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A PATH ANALYSIS OF SELF-CARE OF ELDERLY WOMEN IN A RURAL AREA OF SOUTHERN TAIWAN

Hsiu-Hung Wang and I Lee*

For rural elderly women in Taiwan, in addition to poor economic situations and limited health resources, changing traditional roles and responsibilities and changing family structures further aggravate their conditions of health. Self-care was considered as a strategy or a form of coping to enhance the health and quality of life of these women during their aging process. To design an effective health-promotion program for elderly women, therefore, understanding their self-care model is important for health care professionals. The purpose was to use a path analysis to test a model of self-care in predicting the direct and indirect effects of selected key variables on self-care among rural elderly women. A non-experimental, cross-sectional study was designed to test the proposed hypotheses and the paths in a causal model of self-care. Of the 200 elderly women invited to participate, 192 completed all interview questions. The proposed causal model was tested with a path analysis, using the LISREL 8 program. The resultant model showed that the chi-square was 3.65 with four degrees of freedom. The p-value for the resultant model was 0.46, revealing that the model fit the data and it was, therefore, retained. In addition to the χ^2 test, other fit indices also indicate the model fit the data well. In the resultant model, 56.0% of the total variance in self-care was accounted for by age, socioeconomic status, perceived health status, and social support ($p < 0.001$); 16.4% of the total variance in social support was accounted for by age, socioeconomic status, and marital status ($p < .001$); and 7.3% of the total variance in perceived health status was accounted for by social support ($p < .001$). The implications of nursing practice and research were discussed based on the findings.

Key words: rural elderly women, self-care, path analysis

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Bastida[1] posed some critical issues that affect elderly women in rural areas, such as poor economic situations, lack of support systems, and limited health resources. The migration of offspring to the more prosperous urban centers outside of the rural region further aggravate this situation. Migration of children greatly reduces family support provided to older women. Weinert and Burman[2] described several health concerns of rural older adults: higher rates of chronic illness, infrequent social contacts, and poor quality of life. These concerns contribute to a poor level of health among rural elderly women. For rural elderly women in Taiwan, changing traditional roles and responsibilities and changing family structures may further aggravate their conditions of health. Self-care of these women, therefore, is important to facilitate their health and should be emphasized as the basis of everyday life.

Because of isolation and the unavailability and inaccessibility of health care resources in rural communities, self-care is critical in assisting elderly women to meet their health needs and enhance their higher level of health. Knowledge

School of Nursing, Kaohsiung Medical College, *School of Nursing, Chang Gung College of Medicine and Technology, Kaohsiung, Taiwan, Republic of China
Received:June 20, 1998 Accepted:September 19, 1998
Address for reprints: Hsiu-Hung Wang, School of Nursing, Kaohsiung Medical College, No. 100, Shih-Chuan 1st Rd., Kaohsiung (807), Taiwan, Republic of China

of rural elderly women's self-care can help health care professionals understand how to provide an appropriate health care program to improve the self-care of these women. Health care professionals can support elderly women and increase their self-care by thoroughly assessing capabilities and behavior and the factors that influence their self-care. The purpose of this study, therefore, was to use a path analysis to test a model of self-care in predicting the direct and indirect effects of selected key variables on self-care among rural elderly women.

Self-care was defined as a set of activities in which one engages throughout life on a daily basis[3]. Self-care has been described as a strategy or a form of coping with life stressful events, such as widowhood and chronic illness[4,5]. Self-care is also considered to be an important nursing goal because such involvement has the potential to enhance the quality and meaning of life during the aging process[6]. In this study, the related influences of self-care were selected based on the following review of literature. This review of the literature was focused upon the relations between self-care and the related factors and the relations of self-care, social support, and perceived health status to each related factor.

Relations between self-care and social support

According to Weiss[7], social support was identified as six relational provisions: attachment, social integration, opportunity for nurturance, reassurance of worth, reliable alliance, and obtaining guidance. Jirovec and Kasno[8] contends that social support is related to self-care. That social support is positively correlated with self-care has demonstrated in previous studies[9-13]. These studies showed a consistently positive correlation between social support and self-care. Positive social support provides a context for learning effective coping strategies and for feedback to correct inappropriate action[14]. Many scholars[7,15,16] postulated that the presence of a social support system as an environmental resource which may facilitate self-care by meeting social interaction/relationship needs and enhancing motivation to engage in self-care actions. Social support is important because through it the society organizes the individual's thinking and acting. Without adequate social support, therefore, people may lack the motivation to engage in self-care and may put themselves at risk of receiving inadequate care and attention. Hence, social support was considered as an important predictor of self-care. The absence of support in later life, as may happen when a spouse dies, may have negative consequences for self-care.

Relations between self-care and perceived health status

Perceived health status was found to have a relationship to self-care in several studies[13,17-22]. Perceived health status as a significant predictor of self-care was demonstrated in studies of older adults[13,17,18], general adults[19,20], faculty women[21], and ambulatory cancer patients[22]. The findings of these studies suggest that individuals who report higher levels of perceived health status engage in more activities of self-care.

Relations of age and socioeconomic status to self-care

Age was found to have a positive correlation[17,22-24] or an inverse correlation with self-care[12,20,25,26]. The positive correlation between age and self-care demonstrates that the engagement of self-care activities increases with increased age. On the contrary, the inverse correlation between age and self-care contends that the engagement of self-care activities decreases with increased age. Because of various age groups used in previous studies, for older adults in this study, we hypothesized an inverse relation between age and self-care. Socioeconomic status (including education and occupation in this study) was found as a significant predictor of self-care[8,9,12,17,20,22-26]. The findings indicate that individuals who report higher levels of socioeconomic status engage in more activities of self-care.

Relations of age, socioeconomic status, and marital status to social support

Broadhead *et al.*[27] and Hooyman[28] suggested that demographic characteristics, such as age, socioeconomic status, and marital status may affect availability and accessibility of social support. This viewpoint was demonstrated in previous studies. Socioeconomic status was found to relate to social support: those with greater social support were from higher levels of socioeconomic status[12,29]. Marital status was also found to have a significant correlation with social support in a previous study[30]. Gulick[30] found that those with spouses perceived increased availability of aid over the course of the illness compared to individuals without spouses. Other research has found

that married subjects reported significantly higher perceived social support than did unmarried subjects[10,31].

Relations between social support and perceived health status

The significant correlation between social support and perceived health status was reported in a previous study of rural elderly[32]. Johnson[32] found a strong positive correlation between social support and perceived health status ($r = .81$, $p < .001$). This indicates that the presence of social support may facilitate individuals' perception about their health.

Relations between age and perceived health status

During the aging process, individuals encounter more health problems with increased age. For older adults, the higher rate of chronic illness and limitations of physical function may influence their perceptions about health. This viewpoint is supported by a survey in different countries[33]. The findings show that elderly people who reported higher levels of perceived health status were of greater age in some countries.

Based on the reviewed literature, a hypothesized causal model was proposed (Fig. 1). Based on the paths in the model, 10 hypotheses were tested. Each path represents one hypothesis, these hypotheses are grouped below.

(1) Age is inversely correlated with social support, perceived health status, and self-care.
(2) Socioeconomic status is positively correlated with social support and self-care.
(3) Marital status is positively correlated with social support and self-care.
(4) Social support is positively correlated with perceived health status and self-care.
(5) Perceived health status is positively correlated with self-care.

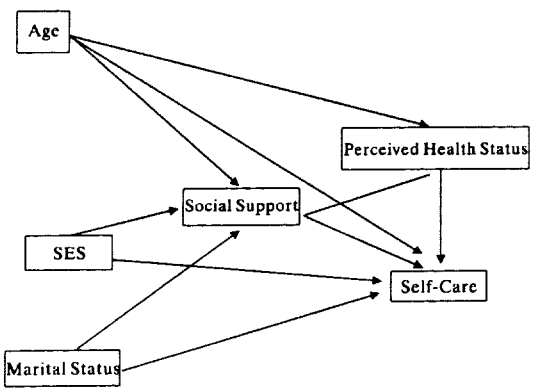

Fig. 1. Hypothesized causal model

In path analysis, the independent and dependent variables were identified as exogenous and endogenous variables respectively. In the path diagram, age, socioeconomic status, and marital status are exogenous variables and social support, perceived health status, and self-care are endogenous variables. Exogenous variables are measured variables that are not caused by any other variables in the model[34]. Endogenous variables are effects of exogenous variables and do not causally affect the exogenous variables, although the endogenous variables may causally affect other endogenous variables[34].

MATERIALS AND METHODS

This was a non-experimental, cross-sectional study designed to test the proposed hypotheses and the paths in a causal model of self-care. Path analysis procedure is formulated as one of estimating the coefficients of a set of linear structural equations[35]. It can be used to test the cause and effect relationships hypothesized by the investigator between one variable and another in non-experimental conditions. The purpose is to obtain the reduced form equations, to estimate the regression of the dependent variables on the independent variables. In this study, following data collection, the model of self-care was examined to determine its fit with the data. The hypothesized model was tested using the LISREL 8 (LInear Structural RELations 8) program[35].

All women aged 65 and older in Kao-Shu Hsiang made up of 19 villages were potential subjects in this study. Ten of the 19 villages were selected conveniently. A systematic random sampling was then used to select the participants. The recruitment criteria included being a non-institutionalized female, 65 years of age or older, residing in Kao-Shu Hsiang, able to communicate verbally, and agreeing verbally to participate in this study.

A survey-interview method was used for data collection. Seven community health nurses were recruited and trained for data collection. The interviewers received an orientation and were given instructions by the researchers. During this orientation and instruction session, the interviewers were trained to interview elderly women and to

be familiar with the questionnaires. During the period of data collection, the researchers met with the interviewers regularly to review the process of data collection.

Three instruments were used in this study. They included the Demographic Inventory (DI), the Personal Resource Questionnaire 85-Part 2 (PRQ85-Part 2), and the Exercise of Self-Care Agency (ESCA) Scale. The DI consists of personal characteristics and perceived health status. In the DI, marital status was dummy coded with having spouse coded "1" and not having spouse coded "0". Socioeconomic status was measured by a composite scale, which measures the highest level of education and occupation of subjects or spouse - whoever had the highest level based on 5 predefined categories of education by occupation. The higher the level, the higher the socioeconomic status in this study.

Perceived health status was measured by a 3-item self-rated questionnaire about present general health, general health compared with the past year, and general health compared to others of the same age. Each question was scored from 1 (poor) to 3 (good), with the total perceived score calculated by adding the scores for the three questions. The scale of perceived health status ranged from 3 to 9; the higher the scores, the better the perceived health status. The corrected alpha reliability coefficient of the scale of perceived health status was .77 in this study, using the Spearman-Brown formula[36].

The PRQ85-Part 2[37] was used to measure social support. The PRQ85-Part 2 is a 25-item scale to assess the relational functions of Weiss theoretical formulation of social support[7]. Items assessed social integration, provision for attachment/intimacy, opportunity for nurturance, and reassurance of worth. Each item of the instrument was scored on a 7-point Likert type of response, ranging from 1 (strongly disagree) to 7 (strongly agree). Total PRQ85-Part 2 ranged from 25 to 175; the higher the score, the greater the perceived social support.

The validity and reliability of the PRQ85-Part 2 were established by its developer[37]. Face, content, construct, and predictive validity were reported as satisfactory. The internal consistency reliability coefficient alpha was .91 and .93 in the previous studies[37,38]. The test-retest reliability coefficient was .72[38]. Construct validation was supported through the assessment of convergent and discriminant validity[39]. Permission for using this instrument was received from the author. The alpha reliability coefficient for the translated PRQ85-Part 2 was .86 in this study.

The Exercise of Self-Care Agency (ESCA) scale, developed by Kearney and Fleischer[40], was used to measure individual's perception of self-care. The ESCA scale consists of 43 items measuring one perception to engage in self-care activities. Four dimensions are included in this measure: active vs. passive response to situations, motivation, knowledge base, and sense of self-worth. Each item of the instrument is scored on a 5-point type of response, ranging from 0 (very uncharacteristic of me) to 4 (very characteristic of me). Total ESCA scale ranged from 0 to 172; the higher the total scores, the higher the exercise of self-care agency.

The content, construct, and concurrent validity of the ESCA scale have been established[40]. Construct validity was established using Gough and Heilbrun Adjective Checklist and Rotter Internal-External Locus of Control scale[40]. The test-retest reliability and split-half reliability coefficients ranged from .77 to .81 of the original scale. Permission for using this instrument was received from the author. The alpha reliability coefficient of the translated ESCA scale was .87 in this study.

Content validity of the translated versions of the PRQ85-Part 2 and the ESCA scale was estimated by two experts in the related research field. Two evaluators are university faculty members, one has a Ph.D. degree in psychology and the other has a Ph.D. degree in nursing. These two evaluators were asked to rate the translated versions related to the applicability, including content and cultural relevance among elderly women in Taiwan. A four-point scale was used to rate each item as: not applicable, somewhat applicable, quite applicable, and very applicable. The index of content validity (CVI) (36) of the translated instruments was 1.0 for both the PRQ85-Part 2and ESCA Scale, indicating that they have satisfactory validity among elderly women in Taiwan based on the experts' evaluation.

RESULTS

Of the 200 elderly women invited to participate, 192 completed all interview questions. Eight subjects were omitted from the analyses

Table 1. Demographic characteristics of the subjects (n = 192)

Items	n	%
Age (years)		
65-69	76	39.6
70 - 74	56	29.2
75 - 79	34	17.7
≧ 80	26	13.5
Education (years)		
0	127	66.1
1 - 6	58	30.2
7 - 9	4	2.1
≧ 9	3	1.6
Socioeconomic status		
I	169	88.0
II	11	5.7
III, IV, & V	12	6.3
Marital status		
Having spouse	100	52.1
Widowhood	89	46.3
Unmarried	3	1.6
Living situation		
Living with spouse	62	32.3
Living with spouse and/or children/grandchildren	95	49.5
Living alone	33	17.2
Living with others	2	1.0

because of incomplete data. The characteristics of the sample are shown in Table 1. The women in the sample ranged in age from 65 to 88 years old with a mean age of 72.2 (SD = 5.6). More than half of the subjects reported no formal education (66.1%). Socioeconomic status placed 88% of the subjects at the lowest level. Approximately half of the subjects had a spouse (52%) and lived with the spouse or children/grandchildren (50%). Of the subjects, 17% lived alone.

The mean scores, standard deviations, and ranges of perceived health status, social support, and self-care are shown in Table 2. The hypothesized bivariate relationships between the study variables were tested using Pearson correlation coefficients (Table 3). The first set of hypotheses - that age would be inversely correlated with social support, perceived health status, and self-care - was supported with the exception of the correlation between age and perceived health status ($r = -.04$, $p > .05$). The second set of hypotheses - that socioeconomic status would be positively correlated with social support and self-care - was supported. Hypotheses set 3, set 4 and hypothesis 5 were all supported, indicating that marital status was positively associated with social support and self-care. That is, the subjects having a spouse reported higher levels of social support and self-care. Social support is positively correlated with perceived health status and self-care. Perceived health status is positively correlated with self-care.

In this study, the distributions of the total scores of perceived health status, social support, and self-care approximately tended to be normal. The raw scores of these variables, therefore, were used in the analysis. In addition, multicollinearity among the predictor variables was assessed before the path analysis. Two indices for diagnosing multicollinearity were used: the tolerances and variance inflation factors (VIF). Tolerance was used to examine the strength of the linear relations among the predictor variables[41]. The collinearity diagnosis shows that all tolerances of the predictor variables in each equation ranged from 0.74 to 1.00. Multicollinearity, therefore, would not be a concern. Another index for diagnosing multicollinearity is the VIF. All VIFs of predictor variables of this study were from 1.02 to 1.36, a further indication that multicollinearity among predictor variables would not be a concern in further analysis[42].

The proposed causal model was tested with a path analysis, using the LISREL 8 program. Based on the initial model, three structural equations were entered into the path analysis. In the first equation, social support was predicted by age, socioeconomic status, and marital status. In the second equation, perceived health status was pre-

Table 2. Means, standard deviations, and ranges of study variables

Variables	Mean	SD	Actual range	Possible range
Self-care	118.6	21.7	51-157	0-172
Social support	126.0	20.2	63-160	25-175
Perceived health status	5.6	1.5	3-9	3-9

Table 3. Correlation matrix of study variables

	AGE	SES	MS	SS	PHS	SC
AGE	1.00					
SES	—	1.00				
MS	—	—	1.00			
SS	-0.31***	0.25***	0.29***	1.00		
PHS	-0.04	—	—	0.27***	1.00	
SC	-0.48***	0.28***	0.36***	0.67***	0.28***	1.00

Note: AGE= age, SES = socioeconomic status, MS = marital status, SS = social support, PHS = perceived health status, SC = self-care. ***p < .001.

Table 4. Direct, indirect, and total effects

	Effects			
	Causal			
Variables	Direct	Indirect	[a]Total	[b]Noncausal
		On social support		
Age	-.18* (-2.34)	0	-.18* (-2.34)	-.13
SES	.22** (3.22)	0	.22** (3.22)	.03
MS	.19* (2.47)	0	.19* (2.47)	.10
		On perceived health status		
SS	.28** (3.86)	0	.28** (3.86)	-.01
		On self-care		
Age	-.27**(-4.81)	-.10* (-2.12)	-.37**(-5.19)	-.11
SES	.11* (2.20)	.12** (3.06)	.23** (3.73)	.05
SS	.50** (9.23)	.04* (2.11)	.54**(10.09)	.13
PHS	.13* (2.52)	0	.13* (2.52)	.15

Note: Parentheses represent the t values.
[a] Total causal effect = direct effect + indirect effect.
[b] Noncausal covariation = r - total causal effect.
*p < .05; **p < .01.

dicted by age and social support. In the third equation, self-care was predicted by age, socioeconomic status, social support, and perceived health status. Maximum Likelihood Method was used to estimate the parameters in the path diagram. The result showed that the chi-square was 1.59 with two degrees of freedom. The p-value for this model was 0.45, indicating that the model fit the data.

By trimming the model, all paths with a level of significance greater than .05 were dropped from the model. The resultant model showed that the chi-square was 3.65 with four degrees of freedom. The p-value for the resultant model was 0.46, revealing that the model fit the data and it was, therefore, retained. In addition to the χ^2 test, other fit indices, the Goodness-of-Fit Index (0.99), Adjusted Goodness-of-Fit Index (0.97), Normed Fit Index (0.99), Non-Normed Fit Index (1.00), Comparative Fit Index (1.00), Incremental Fit Index (1.00), and Relative Fit Index (0.95) also indicate the model fit the data well.

Figure 2 presents the path diagram of the resultant model with its respective standardized path coefficient (ß) and squared multiple correlation (R^2). In the first equation, 16.4% of the total variance in social support was accounted for by age, socioeconomic status, and marital status ($F = 12.30$, $p < .001$). In the second equation, 7.3% of the total variance in perceived health status was accounted for by

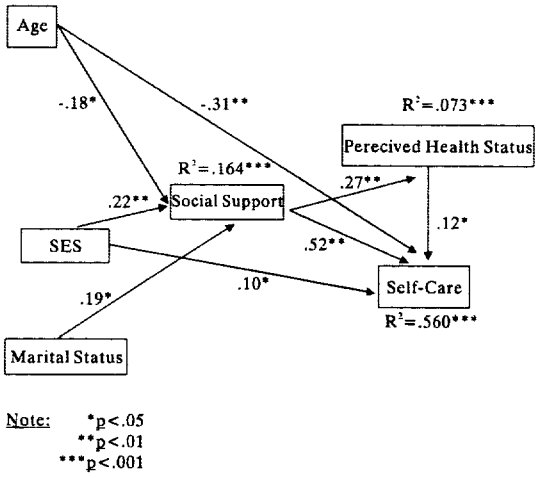

Fig. 2. The resultant causal model

social support (F = 7.68, p < .001). Of 8% variance in perceived health status, 7% was explained by social support (F = 15.02, p < .001). In the third equation, 56.0% of the total variance in self-care was accounted for by age, socioeconomic status, perceived health status, and social support (F = 59.40, p < .001).

Table 4 presents the effects of the predictor variables on social support, perceived health status, and self-care. Age (ß = -.18, p < .05), socioeconomic status (ß= .22, p < .01), and marital status (ß= .19, p < .05) have significant direct effects on social support. Age does not have a direct effect on perceived health status (ß= .05, p > .05), has a significant indirect effect through social support on perceived health status (ß= -.05, p < .05). Social support has a direct effect on perceived health status (ß= .28, p < .01). Age (ß= -.27, p < .01), socioeconomic status (ß= .11, p < .05), social support (ß= .50, p < .01), and perceived health status (ß= .13, p < .05) have significant direct effect on self-care. In addition, age has a significant indirect effect on self-care (ß= -.09, p < .05), through social support and perceived health status. Socioeconomic status has a significant indirect effect on self-care (ß= .12, p < .01) through social support. Social support has a significant indirect effect on self-care (ß= .03, p < .05) by way of perceived health status. Marital status does not have a direct effect on self-care (ß= .07, p > .05); however, it has a significant indirect effect on self-care through social support (ß= .11, p < .05).

DISCUSSION

All relations proposed by the model fit the empirical data through either a direct or an indirect effect on the endogenous variables (i.e., self-care, social support, and perceived health status) in the path diagram. Age was found to have an inverse direct effect on social support and self-care. As rural elderly women aged, therefore, their perceptions of social support and self-care decreased. The older women in the sample tended to be widows to whom resources were either unavailable or inaccessible. These failings may have resulted in a lower level of perceived social support. Health professionals need to focus on providing professional support and other social support resources for older elderly women in rural areas.

Socioeconomic status has a significant direct effect on both social support and self-care. Lower levels of socioeconomic status may impede elderly women from accessing resources, thereby limiting their interactions with others. It is important to help elderly women of lower levels of socioeconomic status to obtain needed social support. Because socioeconomic status includes both education and occupation in this study, subjects with lower levels of socioeconomic status might have less knowledge and fewer skills for self-care. These disadvantages, in turn, impede their engagement in self-care.

Marital status has a significant direct effect on social support. Previous studies have supported the significant correlation between marital status and social support; individuals with spouses reported significantly higher social support than those who did not have spouses[10,30,31]. Elderly women without a spouse should be given more attention by health care professionals, so they can, therefore, find other social support resources from children, neighbors, or friends.

Perceived health status has a significant direct effect on self-care. The finding is consistent with reviewed previous studies[17,21]. Elderly women, thus, who have lower levels of perceived health status have lower levels to take care of themselves. Therefore, perceived health status may be an important prerequisite for elderly women who want to get through their aging process independently.

Social support has a significant direct effect on perceived health status and self-care. The findings indicated that the subjects who had higher

levels of social support had higher levels of perceived health status and self-care. That social support had a direct effect on perceived health status supports the theoretical perspectives that social support is necessary over an individual life course and that a lack of social support reflects negatively on health[7,43]. Therefore, interventions that either build new resources or mobilize existing resources are necessary in enhancing elderly women's perceived health status. The significant correlation between social support and self-care supports the viewpoints that the presence of social support influences engagement in self-care through social interaction[15,16] and adequate social support facilitates an individual's thinking and acting[7].

As chronic diseases continue to affect older adults, self-care becomes significant for this age group. To plan effective interventions to promote elderly women's health, nurses must understand factors that influence their self-care. Home visiting can be arranged by community nurses for those elderly women who meet the criteria of increasing age, lower socioeconomic status, lower perceptions of social support, and poor perceptions of health status. In addition, nurses need to identify the reasons for the lack of social support and plan strategies for interventions.

The findings show that social support and perceived health status have mediating effects between exogenous variables (i.e. age, socioeconomic status, and marital status) and self-care in the model. A mediator may produce either an additive or a suppressive influence on the relation between a predictor and an outcome variable[44]. The mediating functions in this study have additive influences on the relations between the predictors and the outcome variables. When these mediators were controlled, the magnitude of the relations between the hypothesized predictors and the outcome variables were predicted to change. The mediating effects of the study, however, provide significant information for future research.

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REFERENCES

1. Bastida E: Some critical issues affecting older women in rural areas. Convergence In Aging **2**: 99-101, 1984.
2. Weinert C, Burman ME: Rural health and health-seeking behaviors. In: Annual review of nursing research, (Fitzpatrick JJ, Stevenson JS eds.), Springer, New York,1st ed.: 65-92, 1994.
3. Hartweg DL: Health promotion self-care within Orem's general theory of nursing. J Adv Nurs **15**: 35-41, 1990.
4. McLaughlin J, Zeeberg I: Self-care and multiple sclerosis-A review from two cultures. Soc Sci Med **37**: 315-329, 1993.
5. Musci EC, Dodd MJ: Predicting self-care with patients and family members' affective states and family functioning. Oncol Nurs Forum **17**: 394-400, 1990.
6. Boyle JS, Counts MM: Toward healthy aging - A theory for community health nursing. Public Health Nurs **5**: 45-51, 1988.
7. Weiss RS: The fund of sociability. Transactions **6**: 36-43, 1969.
8. Jirovec MM, Kasno J: Self-care agency as a function of patient-Environmental factors among nursing home residents. Res Nurs Health **13**: 303-309, 1990.
9. Hanucharurnkul S: Predictors of self-care in cancer patients receiving radiotherapy. Cancer Nurs **12**: 21-27, 1989.
10. Hubbard P, Muhlenkamp A, Brown N: The relationship between social support and self-care practice. Nurs Res **33**: 266-269, 1984.
11. Mapanga KG, Andrews CM: The influence of family and friends' basic conditioning factors and self-care agency on unmarried teenage primiparas' engagement in contraceptive practice. J Community Health Nurs **12**: 89-100, 1995.
12. Muhlenkamp AF, Sayles JA: Self-esteem, social support, and positive health practice. Nurs Res **35**: 334-338, 1986.
13. Riffle KL, Yoho J, Sams J: Health-promoting behaviors, perceived social support, and self-reported health of Appalachian elderly. Public Health Nurs **6**: 204-211, 1989.
14. Gonzalez JT: Factors relating to frequency of breast self-examination among low-income Mexican American women. Cancer Nurs **13**: 134-142, 1990.

15. Orem DE: Nursing - Concepts of practice. Mosby, St. Louis, 5th ed., 1995.
16. Maida CA: Social support and leaning in preventive health care. Soc Sci Med **21**: 35-35-339, 1985.
17. Kart CS, Dunkle RE: Assessing capacity for self-care among the aged. J Aging Health **1**: 430-450, 1989.
18. Penning MJ, Chappell NL: Self-care in relation to informal and formal care. Aging Soc **10**: 41-59, 1990.
19. Haug MR, Akiyama H, Tryban G, Sonoda K, Wykle M: Self-care-Japan and U.S. compared. Soc Sci Med **33**: 1011-1022, 1991.
20. Segall A, Goldstein J: Exploring the correlates of self-provided health care behavior. Soc Sci Med **29**: 153-161, 1989.
21. Lakin JA: Self-care, health locus of control, and health value among faculty women. Public Health Nurs **5**: 37-44, 1988.
22. Frank-Stromborg M, Pender NJ, Walker SN, Sechrist KR: Determinants of health-promoting lifestyle in ambulatory cancer patients. Soc Sci Med **31**: 1159-1168, 1990.
23. Ahijevych K, Bernhard L: Health-promoting behaviors of African American women. Nurs Res **43**: 86-89, 1994.
24. Hartweg DL: self-care actions of healthy middle-aged women to promote well-being. Nurs Res **42**: 221-227, 1993.
25. Ailinger RL: Self-assessed health of Hispanic elderly persons. J Community Health Nurs **6**: 113-118, 1989.
26. Weerdt ID, Visser A, Kok G, van der Veen E: Determinants of active self-care behavior of insulin treated patients with diabetes - Implications for diabetes education. Soc Sci Med **30**: 605-615, 1990.
27. Broadhead W, Kaplan B, James S, Wagner E, Schoenbach V, Grimson R, Heyden S, Tibblin G, Gehlbach S: The epidemiological evidence for a relationship between social support and health. Am J Public Health **117**: 521-537, 1983.
28. Hooyman N: Social support network in services to the elderly. In: Social support network-Informal helping in the human services, (Whittaker JK, Garbrino J eds.), Aldine, New York, 1st ed.: 135, 1983.
29. Nath PS, Borkowski JG, Whitman TL, Schellenbach CJ: Understanding adolescent parenting - The dimensions and functions of social support. Fam Relations **40**: 411-420, 1991.
30. Gulick EE: Social support among persons with multiple sclerosis. Res Nurs Health **17**: 195-206, 1994.
31. Yates BC: The relationships among social support and short- and long-term recovery outcomes in men with coronary heart disease. Res Nurs Health **18**: 193-203, 1995.
32. Johason JE: Social support and physical health in the rural elderly. Appl Nurs Res **9**: 61-66, 1996.
33. Ko CF: Comparative study of the perceived health status among European elderly. Public Health (Taiwan) **22**: 87-98, 1995.
34. Cohen J, Cohen P: Applied multiple regression/correlation analysis for the behavioral sciences. Lawrence Erlbaum Associates, New Jersey, 2nd ed., 1983.
35. Joreskog KG, Sorbom D: LISREL 8 - User's reference guide. Lawrence Erlbaum Associates, Hillsdale, 1996.
36. Waltz CF, Strickland OL, Lenz ER: Measurement in nursing research. FA Davis, Philadephia, 2nd ed., 1991.
37. Weinert C: A social support measure-PRQ85. Nurs Res **36**: 27-277, 1987.
38. Weinert C, Brandt PA: Measuring social support with the personal resource questionnaire. Western J Nurs Res **9**: 589-602, 1987.
39. Weinert C, Tilden VP: Measures of social support - Assessment of validity. Nurs Res **39**: 212-217, 1990.
40. Kearney BY, Fleischer BJ: Development of an instrument to measure exercise of self-care agency. Res Nurs Health **2**: 25-34, 1979.
41. Norusis MJ: SPSS6.1 - Guide to data analysis. Prentice Hall, Englewood Cliffs, 1995.
42. Stevens J: Applied multivariate statistics for the social sciences. Lawrence Erlbaum Associates, New Jersey, 3rd ed., 1996.
43. Dunkel-Schrtter C, Bennett T: Differentiating the cognitive and behavioral aspects of social support. In: Social support - theory, research, and applications (Sarason IG, Sarason BR eds.), Martinus, Netherlands, 1st ed.: 267-296, 1990.
44. Lindley P, Walker SN: Theoretical and methodological differentiation of moderation and medication. Nurs Res **42**: 276-279, 1993.

臺灣南部鄉村老年婦女自我照顧之因徑分析

王秀紅 李逸*

對於臺灣鄉村老年婦女而言，除了貧困的經濟狀況與有限的健康照顧資源之外，婦女傳統角色與責任的轉變以及家庭結構的改變等，可能加重影響鄉村老年婦女的健康狀況。自我照顧被視爲是老年婦女在其老化的過程中，爲促進健康及生活品質的一種技巧或型式。因此，了解老年婦女之自我照顧模式，有助於健康照顧專業人員擬定適當的健康促進計畫。本研究的目的在於應用因徑分析，以測試一假設性之自我照顧模式；經由此模式，以預測對鄉村老年婦女自我照顧的直接及間接影響因素。本研究的設計爲一非實驗性之橫斷面研究法。200位受邀的老年婦女中，192位完成所有的問卷訪談。本研究根據理論與文獻查證提出一假設性的因果模式。此模式利用 LISREL 電腦軟體之因徑分析加以測試。經過修整後之模式其 χ^2 值爲 3.65(自由度 = 4)，p 值爲 0.46，顯示此模式沒有被推翻而予以保留。此外，其它有關檢定模式適合度之指標亦均顯示此模式適切地契合了所收集的資料。在自我照顧方程式中，56%的變異量是由年齡、社經地位、自覺健康狀況、以及社會支持所解釋($p < .001$)；在社會支持的方程式中，16.4%的變異量是由年齡、社經地位、以及婚姻狀況所解釋($p < .001$)；在自覺健康狀況的方程式中，7.3%的變異量是由社會支持所解釋($p < .001$)。根據本研究之發現，本文進一步加以討論，並提出了在護理實務以及研究上的建議。

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高雄醫學院 護理學系 *長庚大學 護理學系
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索取抽印本處：王秀紅 高雄市807十全一路100號
高雄醫學院護理學系