

The Effect of Exercise, Nutrition Management and Social Network of Citizens over 65 Years living in Rural Environments on Health Conservation[†]

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Abstract

Purpose: The purpose of this study was to investigate the general characteristics, exercise, nutrition, social network and the degree of health conservation of people aged 65 years and older living in rural environment and to investigate the relationship between variables and to identify health conservation influence factors of people over 65 years old living in rural environments, to provide basic data necessary for developing nursing interventions that can improve their level of health conservation. **Methods:** This study is a descriptive correlation study to identify the factors affecting the health conservation of the elderly. The subjects of this study were elderly people aged 65 and over living in a rural area living in C-gun of J-city using the elderly welfare center, consisting of 250 participants who were explained the purpose and method of the study and signed the questionnaire agreeing to participate in the study. **Results:** Exercise was 2.77, nutrition was 3.42, social network was 2.64, and health conservation was 2.64, which showed slightly higher than moderate degree. The variable that had the greatest effect on the health conservation of rural elderly people was social network with explanatory power of 49.0% ($\beta=.606$, $p<.001$), and then nutritional management had an explanatory power of 1.7% ($\beta=.170$, $p=.003$), indicating that these two variables explained a total of 50.7%. **Conclusion:** Therefore, in order to promote the social network of elderly people, it is necessary to expand individual support for the formation and maintenance of diverse social relations, as well as policy support and economic support to ensure individual social participation and leisure activities. In addition, it is thought that the nutritional status of rural environmental citizens should be regularly identified and the elderly who are at risk of malnutrition should be selected, and continued care and intervention are needed under the responsibility of the national and local governments to ensure proper nutritional management.

Keywords: Elderly, Exercise, Nutrition management, Social network, Health conservation

INTRODUCTION

The proportion of the elderly population aged 65 or older in Korea was 13.2% in 2015 which is heading towards an aged society, it is predicted that the it will be an aged society in 2018, and that it will enter a super aged society in 2026 with 20.8%. However, rural areas have already entered the super aged society in 2010, 17 years earlier than the national average [1]. In particular, elderly people aged 65 and over in the rural environment live in many unfavorable conditions, such as weakening of health, lower income, and decrease of social networks, and among the problems experienced by rural elderly people, they experienced economic problems, health alienation, social participation, and relationship problems [2]. In the case of elderly people, the elderly in the rural areas were found to be more negative than the elderly in urban areas in terms of chronic diseases, taking prescription drugs, and exercise [3], and among the health problems of the elderly in Korea, the health maintenance and improvement aspects of the elderly living in the rural environment are more disadvantageous. Looking at chronic conditions, 90.4% of the elderly had chronic diseases, number of patients with two or more chronic diseases was also very high at 72.2%, and it was higher in rural elderly people with 91.8% compared to 90.0% in urban elderly people [3]. The elderly inevitably experience chronic diseases due to aging, and since most chronic diseases are difficult to cure, they have to control their symptoms for a lifetime, and in the case of elderly people with chronic illnesses, it is important to preserve the functions to the maximum extent so that they can perform their daily activities independently rather than providing merely a therapeutic approach [4]. Health care for the elderly means all the activities necessary for the well-being of an individual as well as the treatment and maintenance of diseases [5]. Subjective definitions of health vary from person to person and in order to measure the healthy life of the elderly in recent years, the subject is regarded as an integrated body of physical, mental, and social well-being and emphasizes all aspects of health conservation [4].

[†] This Work was supported by the Jungwon University Research Grant (2017-046)

On the other hand, genetic factors, environmental factors, disease management and daily life habit factors were found to have a significant influence on the health of the elderly. Especially, health-related lifestyles such as nutrition, exercise, rest, drinking, and smoking have a great impact on health status and illnesses and are associated with mortality rates [6], and it was found that the better the lifestyle, the higher the quality of life [7]. In addition, most elderly people experience a decrease or loss of physical function due to changes in the musculoskeletal system due to aging, resulting in a decrease in physical activity [8]. Therefore, it is important to consider exercise and nutrition management which can be a way to prevent diverse health problems among living habits as a factor related to health conservation of the elderly.

In addition, the social support for the elderly is a factor affecting the psychological health of the elderly, and positive emotional expression and behavioral support are identified as a main cause of interaction among people. The social network is also used to mean social contact, which is used in combination with social support, but emphasizes the size of the network, the homogeneity of the members, the frequency of contact, and the opportunity to support each other [9]. The perception of this social network is that the desire for a sense of security and confidence in oneself is satisfied [10]. Elderly with larger social networks had better physical condition [11], and it was found that it had positive influence on life satisfaction [12] which show that social networks are expected to play a role in enhancing health conservation.

Looking at the factors identified as predictors affecting the health conservation of the elderly in Korea, there were wisdom, pain level, positive thinking and perceived health status, aging, self-care behaviors, subjective health status, health concern, meaning of life, family support, physical development score, social support, self-esteem, lifestyle, and social network, and for general characteristics, there were religion, spouse, gender, education level, care cost bearer, and economic status [5,13,14,15,16,17,18]. However, most of the subjects were urban elderly people, and it is difficult to find a study on the link between health care and the elderly in rural areas, which is in a disadvantageous position in terms of exercise and nutrition management, social network and health conservation. The purpose of this study was to investigate the relationship between nutritional management, exercise, social network and health conservation among elderly people aged 65 years or older living in rural environment, to promote exercise, nutritional management and social network of the elderly in rural areas to increase health conservation, and to provide basic data for developing nursing interventions that can improve the health conservation of elderly in rural areas.

PURPOSE

The purpose of this study was to investigate the general characteristics, exercise, nutrition, social network and the

degree of health conservation of citizens aged 65 and over living in rural environment, and to provide the basic data necessary to develop the nursing interventions that can improve the health conservation of elderly people living in rural environment by identifying the relationships between variables and their health conservation influencing factors.

METHODS

Research design

This study is a descriptive correlation study to identify the factors affecting the health conservation of the elderly.

Subjects

The subjects of this study were elderly people living in a rural area living in C-gun of J-city using the elderly welfare center. First, the purpose and method of research was explained to the director of the elderly welfare center and the president of the aged society and permission to collect data was obtained. After that, through a visit to the elderly welfare center, the research purpose and method were explained, and 250 elderly who signed the questionnaire agreeing to participate in this study were selected. Specific conditions include an elderly person aged 65 years or older who is able to decipher or understand Hangul without diagnosis dementia or hearing loss who can listen to and respond to the explanation of the researcher or research assistant. The number of subjects was analyzed using the G * Power 3.0.10 program using the significance level .05, the effect size of .15, the power of 0.95 and the predictor of 14 in the correlation and regression analysis, and the number of samples required was 194 persons, 250 persons were randomly selected considering the dropout rate, and finally 224 copies were used.

Instrument

Exercise

As the scores of the 4 items within the sub areas belonging to exercise in the health promoting lifestyle profile(HPLP) conservation In Kim's study [14], reliability of the instrument was Cronbach's $\alpha = .92$, and reliability in this study was .87.

Nutrition management

As the scores of the 7 items within the sub areas belonging to nutrition in the health promoting lifestyle profile(HPLP) tool developed by Walker, Sechrist and Pender [19], the items ranged from 1 point 'strongly disagree' to 5 points 'strongly agree', and higher scores represent higher level of nutritional health promotion behavior. In Kim's study [20], reliability of the instrument was Cronbach's $\alpha = .92$, and reliability in this study was .84.

Social network

The social network tool of the elderly uses the social network tool developed by Lee [21]. It consists of a total of 15 items including 5 items for social participation activities, 5 items for self-development activities, and 5 items for home activities. Each item is a 5-point scale, and the range of possible scores is from 15 to 75, and the higher the score, the higher the degree of social network. The reliability of the instrument at the time of development was Cronbach's $\alpha = .88$ and reliability in this study was .94.

Health conservation

'Health conservation scale' developed by Sung [4] was used to measure health conservation. This tool consists of a total of 37 items in 4 sub areas consisting of 14 items of personal unity, 8 items of energy conservation, 8 items of structural integrity, and 7 items of social unity. Each item was scored on a 4-point scale, and the six items described as inverse items were reversed, and the range of possible scores was from 37 to 148. Higher score represents higher degree of conservation of health. The reliability coefficient of the total items at the time of development was Cronbach's $\alpha = .94$ [4], and the reliability in this study was .88.

Ethical considerations and data collection

Data were collected from September 1, 2017 to September 15, 2017 from the elderly living in C-gun of J-city using the elderly welfare center, and the data of this study were collected together with the researcher and 5 research assistants. Before the data collection, in order to ensure the accuracy of the data, it was discussed beforehand and the data collection method and the purpose of the research were taught and the expected questions and answers were discussed. Data collection was conducted using structured questionnaires, and when it was difficult to write alone, the researcher and the research assistant read the questionnaires and recorded their answers in the questionnaire. The content and method of this study were approved by the Bioethics Committee of K University (KNU_IRB-2017_43), and the research ethics guidelines were followed during the study period. Before the

data were collected, the subjects were explained the purpose and objective of the study, and it was explained that the subject can withdraw or discontinue the study at any time. Also, a written consent explaining that the collected data are used for research purposes only and ensure the anonymity and autonomy of the subject were written, then the questionnaires were distributed.

Data analysis

The collected data were analyzed using SPSS/WIN 22.0 program.

- The general characteristics of the subjects, exercise, nutrition management, social network and health conservation were analyzed using descriptive statistics frequency, percentage, mean, and standard deviation.
- Differences in health conservation according to the general characteristics of the subjects were analyzed by t-test and ANOVA, and post-test was performed through Scheffe test when there was significant difference between groups.
- Correlation between variables was analyzed by Pearson's correlation coefficients.
- A stepwise multiple regression analysis was conducted to identify predictors of health conservation.

RESULTS

General characteristics of the subjects

The general characteristics of the subjects are shown in Table 1. The average age of the subjects was 74.78 years old and the major age group was over 70 years old with 107 (47.8%). The majority were women with 153 (68.3%) and 116 (51.8%) had spouses. 140 (62.5%) had a religion, and 75 (33%) had graduated from primary school and 164 (73.2%) did not have any occupation. The most common monthly income was less than 500,000 won with 92 (41.1%), and for exercise, 'sometimes' was the most frequent with 116 (51.8%). For the number of illnesses, the most frequent was 1 to 3 with 138 (61.6%), there were 57 (25.4%) with 4 or more illnesses, and 142 (63.4%) of the subjects did not live alone.

Table 1: General characteristics and differences in health conservation by general characteristics

N=224

Characteristics	Division	n(%) or M±SD	Health Conservation		
			M±SD	t or F	p
Gender	Male	71(31.7)	2.75±.27	3.407	.001
	Female	153(68.3)	2.59±.34		
Age	Total	74.78±7.02		7.70 a>b>c	.001
	65~69 ^a	59(26.3)	2.72±.26		

	70~79 ^b	107(47.8)	2.67±.30		
	Over 80 ^c	58(25.9)	2.51±.38		
Spouse	Yes	116(51.8)	2.76±.29	5.99	<.001
	No	108(48.2)	2.51±.31		
Religion	Yes	140(62.5)	2.65±.36	.61	.543
	No	84(37.5)	2.62±.24		
Education	None ^a	47(21.0)	2.38±.34	15.39 e>b>a	<.001
	Elementary school ^b	75(33.5)	2.64±.26		
	Middle school ^c	46(20.5)	2.69±.30		
	High school ^d	37(16.5)	2.77±.23		
	College or higher ^e	19(8.5)	2.91±.30		
Occupation	Yes	60(26.8)	2.76±.26	3.42	.001
	No	164(73.2)	2.60±.33		
Monthly income	Under 500,000 won ^a	92(41.1)	2.51±.37	12.43 a<c, a,b<d	<.001
	Under 500,000 ~ 1,000,000 won ^b	62(27.7)	2.65±.24		
	Under 1,000,000 ~ 2,000,000 won ^c	39(17.4)	2.77±.23		
	Over 2,000,000 ^d	31(13.8)	2.85±.25		
Exercise	Regularly ^a	65(29.0)	2.75±.26	13.24 a,b>c	<.001
	Sometimes ^b	116(51.8)	2.66±.30		
	Not at all ^c	43(19.2)	2.44±.37		
Number of illnesses	0 ^a	29(12.9)	2.76±.29	9.21 a,b>c	<.001
	1~3 ^b	138(61.6)	2.68±.30		
	Over 4 ^c	57(25.4)	2.49±.35		
Living alone	Yes	82(36.6)	2.50±.36	-5.30	<.001
	No	142(63.4)	2.72±.27		

Degree of exercise, nutrition management, social network, and health conservation in subjects

Degree of exercise, nutrition management, social network, and health conservation in subjects is shown in Table 2. Exercise was moderate degree at 2.77 and nutrition was 3.42 which was moderate or higher. Social network showed a moderate 2.64 points, and health conservation was 2.64 points which was moderate or higher.

Table 2: Degree of exercise, nutrition management, social network, and health conservation in subjects

Variables	M±SD	Range
Exercise	2.77±.1.09	1~5
Nutrition management	3.42±.69	1~5
Social network	2.64±.84	1~5
Health conservation	2.64±.32	1~4

Differences in health conservation according to general characteristics of subjects

Differences in health conservation according to general characteristics of subjects is shown in Table 1. There was a statistically significant difference in health conservation according to the gender of the subjects where men had higher scores than women (t=3.40, p=.001). There was a statistically significant difference in health conservation scores between the age groups where the scores were higher with lower age (F=7.70, p=.001), and Scheffe post-analysis showed that there was a significant difference between subjects in 60s, 70s, and over 80s. There was a statistically significant difference in health conservation according to the presence of a spouse where the scores were higher in subjects with spouses (t=5.99, p<.001). There was no difference in the degree of health conservation according to religion (t=.61, p=.543), there was a statistically significant difference in health conservation differences according to education level (F=15.39, p<.001), and according to Scheffe post-analysis, the score of health conservation was higher in college graduates than elementary school graduates, and higher in elementary school graduates

than in those with no education. There were statistically significant differences in health conservation according to occupation status where subjects with occupation had higher scores ($t=3.42, p=.001$). In the case of monthly income, the higher the monthly income, the higher the score of health conservation, and there was a statistically significant difference ($F=12.43, p<.001$), and Scheffe post-analysis showed that subjects with monthly income of 1,000,000~2,000,000 won had higher health conservation scores compared to those with less than 500,000 won and those with 2,000,000 won or over had higher scores than those with under 500,000~1,000,000 won. The score of health conservation according to exercise was higher in the subjects who exercise sometimes or regularly ($F=13.24, p<.001$), and Scheffe post-analysis showed that the health conservation scores were higher in subjects who exercised regularly or occasionally compared to those who did not. The score of health conservation according to the number of illnesses of the subjects showed a statistically significant difference in the score of health conservation as the number of diseases decreased ($F=9.21, p<.001$), and Scheffe post-analysis showed higher scores on health conservation in those who did not have diseases or had 1~3 diseases compared to those with more than 4. The health conservation score according to whether or not they were living alone was higher in those who were not living alone and there were statistically significant differences ($t=-5.30, p<.001$).

Relationship between exercise, nutrition management, social network and health conservation in subjects

Relationship between exercise, nutrition management, social network and health conservation in subjects is shown in Table 3. Health conservation of subjects had positive correlation with exercise ($r=.51, p<.001$), nutrition management ($r=.48, p<.001$), and social network ($r=.70, p<.001$). Thus, the degree of health conservation was higher with more exercise, nutrition management, and wider social networks.

Table 3: Relationship between exercise, nutrition management, social network and health conservation in subjects

Variables	Exercise r(p)	Nutrition management r(p)	Social network r(p)	Health conservation r(p)
Exercise	1			
Nutrition management	.405(<.001)	1		
Social network	.561(<.001)	.617(<.001)	1	
Health conservation	.510(<.001)	.488(<.001)	.701(<.001)	1

Predictors of health conservation in subjects

Predictors of health conservation in subjects is shown in Table 4. Among the independent variables, gender, age, spouse, education, occupation, monthly income, exercise, number of illnesses, and living alone were treated as dummy variables for regression analysis. It was processed as follows: for gender, male 0, female 1, for age, over 80 0, under 80 1, for spouse, no 0, yes 1, for education, under elementary school graduate 0, over middle school graduate 1, for occupation, no 0, yes 1, for monthly income, under 1,000,000 won 0, over 1,000,000 won 1, for exercise, no 0, yes 1, for illness, more than 1 0, none 1, and for living alone, living alone 0, not living alone 1. In order to analyze the effect on health conservation of rural elderly people, with variables that were statistically significant in the study, multiple regression analysis was performed with the 11 variables gender, age, spouse, education, occupation, monthly income, exercise, number of diseases, living alone, nutrition management, and exercise. As a result, social network was the most influential variable for the health conservation of the elderly in rural areas, with 49.0% ($\beta=.606, p<.001$) explanatory power, and then it was nutrition management with 1.7% ($\beta=.170, p=.003$) explanatory power, showing that the two variables explained a total of 50.7% of health conservation of elderly in rural areas. The study confirmed the basic assumption of regression analysis where the Durbin-Watson statistic was 1.709, which was close to the reference value of 2, and there was no problem of autocorrelation. Tolerance was .504 to .984, which was more than 0.1, which is not problematic for multi-collinearity, and Variance Inflation Factor (VIF) was 1.016 ~ 1.627, which is not more than the reference value of 10, and it was found there was no multi-collinearity problem of independent variables.

Table 4: Predictors of health conservation in subjects

	B	SE	β	t	p	Adj. R	F	p
Constant	1.752	.078		22.550	<.001		8.984	<.001
Social network	.235	.022	.606	10.677	<.001	.490		
Nutrition management	.080	.027	.170	2.997	.003	.507		

DISCUSSION

The purpose of this study was to investigate the general characteristics, exercise, nutrition management, social network and health conservation of rural elderly, identify the relationship between variables and the predictive factors of health conservation in the rural elderly, to provide basic data for developing nursing interventions that can improve the

health conservation of the elderly in rural areas, and discussion will be made through the study results.

The exercise score of the subjects was 2.77 (1~5), with an intermediate score. This was similar to the results of 3.01(1~4) in Park's study of elderly in rural areas [22], 3.09 in Kim's study [23] on the elderly, and 2.84 in Song's study [24] on elderly people living in communities. The physical strength of the elderly is significantly lowered with increasing age, and it decreases rapidly at the age of 75, but maintaining normal fitness level with normal exercise and proper lifestyle, it is more likely to lead a healthier life [25]. In addition, a 10-year follow-up study of elderly people aged 65 years or older showed a 29% reduction in mortality and a 30% reduction in cardiovascular disease related mortality with appropriate exercise [26]. As above, exercise is expected to help prevent disease and reduce mortality and maintain a healthy life.

The nutrition management of the subjects was 3.42 points (1-5), with an intermediate score. The nutrition management scores of the subjects in this study were higher than those of 3.02(1~4) in Park's study of elderly in rural areas [22], 3.19 in Kim's study [23] on the elderly, and 3.00 in Song's study [24] on elderly people living in communities. This result can be attributed to the fact that 26.8% of the subjects are mainly engaged in agriculture, and they live in rural areas and seem to maintain healthy eating habits using vegetable gardens. In the elderly, it is difficult to eat balanced food due to social and environmental factors such as loss of taste, economic difficulty and depression due to chronic diseases, and bioavailability is also lowered and it is easy to fall into nutritional risk [26], and balanced nutrition management of the elderly is very important.

The social network of the subject was 2.64 points (1~5 points) with an intermediate score. This result was similar to the results of the study on community elderly [18] with 2.58 (1~5), the results of the study on male elderly [26] with 2.65 (1~5), and results of the study on diabetic elderly [16] with 2.57 (1~5). However, in a study of middle-aged adults [27], the score was 2.81, which was higher than that of the elderly in rural areas, and the study of the elderly in urban vulnerable groups [28], it showed a very low social network score of 6.98 (0~25). Therefore, the social network of the study subjects was lower than that of the middle-aged adults, similar to that of the elderly in the community or the diabetic elderly, and higher than that of the elderly in urban vulnerable groups. The reason why the social network is lower than middle-aged adults seems to be due to various negative changes such as decrease of physical function, decrease and loss of social role [18], and the reasons for the higher level of social network compared to elderly in urban vulnerable groups are that they have frequent communication with their neighbors due to the characteristics of rural areas, and many people participate in various programs and exchanges and support with friends while using the elderly welfare center and senior centers. Social network deficits lead to cognitive, mental, and physical

health problems, resulting in poor quality of life [29], and among the types of social networks, 80.4% of the elderly people who are isolated, rated their health condition as bad, and as the health condition is worse, the social relationship is slowed and passive, so health status is an important factor in maintaining and shaping social relations [30]. In order to improve the quality of life of elderly people and promote social networks that are important for their health, policy and economic support is needed to ensure the provision of diverse programs and leisure activities in the elderly welfare centers and districts in rural areas. In addition, it is necessary to establish a relationship with the family, relatives, friends, neighbors, etc. from the middle ages to form and maintain social networks and to give them social support [27].

The health conservation of elderly in rural area was 2.64 points (1~4) with an intermediate score. This result was similar to the results of the study on community elderly [5,8] with 2.73 points (range: 1~4 points) and 2.70 points (range: 1~4 points), and results from the study on elderly with chronic diseases [13] with 2.40~2.76 points (range: 1~4 points). However, it was 2.85 points in the study on middle aged adults [27] and it can be seen that it is higher than the degree of health conservation in rural elderly in this study as well as community elderly and elderly with chronic illnesses. The health conservation of the elderly is to preserve the function as much as possible rather than cures, and when health is preserved, disease is prevented, energy is preserved, fatigue is prevented, body integration is possible, and physical function can be restored and maintained, and as the psychological and psychological integration is achieved, self-awareness and self-esteem are restored and maintained, and socially smooth human interaction and integration and unity result in a proper balance [31], so it is necessary to find a way to improve the health conservation of elderly people.

In this study, the general characteristics showing differences in health conservation were gender, age, marital status, education, occupation, monthly income, exercise, number of diseases, and living alone. In the study by Lee & Kim in community elderly [18], men rather than women, those with spouses, those with higher education levels, those with occupation, those with less medication intake, more regular exercise, more abundant economic status, and living with family resulted in higher level of health conservation, and also in the study by Oh & Kim [5], men rather than women, those with religion, higher education, and lower loneliness resulted in higher scores of health conservation. The study by Sung [13] showed higher scores of health conservation in women rather than men, lower age, religious affiliation, higher education, those living with spouses, and higher perception of health condition. Comparing the results of the above studies, gender, marital status, and education were consistent with general characteristics that affect the health conservation of the elderly, but in case of gender, Lee and Kim [18] found that men had higher health conservation than women, but in Sung's study [13], women's health conservation was higher than men, and

in the case of religion, there was no significant difference in this study and Lee & Kim's study [18], but in Sung's study [13] health conservation was higher in those with religion, and in the case of monthly income, Sung et al's study [17] was consistent with the results of this study, but there were studies that did not include it in the general characteristics, and it is deemed necessary to confirm the relationship between general characteristics and health conservation through further studies including sex, religion, monthly income, occupation, exercise, and number of diseases.

The variable that had the greatest effect on the health conservation of rural elderly people was social network with explanatory power of 49.0%, and then nutritional management had an explanatory power of 1.7%, indicating that these two variables explained a total of 50.7%. In the study by Sung et al. [17], social support was associated with a 17% explanatory power on health conservation, and higher social support correlated to higher degree of health conservation which was similar to the results of the study, and also in the study of Lee & Kim [18], social network was the most powerful explanatory variable in health conservation. In addition, in a study of the relationship between social networks and quality of life [32] as key elements of the social network that enhances the quality of life of the elderly, activity in social relations, independence in child relationship, and satisfaction with family relationship were derived, and in the study by Eim & Yang [33], it was found that the elderly who participate in the social network which is based on the current relationship and is genuinely enjoyable and was voluntarily participated effectively increased the life satisfaction of the elderly who participate in the club or hobby club. According to the survey of the elderly, 43.3% of the elderly in Korea participated in social group activities, 4.9% in community activities, and 0.5% in political society groups which showed that there were low participation rates, and in particular, the elderly in urban areas showed more activity in social organizations than elderly in rural areas, and it could be seen that there was lack of social group activities in elderly in rural areas [3]. Also, the participation rate was relatively higher in male elderly, lower age groups, those with spouses, those with higher education and household income, and elderly with occupations or those without limitations in physical functions, and this result is considered to be consistent with the relationship and context of health conservation according to general characteristics. As such, in order to improve the quality of life and health conservation of the elderly, it is necessary to expand the social network, where there needs to be interest in activating the social network through voluntary participation of the elderly. Therefore, in order to promote the social network of elderly people, it is necessary to expand individual support for the formation and maintenance of various social relations, as well as policy support and economic support to ensure individual social participation and leisure activities [18].

The nutritional risk is emphasized as an important determinant of the health status of the elderly, where the risks are derived

from the proper practice and management of medical and nutritional health care from the old age, and it is reported that when the degree of nutritional risk is small, it positively affects the quality of life as well as health [33]. In addition, hypertensive lifestyle-related eating habits with high meat consumption showed higher risk of hypertension [34], and because it was similar to the previous study results [35] showing that the ratio of those who did not exercise at all was highest in the obese group, that as obesity increased, the saltiness of foods increased and the scores of eating habits decreased, the impact of nutrition management on health conservation is important. In addition, it was reported that the elderly in rural areas had poor nutritional status compared to the urban elderly [36], and in particular, efforts are needed to improve the nutritional status of the elderly in rural areas. Therefore, if the nutritional status of the elderly in rural areas is regularly identified and appropriate nutrition management is performed by selecting elderly people who are at risk of malnutrition, improved health conservation of elderly people in rural areas can be expected, and it is considered that the continuing interest and intervention of the community is needed for such nutrition.

CONCLUSION

This study attempted to provide the basic data necessary for the development of nursing interventions that can enhance the health conservation of elderly in rural areas. This study was meaningful in that it provided the basic data necessary to develop the nursing intervention to enhance the health conservation of the elderly in the rural area by enhancing the understanding of the health conservation of the elderly in the rural area and identifying the influence factors related to the health conservation. The results identified the factors affecting the health conservation of elderly in rural areas, and it was confirmed that social network and nutrition management are very important in the health conservation of elderly in rural areas. However, there is a limit to the generalizability of the results of the study because the analysis uses data collected only from some rural elderly people. In the future, it is suggested that research on health conservation of elderly people living in rural area extended to other rural areas should be continued, and it is suggested that the research including various factors related to the health conservation of elderly people in rural area should be continued.

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