Further, the analysis shows that the effects of social support and negative interactions on depressed affect are stronger for old-old than young-old Chinese. How do these findings shed light on the literature regarding social exchanges and well-being in later life?

First, our findings suggest that both social support and negative interactions are important to positive and negative well-being, and their relative potency depends on the dimension of well-being. For negative subjective well-being, indicated by depressed affect in this study, our findings concur with some Western studies that report similar effects of perceived support and negative interactions on psychological distress (Finch et al., 1999). For positive subjective well-being, indicated by life satisfaction here, we found social support to be a more important predictor than negative interactions, which is also consistent with other investigations (e.g., Okabayashi et al., 2004). The literature has suggested that positive and negative dimensions of psychological well-being are partially independent (Bradburn, 1969; Lawton, 1983). Our findings underscore that observations related to the former do not necessarily extend to the latter.

Note that our analysis was based on cross-sectional data. A recent longitudinal study in the United States shows that the short-term and long-term effects of positive and negative social exchanges are different (Newsom et al., 2003). These researchers found that the contemporaneous associations of positive and negative exchanges and positive and negative affect support a domain-specific model; however, only negative exchanges have significant effects on positive and negative affect at follow-up. Their findings thus suggest that negative exchanges have more long-lasting effects than positive exchanges. Investigating the differential long-term effects of positive and negative social exchanges on positive and negative well-being in Chinese elders is an important next step.

Another contribution of our study is that it provides some evidence that social exchanges, both positive and negative, may take on greater meaning as older adults enter advanced old age. In the case of older Chinese, it has been shown that the old-old are more financially dependent, have fewer social ties, and are less likely to reciprocate support than the young-old (Liang et al., 1992). On the other hand, age-related changes in physical and mental functioning are likely to render the old-old to be in greater need for support than the young-old. In sum, the old-old are more vulnerable, which may account for their stronger reactivity to encounters with others. While there has been theoretical discussion about age differences in the relation between social exchanges and well-being in later life (Carstensen et al., 2003; Krause, 1995), this study is one of the few empirical investigations to test the age difference hypothesis among older persons. However, we found that age differences in the effect of social exchanges apply to depressed affect only, not life satisfaction. One reason may be that life satisfaction is a relatively stable construct that involves a global evaluation of life, whereas depressed affect is a mood state that tends to be transient and to respond more quickly to social stimuli. At the same time, our research provides some interesting findings regarding the socioemotional selectivity theory which suggests that compared with younger adults, older people have greater regulation of negative emotions (Carstensen et al., 2003). According to our research, this greater regulation of negative emotions may apply less to the old-old than the young-old in China. Increased heterogeneity in old age and cultural differences are likely to play important roles in accounting for the differential age-related interaction effects.

The findings of this study should be interpreted with its limitations in mind. Our cross-sectional analysis precludes any conclusion about developmental change; interpretations about causal relationships should be made with great caution. Nonetheless, this study is a first step in exploring age differences in the associations of social exchanges and subjective well-being in Chinese elders. Overall, the findings reported here should be regarded as exploratory. More studies with Chinese elderly samples are needed to validate the results. Also note that the Cronbach's alpha reliability of the negative interactions measure was relatively low in our sample. Our analyses involving latent variable models have adjusted for measurement errors when estimating regression coefficients. Future efforts to better measure negative interactions in Chinese elderly are warranted.

Finally, the data used for this study were collected in 1991. Considering social and economic changes in China in the past decade, one may wonder whether the findings reported here can be generalized to present-day China. China began the transformation from a planned socialist economy to market-oriented economy in 1978. Simultaneous with policies to decollectivize agriculture and encourage petty capitalism, the one-child policy was introduced in 1979. At the time when the data of this study were collected (1991), economic reform had been in full swing for more than a decade. The 1991 cohort as well as the present cohort of elderly persons started their families before the strict one-child policy. They typically have four or five children (Jackson & Howe, 2004). Doubtless, Chinese society has changed since 1991; for instance, a decline of intergenerational coresidence in cities has been reported (Logan, Bian, & Bian, 1998). However, whether the changes in living arrangements and social development since 1991 would significantly alter the underlying structural linkages between social exchanges and subjective well-being remains an open question.

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References

- Allison, P. Missing data. Thousand Oaks, CA: Sage; 2002.
- Bollen, K. Structural equations with latent variables. NY: Wiley; 1989.
- Bradburn, NM. The structure of psychological well-being. Chicago: Aldine; 1969.
- Carstensen L, Fung H, Charles S. Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion*. 2003; 27:103–123.
- Finch J, Okun M, Pool G, Ruehlman L. A comparison of the influence of conflictual and supportive social interactions on psychological distress. *Journal of Personality*. 1999; 67:581–621. [PubMed: 10444852]
- Gu, S.; Guo, J. A comprehensive study of the urban elderly. Wuhan, China: Wuhan University Press; 1989.
- Gu, S.; Liang, J. Almanac of China's population 1994. Beijing, China: Chinese Academy of Social Sciences, Population Research Institute; 1994. Old age support in China; p. 118-125.
- Gu, S.; Wang, B. International comparison of the health and social life of the elderly. Wuhan, China: Wuhan University Press; 1989.
- Hsiao WC, Liu Y. Economic reform and health lessons from China. *New England Journal of Medicine*. 1996; 335:430–432. [PubMed: 8663878]
- Ingersoll-Dayton B, Morgan D, Antonucci T. The effects of positive and negative social exchanges on aging adults. *Journal of Gerontology: Social Sciences*. 1997; 52B:S190–199.

- Jackson, R.; Howe, N. The graying of the middle kingdom: The demographics and economics of retirement policy in China. Washington DC: Center for Strategic & International Studies; 2004.
- Joreskog, K.; Sorbom, D. LISREL 8.3 and Prelis 2.3. Scientific Software International; 1999. [computer software]
- Kinsella, K.; Velkoff, V. An Aging World: 2001. US Census Bureau, Series P95/01-1. Washington DC: US Government Printing Office; 2001.
- Krause N. Negative interaction and satisfaction with social support among older adults. *Journal of Gerontology: Psychological Sciences*. 1995; 50B:59–73.
- Krause N, Liang J. Stress, social support, and psychological distress among the Chinese elderly. *Journal of Gerontology: Psychological Sciences*. 1993; 48:282–291.
- Krause N. Exploring age differences in the stress-buffering function of social support. *Psychology and Aging*. 2005; 20:714–717. [PubMed: 16420145]
- Lawton P. Environment and other determinants of well-being in older people. *Gerontologist*. 1983; 23:349–357. [PubMed: 6352420]
- Lepore S. Social conflicts, social support, and psychological distress: Evidence of cross-domain buffering effects. *Journal of Personality and Social Psychology*. 1992; 63:857–867. [PubMed: 1447698]
- Leung J. Family support for the elderly in China: Issues and challenges. *Journal of Aging and Social Policy*. 1997; 9:87–101. [PubMed: 10186888]
- Liang J, Gu S, Krause N. Social support among the aged in Wuhan, China. *Asia-Pacific Population Journal*. 1992; 7:33–62. [PubMed: 12317665]
- Little, R.; Rubin, D. Statistical analysis with missing data. 2. Hoboken, NJ: John Wiley & Sons; 2002.
- Logan J, Bian F, Bian Y. Tradition and change in the urban Chinese family: The case of living arrangements. *Social Forces*. 1998; 76:851–82.
- Matt G, Dean A. Social support from friends and psychological distress among elderly persons: Moderator effects of age. *Journal of Health and Social Behavior*. 1993; 34:187–200. [PubMed: 7989664]
- Nelson E, Dannefer D. Aged heterogeneity: Facts or fiction? The fate of diversity in gerontological research. *Gerontologist*. 1992; 32:17–23. [PubMed: 1740251]
- Neugarten B, Havighurst R, Tobin S. The measurement of life satisfaction. *Journal of Gerontology*. 1961; 16:134–143. [PubMed: 13728508]
- Newsom J, Nishishiba M, Morgan D, Rook K. The relative importance of three domains of positive and negative social exchanges: A longitudinal model with comparable measures. *Psychology and Aging*. 2003; 18:746–754. [PubMed: 14692861]
- Okabayashi H, Liang J, Krause N, Akiyama H, Sugisawa H. Mental health among older adults in Japan: Do sources of social support and negative interaction make a difference? *Social Science and Medicine*. 2004; 59:2259–2270. [PubMed: 15450702]
- Okun M, Keith V. Effects of positive and negative social exchanges with various sources on depressive symptoms in younger and older adults. *Journal of Gerontology: Psychological Sciences*. 1998; 53B:4–20.
- Pinquart M, Sorensen S. Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging*. 2000; 15:187–224. [PubMed: 10879576]
- Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Rook, K. Stressful aspects of older adults' social relationships: Current theory and research. In: Stephens, MAP.; Crowther, J.; Hobfoll, S.; Tennenbaum, D., editors. *Stress and coping in later-life families*. NY: Hemisphere; 1990. p. 173-192.
- Rook, K. Investigating the positive and negative sides of personal relationships: Through a lens darkling. In: Spitzberg, B.; Cupach, W., editors. *The dark side of close relationships*. Mahwah, NJ: Erlbaum; 1998. p. 369-393.
- Rook K. Exposure and reactivity to negative social exchanges: A preliminary investigation using daily diary data. *Journal of Gerontology: Psychological Sciences*. 2003; 58B:100–111.

- Schafer, J. NORM: Multiple imputation of incomplete multivariate data under a normal model. University Park: Pennsylvania State University, Department of Statistics; 1999. [computer software]
- Schafer J, Olsen M. Multiple imputation for multivariate missing-data problems: A data analyst's perspective. *Multivariate Behavioral Research*. 1998; 33:545–571.
- Shi L. Family financial and household support exchange between generations: A survey of Chinese rural elderly. *Gerontologist*. 1993; 33:468–480. [PubMed: 8375675]
- Streib G. Old age in sociocultural context: China and the United States. *Journal of Aging Studies*. 1987; 1:95–112.
- van Tilburg T. Losing and gaining in old age: Changes in personal network size and social support in a four-year longitudinal study. *Journal of Gerontology: Social Sciences*. 1998; 53B:S313–S323.
- Yang, CK. Chinese communist society: The family and the village. Cambridge: MIT Press; 1965.
- Yasuda N, Zimmerman S, Hawkes W, Fredman L, Hebel R, Magaziner J. Relation of social network characteristics to 5-year mortality among young-old versus old-old white women in an urban community. *American Journal of Epidemiology*. 1997; 145:516–523. [PubMed: 9063341]
- Ying, Yu-Wen; Zhang, X. Mental health in rural and urban Chinese families: The role of intergenerational personality discrepancy and family solidarity. *Journal of Comparative Family Studies*. 1995; 26:233–246.

Figure 1.
Social Exchanges and Subjective Well-Being

Table 1

Estimates for Effects on Life Satisfaction and Depressed Affect (N = 2,943)

	Life Satisfaction		Depressed Affect	
	Maximum likelihood estimates (standard errors)	Standardized regression coefficients	Maximum likelihood estimates (standard errors)	Standardized regression coefficients
Age	-.003 (.008)	-.010	.027 (.002)	.049 *
Education	-.062 (.007)	-.197 ***	-.020 (.012)	-.037
Urban Residence	.003 (.007)	.008	-.009 (.012)	-.015
Household Luxury Items	.020 (.007)	.064 **	-.029 (.012)	-.053 *
Female Gender	-.019 (.007)	-.062 **	.045 (.012)	.081 ***
Married	.020 (.007)	.065 **	-.079 (.011)	-.143 ***
Poor Health	-.099 (.008)	-.315 ***	.172 (.014)	.311 ***
Social Support	.093 (.008)	.296 ***	-.158 (.013)	-.285 ***
Negative Interactions	-.049 (.010)	-.154 ***	.128 (.017)	.230 ***
R^2		.319		.403

Note. Goodness-of-fit statistics: χ^2 (250, N=2,943) = 1811.437, $p = .0$; GFI = .954; AGFI = .939; NFI = .921; NNFI = .916; CFI = .931; IFI = .931; SRMSR = .037; RMSEA = .045. GFI = goodness-of-fit index; AGFI = adjusted GFI; NFI = normed fit index; NNFI = non-normed fit index; CFI = comparative fit index; IFI = incremental fit index; SRMSR = standardized root mean square residual; RMSEA = root mean square error of approximation.

* $p < .05$;

** $p < .01$;

*** $p < .001$.