THINK POSITIVELY AND FEEL POSITIVELY:
OPTIMISM AND LIFE SATISFACTION IN LATE LIFE*

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ABSTRACT

This study developed a dispositional path model of life satisfaction for community dwelling Chinese elderly living in Hong Kong. A sample of 117 elderly completed scales measuring life satisfaction, optimism, self-esteem, relationship harmony, self-construals, and perceived/expected health and financial status. Modeling revealed that life satisfaction was predicted by self-esteem and relationship harmony, which in turn were predicted by independent and interdependent self-construals, respectively. In addition, optimism predicted life satisfaction directly and indirectly through self-esteem and relationship harmony. Financial status mediated entirely the effect of optimism on life satisfaction. Health status was predicted by optimism but did not predict life satisfaction. Optimism is a key contributor to subjective well being because it fosters self-esteem, relationship harmony, and positive perceptions of financial conditions.

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The dream of psychology has always been to facilitate human development and foster productive and satisfactory lives (James, 1958; June, 1933; Maslow, 1962, 1970). However, this mission was neglected for a long time, and research focused primarily on pathology, impairment, and weakness, leaving the positive potential of human development and existence unrevealed (Argyle, 1986; Seligman, 1998; Seligman & Csikszentmihalyi, 2000). In the past decade or so, an increasing number of researchers participating in the positive psychology movement has recognized that psychology is not just the study of impairment and disorder, but also the study of strength, virtue, and well being (Kahneman, 1999; Seligman & Csikszentmihalyi, 2000).

In parallel with psychology, gerontology originally focused on age-related cognitive and physiological losses and disease-related phenomena (Rowe & Kahn, 1987). However, the introduction of the groundbreaking concept of successful aging (Rowe & Kahn, 1987) has redirected research from impairment to health and well being (Abeles, Gift, & Ory, 1994; Baltes & Baltes, 1990; Garfein & Herzog, 1995; Hazzard, 1995). The concept of successful aging emphasizes the positive sides of development in late life and the importance of identifying and intervening on moderators of the aging process (Rowe & Kahn, 1997).

Comparatively little research has been conducted on successful aging among members of non-Western elderly populations. The Government of the Hong Kong S.A.R. is actively seeking effective ways of promoting the physical and psychological well being of its fast growing elderly population, relying particularly on its network of elderly community centers (Elderly Commission, 1999), so that research findings specific to community dwelling elderly are needed. In response to both the scientific and practical needs, the goal of this study was to investigate successful aging on a sample of community dwelling Chinese elderly living in Hong Kong.

Successful Aging and Life Satisfaction

Various definitions of successful aging have been proposed. Some researchers have adopted the medical perspective and defined successful aging as the absence of chronic illness and disability (Fries, 1990), whereas others have adopted the performance-oriented perspective and defined successful aging as being either physically fit (Beckman et al., 1993) or cognitively fit (Albert et al., 1995). Both perspectives emphasize the importance of objective criteria of success and downplay the phenomenological components of a good and successful late life. In contrast, approaching the issue from an ethnographic perspective, Fisher (1995) identified five fundamental and intrinsically phenomenological features of successful aging: sense of purpose, self-acceptance, personal growth, autonomy, and interactions with others.

In Fisher’s (1995) study, when the participants were asked about their perception of the relationship between successful aging and life satisfaction, the
majority of respondents maintained that life satisfaction was a precursor to and foundation of successful aging. This finding is consistent with the widespread view that the global sense and judgment of life satisfaction is a key indicator of psychological well being (e.g., Bryant & Veroff, 1982; Diener, 1984).

**Predictors of Life Satisfaction**

Numerous correlates of life satisfaction have been identified (see review by Diener, Suh, Lucas, & Smith, 1999). Three findings obtained on general populations are of particular relevance to gerontology. First, studies conducted in different cultures show that life satisfaction does not decline with age (Butt & Beiser, 1987; Diener & Suh, 1998; Horley & Lavery, 1995; Inglehart, 1990). This finding has been interpreted as evidence that people adjust their goals as they age (Campbell, Converse, & Rodgers, 1976; Rapkin & Fischer, 1992), shifting progressively from assimilative coping, in which life conditions are modified to fit personal preferences, to accommodative coping, in which personal preferences are modified to fit constraints such as poor health and reduced income that are typically associated with age (Brandstädter & Renner, 1990). Second, life satisfaction correlates more with perceived health than with objective health (e.g., Brief, Butcher, George, & Link, 1993). Third, the correlation between life satisfaction and income within nations is positive but small (Haring, Stock, & Okun, 1984; Veenhoven, 1994). As pointed out by Diener and coworkers (1999), these and other findings converge in showing that people’s expectations strongly mediate the effects that potentially negative age-related processes and events, such as the deterioration of health and financial conditions, have on their life satisfaction.

The recognition of the importance of expectations has motivated the search for dispositional variables that are responsible for individual differences in life satisfaction among people who share objectively similar life conditions. Three key dispositions have been identified. First, self-esteem, a global perception of self-worth, correlates moderately with life satisfaction in individualist, Western cultures and modestly in collectivist, Asian cultures (Diener & Diener, 1995; Kwan, Bond, & Singelis, 1997). Second, relationship harmony, the mutuality and quality achieved in relationships, correlates moderately with life satisfaction in Hong Kong and modestly in the United States (Kwan et al., 1997). Third, optimism, a global tendency to expect positive outcomes, correlates moderately with life satisfaction in Western samples (Scheier & Carver, 1992), while the association has not yet been studied in collectivist cultures.

**Goal and Plan of this Study**

Prior research has indicated that life satisfaction is a key construct for understanding successful aging and has identified five potential determinants of the life satisfaction of elderly: three key dispositional variables (i.e., self-esteem,
relationship harmony, and optimism) and perceptions relative to the two key problems associated with old age (i.e., health and financial status). However, no global model has yet been constructed showing how all five potential determinants interact with one another in promoting life satisfaction. Furthermore, there is the need of developing and testing a model that is applicable in the Hong Kong context.

The goal of this article is to develop and test a model of life satisfaction for community dwelling Hong Kong Chinese elderly that integrates all five potential determinants of life satisfaction into a unitary representation. The model is developed in three steps. In the first step, an existing model is adopted as a starting point. In the following two steps, additional variables are added to the model and specific hypotheses are formulated on the effects that the newly added variables have on life satisfaction and on the other variables in the model.

First Modeling Step: The Pancultural Model as a Starting Model

In the first modelling step of the current study, we used the pancultural model (Kwan et al., 1997) as a starting model, hypothesizing that the model will basically hold for community dwelling Chinese elderly living in Hong Kong. The pancultural model is the only existing model of life satisfaction that considers simultaneously a set of potential dispositional determinants and explains cultural differences in the paths leading to life satisfaction. However, the pancultural model is far from complete and was only tested on college student samples. Therefore, the pancultural model is tentatively adopted in the current study with the intention of modifying its path structure and adding to it new potential determinants of life satisfaction.

Kwan and coworkers (1997) hypothesized that self-esteem and relationship harmony have independent and direct effects on life satisfaction in all cultures, although the effect of self-esteem is stronger in individualist cultures and the effect of relationship harmony is stronger in collectivist cultures. Furthermore, they provided a cultural explanation of the origins of self-esteem and relationship harmony in terms of self-construals (e.g., Markus & Kitayama, 1991). Independent self-construal denotes a person’s tendency to affirm his or her existence as an individual separate from the social context and relationships with others, whereas interdependent self-construal denotes a person’s tendency to affirm his or her existence as an integral part of a social group characterized by reciprocal bonds and commitments. Kwan and coworkers hypothesized that independent self-construal promotes self-esteem because it motivates a person’s development of the abilities required to become independent and self-actualizing, whereas interdependent self-construal promotes relationship harmony because it motivates a person’s development of the abilities required to blend harmoniously with the social network.
Kwan and coworkers (1997) tested the pancultural model on samples of college students from the United States and Hong Kong. The model was supported and shown capable of accounting for some cultural differences in that: a) the goodness of fit was satisfactory in both samples; b) all the hypothesized causal links were statistically significant in both samples; and c) the path from self-esteem to life satisfaction was stronger in the U.S. sample, whereas the path from relationship harmony to life satisfaction was stronger in the Hong Kong sample. Our first research hypothesis is that the pancultural model will fit reasonably well, showing some evidence of age-invariance among Hong Kong Chinese elderly.

Second Modeling Step:
The Central Role of Optimism

In the second modelling step of the current study, we added the variable of optimism to the pancultural model. We hypothesized that optimism will have a direct positive effect on life satisfaction and two positive indirect effects through the mediation of self-esteem and relationship harmony.

Scheier and Carver (1985) defined optimism as a longitudinally and cross-situationally stable tendency to believe that one will experience positive versus negative life events. Optimism was also defined as an individual explanatory style vis-à-vis negative life events: optimists tend to invoke external, unstable, and specific causes, whereas pessimists tend to invoke internal, stable, and general causes (Buchanan & Seligman, 1995; Peterson, 2000). Therefore, optimism is a cognitive disposition that leads to more positive evaluations of past life events and more positive expectations of future life events. Optimism has been measured primarily by the Life Orientation Test (LOT) (Scheier & Carver, 1985) or its revised version (LOT-R; Scheier, Carver, & Bridges, 1994).

Numerous studies have found that optimism predicts coping, objective health, and adaptation, assessed as absence of depressive symptoms and enhanced life satisfaction (see review by Scheier & Carver, 1992). In particular, optimism was found to correlate with life satisfaction in Western samples (Boland & Cappeliez, 1997; Chang, Maydeu, D'Zurilla, 1997; Chang & Sanna, 2001; Myers & Diener, 1995).

The association between optimism and life satisfaction has not yet been studied in Chinese samples. Furthermore, there have been very few studies of optimism in Chinese samples. In a study on Hong Kong undergraduates, Lai and coworkers (Lai, Cheung, Lee, & Yu, 1998) have found that their Chinese translation of the LOT-R (Scheier et al., 1994) is psychometrically inferior to the original English version and might not be unidimensional. In interpreting these results, they emphasized that optimism, as operationalized in LOT-R (Scheier et al., 1994), derives from Western expectancy-value theories that may not fully apply to Chinese and members of other non-Western cultures. Therefore, they
stressed the need of developing new, emic instruments to measure optimism in Chinese samples.

Although there is some uncertainty on the content and construct validity of the LOT-R (Scheier et al., 1994) when used with Chinese participants, this study assumed that the LOT-R is sufficiently valid and reliable in a Chinese context to allow investigating the relationship between optimism and life satisfaction. Based on this assumption, we explored the Chinese connotations of the construct of optimism and saw no cultural reason why the link between optimism and life satisfaction should not hold for Chinese elderly. In particular, we propose that optimism promotes life satisfaction because it leads to more positive reinterpretations of past life events and more growth-oriented projections of future life events. Therefore, the second hypothesis is that optimism, when added to the pancultural model, will have a direct positive effect on life satisfaction.

Optimists were found to have a more positive self-image than pessimists (Scheier & Carver, 1992). We propose that optimism promotes self-esteem in the elderly for two reasons. First, optimists have more hope for future potential and, thus, greater motivation to invest in personal growth (Synder, 1994). Ryff and Keyes (1995) found that active pursuit of personal growth declines with age. Therefore, optimism might be a factor explaining why some individuals counteract the negative age-trend in the pursuit of personal growth and, thus, age more successfully than others. In particular, optimism may lead persons to view their limitations as more temporary, circumstantial, and changeable and to believe more strongly that they can improve in the future. Second, optimists are more ready to accept reality (Scheier, Weintraub, & Carver, 1986; Taylor, 1983; Taylor, Collins, Skokan, & Aspinwall, 1989). The optimistic elderly may accept more readily their losses in physical, social, and cognitive capacities and, in turn, these losses have lesser impact on their self-image. Therefore, the third hypothesis is that optimism will have an indirect effect on life satisfaction through the mediation of self-esteem.

Compared to pessimists, optimists express more satisfaction with their level of social support (Fontaine & Seal, 1997) and report being more ready to seek social support for managing their problems when needed (Scheier et al., 1986). The Chinese have a sense of moral obligation to reciprocate between both sides appropriately (Goodwin & Tang, 1996), and emphasize mutual aid and care as affirmation of relationship quality (Gao, Ting-Toomey, & Gudykunst, 1996). Therefore, it is likely that, in the Chinese context, optimism correlates with both positive network orientation and relationship harmony. We propose that optimism promotes relationship harmony in the Chinese elderly for two reasons that parallel those invoked to explain the contribution of optimism to self-esteem: optimists may more readily accept the limitations of the relationships and believe that these limitations can be overcome. In addition, optimism was found to promote social coping in times of difficulty: optimists react by greater social involvement, whereas pessimists tend to disengage (Scheier & Carver, 1992). We propose that
optimism leads the elderly to reach out in times of difficulty and, in turn, social involvement enhances elderly’s perceptions of their interpersonal relationships. Therefore, the fourth hypothesis is that optimism will have an indirect effect on life satisfaction through the mediation of relationship harmony.

**Third Modeling Step: Mediators of Optimism**

In the third and final modelling step of the current study, we added the variables of perceived/expected health and financial status to the final model of the second step of the analysis. We hypothesized that the new variables will have a direct influence on life satisfaction and will mediate the effect that optimism has on life satisfaction.

Coping was found to be an important mediator of the relationship between optimism and adaptation (Scheier & Carver, 1992). Three complementary explanations of the mediation process have been proposed and supported to some extent. First, optimists view life problems as less severe than pessimists do (Blankstein, Flett, & Koledin, 1991). Second, positive expectations lead to more effective problem solving and, in turn, less adverse consequences (Scheier & Carver, 1992). Third, optimism leads to more positive affect that, in turn, reduces depressive symptoms and enhances life satisfaction (Chang & Sanna, 2001). The rationale for these explanations is grounded in the model of self-regulated behavior developed by Carver and Scheier (1981), in which people are assumed to keep trying to achieve goals only if their expectancies of success are sufficiently positive. In turn, if movement toward the goals is sufficient, then affect will be positive; otherwise, if progress is insufficient, affect will be negative (Carver & Scheier, 1990). Thus, optimists are theorized to have comparatively more expectations of success, motivation to succeed, actual progress, positive affect, and less negative affect.

We investigated two coping mediation hypotheses. Respondents to Fisher’s (1995) interview stated that the fulfillment of basic needs is a precursor of successful aging. It is, therefore, likely that elderly’s perceptions of the extent to which their basic needs are fulfilled mediate the effect of optimism on life satisfaction. Thus, the broad hypothesis is that optimism enhances the way people evaluate the extent to which their basic needs are fulfilled in the present and will be fulfilled in the future and, in turn, the extent of basic needs fulfillment enhances life satisfaction.

This broad hypothesis is consistent with Sen’s (1999) concepts of functioning and functional capabilities according to which the key consideration in assessing subjective well-being should be the perception of individual freedom rather than the possession of resources such as income. In a similar vein, Nussbaum (2000) argued that what matters the most is what people are able to do or be. Consistent with the capabilities approach, our broad hypothesis is that the extent to which people perceive that their basic needs are fulfilled in the present
and will be fulfilled in the future is a better predictor of life satisfaction than the actual resources they can command.

The life satisfaction of elderly is negatively related to perceived health problems (Krause, 1990) and financial strain (Krause, 1991, 1993; Krause, Jay, & Liang, 1991). In a three-year follow-up study of Chinese elderly, the number of self-reported somatic complaints and perceived financial strain were among the four best predictors of life satisfaction, the other two being social support and education (Chou & Chi, 1999). We therefore selected perceived/expected health and financial status as the key basic needs that can mediate the effect of optimism on life satisfaction.

There are two possible processes leading to the formation of perceptions of health and financial status. First, people may evaluate what they know about their current conditions with reference to their current standards. Second, people may estimate how their conditions will evolve in the future and compare the projected scenario with reference to their current standards. We propose that optimism intervenes in both processes, fostering more positive evaluations of the current conditions and more positive expectations of the future conditions. Furthermore, we propose that optimism fosters effective problem-solving strategies in tackling health and financial problems; so that, these problems have less disruptive consequences on what the elderly are able to be or do. Therefore, the fifth and last hypothesis is that perceived/expected health and financial status will mediate the effect of optimism on life satisfaction.

**METHOD**

**Participants**

The selection criteria were community dwellers, aged 55 years or older, carrying no major physical impairment (e.g., deafness) or disabling cognitive deficit (e.g., dementia). Notices introducing the nature of the study were posted in five elderly activity centers in Hong Kong. Members of the centers who were interested in participating were invited to sign up with the staff of the centers. In addition, the first author of this article introduced the research in the monthly member meetings organized in the centers and invited the interested elderly to sign up after the meetings.

The sample consisted of 32 men and 85 women ages 56-89 (\(X = 73.0, SD = 7.4\)); all participants were retired; 56 participants (48%) were married, 7 (6.0%) single, 5 (4.3%) divorced, and the remaining 47 (40%) widowed; 35 (29.9%) had received no formal education, 58 (49.6%) had not gone beyond primary education, 18 (15.4%) had not gone beyond secondary education, and the remaining 3 (0.3%) had had some post-secondary education; 81 (69.2%) lived with their spouse, children, or friends, and the remaining 36 (30.8%) lived alone; 21 (17.9%)
reported that they were financially independent, 94 (80.3%) reported that they were not, and the remaining 2 (1.7%) did not respond.

**Procedure**

Structured face-to-face interviews were conducted in the elderly centers where the participants had been recruited. The interviewers were postgraduates and undergraduates who had substantial fieldwork experience. The interviewer explained the procedure and content of the interview, obtained the informed consent from the participant, collected demographic information, and orally administered a set of scales measuring the dispositional variables and perceived/expected health and financial status. The whole interview lasted one hour on average.

**Scales**

**Life Satisfaction**

Life satisfaction was assessed by the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985), that consists of five items (e.g., “I am satisfied with my life”), and the Delighted-Terrible Scale (D-T Scale; Andrews & Withey, 1976), that consists of the single item “How do you feel about your life as a whole?” The two scales have been used in different samples and cultures and have high internal consistency, temporal stability, and construct validity (Diener et al. 1985; Diener & Suh, 1998; Pavot & Diener, 1993). We used Chinese versions of the SWLS (Choy & Moneta, 2003) and D-T scale (Leung & Leung, 1992). The items were scored on a 7-point Likert scale with anchors of 1 (strongly disagree) to 7 (strongly agree) for the SWLS and anchors of 1 (terrible) to 7 (delighted) for the D-T scale. The correlation between SWLS and D-T was .47. As Kwan and coworkers (1997) did to test the pancultural model, we averaged the ratings of the items of both scales in order to create a single measure of life satisfaction.

**Self-Esteem**

Global self-esteem was assessed by the Rosenberg Self-Esteem Scale (SES) (Rosenberg, 1965) that contains 10 items (e.g., “I feel good about myself”) expressed on a 4-point Likert scale with anchors of 1 (strongly disagree) to 4 (strongly agree). We used a Chinese version of the scale (Cheng & Hamid, 1995) that excludes the item “I wish I could have more respect for myself,” because it was found to be syntactically problematic in Chinese. The self-esteem score was the average of the remaining nine items after reversing the negatively framed ones.
Relationship Harmony

Relationship harmony was assessed by the Interpersonal Relationship Harmony Inventory (Kwan et al., 1997) in which participants are asked to specify the partner’s name, gender, and relation for each of the five most significant dyadic social relationships in their lives and to score the degree of harmony within each relationship on a 7-point Likert scale with anchors of 1 (very low) to 7 (very high). The relationship harmony score was the average of the five relationship harmony ratings.

Optimism

Optimism was measured by the revised Life Orientation Test (LOT-R) (Scheier et al., 1994) consisting of 10 items. Three items are positively worded (e.g., “In uncertain times, I usually expect the best”) and measure the optimism subscale, three items are negatively worded and measure the pessimism subscale (e.g., “I hardly ever expect things to go my way”), and the remaining four are filler items (e.g., “I enjoy my friends a lot”). The items are scored on a 5-point Likert scale with anchors of 1 (strongly disagree) to 5 (strongly agree). The scale is treated as unidimensional first by reverse scoring the items of the pessimism subscale and then averaging the six items of the optimism and pessimism subscales. We used a Chinese version of the scale (Lai et al., 1998).

Self-Construals

Self-construals were assessed by the Self-Construal Scale (SCS) (Singelis, 1994) that consists of 12 items measuring independent self-construal (e.g., “I try not to depend on others”) and 12 items measuring interdependent self-construal (e.g., “I consult with others before making important decisions”) expressed on a 7-point Likert scale with anchors of 1 (strongly disagree) to 7 (strongly agree). We used a Chinese translation of the items (Kwan et al., 1997). Ten items were eliminated; of these, three were not applicable to the life situation of elderly (e.g., “Speaking up during a class is not a problem for me”) and the remaining seven had negative item-scale correlations. Furthermore, the item “It is important for me to maintain harmony within my group” was changed to “It is important for me to maintain harmony with my family or friends.” A total of 14 items were used to compute the scale scores: independent self-construal was measured by six items and interdependent self-construal was measured by eight items. Independent and interdependent self-construal scores were computed by averaging the ratings of their constituent items.

Perceived/Expected Health Status

Perceived/expected health status was measured with three items written specifically for this study: a) “How do you consider your general health condition?”
scored on a 5-point Likert scale with anchors of 1 (poor) to 5 (excellent); b) “How does your current health condition compare with that of one year ago?”; and c) “How do you expect that your health condition one year from now will compare with your current health condition?” both scored on a 5-point Likert scale with anchors of 1 (much worse) to 5 (much better). The perceived/expected health status score was the average of the three ratings.

Perceived/Expected Financial Status

The perceived/expected financial status was measured by two items written specifically for this study: a) “Do you have enough money for your daily expenses?” scored on a 4-point Likert scale with anchors of 1 (very insufficient) to 4 (very sufficient); and b) “Do you worry about not having enough money to deal with emergent expenses?” scored on a 4-point Likert scale with anchors of 1 (very worried) to 4 (not worried at all). The perceived/expected financial status score was the average of the two ratings.

Statistical Analysis

The research hypotheses were tested using path analysis (Munro, 2001). The modeling proceeded in three steps. In the first step, we examined Kwan and coworkers’ (1997) pancultural model and identified needed modifications of the model. In the second step, we expanded the model by assuming that optimism has direct and indirect effects on life satisfaction through the mediation of self-esteem and relationship harmony. In the third step, we further expanded the model by assuming that perceived/expected health and financial status mediate the effect of optimism on life satisfaction.

The modeling used in this study mimics the modeling used by Kwan and coworkers (1997). Kwan and coworkers defined all variables in their model as latent variables that are measured indirectly by the items of their corresponding scales. Thus, they specified a full measurement model in correspondence with the path model. We could not follow the same strategy because the relatively small sample size would not have allowed the estimation. Therefore, we simplified the modeling by assuming that all the variables in the models are directly measured by their constituent items, and thus, there is no measurement model along with the structural model. Nevertheless, we fixed the value of the error of measurement of each of the variables in the models to be equal to one minus the reliability of the corresponding scale. This procedure controlled for measurement error and for differences in reliability between the variables.

The goodness of fit of the models was assessed by the chi-square, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). The chi-square tests the overall fit of the model to the data. Strictly, a model fits if the chi-square is non-significant. The CFI measures how well the model fits compared to a null model. This index ranges from 0 to 1, with a value of .9
indicating reasonable fit (Bentler, 1990). The RMSEA is a measure of discrepancy between the model and the data adjusted for degrees of freedom. This index ranges from 0 to 1, with a value below .05 indicating good fit and a value in the range .05-.08 a reasonable error of approximation in the population (Browne & Cudeck, 1993).

The need for adding or removing a specific path was detected by the corresponding t-test, and tested formally by the chi-square of change of nested models, that is, the difference in chi-square of two nested models with degrees of freedom equal to the difference of degrees of freedom of the two models. This statistic tests whether the addition of one or more paths to a model leads to a significantly better fit to the data. The analysis was conducted in LISREL 8.5 (Jöreskog & Sörbom, 1996) using maximum likelihood estimation.

RESULTS

Data Description

Reliability

Table 1 shows the means, standard deviations, Cronbach’s alphas, and inter-correlations of the study variables. The reliability was satisfactory for all the study variables except for the variables of optimism, perceived/expected health status, and perceived/expected financial status. The low reliability of these three scales was controlled for in the statistical analysis as explained before. In addition, item analyses and sensitivity analyses were conducted specifically on the variable of optimism.

Lai and coworkers (Lai, 1997; Lai et al., 1998) applied their Chinese translation of the LOT-R (Scheier et al., 1994) to Hong Kong Chinese undergraduates and found that the scale might have a bidimensional structure, with optimism and pessimism subscales. Lai and coworkers also found that the pessimism subscale is psychometrically inferior to the optimism subscale probably due to the difficulty in translating double negative phrases in Chinese.

In this study, the reliability coefficient of optimism was lower than the one estimated on Chinese undergraduates (.70) (Lai et al., 1998). After removing the items of the pessimism subscale, alpha raised to .69, confirming that the pessimism subscale is psychometrically inferior to the optimism subscale. Our reliability findings suggest that the translation problem becomes more severe when the scale is administered to elderly with relatively low educational achievement.

In order to assess the impact that the low reliability and uncertain dimensionality of the LOT-R (Scheier et al., 1994) have on the validity of the models, we conducted all the analyses of this study twice, first using all the items to measure optimism and then using only the items of the optimism subscale, and obtained virtually identical results. Therefore, we report only the results obtained using all the items to measure optimism.
Table 1. Means, Standard Deviations, and Intercorrelations of the Study Variables

<table>
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<tr>
<th>Variables</th>
<th>X</th>
<th>SD</th>
<th>1.</th>
<th>2.</th>
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<th>6.</th>
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<th>8.</th>
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<tbody>
<tr>
<td>1. Life satisfaction&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.12</td>
<td>1.10</td>
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<tr>
<td>2. Self-esteem&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.85</td>
<td>.49</td>
<td>.45**</td>
<td></td>
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<tr>
<td>3. Relationship harmony&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.78</td>
<td>.92</td>
<td>.36**</td>
<td>.23*</td>
<td></td>
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<tr>
<td>4. Independent self-construal&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.84</td>
<td>.75</td>
<td>.32**</td>
<td>.13</td>
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<tr>
<td>5. Interdependent self-construal&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.82</td>
<td>.81</td>
<td>.37**</td>
<td>.33**</td>
<td>.47**</td>
<td>.10</td>
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<td>6. Optimism&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.97</td>
<td>.59</td>
<td>.37**</td>
<td>.26**</td>
<td>.22*</td>
<td>.05</td>
<td>.14</td>
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<td>7. Perceived/expected health status&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.69</td>
<td>.70</td>
<td>.24*</td>
<td>.21*</td>
<td>.29**</td>
<td>.06</td>
<td>.10</td>
<td>.25*</td>
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<td>8. Perceived/expected financial status&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.89</td>
<td>.61</td>
<td>.41**</td>
<td>.19*</td>
<td>.29**</td>
<td>.14</td>
<td>.10</td>
<td>.16#</td>
<td>.28**</td>
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Note: n = 117. Reliability coefficients (Cronbach's alpha) are shown in parentheses.

<sup>a</sup>Range of the scale = 1-7. <sup>b</sup>Range of the scale = 1-5.

<sup>#</sup>p < .10. <sup>*</sup>p < .05. **p < .01.
Interrelations of the Study Variables

The dependent variable of life satisfaction correlated with all the hypothesized predictors, except for independent self-construal. As expected, independent self-construal correlated with self-esteem, and interdependent self-construal correlated with relationship harmony. Unexpectedly, interdependent self-construal also correlated with self-esteem, suggesting that a path between these variables may have to be added to the pancultural model. Optimism, self-esteem, and relationship harmony correlated with one another. Lastly, optimism correlated with perceived/expected health status and marginally with perceived/expected financial status. Subsequent path modeling helped further to clarify associations among all variables.

First Modeling Step: The Pancultural Model as a Starting Model

Table 2 shows the indices of goodness of fit of all the path models. Model 1 is the pancultural model. The chi-square was significant, indicating that the model does not fit. Both the CFI and the RMSEA fell outside the range of reasonable fit. The modification indices (result not shown) suggested the need to add the path from interdependent self-construal to self-esteem.

Model 2 is the pancultural model with the added path from interdependent self-construal to self-esteem. The chi-square was non-significant, indicating that the model fits. The CFI indicated good fit, whereas RMSEA fell outside the range of reasonable fit. The chi-square of change comparing Model 2 with Model 1 was significant, indicating that Model 2 is preferable. Furthermore, the modification indices indicated that no additional path was needed for Model 2 (result not shown). Therefore, Model 2 was retained as the final model of the first step of the analysis.

Figure 1 shows the path diagram of Model 2 with the estimated path coefficients, whose \( t \) values were all significant at least at the \( p < .05 \) level. Life satisfaction is predicted by self-esteem and relationship harmony. In turn, self-esteem is predicted by both independent and interdependent self-construals, whereas relationship harmony is predicted by interdependent self-construal only. The percentage of variance in life satisfaction explained by the model was 42%, which is identical to the value achieved by the pancultural model estimated on samples of college students (Kwan et al., 1997).

Second Modeling Step: The Central Role of Optimism

In Models 3 through 5, optimism was added to the set of variables of Model 2 which is shown in Figure 1. Model 3 preserves all the paths of Model 2 and in addition contains the path from optimism to life satisfaction. The chi-square was non-significant, indicating that the model fits. The CFI indicated good fit, whereas RMSEA fell outside the range of reasonable fit.
Model 4 preserves all the paths of Model 3 and in addition contains the path from optimism to self-esteem. The chi-square was non-significant, indicating that the model fits. Both the CFI and the RMSEA indicated good fit. The Chi-square of change comparing Model 4 with Model 3 was significant, indicating that Model 4 is preferable.

Model 5 preserves all the paths of Model 4 and in addition contains the path from optimism to relationship harmony. The chi-square was non-significant, indicating that the model fits. The CFI reached its maximum and the RMSEA its minimum, with both indices indicating perfect fit. The chi-square of change comparing Model 5 with Model 4 was significant, indicating that Model 5 is preferable. Furthermore, the modification indices indicated that no additional path was needed for Model 5 (result not shown).

Additional three models were fitted in order to ascertain that the direct path from optimism to life satisfaction was indeed needed. Model 6 preserves all the paths of Model 5 except for the path from optimism to life satisfaction. The chi-square was non-significant, indicating that the model fits. The CFI indicated good fit, whereas the RMSEA indicated reasonable fit. The chi-square of change comparing Model 6 with Model 5 was significant, indicating that Model 5 is preferable and that the path from optimism to life satisfaction cannot be removed.

Model 7 preserves all the paths of Model 5, except for the path from optimism to life satisfaction and the path from optimism to self-esteem. The chi-square was significant, indicating that the model does not fit. The CFI indicated reasonable fit, whereas the RMSEA indicated unsatisfactory fit. The chi-square of change comparing Model 7 with Model 5 was significant, indicating that Model 5 is preferable and that the path from optimism to life satisfaction and the path from optimism to self-esteem cannot be conjointly removed.

Model 8 preserves all the paths of Model 5 except for the path from optimism to life satisfaction and the path from optimism to relationship harmony. The chi-square was non-significant, indicating that the model fits. The CFI indicated good fit, whereas the RMSEA indicated unsatisfactory fit. The chi-square of change comparing Model 8 with Model 5 was significant, indicating that Model 5 is preferable and that the path from optimism to life satisfaction and the path from optimism to relationship harmony cannot be conjointly removed.

The comparisons between Model 5, on the one hand, and Models 6 through 8, on the other hand, support the hypothesis that the direct path from optimism to life satisfaction has to be retained. Therefore, Model 5 was retained as the final model of the second step of the analysis.

Figure 2 shows the path diagram of Model 5 with the estimated path coefficients, whose t values were all significant at least at the $p < .05$ level. The three key dispositional variables (self-esteem, relationship harmony, and optimism) generate paths to life satisfaction. Furthermore, optimism contributes to both self-esteem and relationship harmony. The path structure originating from the self-construals is unchanged compared to the path diagram of Figure 1. The
Table 2. Goodness-of-Fit Indices and Comparisons of the Path Models of Life Satisfaction Tested in the Three Modeling Steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Model description</th>
<th>Goodness of fit indices</th>
<th>Model comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>$\chi^2$</td>
<td>df</td>
</tr>
<tr>
<td>I</td>
<td>1 Pancultural model</td>
<td>18.42</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2 Model 1 with the path from interdependent self-construal to self-esteem</td>
<td>6.56</td>
<td>5</td>
</tr>
<tr>
<td>II</td>
<td>3 Model 2 with the path from optimism to life satisfaction</td>
<td>16.60</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>4 Model 3 with the path from optimism to self-esteem</td>
<td>9.96</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>5 Model 4 with the path from optimism to relationship harmony</td>
<td>5.97</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6 Model 5 without the path from optimism to life satisfaction</td>
<td>13.34</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>7 Model 5 without both the path from Optimism to life satisfaction and the path from optimism to self-esteem</td>
<td>18.82</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>8 Model 5 without both the path from Optimism to life satisfaction and the path from optimism to relationship harmony</td>
<td>16.40</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Model Description</td>
<td>CFI</td>
<td>df</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>9</td>
<td>Model 5 with both the path from perceived health to life satisfaction and the path from financial status to life satisfaction</td>
<td>45.15</td>
<td>18</td>
</tr>
<tr>
<td>10</td>
<td>Model 9 with the path from optimism to perceived health status</td>
<td>29.27</td>
<td>17</td>
</tr>
<tr>
<td>11</td>
<td>Model 10 with the path from optimism to perceived financial status</td>
<td>18.70</td>
<td>16</td>
</tr>
<tr>
<td>12</td>
<td>Model 11 without the path from optimism to life satisfaction</td>
<td>20.10</td>
<td>17</td>
</tr>
<tr>
<td>13</td>
<td>Model 12 without the path from perceived health to life satisfaction</td>
<td>20.58</td>
<td>18</td>
</tr>
<tr>
<td>14</td>
<td>Model 13 without the path from relationship harmony to life satisfaction</td>
<td>21.98</td>
<td>19</td>
</tr>
</tbody>
</table>

**Note:** CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; \( \Delta \chi^2 \) = chi-square of change of the compared models; \( \Delta df \) = degrees of freedom of the chi-square of change.
diagram shows that optimism has the central role in the model of life satisfaction exercising a direct effect and two indirect effects. The percentage of variance in life satisfaction explained by the model was 47%, an increase of 5% compared to the model without optimism shown in Figure 1.

Third Modeling Step: Mediators of Optimism

In Models 9 through 14, perceived/expected health and financial status were added to Model 5, which is shown in Figure 2. Model 9 preserves all the paths of Model 5 and contains in addition a path from perceived/expected health status to life satisfaction and a path from perceived/expected financial status to life satisfaction. Perceived/expected health and financial status are stand-alone predictors of life satisfaction with no links to or from the dispositional
variables in the model. The chi-square was significant, indicating that the model does not fit. Both the CFI and RMSEA fell outside the range of reasonable fit.

Model 10 preserves all the paths of Model 9 and contains in addition the path from optimism to perceived/expected health status. The chi-square was significant, indicating that the model does not fit. The CFI indicated good fit, whereas the RMSEA indicated reasonable fit. The Chi-square of change comparing Model 10 with Model 9 was significant, indicating that Model 10 is preferable.

Model 11 preserves all the paths of Model 10 and contains in addition the path from optimism to perceived/expected financial status. The chi-square was non-significant, indicating that the model fits. Both the CFI and the RMSEA indicated good fit. The chi-square of change comparing Model 11 with Model 10 was significant, indicating that Model 11 is preferable.

Figure 2. The final path model of life satisfaction from the second modeling step, with standardized path coefficients, containing all the variables and paths of the pancultural model (Kwan et al., 1997) and optimism. The diagram shows that optimism has a direct effect on life satisfaction and indirect effects through the mediation of self-esteem and relationship harmony. The model explains 47% of the variance in life satisfaction. All paths are significant at least at the $p < .05$ level.
Model 12 preserves all the paths of Model 11, except for the path from optimism to life satisfaction; this path was removed in order to test whether the effect of optimism on life satisfaction is mediated entirely by perceived/expected health and financial status. The chi-square was non-significant, indicating that the model fits. The CFI reached its maximum, indicating perfect fit, whereas the RMSEA indicated good fit. The chi-square of change comparing Model 12 with Model 11 was non-significant, indicating that the more parsimonious Model 12 is preferable. The modification indices indicated that no additional path was needed for Model 12 (result not shown). Therefore, Model 12 appeared to be the final model of the third step of the analysis. However, the $t$ value of the path from perceived/expected health status to life satisfaction was non-significant (result not shown), suggesting a simpler model.

Model 13 preserves all the paths of Model 12, except for the path from perceived/expected health status to life satisfaction. The chi-square was non-significant, indicating that the model fits. The CFI reached its maximum, indicating perfect fit, whereas the RMSEA indicated good fit. The chi-square of change comparing Model 13 with Model 12 was non-significant, indicating that the more parsimonious Model 13 is preferable and that the path from perceived/expected health status to life satisfaction can be removed. However, also this model appeared to be too complex as the $t$ value of the path from relationship harmony to life satisfaction was non-significant (result not shown).

Model 14 preserves all the paths of Model 13, except for the path from relationship harmony to life satisfaction. The chi-square was non-significant, indicating that the model fits. Both the CFI and the RMSEA indicated good fit. The chi-square of change comparing Model 14 with Model 13 was non-significant, indicating that the more parsimonious Model 14 is preferable and that the path from relationship harmony to life satisfaction can be removed. Furthermore, the modification indices indicated that no additional path was needed for Model 14 (result not shown). Therefore, Model 14 was retained as the final model of the present study.

Figure 3 shows the path diagram of the final model with the estimated path coefficients, whose $t$ values were all significant at least at the $p < .05$ level. The diagram shows that perceived/expected financial status explains entirely the effect of optimism on life satisfaction. Optimism has no direct effect on life satisfaction. However, it has an indirect effect through the mediation of perceived/expected financial status. Furthermore, optimism holds paths to self-esteem and relationship harmony, and it contributes to perceived/expected health status. Whereas self-esteem contributes to life satisfaction, neither relationship harmony nor perceived/expected health status contribute to life satisfaction. The path from perceived/expected financial status to life satisfaction is the strongest in the model, highlighting the importance of this variable. The percentage of variance in life satisfaction explained by the model was 73%, that is an increase of 26% compared to the model without perceived/ expected financial status shown in
Figure 2, and an increase of 31% compared to the model without optimism and perceived/expected financial status shown in Figure 1.

**Additional Analyses on Education and Gender**

The study sample had an uneven distribution of participants as concerns educational achievement and gender. Due to the relatively small sample size, education and gender could not be included in the models and, thus, controlled for. Therefore, it is possible that the final models of this study are biased by education and gender. In particular, given that the participants were all retired, it is possible that more educated participants and women were better
positioned in finding non-working roles and alternative interests in life; therefore, the model for more educated elderly and women may differ from the model for less educated elderly and men. We performed two sets of sensitivity analyses in order to infer how strong the education and gender biases might be.

In the first set of sensitivity analyses, we explored whether education and gender differences influence the level of life satisfaction, as well as the level of all the predictors of life satisfaction considered in this study. The variable of years of education was categorized into low and high based on the median split. Independent samples t-tests were then conducted comparing the mean of each of the variables between education and gender groups. Of the 16 tests performed none turned out to be significant (results not shown).

In the second set of analyses, we explored whether education and gender moderate the direct paths from optimism, self-esteem, relationship harmony, perceived/expected health status, and perceived/expected financial status to life satisfaction. For each of the paths separately, we tested the moderation hypothesis by regressing life satisfaction on the predictor, the potential moderator (education or gender), and the interaction between the predictor and the potential moderator. Of the 10 estimated regression models none exhibited a significant interaction (results not shown).

These findings indicate that education and gender are neither mediators nor moderators of the relationships between the predictors included in the path models and the dependent variable of life satisfaction. Thus, education and gender appear not to markedly influence the path models of this study. However, due to the small sample size, the test of interactions had low statistical power. It is therefore possible that with either a larger sample or an evenly distributed sample education and gender would prove to be moderators of the relationship between optimism, self-esteem, relationship harmony, perceived/expected health status, and perceived/expected financial status, on the one hand, and life satisfaction, on the other hand.

**DISCUSSION**

The present study provides evidence in support of the importance of optimism as a dispositional determinant of life satisfaction in community dwelling Chinese elderly living in Hong Kong, and clarifies the process by which positive expectations lead to more subjective well being. Evidence comes from testing and comparing various path models of life satisfaction. The analysis proceeded in three modeling steps. In the first step, the pancultural model (Kwan et al., 1997) was tested, and possible modifications of the path structure were investigated. In the second step, optimism was added to the pancultural model and its effects were investigated. In the third step, perceived/expected health and financial status were added to the pancultural model together with optimism and their effects were investigated. In each modeling step a final model was obtained. The final model
from the third modeling step stood up as the most predictive, insightful, and potentially useful.

The first modeling step substantially corroborated the age-invariance of the pancultural model (Kwan et al., 1997) in that the structure of causal paths toward life satisfaction for Chinese elderly matches the structure that was previously identified on Hong Kong Chinese and North American college students (Kwan et al., 1997). For both young and old adults, life satisfaction was predicted by self-esteem and relationship harmony, which in turn were predicted by independent and interdependent self-construals, respectively.

Nevertheless, the model for Chinese elderly differed in an interesting way from the model for college students. We found an additional path from interdependent self-construal to global self-esteem, such that elderly with a more developed interdependent self tend to have more self-esteem. Kwan and coworkers (1997) did not include this path in the theoretical formulation of the pancultural model, but in post hoc analyses on samples of college students found that this path was statistically significant. However, the path had a negative sign, such that college students with a more developed interdependent self tended to have less self-esteem. Drawing from Schwartz (1992), Kwan and coworkers interpreted this negative relation as evidence of a trade-off between communal tendencies and self-assertiveness, and hypothesized that the desire for enhancing interpersonal relationships sometimes clashes with the desire for enhancing self-esteem. On the contrary, our findings suggest that in Chinese elderly the desire for enhancing interpersonal relationships is congruent with the desire for enhancing self-esteem.

The difference in findings between the present and Kwan and coworkers’ (1997) study is consistent with prior observations that elderly are less focused on achieving personal or career-related goals but are more devoted to interpersonal accomplishment (Atchley, 2000; Hooyman, 1996), and that people invest increasingly in close, intimate relationships as expected time to death shrinks (Fung, Carstensen, & Lutz, 1999). These developmental trends would explain why maintaining interpersonal relationships and achieving harmony with others may lead to more self-worth in late life. Therefore, the shift from a negative to a positive relation linking interdependent self-construal with self-esteem might be a pancultural developmental process.

However, because the comparison between age groups is cross-sectional, cohort effects might confound the findings. Hong Kong has rapidly transformed from an industrial economy to a service economy in the last few decades. For example, in the decade 1991-2000 (Hong Kong Annual Digest of Statistics, 2001), industrial production decreased of 17%, whereas external trade increased of 209.1%. As a result, the number of workers in the manufacturing sector dropped 64%, whereas the number of workers in the financing, insurance, real estate, and business services increased 46.7%. This switch in occupational demands was vigorously supported by the education system, with an increase of 25.5% in the number of students entering higher education. The psychological effects of these
and other sharp social changes might be the actual cause of the difference in findings between the present and Kwan and coworkers’ (1997) study.

The second modeling step extended the pancultural model (Kwan et al., 1997) by inserting optimism as an additional dispositional variable and supported the hypothesis that optimism is the central predictor of life satisfaction in Chinese elderly. Life satisfaction was predicted directly by optimism, self-esteem, and relationship harmony. Furthermore, optimism predicted both self-esteem and relationship harmony. Optimism was not predicted by self-construals, whereas self-esteem and relationship harmony were predicted by self-construals as already found in the first modeling step. As hypothesized, optimism generated the greatest number of paths and, thus, had the central role in the model of life satisfaction.

The third and final modeling step extended the pancultural model (Kwan et al., 1997) with optimism by introducing perceived/expected health and financial status and supported the hypothesis that optimism contributes to the life satisfaction of Chinese elderly by promoting positive perceptions and expectations of the extent to which their basic needs are and will be fulfilled. When optimism was specified as the predictor of perceived/expected health and financial status, perceived/expected financial status became the strongest predictor of life satisfaction in the model and mediated entirely the positive effect of optimism on life satisfaction. At the same time, perceived/expected health status was predicted by optimism but did not predict life satisfaction. Furthermore, relationship harmony no longer predicted life satisfaction. Finally, the pattern of the remaining paths in the model that had been established in the first and second modeling steps remained unchanged. These findings support the hypothesis that optimism (e.g., Boland & Cappeliez, 1997) and fulfillment of basic needs (e.g., Fisher, 1995) are both key contributors to the life satisfaction of elderly and, in addition, indicate that optimism becomes a powerful predictor of life satisfaction in the extent to which it leads to more positive perceptions and expectations of financial status.

The present study adds to the evidence in support of the hypothesis that coping mediates the relationship between optimism and psychological adaptation. We propose four explanations of the specific coping mediation process represented in the final model. First, compared to pessimistic elderly, optimistic elderly may view their current financial problems as less severe. Second, they may think less of the risk of future financial downturns. Third, when they anticipate financial problems, they may see them as less severe. Finally, they may take more effective actions in tackling their current financial problems, thus preventing or reducing the negative consequences of these problems. Although studies conducted on college students provide some support for the first and last explanations (Blankstein et al., 1991; Scheier & Carver, 1992), these speculations need to be tested specifically on samples of elderly.

An interesting finding is that, although perceived/expected health status and perceived/expected financial status were both very well predicted by optimism, only perceived/expected financial status in turn predicted life satisfaction. Maslow
(1962, 1970) theorized that there are different levels of needs that have to be fulfilled in human development and argued that it is a prerequisite to fulfill the needs in the basic level, such as needs for food and security, in order to strive for those in the higher levels of the hierarchy, such as need for self-esteem. Following Maslow, we propose that the difference in findings concerning health and financial status is due to the difference in salience of health and financial status for the specific study sample. On the one hand, the participants were relatively healthy and physically active. On the other hand, most participants were financially dependent on government subsidies or family support. It is therefore likely that financial status was a much more salient basic need than health status and, as such, was the only one to impact on life satisfaction. If this speculation is correct, the found asymmetry of paths should be reversed in samples of wealthier but less healthy elderly.

Another interesting finding is that the introduction of perceived/expected financial status in the model made relationship harmony a non-significant predictor of life satisfaction. This means that the variance in life satisfaction that was originally accounted for by relationship harmony was then appropriated, at least in part, and explained by perceived/expected financial status. This finding further emphasizes the importance that perceived/expected financial status has on the subjective well being of the study participants.

Is the model developed in this study specific to community dwelling Chinese elderly living in Hong Kong? This is largely an empirical question that can be answered only by replicating the study on elderly and other adults in different cultures. Our speculation is that the model would generalize because optimism is theorized to be a pervasive determinant of subjective well being across the life span and cultures (e.g., Peterson, 2000). However, invoking Maslow’s (1962, 1970) hierarchical theory of needs, we propose that the effect of optimism on life satisfaction in other samples might be mediated by perceptions/expectations relative to basic needs other than health and finances. For example, for college students, academic performance, career success, and the development of an intimate bond may be more salient needs than health and financial status. Therefore, we suggest that the effect of optimism on life satisfaction in a specific sample will be mediated by perception/expectations relative to those needs that are most pertinent and salient to that sample.

The model of this study can, in principle, be applied to enhance the life satisfaction of community dwelling Chinese elderly living in Hong Kong. The logic of the application is: if an intervention enhances optimism, elderly will have more positive perceptions/expectations concerning their basic needs fulfillment, more self-esteem, more relationship harmony and, in turn, more life satisfaction. However, we do not know if optimism can be changed in late life. Most intervention work has been conducted on children (Gillham, Reivich, Jaycox, & Seligman, 1995; Seligman, 1990) and has demonstrated that the use of cognitive-behavioral techniques results in less depressive symptoms years after
the intervention. To our knowledge no study has yet established the effectiveness of optimism-enhancing techniques in elderly. Therefore, the potential for applying the identified path model to the enhancement of the subjective well being of Chinese elderly exists and is potentially relevant to social service researchers, but further investigations are required to evaluate its feasibility.

This study is affected by four key limitations that call for cautiousness in interpreting, generalizing, and applying the study findings. First, due to the small sample size, we could not formally test variables that were previously found to influence life satisfaction, such as education (Witter, Okun, Stock, & Haring, 1984) and gender (Haring-Hidore, Stock, Okun, & Witter, 1985). This limitation can be overcome in future research by drawing larger samples.

Second, the sample distribution was uneven as concerns gender (72.6% were women), educational attainment (79.5% did not go beyond primary school), and income (80.3% depended on external support). Therefore, the study sample cannot be considered representative of the whole population of Chinese elderly living in Hong Kong. The study sample should be rather viewed as possibly representative of the subpopulation of community dwelling elderly living in Hong Kong. As such, the interpretation and possible application of the study findings should be confined to that specific subpopulation.

Third, the construct of optimism was developed based on Western expectancy-value theories that might not fully apply to members of the Chinese culture. Furthermore, the Chinese version (Lai et al., 1998) of the LOT-R (Scheier et al., 1994) used in this study to measure optimism has been previously shown to have relatively poor psychometric properties. Therefore, although the evidence gathered in this study tentatively supports various links between optimism and subjective well being in Chinese elderly, there is the need of developing an emic inventory for measuring optimism in Chinese samples. This line of inquiry may eventually lead to identifying indigenous constructs of optimism that are potentially more valuable for understanding and promoting the subjective well being of members of the Chinese culture.

Finally, the path models were tested on cross-sectional data. Therefore, although we formulated the research hypotheses in the causal language of structural equation modeling, the models should be interpreted as tentative causal models that can only suggest a structure of possible causal relationships. This limitation can be overcome in future research by conducting a more stringent test of the models within a longitudinal intervention study.

Despite its limitations, this study contributes to the knowledge of the determinants of life satisfaction in late life. First, previous studies focused on single variables or on subsets of the variables considered here. This study developed and validated a comprehensive model that represents simultaneously the relationships among all the variables, and identified the specific and unique paths by which each variable contributes to life satisfaction. Second, this study supported the pancultural model (Kwan et al., 1997), showed its substantial age-invariance,
and suggested an interesting developmental difference concerning the contribution of interdependent self-construal to global self-esteem. Third, this study developed the pancultural model by explicitly incorporating expectations in the form of optimism and perceptions/expectations of basic needs fulfillment, and identified the process by which optimism influences life satisfaction through the mediation of perceptions/expectations of financial status. Lastly, this study provides suggestions for planning longitudinal interventions and possibly demonstrating how to enhance subjective well-being in late life.

REFERENCES


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