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PHYSICAL HEALTH AND PSYCHOLOGICAL WELL-BEING IN THAI OLDER ADULTS: SOCIAL COMPARISON AS A MEDIATOR

Pornpat Hengudomsub[1]*, Jantana Koedbangkham*, and Waree Kangchai**

* *Depar tment of Psychiatric and Mental Health Nursing, Faculty of Nursing, Burapha University, Chonburi 20131, Thailand.*
** *Department of Basic Science of Nursing, Faculty of Nursing, Burapha University, Chonburi 20131, Thailand.*

ABSTRACT

The overall purpose of this study was to examine possible mechanisms by which Thai older adults manage their lives to report high levels of psychological well-being despite the difficulties associated with aging, especially those in the physical domain. Social comparison is proposed as a protective factor which older adults use to enhance their psychological well-being. Thai community-dwelling older adults aged 60 years and older (N = 700) completed structured questionnaires (in an interview format). The questionnaires assessed physical health (number of chronic health problems, symptom bother, subjective health, and functional health), social comparison, and psychological well-being (positive relations, self acceptance, and purpose in life). The results showed that better physical health was linked with more positive social comparison, which was also linked with higher levels of psychological well-being. Structural Equation Modeling (SEM) was used to examine whether social comparison mediated the relation between physical health and psychological-well-being once error was attenuated. The results showed a significant direct pathway from physical health to psychological well-being and an indirect pathway from physical health to psychological well-being through a mediator "social comparison".

Key Words: Thai older adults, social comparison, physical health, psychological well-being.

INTRODUCTION

In Thailand, a longer life expectancy coupled with a dramatic decline in birth rate have resulted in a rapidly aging population. The proportion of older Thai persons in total population will be increased to 14.0 per cent in 2015, 19.8 per cent in 2025, and nearly 30 per cent in 2050 (United Nations, 2005). As more individuals reach old age, an increase in the number of chronic illnesses is expected. Similar to the pattern in the West, most Thai older adults have at least one chronic condition (Hengudomsub, 2004; Jitapunkul and Bunnag, 1999; Mahidol University, 1999). There are age-related changes in physical

* 1 Corresponding author: Email address: pornpat@buu.ac.th

functioning, symptomatology, and chronic illnesses as people age (Plach et al., 2003), and these declines in physical health and functioning are usually linked to increase psychological distress such as depression and anxiety (Heidrich and Powwattana, 2004; Hengudomsub, 2004).

Health decline is the most common factor associated with aging (Kozma et al., 1991; Smith et al., 2002) and has been found to be related to psychological well-being (Nesbitt and Heidrich, 2003; Heidrich and Ryff, 1995). However, a persistent finding in gerontological research has been that even though some older adults experience declines in physical health, such as increases in chronic illnesses and injuries, when they are asked to describe their health and their lives, they nevertheless report generally positive outlooks. Huntikul and Sangmanee (1998) studied the incidence of chronic diseases among Thai older adults (N = 75), they found that 82.7 percent of these participants had chronic diseases, and 20 percent of them had more than 2 diseases. The most common diseases were arthritis, hypertension, and diabetes mellitus. When asked about their lives, however, most of them reported being happy and satisfied. Only 1.3 percent of these participants reported being unsatisfied with their lives. One possible explanation for this seeming paradox is that aged individuals interpret or "make sense of" their objective health status in ways that protect their psychological well-being and social comparison might be the self-enhancement factor that explains this phenomenon (Brandstader and Rothermund, 2002, Heidrich and Ryff, 1993a, 1993b).

Social comparison theory mainly refers to the proposition that individuals learn about and evaluate themselves by comparison with other people. According to the social comparison theory (Festinger, 1954), individuals are motivated to evaluate their abilities and to protect their self-esteem in the face of threat. People use social comparisons in a flexible and strategic way to cope with situations and to enhance their psychological well-being (Diener and Fujita, 1997; Frieswijk et al., 2004). The positive influence of social comparison on numerous dimensions of well-being has been found in many studies of aging populations. For example, Heidrich and Ryff (1993a, 1993b), Buunk (1995), and VanderZee et al. (1995) demonstrated that well-being is affected directly by the perception of being better off than similar others, independent of physical health. Heidrich and Ryff (1993a) tested the mediating role of social comparison on the relationships between physical health and psychological well-being among community-dwelling older women (N=243, mean age=74 years). The results supported the hypothesis that social comparison mediated the relationship between physical health and multiple indicators of psychological well-being and psychological distress. That is physical health per se did not directly affect psychological well-being once social comparison was brought into play. Later, the same researchers (Heidrich and Ryff, 1995) conducted a short-term longitudinal study that reached the same basic conclusion.

The beneficial effects of social comparison as a mediator were also supported in a study of community relocation of older women (N = 120, mean age = 74.9 years) (Ryff and Essex, 1992). The results showed that making social comparison within particular realms of life (i.e., health, families, friends, daily activities, and economics) was strongly linked to multiple aspects of psychological well-being. The women in their study who felt that they compared favorably with others in their new environments—and who perceived that their families and friends had positive assessments of how they were doing in multiple domains of life—had higher levels of psychological well-being (i.e., environmental mastery, positive relations with others, etc.). Ryff and Essex (1992) and Kwan et al. (2003) added longitudinal refinement to the query, showing that increased self-enhancing evaluations (i.e., social comparison) in multiple life domains such as daily activities and health predicted improvement in multiple dimensions of psychological well-being.

Chou and Chi (2001) examined the role of social comparison in an Asian culture. The participants in their study were 411 Chinese older adults aged 60 or older living in Hong Kong. The respondents were asked to state how they rated themselves in four domains (physical health, financial

situation, relationship with adult children, and social support from friends) on a 5-point scale ranging from (1) much worse than others to (5) much better than others of their own age. The results showed that social comparison mediated the effect of support from friends on depressive symptoms. In addition, social comparison was also a partial mediator in the linkage between financial strain and depressive symptoms.

Hengudomsub (2004) used open-ended questions to probe the use of social comparison among 51 Thai older adults. Three questions were asked: (1) "when thinking about how you are doing as you get older, do you ever compare yourself to other people?", (2) "with whom do you compare yourself?" , and (3) "how do you see yourself when you compare yourself to others?" A majority of the respondents reported that they did make comparisons with others, mostly with their friends, followed by relatives or even with persons created in their imagination. Interestingly, some respondents compared themselves with persons they knew from the media. There was an evidence of upward and downward as well as mixed comparisons. Some respondents reported that the main purposes of making comparisons with others were to do self-evaluation and self-enhancement (i.e., to make them feel good about themselves).

To date, there is no study focusing on the impact of social comparison on the psychological well-being of older Thai persons. However, some research conducted with Thai older adults found that some of these older adults confronted with various problems in their lives such as health problems, financial problems, or loneliness. When they were asked to rate their life satisfaction and happiness, they still rated themselves as happy and satisfied with their lives (Hengudomsub, 2004; Mahidol University, 1994). One possible explanation is that these older adults might compare themselves with someone worse off than they are. This is related to a Buddhism proverb that Thai people always think of when they have some problems or difficulties in their lives. This proverb says "try to think about the suffering that some people who are worse off than you have to endure". This proverb suggests the cultural notion that older adults who are confronted with stressors in their lives might tap into social comparison as a self-enhancing factor to help them maintain or improve their psychological well-being. According to Young (1996), Buddhism offers perhaps the most developed account of human suffering and its meaning because its founder (Buddha) took as his central mission the alleviation of suffering. This principle contains psychological insight and practical wisdom related to the transformation of difficulty into development.

Given the importance of social comparison as a self-enhancement factor in later life, research examining the role of social comparison in Thai elders is needed. Taking into account the relationships among physical health, psychological well-being and social comparison, a theoretical model was proposed in which physical health was hypothesized to have a direct effect on psychological well-being as well as indirect effects mediated by social comparison. The specific research questions were: (a) what are the relationships among physical health, social comparison and psychological well-being in Thai community-dwelling older adults?, and (b) does social comparison mediate the influence of physical health on psychological well-being in Thai community-dwelling older adults?.

The purposes of this descriptive, cross-sectional study were to describe physical health, social comparison, and psychological well-being in Thai community-dwelling older adults, as well as to test the mediating role of social comparison on the relationship between physical health and psychological well-being.

MATERIALS AND METHODS

SAMPLE

Seven hundred Thai older adults participated in this study. These participants were recruited from communities located in Chonburi province, Thailand, by means of multi-stage sampling. Inclusion criteria were that the participants must be individuals aged 60 or older who lived at home and whose mental status allowed reliable participation in the interview process. The average age of these participants was

69.83 years (SD=6.63, range=60-90). Fifty-eight percent of the participants were female. Most of the participants were Buddhist (96%). The sample included the people who were married (55.1%) and widowed (28.9%). The majority of them had only primary education (78.4%). Most of them lived in their own homes, either with their spouses or their children (85.9%). Participants rated their income as insufficient (18.5%), sufficient but not enough for saving (57.1%), or sufficient and enough for saving (24.4%).

INSTRUMENTS

The instruments used in this study consisted of the following:

Demographic measure. The questionnaire contained items related to demographic characteristics of the sample such as age, education, living arrangement, and subjective income.

Physical health measures. Physical health was measured with four self-report scales chosen to assess different dimensions of health: number of health problems, symptom bother, subjective health, and functional health.

Number of health problems (NH). Participants were asked whether they had any of the following 10 chronic illnesses: musculo-skeletal disease (e.g. arthritis), heart disease, high blood pressure, diabetes mellitus, stroke, cancer, lung disease (COPD), kidney disease, stomach disease, eye disease (cataracts). These 10 chronic diseases were chosen because they were the most common chronic health problems among Thai older adults (Hengudomsub, 2004; Mahidol University, 1994). The participants identified whether or not they had experienced each illness in the recent past. The number of health problems was reported as a reliable and valid indicator of physical health status (Nesbitt and Heidrich, 2003). The total number of health problems and the frequency of each problem for the group were also computed.

Symptom bother (SB). The symptom bother scale (Heidrich and Ryff, 1993a) was used to assess the degree of bother from 13 symptoms commonly experienced by older adults as a result of aging or common chronic illnesses such as shortness of breath, pain, and fatigue. The participants were asked to indicate the degree of bother on a 4-point scale ranging from do not have (0) to bothered a great deal (3). Both the mean number of symptoms and the mean degree of bother from each symptom were computed, with higher scores indicating more symptoms and a higher degree of bother from symptoms. This scale had been preliminary tested with Thai older adults and had yielded good reliability (Hengudomsub, 2004). The reliability (alpha) coefficient obtained from this study was .73.

Subjective health (SH). Subjective health was measured by a single item—"in general, how would you rate your health?" on a 5-point scale (poor to excellent), with higher scores indicating better health. This measure has been described as one of the best predictors of mortality and morbidity among older adults, and is reported to be more predictive than physician ratings of future health status (Idler and Kasl, 1991). This measure has also been widely used with Thai older adults (Hengudomsub, 2004; Thaicharoen, 2001).

Functional status (FS). Functional Status was evaluated using participants' ratings of how well they performed 15 common activities essential for living in a community (e.g., eating, dressing, grooming). For each item, participants were asked whether they were: unable to perform the task (0); able to perform the task with help from others (1); able to perform the task (but slow) (2), and able to perform the task independently without any difficulties (3). This scale was developed by the Thai Aging Institute (2002). The scores were summed, with higher scores indicating a better functional status. The Cronbach's alpha coefficient obtained from this study was 0.96.

Social comparison measure. The Social Comparison (SC) developed by Kling et al. (1997) was used to assess how participants compared themselves with others of the same age. This scale was framed within five domains: family relationships, friends, economics, daily activities, and health. Within each domain, the participants were asked to rate how they compared themselves with others. The response

format consisted of a 6-point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). For each domain, there were four items (balanced between negative and positive phrasing). Mean scores were computed, with higher scores indicating more positive comparison. These scales were used with older Thai respondents in Hengudomsub's pilot study, and reported good reliability. The internal consistency (alpha) coefficients obtained for subscales were as follows: family relationships (SFA) = 0.62; friends (SFR) = 0.60, economics (SECO) = 0.75; health (SHE) = 0.72; daily activities (SACT) = 0.60. The reliability (alpha) coefficient of the total scale (SC) obtained from this study was 0.83.

Psychological well-being measures. Three subscales of psychological well-being (PWB) developed by Ryff and Keyes (1995) were used in this study. These three separate developmentally-based dimensions of well-being were assessed using Ryff's (1989) scales of positive relations, purpose in life, and self-acceptance. These three dimensions of psychological well-being provided a more differentiated view of well-being in later life than is evident in prior research, which usually used happiness and life satisfaction as indicators. Each subscale, consisting of 7 items, taps a developmental aspect of psychological well-being in older adults. Self acceptance reflects having a positive attitude about both one's self and one's life. Positive relations with others refer to being able to make and maintain warm, satisfying, and trusting relations with others. Purpose in life is associated with having goals and objectives for living, a sense of directedness, and feeling there is meaning to life. The respondents were asked to rate agreement or disagreement with each item on a 6-point scale (from strongly disagree to strongly agree), and mean scores were computed. Higher scores indicated higher levels of psychological well-being. In this study, the reliability estimates were: positive relations = 0.74, purpose in life = 0.73, and self-acceptance = 0.72. The reliability (alpha) coefficient of the total scale (SC) obtained from this study was .86.

RESULTS

The results of this study are discussed in three parts. First, the descriptive data regarding physical health, social comparison, and psychological well-being are presented. Second, the relationships among physical health, social comparison, and psychological well-being are described. Finally, the analyses of testing the mediating role of social comparison are reported.

Descriptive findings.

Means, standard deviation for physical health, social comparison, and psychological measures are reported in Table 1.

Physical health. The average number of health problems in this sample was 2.03 (SD = 1.41). The average number of symptoms was 6.32 (SD = 3.24). On average, the older adults in this study reported less difficulty of daily activity (36.97; SD = 7.26) and they were generally positive about their subjective health (mean = 3.30, SD = 0.97).

Social comparison. Older participants in this study had the most positive social comparison in the domain of relationships with family (mean = 4.69, SD = 0.91) followed by health (mean = 4.35, SD = 1.04), and the lowest scores on the domain of economics (mean = 3.60, SD = 0.86). Mean scores of the 5 domains ranged from 3.60 to 4.69, which were above the midpoint on the scale (i.e., doing better than others). This indicates that these older Thai participants reported positive social comparison.

Psychological well-being. Overall, these Thai older adults reported high levels of psychological well-being (i.e., the mean for each subscale was above the midpoint of the scale). They showed the highest self-ratings on the measure of positive relations with others (mean = 4.42, SD = 0.79) and the lowest ratings for purpose in life (mean = 3.41, SD = 0.68).

Table 1. Descriptive result of all study variables

Variables	Mean	SD
Physical health		
-Functional status	36.97	7.26
-Number of symptoms	6.32	3.24
-Subjective health	3.30	.97
-Number of health problems	2.03	1.41
-Symptom bother	1.27	.70
Social comparison		
-Family relationships	4.69	.91
-Health	4.35	1.04
-Friend relationship	4.21	.60
-Daily activities	4.10	.91
-Economics	3.60	.86
Psychological well-being		
-Positive relations with others	4.42	.79
-Self acceptance	3.95	.82
-Purpose in life	3.41	.68

Table 2 shows the most common health problems reported by older participants included musculo-skeletal disease (44.0%), diabetes (38.0%), eye disease (37.0%), and hypertension (33.3%). With respect to symptom bother, the participants were more likely to report aching in any part of the body (72.0%), poor vision (61.0%), insomnia (52.0%), numbness (50.0%), and problems with hearing (50.0%).

Table 2. Health problems and symptoms in order of frequency.

Health problems			Symptoms		
	N	%		N	%
Musculo-skeletal disease	308	44.00	Aching in any parts of body	504	72.0
Diabetes mellitus	266	38.00	Vision problems	427	61.00
Eye disease	259	37.00	Insomnia	364	52.00
Hypertension	233	33.30	Numbness	350	50.00
Stomach disease	119	17.00	Hearing problems	350	50.00
Hearth disease	70	10.00	Getting tired easily	336	48.00
Lung disease	63	9.00	Dizziness	329	47.00
Toxic goiter	30	4.28	Indigestion	280	40.00
Kidney disease	28	4.00	Shortness of breath	280	40.00
			Incontinence	273	39.00
			Constipation	259	37.00
			Stiffness	260	37.10
			Memory problems	150	21.42

Relationships among physical health, social comparison, and psychological well-being

Table 3 contains the correlations among the study variables including physical health, social comparison, and psychological well-being. The psychological well-being and social comparisons showed a similar pattern of correlations with the physical health measures. That is, all had significant negative correlations with the reverse scores of subjective health ratings (r = -0.17 to -0.53) and significant negative correlations with number of health problems (r = -0.06 to -.31) and symptom bother (r = -0.13 to -0.43). These correlations indicated that those with poor health had lower levels of psychological well-being. Poor physical health status was also significantly negatively correlated with social comparison. Positive social comparison was positively correlated with psychological well-being.

Table 3. Zero-order correlations of study variables.

VAR	1	2	3	4	5	6	7	8	9	10	11	12
1	1											
2	.444**	1										
3	.072	.250**	1									
4	.060	.050	.039	1								
5	-.243**	-.392**	-.216**	-.099**	1							
6	-.213**	-.163**	-.171**	-.036	.219**	1						
7	-.102**	-.131**	-.234**	.003	.225**	.364**	1					
8	-.202**	-.302**	-.526**	-.086*	.381**	.268**	.471**	1				
9	-.063	-.294**	-.216**	-.037	.281**	.196**	.405**	.459**	1			
10	-.221**	-.401**	-.387**	-.024	.422**	.346**	.491**	.498**	.354**	1		
11	-.224**	-.311**	-.429**	-.034	.403**	.038	.298**	.395**	.253**	.524**	1	
12	-.307**	-.424**	-.406**	-.062	.527**	.218**	.454**	.517**	.431**	.663**	.660**	1

Note: *Sig. p<.05; ** p<.01

Physical health (1-4):
1=No of health problems
2=Symptom bother
3=Subjective health (Reverse score)
4=Functional status (Reverse score)

Social comparison (5-9):
5=Economics
6=Friendships
7=Family relationships
8=Health
9=Daily activities

Psychological well-being (10-12):
10=Positive relations
11=Purpose in life
12=Self-acceptance

Mediating effect of social comparison

To determine whether social comparison mediates the relationships between physical health and psychological well-being, the Structural Equation Modeling (SEM) approach was used to test the hypothesized model. The advantages of SEM are that it incorporates measurement errors and provides modeling of non-recursive structures (Brown, 1997). In this model, physical health was hypothesized to have direct effects on psychological well-being, and indirect effects which were mediated by social comparison. There were two steps to testing the model: first, testing the measurement model, and second, testing the structural model. In this analysis, only the proposed hypothesized model was tested in an effort to examine the direct and indirect effects of physical health and psychological well-being. We did not attempt an exhaustive test of all alternative configurations.

Assessment of the measurement model

To evaluate whether the measurement is suitably represented by the observed model, the relationship between latent variables and their indicators (observed variables) was examined. Among the latent variables, "physical health" had four indicators, "psychological well-being" had three indicators, and "social comparison" had five indicators. The results showed that each measured variable served as a reliable indicator of its underlying construct. As displayed in Figure 1, indicator loadings or Lambda [] were significant, as indicated by significant t-values (i.e., t-values greater than 1.96 in absolute value) (Diamantopoulos and Siguaw, 2000). The t value was defined as the ratio between path coefficient and its standard value. The significant t-values indicated that the observed variables were good indicators of each underlying construct. Symptom bother served as the strongest indicator for the latent variable "physical health". Fifty-seven percent of the variance in symptom bother could be explained by the latent factor "physical health".

For the latent variable "social comparison", health comparison served as the strongest indicator. Seventy-four percent of the variance in social comparison could be explained by the latent variable "social comparison". For the latent variable "psychological well-being", self acceptance was the strongest indicator. Eighty-nine percent of the variance in self acceptance could be explained by latent factor "psychological well-being". Poor health was negatively correlated with social comparison and psychological well-being. Positive social comparison was positively correlated with psychological well-being.

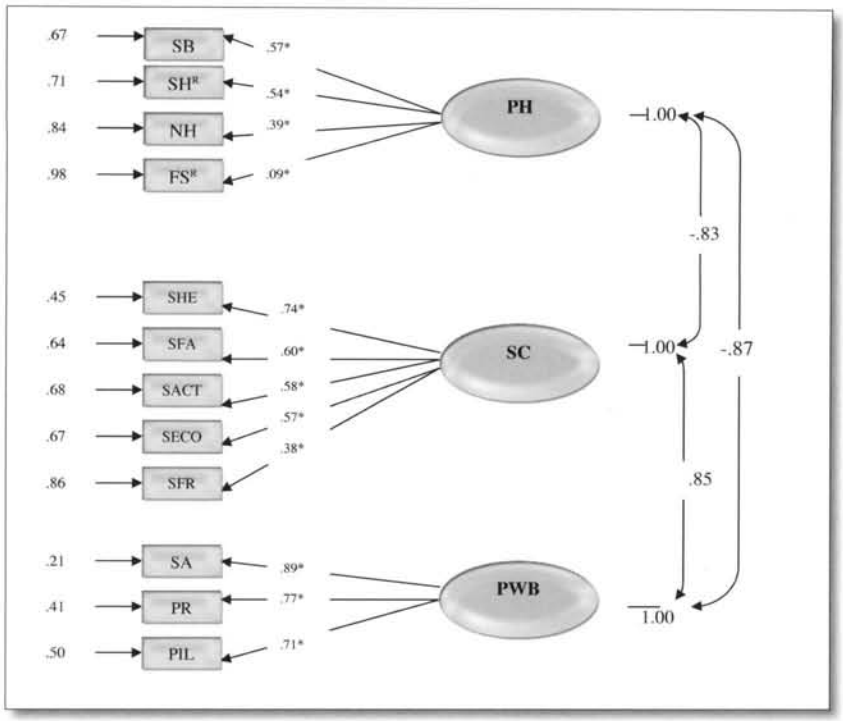

Figure 1. Parameter estimates of physical health, social comparison, and psychological well-being.

Note: * Significant path

Physical health [PH]:
SB = Symptom bother
SH^R = Subjective health (Reverse score)
NH = No of health problems
FS^R = Functional status (Reverse score)

Social comparison [SC]:
SHE = Health
SFA = Relationships with family
SACT = Daily activities
SECO = Economics
SFR = Relationships with friends,

Psychological well-being [PWB]:
SA = Self acceptance
PR = Positivse relations
PIL = Purpose in life

Assessment of structural model

The model was specified to show how it was analyzed using LISREL in Figure 2. This model presented both measurement and structural components. To provide a metric for the latent constructs and to identify the measurement model, the first construct loading for each latent construct was set to 1 in the analysis. Goodness of fit indices for the model were based on the maximum likelihood method. Parameter estimates of the model (Figure 2) are presented in Table 4.

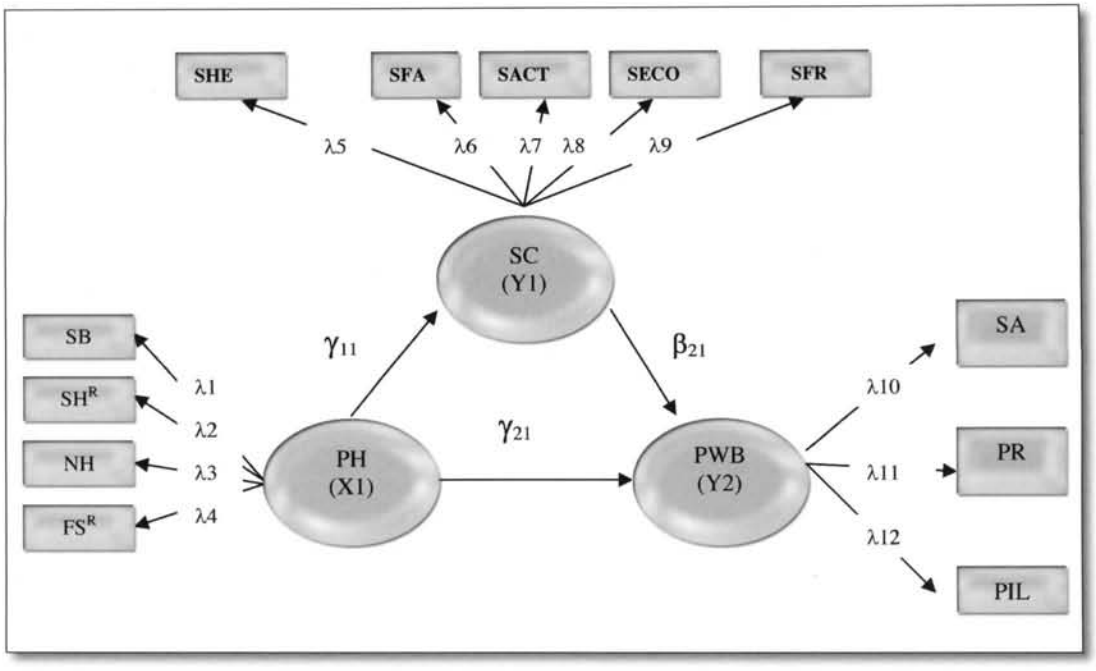

Figure 2. Measurement and structural model of the relationships among physical health, social comparison, and psychological well-being.

Table 4. Lisrel estimates of model parameters (structural and measurement models).

Measurement model			Structural model		
Parameters	Path coefficients	Standard error	Parameters	Path coefficients	Standard error
λ1[a]	1	-	γ_{11}	-0.82*	0.08
λ2	0.86*	0.08	γ_{21}	-0.09	0.15
λ3	0.81*	0.08	β_{21}	1.15*	0.16
λ4	0.14*	0.07			
λ5[a]	1	-			
λ6	0.82*	0.06			
λ7	0.77*	0.06			
λ8	0.88*	0.07			
λ9	0.52*	0.06			
λ10[a]	1	-			
λ11	0.92*	0.04			
λ12	0.74*	0.05			

Note: [a] = Fixed value

* Indicated significant path (t value>1.96)

Based on Baron and Kenny's approach (1986), Social Comparison (SC) functions as a mediator when it meets the following conditions: (a) variations in the levels of the independent variable (physical health) significantly account for variations in the presumed mediator (SC) (i.e., path γ_{11}), (b) variations in the mediator (SC) significantly account for variations in the dependent variable (psychological well-being) (i.e., path β_{21}), and (c) when paths γ_{11} and β_{21} are controlled, a previously significant relationship between independent (physical health) and dependent variable (psychological well-being) is no longer significant , with the strongest demonstration of mediation occurring when path γ_{12} is zero.

The results from this study showed that there was a significant direct effect of health on social comparison (the mediator) (condition **a** was met, estimated parameter = -0.82, SE = 0.08, t = -10.69 [γ_{11}]). There was also a significant effect of the mediator variable (SC) on psychological well-being (condition **b** was met, estimated parameter = 1.15, SE = 0.16, t = 6.99 [β_{21}]). When controlling for the mediating variable (SC) in the model, the direct effect of health on psychological well-being was no longer significant. This decrease indicated that condition c was achieved, estimated parameter = - 0.09, SE = 0.15, t = -0.64 [γ_{12}]. The Fit indices of this study are: χ^2 = 394.98, df = 43, RMR = 0.06; NNFI = 0.80; CFI = 0.90; GFI = 0.91; AGFI = 0.85). Fit indices for this model were acceptable except the χ^2 statistics. The significant χ^2 statistics may be due to the large sample size. According to Kline (1998), the χ^2 statistics are sensitive to sample size, it is often difficult to achieve a non-significant χ^2 with a large sample size, and other fit indexes are more standardized and may be less sensitive to sample size than χ^2 statistics. Four of the recommended fit indexes are Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Non-Normed Fit Index (NNFI), and Comparative Fit Index (CFI). Theoretically, the values of these four indexes range from 0 (poor fit) to 1 (perfect fit). The values of these four indexes obtained from this study were acceptable.

The proportion of mediation in this model can be calculated by looking at the ratio of the total indirect effect (-6.03) to the total effect (-12.11). Specifically, in this model, the incorporation of a mediating variable explains about 50% of the effect on well-being. This model demonstrated that social comparison mediated the effect of health on psychological well-beings. This indicated support for the theoretical notion that favorable assessments of self in relationship to others play a role in mediating the effect of physical health on psychological well-being among Thai older adults.

DISCUSSION

This study used structured instruments to examine physical health, social comparison, and psychological well-being among Thai community-dwelling older adults. The findings from this study were consistent with those from the studies conducted in the West (Heidrich and Ryff, 1993a, 1993b; VanderZee et al., 1995). They supported the premise that although the psychological well-being of Thai older adults is influenced by their physical health status, this influence can be significantly mediated by social comparison. These findings have important implications for practice and research. These results highlighted the importance of a multidimensional assessment of physical health status. From this investigation, varied indicators of health status were conceptualized as a single latent variable of physical health. This method proved successful, and could be useful in health promotion and quality of life nursing research.

In addition, symptom assessment appeared to be valid and reliable in the assessment of Thai older adults' health, and also served as an important determinant of psychological well-being. This underscores the relevance of symptoms to the psychological well-being of Thai older adults, and should be considered for use in health assessments with Thai older adults. The results revealed that physical health has an impact on psychological well-being. Thus, health promotion, health maintenance as well as nursing interventions aimed at maintaining and promoting optimal levels of functioning in the face of having chronic health problems among older

adults should be an area of focus in the nursing research. The results help to clarify the relationships among physical health, social comparison, and psychological well-being in Thai community-dwelling older adults in one particular part of Thailand. Regardless of physical health, older adults with more positive social comparison were found to have better psychological well-being. Further research can help to gain a greater understanding of how social comparison contribute to and are affected by physical health status. The testing of interventions associated with social comparison to optimize health outcomes for healthy or frail older adults is needed to guide future practice.

Although this study contributes to an important information related to the study of physical health, psychological well-being as well as the mediating role of social comparison, some limitations need to be addressed. First, the cross-sectional nature of the study limits the ability to identify causal specification. Although an association was found between psychological well-being and social comparison, the causal directions of these relationships cannot be specified. It may be that self-enhancement (i.e., social comparison) leads to psychological well-being, or it may be that people who are more psychologically healthy perceive themselves in a self-enhancing manner, or both of these phenomena may occur simultaneously. These facts underscore the need for a longitudinal design which would help to untangle directions and determine changes over time. A further methodological concern is that, because all of the measures were based on self-reports, there is considerable common method variance that may have inflated the obtained effects. This type of research could be strengthened by a multi-method approach. For example, more objective physical health measures and family or friends' ratings of psychological well-being could be used.

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