Original Article

Correlates of life satisfaction among older Nepalese adults living with a son

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Summary	The objective of this study was to identify the correlates of life satisfaction in elderly Nepalese adults living with a son. A convenience sample of 489 urban elderly was recruited from Kathmandu, Nepal. Socio-demographic, economic, health, and social support variables were used as correlates of life satisfaction. Life satisfaction was measured using 9 of the 11 items of the Life Satisfaction Index by Liang. Results showed that the strongest correlate of life satisfaction was perceived financial satisfaction ($p < 0.0001$). High life satisfaction was also more likely reported by elderly who were educated ($p < 0.05$), had fewer functional limitations ($p < 0.005$), and better perceived health ($p < 0.0001$). Other correlates with high life satisfaction were instrumental support ($p < 0.05$) but not emotional support from the son. Further research on correlates of life satisfaction in developing countries will assist health care practitioners and policy makers involved in the well-being of aged populations.

Keywords: Life satisfaction, Older adults, Developing countries, Social support, Nepal

1. Introduction

Gerontologists have indicated that quality of life should be considered not only in terms of the length of life but equally in the degree of life satisfaction. For the elderly, life satisfaction is defined as an overall assessment of one's life (*1*). Factors affecting life satisfaction in the elderly include socio-demographic characteristics, general health status, personal characteristics, and family relationships. Results of research into the determinants of life satisfaction in Western countries have been mixed and inconsistent. Major differences are consistently found in the demographic context of aging for men and women (*2*). A meta-analysis of 300 empirical studies on gender differences in life satisfaction revealed that socio-economic status more strongly correlated with life satisfaction in elderly men than in elderly women (*3*).

Various correlates of life satisfaction of the elderly have been reported in the literature. Findings on whether life satisfaction increases, decreases, or remains stable as people age are inconsistent. Some studies showed no empirical relationship between age and life satisfaction of the elderly, while others reported that life satisfaction decreased with age (*4*).

Still other studies have reported that life satisfaction is related to the gender and marital status of the elderly (*5*). A study among community-dwelling elderly in a rural part of Japan found life satisfaction was related to mental health and age in women but to mental health status and social support from others in men (*6*). Marital status was positively associated with life satisfaction among elderly Canadians (*7*). The effect of marital status on life satisfaction appears to be gender-specific. One study found that being married had a significantly higher association with life satisfaction for men than for women (*8*). Financial strain has been negatively associated with life satisfaction (*9*). One study found no significant relationship between income and life satisfaction (*10*), while another found a

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significant positive relationship between life satisfaction and education and income (*11*). Educational attainment has been positively associated with life satisfaction of the elderly (*12*).

Biologically, physical health deteriorates as people age. Health is an important variable influencing the life satisfaction of older adults. Associations between higher life satisfaction and better health, level of functioning, and self-perceived health have been consistently shown (*2*). There are cross-cultural variations in the correlates of life satisfaction of older adults. For example, emotional attributes may be a very important correlate of life satisfaction in individualist countries while they may be less important in collectivist countries where social factors are more significant (*13*).

The quality and quantity of reciprocal assistance plays a crucial role in the life satisfaction of the elderly. The literature shows that the elderly who receive a high level of social support report higher life satisfaction (*9*). Instrumental and emotional support are among the major types of social support provided to the elderly. A previous study in Nepal found that social support from children living with the elderly and social support for a spouse, children living together, and friends and neighbors reduced the loneliness of the elderly while support for children living apart increased subjective well-being life-satisfaction (cognitive long-term well-being) and support from children living together and support for children living together and apart increased subjective well-being life-stability (emotional short-term well-being). The study was, however, limited to one caste group, Brahman, in Nepal (*14*). The present study focuses on the general population of the elderly in Nepal.

Life satisfaction of the individual is a complex, subjective, and culturally determined phenomenon. Although much research has been conducted regarding the correlates of life satisfaction of the elderly in developed countries, few studies have been reported from developing countries (*15*). Population aging is a global phenomenon and is proceeding rapidly in developing countries. The population of the elderly has been increasing faster than the total population in Nepal over the last three decades, and the aged population is expected to double in 20 years (*16*). Life expectancy at birth increased in Nepal by almost 20 years, from 41 years in the 1970s to 60 years in 2001. In addition the average family size declined from 6 children (for every parent) in the 1970s to 4.1 in 2001 to 3.1 in 2006 (*16*). This increase in the older adult population in Nepal highlights the need to study those factors that impact well-being and life satisfaction. Norms of filial responsibility govern intergenerational relationships in Nepal as in other Asian countries. This is evident by the fact that as many as 80.0% of older Nepalese live with an adult child. The present study explores the correlates (socio-demographic, economic, health, and social

support variables) of life satisfaction among Nepalese elderly living with a son.

2. Materials and Methods

2.1. *Subjects*

The study sample was derived from a survey that sought to examine the relationship between the elderly and a married son. A convenience sample of people aged 60 and above was recruited from a municipal area within Kathmandu, Nepal (Ward number 10). Elderly constitute 6.5% of the total population of Nepal (CBS, 2003). The 2004 voter list was used to identify adults aged 60 years or older. A total of 1,539 older adults aged 60 and above were identified in ward number 10. Only those elderly able to communicate well in Nepali were included. If there was more than one elderly adult in a household, only one elderly adult was selected for an interview based on his or her willingness to participate. A face-to-face structured interview was conducted by 1 of 10 researchers who had undergone an intensive one-day training course on the process of data collection. A total of 489 respondents (247 men and 242 women) were interviewed. Sampling procedures are detailed elsewhere (*17*).

Verbal informed consent was obtained from all respondents prior to the study. Due to the high rate of illiteracy among older adults, written informed consent was not possible (*14*). The study protocol was approved by the Institutional Review Board of the Graduate School of Medicine, The University of Tokyo.

2.2. *Dependent variable*

Life satisfaction was measured using the Life Satisfaction Index developed and validated by Liang (*18*) (LSI-L) from the original Life Satisfaction Index A developed by Neugarten and colleagues (*1*). The reliability and validity of this scale has been tested internationally (*19*). LSI-L is an 11-item scale measuring three dimensions of life satisfaction: mood, zest, and congruence. In the current data, two questions based on assumptions ("my life could be happier than it is now", and "I would not change my past life, even if I could") were removed because of lower or negative correlations with other items. Confirmatory factor analysis of the remaining nine items in the data of this study showed a good fit of the model with the second-order factor of general life satisfaction and the three first-order factors of mood, zest, and congruence (chi-square = 87.6, DF = 26, GFI = 0.961, AGFI = 0.933, RMSEA = 0.070). The total score of the nine-item version of the LSI-L was used in this study. Each item had response options of "agree" and "disagree," resulting in a score ranging from 0 to 9. The Cronbach reliability coefficient for the present study was 0.838.

Initially, the English questionnaire was translated into the Nepali language by the first author. The draft questionnaire was then reviewed and revised by three Nepali students at the University of Tokyo proficient at both the English and Nepali languages. The Nepali version of the questionnaire was re-translated into English by a professional Nepali-English translator who had not previously seen the questionnaire. After checking the original English version and the back-translated versions of the questionnaire, all differences were corrected by the first author and the final version of the questionnaire was developed.

2.3. *Independent variables*

Socio-demographic variables measured were age, gender, marital status, education, and economic status. Education was coded into four categories: illiterate (= 1), literate but no formal schooling (= 2), schooling through high school (= 3), and college & above (= 4). Economic variables were measured by self-perceived financial satisfaction, currently in paid employment, and possession of inherited property. Self-perceived financial satisfaction was measured by asking, "Compared to other people of your age in your neighborhood, are you financially satisfied?" Response options were categorized as dissatisfied (= 1), fairly satisfied (= 2), and satisfied (= 3). Respondents were asked if they were currently in paid employment and whether or not they possessed inherited property (yes = 1; no = 0). In Nepal, inherited property is transferred from parents to sons. Some older adults transfer all of their inherited property to their sons while still alive, some make provisions for transfer after death, and others keep a share of the property and transfer the rest to their sons. The importance of maintaining inherited property to the well-being of older Nepalese adults in later life has been confirmed in a qualitative study (*20*).

The health measures included Instrumental Activities of Daily Living (IADL), self-perceived health, and number of chronic illnesses. IADL was measured by five items (travel by public transportation, shopping for groceries, preparation of meals, light housework, taking the correct dose of medicine) taken from the seven-item Lawton IADL scale (*21*), which has been used previously among older adults in Nepal (*14*). Responses to the IADL are measured on a four-point Likert scale ranging from "unable to do so at all" to "no difficulty," and scores ranged from 0 to 15, with higher scores indicating better functional status. The Cronbach reliability coefficient of the IADL in the present study was 0.908. Self-reported general health (SRH) was measured by asking "In general, how do you describe your health?" with responses categorized as: poor health (= 1), fair health (= 2), and good health (= 3). The number of chronic illnesses was self-reported by referring to a list of nine common illnesses (high

blood pressure, diabetes, heart diseases, stroke, cancer, arthritis, back pain, liver or gallbladder problems, or respiratory problems), with the responses categorized as no chronic illness (= 1), one chronic illness (= 2), and two or more chronic illnesses (= 3).

Social support was defined as support from a son living with the elderly for the preceding year and measured by six items selected from previous studies (*14,22*). Factor analysis (varimax rotation) showed a two-factor model: emotional support (listening to the parent when he/she needs to talk, sharing one's most private worries with the parent, and providing good advice to the parent in times of crisis) and instrumental support (financial assistance, home repairs and household work, and transportation support from the son). The Cronbach reliability alpha coefficient was 0.825 for emotional support and 0.709 for instrumental support. Respondents chose either "yes (= 1)" or "no (= 0)" for each of the three items of instrumental and emotional support, resulting in a possible score ranging from 0 to 3, with a higher score indicating more support.

2.4. *Statistical analysis*

Subject characteristics were implied using descriptive statistics. Variables that were previously reported in the literature as correlates of life satisfaction were selected as independent variables in the present study. The correlates of the life satisfaction of older adults were determined by multiple regression analysis using SPSS v. 15.0 for Windows (Chicago, IL, USA). Multicollinearity was checked by tolerance and variance-inflation-factor (VIF). The norms of multicollinearity were not violated in the present study. The value of beta (β) was considered to analyze the strength of the correlating variables. $P < 0.05$ was considered to be statistically significant in this study.

3. Results

3.1. *Subject characteristics*

Socio-demographic characteristics of the subjects are presented in Table 1. The sample consisted of 247 (50.5%) men and 242 women (49.5%) with a mean age of 69.9 years (range: 60 to 100 years). Fifty-four percent were currently married while 46.0% were widowed. A higher number of women were widowed (64.0%) than men (28.3%). Among respondents, 56.6% were illiterate, 13.7% had no formal education but were literate, 22.3% had a high school education, and 7.4% a college-level or higher education. Illiteracy was higher among women (81.8%) than men (32.0%). About 49.3% of respondents reported their financial satisfaction as fair, 33.5% as satisfied, and 17.2% as dissatisfied. Respondents who were in paid employment accounted

for 16.2%, and 81.0% possessed some type of private property. A total of 50.7% described their general health as poor, 40.1% as fair, and 9.2% as good. Twenty

percent reported no chronic illness, 54.4% one chronic illness, and 25.2% two or more chronic illnesses.

3.2. *Correlates of life satisfaction*

In a regression model developed to explore the correlates of life satisfaction in older adults (Table 2), 28.0% of variance was explained by the predictor variables in the model. Financial satisfaction ($\beta = 0.30$; $p < 0.0001$) and perceived health ($\beta = 0.17$; $p < 0.0001$) were the strongest predictors of life satisfaction. Education ($\beta = 0.14$; $p < 0.05$), higher functional ability (IADL) ($\beta = 0.16$; $p < 0.005$), and higher instrumental support ($\beta = 0.13$; $p < 0.05$) were significantly correlated with higher life satisfaction.

4. Discussion

Life satisfaction is an important component of successful aging. The current study found that financial satisfaction was the strongest correlate of life satisfaction among urban elderly in Nepal. Additional correlates included education, functional status, self-perceived health, and instrumental support from a son.

Deteriorating health and financial needs affect not only the elderly themselves, but also have a wider impact on care-giving families as well as on society itself if the individual becomes the responsibility of the state. In this study, financial satisfaction was the strongest correlate of life satisfaction. Previous studies support the current finding that perceived financial satisfaction and health status are stronger correlates of life satisfaction than a social network and social support (*23*). A study in Hong Kong showed significant positive associations between life satisfaction and other variables including less financial strain, better social support, fewer somatic complaints, and higher education (*24*).

In the current subjects, better functional status,

Table 1. Subject characteristics

		Total (*n* = 489) *n* (%)
Age in years (Mean ± SD)		69.9 ± 8.1
Gender		
	Male	247 (50.5)
	Female	242 (49.5)
Marital status		
	Married	264 (54.0)
	Widowed	225 (46.0)
Education		
	Illiterate	277 (56.6)
	No schooling but literate	67 (13.7)
	High school	109 (22.3)
	College & above	36 (7.4)
Financial satisfaction		
	Dissatisfied	84 (17.2)
	Fair	241 (49.3)
	Satisfied	164 (33.5)
Paid employment		
	Yes	79 (16.2)
	No	410 (83.8)
Possess inherited property		
	Yes	396 (81.0)
	No	93 (19.0)
IADL (Mean ± SD)		11.9 ± 4.3
Perceived health		
	Poor	248 (50.7)
	Fair	196 (40.1)
	Good	45 (9.2)
Number of chronic illness		
	No	100 (20.4)
	One	266 (54.4)
	Two or more	123 (25.2)
Instrumental support (Mean ± SD)		2.0 ± 1.1
Emotional support (Mean ± SD)		2.1 ± 1.2
Dependent variable		
	LSI (Mean ± SD)	4.9 ± 2.8

SD: Standard deviation.
LADL: Instrumental activities of daily living; score ranges from 0-15.
LSI: Life satisfaction index; score ranges from 0-9.
Instrumental and emotional support received score ranges from 0-3.

Table 2. Correlates of life satisfaction (multiple regression)

Variable		B	SE	ß	*p*
Socio-demographic					
	Age	0.01	0.02	0.02	0.758
	Gender (male)	-0.13	0.26	-0.02	0.631
	Marital status (married)	0.35	0.25	0.06	0.163
	Education	0.38	0.13	0.14	0.003
Economic					
	Financial satisfaction	1.21	0.17	0.30	0.000
	Paid employment (yes)	-0.09	0.32	-0.01	0.781
	Possess property (yes)	-0.29	0.29	-0.04	0.316
Health					
	Instrumental Activities of Daily Living	0.10	0.03	0.16	0.002
	Perceived health	0.73	0.21	0.17	0.000
	Number of chronic illnesses	-0.20	0.19	-0.05	0.283
Social support received					
	Instrumental	0.33	0.12	0.13	0.006
	Emotional	0.04	0.11	0.02	0.700
Adjusted R^2	0.279				

B: Unstandardized coefficient; SE: Standard error; ß: Standardized coefficient; Variables in the parentheses indicate the reference categories. *p* value significant at < 0.05.

as indicated by a higher IADL score, also correlated strongly with life satisfaction. Previous studies have also found that life satisfaction is negatively associated with recent health problems, chronic illness (*25*) and functional impairment (*26*), and that health is a stronger correlate of life satisfaction than age (*27*). Longitudinal studies provide further evidence that age is not what causes a decline in life satisfaction but rather that health constraints play a major role (*28*). In the present sample, better perceived health also correlated strongly with life satisfaction. Previous studies have also found that perceived health is the strongest correlate of life satisfaction (*2*). However, the possibility of a converse causal association has also been noted, namely that poor life satisfaction may lead to poor health (*11*). Future longitudinal studies will help explain the causal relationship of health and life satisfaction among the elderly of Nepal.

Literacy is low in Nepal and it is even lower for the elderly. Education provides individuals the ability to view life from different perspectives. Education was a correlate of life satisfaction among elderly Nepalese. Previous studies have also found that life satisfaction is likely to be higher in educated rather than uneducated individuals (*12*). Because the sample of this study was from an urban area, older adults who were educated might have better adapted to rapid social and economic changes, providing them with higher life satisfaction than those who were not educated.

In the present study, instrumental support positively correlated with life satisfaction while emotional support did not. A previous study in Nepal also reported social support from children living together increased the subjective well-being life stability. The study did not differentiate social support into emotional and instrumental support (*14*). Previous studies in other countries, however, have consistently reported a positive association between social support from social networks and life satisfaction among the elderly (*29*), as well as the benefit of social support, particularly emotional support, to their well-being (*30*). Nevertheless, a study among the elderly in Hong Kong found that material and instrumental support were more influential than emotional support in preventing depression (*31*). The reason for the greater importance of instrumental than emotional support in the present sample may be due to the absence of formal support systems for the elderly in Nepal.

Several limitations of this study should be mentioned. The sample consisted of the elderly from an urban area who were living with a son or daughter-in-law, so the findings may not be generalizable to elderly with other living arrangements. Economic variables were measured subjectively as financial satisfaction and real income or objective economic status was not measured in the present study. Further, the cross-sectional nature of the study prevents the description of causal relationships. Nonetheless, this study is one of the first to explore the correlates of life satisfaction among older Nepalese adults. Further investigation of life satisfaction among older adults in Nepal is warranted.

Acknowledgement

References

1. Neugarten BL, Havighurst RJ, Tobin SS. The measurement of life satisfaction. J Gerontol 1961; 16:134-143.
2. Smith JP. Measuring health and economic-status of older adults in developing countries. Gerontologist 1994; 34:491-496.
3. Pinquart M, Sorensen S. Gender differences in self-concept and psychological well-being in old age: a meta-analysis. J Gerontol B Psychol Sci Soc Sci 2001; 56:195-213.
4. Diener E, Suh EM, Lucas RE, Smith HL. Subjective well-being: three decades of progress. Psychol Bull 1999; 125:276-302.
5. Mroczek DK, Kolarz CM. The effect of age on positive and negative affect: a developmental perspective on happiness. J Pers Soc Psychol 1998; 75:1333-1349.
6. Wang CW, Iwaya T, Kumano H, Suzukamo Y, Tobimatsu Y, Fukudo S. Relationship of health status and social support to the life satisfaction of older adults. Tohoku J Exp Med 2002; 198:141-149.
7. Clarke PJ, Ryff CD, Rosenthal CJ. Well-being in Canadian seniors: findings from the Canadian study of health and aging. Can J Aging 2000; 19:139-159.
8. Calasanti TM. Gender and life satisfaction in retirement: an assessment of the male model. J Gerontol B Psychol Sci Soc Sci 1996; 51:18-29.
9. Aquino JA, Russell DW, Cutrona CE, Altmaier EM. Employment status, social support, and life satisfaction among the elderly. J Couns Psychol 1996; 43:480-489.
10. Usui WM, Keil TJ, Phillips DC. Determinants of life satisfaction: a note on a race interaction hypothesis. J Gerontol 1983; 38:107-110.
11. Lohr MJ, Essex MJ, Klein MH. The relationships of coping responses to physical health-status and life satisfaction among older women. J Gerontol 1988; 43:54-60.
12. Herzog AR, Franks MM, Markus HR, Holmberg D. Activities and well-being in older age: effects of self-concept and educational attainment. Psychol Aging 1998; 13:179-185.
13. Suh E, Diener E, Oishi S, Triandis, H. The shifting basis of life satisfaction judgments across cultures: Emotions versus norms. J Pers Soc Psychol 1998; 2:482-493.
14. Chalise HN, Saito T, Kai I. Relationship specialization amongst sources and receivers of social support and its correlations with loneliness and subjective well-being: a cross sectional study of Nepalese older adults. Arch Gerontol Geriatr 2007; 44:299-314.
15. Thang L. Experiencing leisure in later life: a study of retirees and activity in Singapore. J Cross Cult Gerontol 2005; 20:307-318.

16. Central BS. Population Monograph of Nepal. In: Nepal Government Kathmandu, 2003.
17. Gautam R, Saito T, Kai I. Leisure and religious activity participation and mental health: gender analysis of older adults in Nepal. BMC Public Health 2007; 7:299.
18. Liang J. Dimensions of the Life Satisfaction Index A: a structural formulation. J Gerontol 1984; 39:613-622.
19. Wallace KA, Wheeler AJ. Reliability generalization of the Life Satisfaction Index. Educ Psychol Meas 2002; 62:674-684.
20. Goldstein MC, Beall CM. Family change, caste, and the elderly in a rural locale in Nepal. J Cross Cult Gerontol 1986; 1:305-316.
21. Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. Gerontologist 1969; 9:179-186.
22. Sherbourne CD, Stewart AL. The MOS social support survey. Soc Sci Med 1991; 32:705-714.
23. Bowling A, Farquhar M, Grundy E, Formby J. Changes in life satisfaction over a 2-1/2 year period among very elderly people living in London. Soc Sci Med 1993; 36:641-655.
24. Chou KL, Chi I. Reciprocal relationship between social support and depressive symptoms among Chinese elderly. Aging Ment Health 2003; 7:224-231.
25. Fagerstrom C, Holst G, Hallberg IR. Feeling hindered by health problems and functional capacity at 60 years and above. Arch Gerontol and Geriatr 2007; 44:181-201.
26. Newsom JT, Schulz R. Social support as a mediator in the relation between functional status and quality of life in older adults. Psychol Aging 1996; 11:34-44.
27. Horgas AL, Wilms HU, Baltes MM. Daily life in very old age: everyday activities as expression of successful living. Gerontologist 1998; 38:556-568.
28. Kunzmann U, Little TD, Smith J. Is age-related stability of subjective well-being a paradox? Cross-sectional and longitudinal evidence from the Berlin Aging Study. Psychol Aging 2000; 15:511-526.
29. Chou KL, Chi I. Reciprocal relationship between social support and depressive symptoms among Chinese elderly. Aging Ment Health 2003; 7:224-231.
30. Leung KK, Chen CY, Lue BH, Hsu ST. Social support and family functioning on psychological symptoms in elderly Chinese. Arch Gerontol Geriatr 2007; 44:203-213.
31. Chi I, Chou KL. Social support and depression among elderly Chinese people in Hong Kong. Int J Aging Hum Develop 2001; 52:231-252.