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The Effects of Health Care Empowerment Program for Vulnerable Elderly Women with Hypertension

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Purpose: This study aimed to develop and apply a self-management competency enhancement program based on Johnson's Model of Health Care Empowerment for vulnerable elderly women with hypertension.
Methods: A quasi-experimental, non-equivalent control group design was used. Participants were 38 elderly women aged 65 and older receiving customized home visiting health care in G city. They were assigned to either the intervention or control group. The program consisted of eight 60-minute sessions, and was held twice a week for four weeks. Blood pressure (BP) and lipid levels, including total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C), were measured at three time points: before, immediately after, and four weeks after the intervention. Health literacy, self-efficacy, and depressive symptoms were assessed using structured questionnaires. Data were analyzed using repeated measures analysis of variance (ANOVA), independent t-tests, the Friedman test, and the Mann-Whitney test.
Results: The program significantly improved health literacy (p<0.01) and self-efficacy (p<0.01). However, no significant differences were observed between groups in blood pressure, lipid levels, or depressive symptoms.
Conclusion: The health care empowerment program is a viable community health nursing intervention for enhancing health literacy and self-efficacy in vulnerable elderly women with hypertension.

Keywords: Elderly; Empowerment; Health literacy; Hypertension; Self-efficacy

Introduction

Hypertension is a representative chronic disease with a global prevalence of approximately 20%, and it is known to be one of the main causes of cardiovascular diseases, such as myocardial infarction, stroke, and renal failure [1]. In addition, hypertension is the leading risk factor for death worldwide, and there is a rapid increase in the burden of cardiovascular disease, especially in socioeconomically vulnerable populations and low-income countries. In Korea, approximately 90% of the elderly population is reported to have an average of 2.7 chronic diseases, and among chronic conditions, hypertension has the highest prevalence at 59% [2]. In particular, the prevalence of hypertension in the low-income group has been reported to be approximately 8% higher than that of the total population, and the prevalence of hypertension in the low-income elderly population is continuously increasing [3]. These statistics suggest that, partly with the deepening of population aging, the burden of managing chronic diseases in low-income elderly people is continuously increasing.

In Korea, the economically vulnerable group includes basic livelihood security recipients and the near poor with an income equal to or less than 50% of the median income, and this vulnerable population is highly likely to be exposed to health risk factors, has relatively low coping ability for health risk factors, and thus is likely to easily become physically and mentally vulnerable [4]. In particular, as of 2025, among basic livelihood security recipients aged 65 or older in Korea, the proportion of women is approximately two times higher than that of men, and the poverty rate

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among elderly women is continuously rising [5]. Against this backdrop, vulnerable elderly women are more likely to experience depression, loneliness, and alienation due to lack of family support and social support as well as financial difficulties [6].

Regular measurement of blood pressure and the improvement of lifestyle habits are essential for the management of hypertension, and in particular, blood lipid control plays an important role in preventing cardiovascular complications [7]. In this connection, it has been found that elderly women tend to have a higher risk for dyslipidemia than elderly men, and thus require active management of blood lipid levels [8]. However, to effectively manage blood lipid levels, individuals need to have adequate health literacy. In addition, it has been reported that economically vulnerable elderly people tend to have lower education levels and lower health literacy than general elderly people [9], and these factors lead to their low utilization rate of healthcare services and difficulties in accessing appropriate health education and preventive interventions.

Health literacy refers to an individual's ability to find, understand, and critically evaluate health-related information and use this information to make appropriate health-related decisions [10]. Higher health literacy is associated with higher levels of self-management ability and higher levels of treatment adherence among hypertensive patients, and it has a positive impact on various aspects, such as medication adherence, practice of positive health behaviors, and improvement of lifestyle habits [11]. However, approximately two-thirds of the elderly have difficulty understanding health information, and this tendency is more pronounced with increasing age and lower socioeconomic status [12]. Low health literacy has a negative impact not only on the practice of health behaviors but also on access to healthcare services and the process of decision-making regarding treatment [13], and these negative impacts of low health literacy can also lead to a decrease in self-efficacy and an increase in depressive symptoms [14].

Self-efficacy is an individual's belief in his or her ability to perform the actions required in a given situation [15], and plays an important role in the psychological well-being and self-management ability of elderly people. In particular, self-efficacy is likely to be further decreased in vulnerable elderly women who are severely socially isolated [16], and this low self-efficacy in vulnerable elderly women can make it difficult for them to actively cope with their health problems and can worsen their feelings of helplessness and depression [17]. In addition, depression in elderly people with hypertension can lead to decreased physical activity and treatment non-compliance, and thereby make it more difficult for them to manage their health conditions [18]. Thus, it is required to provide interventions that can reduce depressive symptoms and enhance self-management ability through improving self-efficacy.

Health care empowerment is a concept that refers to improving individuals' health management capabilities by motivating them to manage their health. Empowerment, a key element of health promotion, refers to the process by which individuals gain greater control over the decisions and actions affecting their health [19]. This empowerment process involves an interactive process in which individuals clearly recognize their roles in the management of their health, and healthcare providers encourage patients' active involvement by considering the community and cultural characteristics, and provide them with the necessary knowledge and skills [20]. Previous studies have shown that health care empowerment programs have a positive effect on improving health behaviors and psychological well-being in vulnerable groups [21,22]

Against this theoretical background, Johnson's health care empowerment model was developed to explain the process in which cultural, social, and environmental factors interactively influence individuals' engagement in the self-management of their health and health outcomes [19]. This model is composed of five main components: active engagement, information acquisition, collaboration, commitment, and tolerance of uncertainty [23]. These five components can serve as important health management resources for vulnerable elderly women with hypertension who need to look for the methods of health management on their own, understand related information, and make decisions through effective communication with healthcare providers.

The health care empowerment model described above has been effectively utilized in the interventions to improve self-management in patients with chronic diseases [24,25], but in Korea, there is still a lack of research that applied this model to economically vulnerable elderly women with hypertension.

Therefore, this study aimed to develop a health care empowerment program based on the health care empowerment model proposed by Johnson [19] apply the developed program to vulnerable elderly women with hypertension, and investigate changes in health literacy, self-efficacy, depression, and blood pressure-related indices after the application of the intervention program (Figure 1).

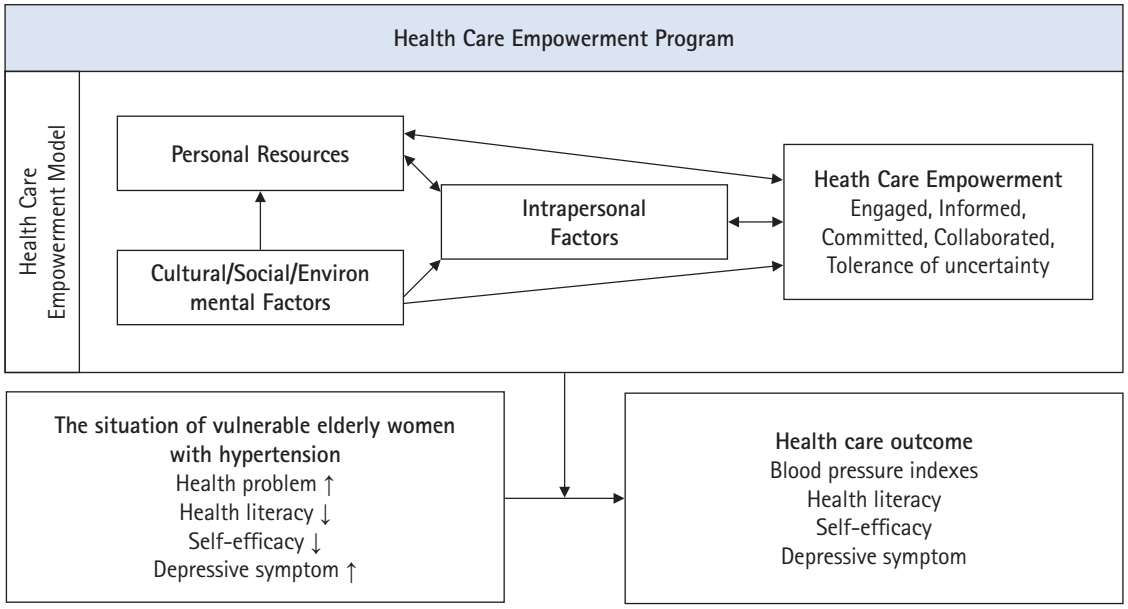


Figure 1. Conceptual framework of this study.

Methods

Study design

This study is a quasi-experimental research using a non-equivalent control group pretest-posttest design to develop a health care empowerment program for vulnerable elderly women with hypertension and verify its effectiveness.

Participants

The participants of this study were elderly women aged 65 years or older with hypertension who were registered as the recipients of customized home visiting healthcare services at the public health center in G City. After personally visiting the person in charge of home visiting healthcare services of the public health center, the researcher explained the purpose, content, and methods of the study and obtained permission to conduct the study. Then, after meeting with the presidents of senior centers in G City with the help of the person in charge of home visiting healthcare services at the public health center, participants were recruited at the six senior centers where the researcher had received permission for participant recruitment from the president of the senior center. The sample size for this study was calculated using G*power 3.1 with a statistical power of .80, a significance level of 0.05, and an effect size of .25 for repeated measures ANOVA for two groups. The minimum sample size was calculated as 19 people per group, a total of 38 people. Considering a dropout rate of 20%, a total of 50 people were selected and divided into two groups with 25 people each by randomly assigning them to the intervention or control group. However, among the 50 participants, eight people were excluded due to the objections of their families when the level of social distancing measures was raised to Level 2 due to COVID-19. Additionally, three more people withdrew from the study: one person moved to another region, one person was hospitalized, and one person did not respond to the follow-up survey. As a result, 38 people were finally included in the analysis.

Measures

Measurement of blood pressure-related indices

In this study, blood pressure and blood lipid levels of the participants were measured to evaluate blood pressure-related indices.

1. Measurement of blood pressure

Blood pressure was measured using an automatic blood pressure monitor (OMRON-IA2, Japan, 2016). Each participant was instructed to stay relaxed for at least 5 minutes before measurement. Then, to measure blood pressure, each participant was instructed to position an upper arm at the level of her heart, and the cuff of the blood pressure monitor was wrapped around the upper arm so that the lower triangular mark on the cuff was 2 cm above the pulse point of the brachial artery. After measuring blood pressure twice, the average value was recorded.

2. Blood lipids

The measurement of blood lipid levels included tests for total cholesterol, triglycerides, high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C). The participants were instructed to fast for at least 8 hours from midnight on the previous day, and measurements were taken after checking whether they had fasted on the day when tests for lipids were performed. Blood lipid levels were measured using a portable lipid meter (LipidoCare Korea, 2020), the validity of which has been verified in a previous study [26]. 35㎕ of blood was collected from a finger capillary for analysis. Test results were provided approximately 3 minutes after the test.

Health literacy

Health literacy among the participants was assessed using the Short-form Korean Health Literacy Scale (SKHLS) developed by Lee & Kang [27]. This scale consists of 12 items in total, including five questions on health-related terms and seven questions on comprehension and numeracy. Scores are determined by assigning 1 point to each correct response and 0 points to each incorrect answer. The total score ranges from 0 to 12 points. A total score of 7 points or below indicates a low level of health literacy, equivalent to elementary school graduates' level of health literacy, and higher total scores indicate higher health literacy. Regarding the reliability of the scale, the value of Cronbach's α was reported as 0.80 by Lee & Kang [27], and it was calculated as 0.70 in this study.

Self-efficacy

Self-efficacy was assessed using the self-efficacy scale for hypertension management developed by Park [28]. This scale contains 10 items in total, and each item is rated on a scale ranging from 10 points (Completely unable to do it) to 100 points (= Able to do it very well). a higher total score indicates higher self-efficacy for the management of hypertension. The value of Cronbach's α was reported as 0.72 by Park [28], and it was calculated as 0.70 in this study.

Depressive symptoms

Depressive symptoms were assessed using the Geriatric Depression Scale Short Form-Korea Version (GDSSF-K) developed by Kee [29]. This tool consists of 15 items, including questions on life satisfaction and dissatisfaction, helplessness, and anxiety, and each item is rated dichotomously (0 points (=Yes), 1 point (=No)). The total scores range from 0 to 15 points. In terms of total scores, 4 points or less were categorized as normal, 5 to 9 points as mild depression, and 10 to 15 points as severe depression. A higher total score indicates more severe depression. The value of Cronbach's α was reported as 0.88 by Kee [29], and it was calculated as 0.79 in this study.

Health care empowerment program

A literature review and analysis of previous studies were conducted for the development of a health care empowerment program for elderly women with hypertension in economically vulnerable groups, and the results showed that there is a need to strengthen individuals' self-management ability for the health management of the target group of the intervention. To analyze the needs of the target group of the intervention program, the Importance-Performance-Analysis (IPA) technique proposed by Martilla & James was applied to evaluate the importance and performance of educational items among elderly people with hypertension, and the results were reflected in the intervention program. In addition, this study referred to the content of educational programs on hypertension provided by the Korean Society of Hypertension, the American College of Cardiology, and the World Health Organization (WHO), and this program was designed centered around the five strategies of active engagement, information, collaboration, commitment, and tolerance of uncertainty presented in Johnson's Health Care Empowerment Model [19]. Thus, the main goals of the program included encouraging active participation of subjects, providing health information, improving communication skills for reasonable decision-making, stress management, resetting goals, and practicing health promises. The content related to the topics, objectives, and competencies for each session was finalized through the verification of content validity by an expert panel consisting of two nursing professors, one cardiologist, one cardiac nurse, two geriatric nurses, and two community nurses.

To evaluate the feasibility and applicability of this study, five elderly women with hypertension who met the inclusion criteria were selected and a five-session pilot study was conducted. Afterward, to comply with social distancing guidelines due to COVID-19, the exercise area was changed to individual exercise. In addition, to ensure the participants' comprehension of the questionnaire items, the survey method was adjusted in such a way that participants would respond to the questions after a research assistant read each question aloud to them. Additionally, educational materials were supplemented by providing enlarged figures and tables.

The elements of the program were organized in the following order: understanding the disease, setting goals, understanding

health information, managing hypertension symptoms, taking medication, nutritional management, exercise, shared decision-making, stress management, solving a quiz on hypertension, and a completion ceremony. The intervention program consisted of eight 60-minute sessions, and was conducted twice a week over four weeks personally by the researcher with the assistance of a research assistant. The control group was provided with educational materials after completion of the experiment. The post-survey was conducted immediately after completion of the program, and the follow-up survey was conducted in the same manner four weeks after the post-survey.

Data collection and analysis

The collected data were analyzed using SPSS 25.0. The general characteristics of the participants were analyzed by calculating frequencies, percentages, means, and standard deviations. The homogeneity test for the general characteristics of the intervention and control groups was performed using independent t-test, Chi-square test, and Fisher's exact test. Additionally, the Shapiro-Wilk test was used to test the normality of the dependent variables. The pre-test test for homogeneity for dependent variables between the intervention and control groups was performed using the independent t-test and the Mann-Whitney U test. Hypothesis testing was performed using repeated measures analysis of variance (ANOVA) and the independent t-test. When a dependent variable did not satisfy normality, the Friedman test and Mann-Whitney U test were used for analysis.

Ethical considerations

This study was conducted after receiving approval from the Institutional Review Board of Daegu Catholic University (IRB No. CUIRB-2020-0034). Before conducting a preliminary survey, the researcher personally provided the participants with oral explanations about the research purpose, research method, and expected results. The participants were informed that they could freely decide whether to participate in the study or not according to their voluntary intention, and they had the right to withdraw from the study at any time if they did not wish to participate. Additionally, to protect personal information, the participants were assured that the collected data would not be used for any other purposes than research, and this study was conducted after obtaining written informed consent from the participants. After completion of the program, educational materials were provided to the control group, and a small gift was provided to each of the participants in both the intervention and control groups as a token of appreciation

Results

Homogeneity test for general characteristics and pretest homogeneity test for dependent variables

The participants of the present study consisted of 38 people, with 19 people in the intervention group and 19 in the control group. There were no statistically significant differences between the two groups in age, religion, education level, living status (living alone or with the family), job (presence of an occupation), or level of economic satisfaction. In addition, there were no significant differences in hypertension-related characteristics, such as average length of time from diagnosis, number of hypertension medications, practice of exercise, alcohol consumption, smoking status, and experience of hospitalization due to hypertension within 1 year, indicating that the two groups were homogeneous.

Before starting to apply the intervention program, the pretest homogeneity test for the dependent variables of the intervention and control groups was conducted. First, the Shapiro-Wilk test was performed to check the normality of data. As a result, diastolic blood pressure and triglyceride levels did not follow a normal distribution, so the Mann-Whitney U test was used. There were no significant differences between the two groups in blood pressure and blood lipid indices, including systolic blood pressure, diastolic blood pressure, total cholesterol, triglycerides, HDL cholesterol, and LDL cholesterol. In addition, no significant differences between the two groups were found in health literacy, self-efficacy, and depressive symptoms, showing that the homogeneity of the intervention and control groups was secured (Table 1).

Evaluation of the effectiveness of the health care empowerment program

The results of the tests for the effectiveness of the health care empowerment program are shown in Table 2.

In this study, four research hypotheses regarding the effectiveness of the intervention program were postulated, and the four hypotheses and the results of hypothesis testing are presented below.

H1: There will be significant differences in the changes in blood pressure-related indices over time between the intervention group that participated in the health care empowerment program and the control group that did not participate.

As a result of the analyses to test the above hypothesis, there was a significant difference between the two groups in the changes of diastolic blood pressure ($z = -2.14$, $p = .032$), supporting the

Table 1. Homogeneity of General Characteristics and Variables in Pretest (N=38)

Variables	Categories	Exp. (n = 19)	Cont. (n = 19)	χ^2/t (p)	Z (p)
		n (%) or M ± SD			
Age (yrs)	< 80	11 (57.9)	10 (52.6)	0.11 (.744)	
	≥ 80	8 (42.1)	9 (47.4)		
	Mean ± SD	77.00 ± 8.92	79.53 ± 4.18	-1.12 (.274)	
Religion	Not have	4 (21.1)	6 (31.6)	0.54 (.461)	
	Have	15 (78.9)	13 (68.4)		
Educational level	Uneducated	3 (15.8)	2 (10.5)	1.31† (.392)	
	Elementary	10 (52.6)	16 (84.2)		
	≥ Middle school	6 (31.6)	1 (5.3)		
Living status	Alone	7 (36.8)	12 (63.2)	2.63 (.105)	
	With family	12 (63.2)	7 (36.8)		
Job	Not have	18 (94.7)	17 (89.5)	0.00(> .999)	
	Have	1 (5.3)	2 (10.5)		
Economical satisfaction	Good	2 (10.5)	2 (10.5)	3.02 (.310)	
	Moderate	17 (89.5)	14 (73.7)		
	Poor	0 (0.0)	3 (15.8)		
Time from diagnosis (yrs)	< 10	11 (57.9)	8 (42.1)	0.95 (.330)	
	≥ 10	8 (42.1)	11 (57.9)		
Number of hypertension medications	1	13 (68.4)	12 (63.2)	0.12 (.732)	
	≥ 2	6 (31.6)	7 (36.8)		
Exercise	Yes	13 (68.4)	13 (68.4)	0.00 (> .999)	
	No	6 (31.6)	6 (31.6)		
Alcohol consumption	Yes	0 (0.0)	1 (5.3)	0.00 (> .999)	
	No	19 (100.0)	18 (94.7)		
Smoking	Yes	0 (0.0)	0 (0.0)	0.00 (> .999)	
	No	19 (100.0)	19 (100.0)		
Hospitalization due to hypertension within 1 year	Yes	1 (5.3)	1 (5.3)	0.00 (> .999)	
	No	18 (94.7)	18 (94.7)		
Blood pressure indexes	SBP (mmHg)	143.74 ± 19.63	149.53 ± 16.37		-0.99 (.330)
	DBP (mmHg)	77.47 ± 9.00	80.16 ± 7.18		-1.23‡ (.223)
	TC (mg/dL)	162.32 ± 27.57	154.53 ± 29.02		0.83 (.415)
	TG (mg/dL)	141.74 ± 91.49	123.11 ± 67.89		-0.47‡ (.641)
	HDL-C (mg/dL)	58.79 ± 15.35	59.26 ± 15.85		-0.09 (.926)
	LDL-C (mg/dL)	76.26 ± 30.31	60.82 ± 22.98		1.71 (.097)
Health literacy		8.63 ± 2.52	7.37 ± 2.41		-1.54‡ (.130)
Self-efficacy		69.65 ± 9.04	64.68 ± 7.65		1.83 (.076)
Depressive symptom		6.11 ± 4.43	5.89 ± 2.38		0.82 (.857)

†Fisher's exact test; ‡Manny-Whitney test.
Cont. = control group; Exp. = experimental group; M ± SD = mean ± standard deviation; SBP = systolic blood pressure; DBP = diastolic blood pressure; TC = total cholesterol; TG = triglycerides; HDL-C = high-density lipoprotein cholesterol; LDL-C = low-density lipoprotein cholesterol.

hypothesis. However, there were no significant differences between the two groups in the changes of systolic blood pressure, total cholesterol, triglycerides, HDL cholesterol, and LDL cholesterol, so the first hypothesis was rejected.

H2: There will be a significant difference in the changes in the scores for health literacy over time between the intervention group that participated in the health care empowerment program and the control group that did not participate.

Analysis results indicated that the change from pretest to follow-up was significantly higher in the intervention group than the control group (Z = -2.67, p = .008), supporting the second

Table 2. Differences of Dependent Variables between the Experimental and Control Group (N=38)

Variables		Groups	Pretest	Posttest 1	Posttest 2	Friedman test			Comparison by time	
									Pre-Post 1	Pre-Post 2
			M ± SD			F or χ^2 (p)	Source	F(p)	t or Z(p)	t or Z(p)
Blood pressure indexes	SBP (mmHg)	Exp.	143.74 ± 19.63	136.47 ± 13.77	133.89 ± 16.52		G	6.36 (.016)	-1.73 (.092)	-1.70 (.097)
		Cont.	149.53 ± 16.37	150.26 ± 16.25	149.05 ± 16.80		T	2.24 (.130)		
							G×T	2.11 (.129)		
	DBP+ (mmHg)	Exp.	77.47 ± 9.00	77.16 ± 9.51	73.58 ± 7.60	4.76 (.093)			-0.22 (.840)	-2.14 (.032)
		Cont.	80.16 ± 7.18	78.74 ± 8.59	81.89 ± 8.20	4.59 (.101)				
	TC (mg/dL)	Exp.	162.32 ± 27.57	157.21 ± 30.35	153.00 ± 27.99		G	0.03 (.856)	-1.16 (.255)	-1.83 (.076)
		Cont.	154.53 ± 29.02	152.44 ± 29.20	154.50 ± 33.18		T	0.47 (.627)		
							G×T	1.82 (.170)		
	TG+ (mg/dL)	Exp.	141.74 ± 91.49	146.26 ± 97.87	149.37 ± 85.23	0.74 (.692)			-1.73 (.086)	-1.16 (.258)
		Cont.	123.11 ± 67.89	134.74 ± 91.23	143.63 ± 91.54	4.11 (.128)				
	HDL-C (mg/dL)	Exp.	58.79 ± 15.35	62.32 ± 15.22	58.42 ± 16.76		G	0.01 (.924)	1.39 (.174)	-0.12 (.903)
		Cont.	59.26 ± 15.85	59.63 ± 14.05	59.26 ± 14.21		T	1.63 (.204)		
							G×T	1.10 (.340)		
	LDL-C (mg/dL)	Exp.	76.26 ± 30.31	66.21 ± 30.05	66.16 ± 28.49		G	0.84 (.365)	-1.94 (.060)	-1.28 (.211)
		Cont.	60.82 ± 22.98	64.22 ± 21.23	61.24 ± 21.86		T	0.42 (.661)		
							G×T	1.70 (.191)		
Health literacy		Exp.	8.63 ± 2.52	9.84 ± 2.19	10.37 ± 2.14	9.53 (.009)			-1.97 (.053)	-2.67 (.008)
		Cont.	7.37 ± 2.41	7.05 ± 2.07	7.37 ± 2.03	1.26 (.532)				
Self-efficacy		Exp.	69.65 ± 9.04	77.03 ± 11.21	85.37 ± 8.45		G	24.59 (< .001)	3.39 (.002)	3.68 (.001)
		Cont.	64.68 ± 7.65	62.53 ± 9.56	67.95 ± 10.36		T	19.69 (< .001)		
							G×T	8.69 (< .001)		
Depressive symptom		Exp.	6.11 ± 4.43	4.42 ± 3.29	4.05 ± 3.17		G	0.02 (.902)	-0.59 (.556)	-0.50 (.623)
		Cont.	5.89 ± 2.38	4.74 ± 3.59	4.32 ± 3.37		T	9.61 (< .001)		
							G×T	0.22 (.802)		

None-parametric test; Exp. = experimental group; Cont. = control group; Pre = pretest; Post 1 = posttest 1; Post 2 = posttest 2; SBP = systolic blood pressure; DBP = diastolic blood pressure; TC = total cholesterol; TG = triglycerides; HDL-C = high-density lipoprotein cholesterol; LDL-C = low-density lipoprotein cholesterol; G = group; T = time.

hypothesis.

H3: There will be a significant difference in the changes in the scores for self-efficacy over time between the intervention group that participated in the health care empowerment program and the control group that did not participate.

As a result of testing the hypothesis, the change from pretest to follow-up in the scores for self-efficacy was significantly higher in the intervention group than the control group ($F = 8.69$, $p < .001$), supporting the third hypothesis.

H4: There will be a significant difference in the changes in the scores for depressive symptoms over time between the intervention group that participated in the health care empowerment program and the control group that did not participate.

Analysis results showed that there was no significant difference in the changes in the scores for depressive symptoms between the two groups ($F = .22$, $p = .802$), so the fourth hypothesis was rejected.

Discussion

This study developed a health care empowerment program for vulnerable elderly women with hypertension, and verified its effectiveness. This intervention program was developed based on the five strategies that are key elements of the health care empowerment model proposed by Johnson [19]: active engagement, information, collaboration, commitment, and tolerance of uncertainty. To reflect these strategies, this program included activities such as providing health information, improving communication skills, setting and resetting goals, stress management, and practicing health commitments. In particular, this program focused on enhancing the competency for self-directed health management by encouraging participants to set and achieve their own health goals. In this respect, this program has significance as a case of applying the practical values of the health care empowerment model proposed by Johnson [19] to a vulnerable group in the community.

In the case of systolic blood pressure, the results of this study showed that although there was a significant difference in systolic blood pressure between the two groups, no significant difference between groups in changes over time or significant between-group interaction was observed. As for diastolic blood pressure, in the pretest-posttest changes, there was no significant difference between the two groups, but in the changes from pretest to follow-up, the intervention group showed a greater decrease in diastolic blood pressure, indicating a partial effect of the intervention. These results of the present study are different from the findings of a previous study of community-dwelling general elderly people by Yu et al. [30], which reported that both systolic and diastolic blood pressure were significantly decreased after a 4-week intervention. Regarding this difference in research results, it should be pointed out that although the study by Yu et al. [30] and this study were both conducted with the elderly, the participants of this study were vulnerable elderly women with limited access to health information and little or limited experience in self-management, and this study was conducted in a situation where home visiting health services were suspended due to COVID-19, so there were differences in the characteristics of the participants and the research environment between the two studies. Nevertheless, the intervention group showed positive changes in some indices in the present study, and this fact suggests that the intervention program contributed to some degree to changes in health behavior.

With respect to blood lipid levels, there were no significant changes in blood lipid levels in either the intervention or control group. This finding is not consistent with the results of a study by Chang et al. [31], which found that an 8-week intervention combining exercise and a low-sodium diet resulted in a significant reduction in the triglyceride and LDL cholesterol levels. The lack of significant changes in blood lipid levels in the present study may be attributed to the fact that the intervention program of this study mainly consisted of cognitive interventions focused on providing health information and self-management strategies, and did not include diet and exercise therapy, and the intervention period of this study was relatively short. Thus, considering that the health care empowerment model proposed by Johnson [19] is an approach focused on behavioral changes and improving self-efficacy rather than physiological measures, it is required to develop and apply a more integrated and long-term intervention including diet and exercise in the future.

As for health literacy, there was significant improvement in health literacy over time, and this finding is similar to the results of a study by Lin et al. [32], which found that there were significant improvements in the abilities to find and use health information after applying a health literacy program. In this study, based on 'information' and 'collaboration' strategies presented in Johnson's model of health care empowerment, taking notes in a notebook, learning of the decision-making process, and practicing communication skills were included in the intervention program, and this approach led to practically enhancing the participants' ability to utilize health information.

In this study, self-efficacy was also significantly improved over time, and these results are consistent with the results of previous

studies [33,34], which reported that self-efficacy was improved through hypertension management education or meditation training over 8 weeks. In particular, in the intervention program developed and applied in this study, the participants were encouraged to set their own health goals and establish their practice plans according to 'active engagement' and 'commitment' strategies presented in the health care empowerment model proposed by Johnson [19], and this method was believed to have a positive effect on the improvement of self-efficacy.

On the other hand, there was no significant difference in depressive symptoms between the intervention and control groups, and these results are not consistent with the results of a study by Lee & Jun [35], which reported that depressive symptoms were significantly reduced through individual home visit counseling. No significant changes in depressive symptoms may be attributed to the fact that the intervention of this study had limitations in providing emotional support because it mainly involved small group-centered activities, and 'tolerance of uncertainty' among the five strategies of the model proposed by Johnson [19] was not sufficiently reflected in the program, compared to other strategies. However, it is considered a positive result that scores for depressive symptoms improved to the normal range over time. In future research, there is a need to supplement interventional elements that can strengthen emotional stability and psychological support.

As described above, the intervention program developed by this study were found to have a significant effect on health literacy and self-efficacy, which are key elements of the health care empowerment model proposed by Johnson [19], and in particular, it is considered significant that study results suggest that the model proposed by Johnson [19] can be applied as a customized intervention strategy for vulnerable elderly people with low access to health services. In the future practice of community health nursing, it is necessary to develop integrated interventions that involve the application of various strategies to enhance subjects' self-management ability, and the results of this study are expected to serve as basic data for this purpose.

Conclusions

This study developed a health care empowerment program for vulnerable elderly women with hypertension, based on the health care empowerment model proposed by Johnson [19], and verified its effectiveness. The results of this study indicated that health literacy and self-efficacy were significantly improved, and positive changes were also observed in some blood pressure-related indices. These results suggest that the strategies of Johnson's model were effective in inducing the participants' involvement in health management and strengthening their self-directed behavior. Although no significant differences between the intervention and control groups were observed in blood lipid levels and depressive symptoms, the fact that the intervention program resulted in the improvement of key health competencies despite the application of the intervention under limited conditions is an important result that demonstrates the practical value and applicability of the program.

In the future, the effectiveness of the intervention program needs to be strengthened through longer-term operation of the program as well as a multidimensional intervention including physical activity, diet, and emotional support. A strategic approach utilizing this model is also required in the practice of community health nursing. Additionally, follow-up research is needed to more systematically verify the effectiveness of this program and to develop and evaluate customized health promotion programs for various health-vulnerable populations.

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Conflict of interest

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Authors' contributions

Yunkyoung Jung contributed to conceptualization, data curation, formal analysis, funding acquisition, methodology, project administration, visualization, writing-original draft, review & editing, investigation, supervision, and validation.

Data availability

Please contact the corresponding author for data availability.

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References

1. World Health Organization. Age-standardized prevalence of hypertension among adults aged 30 to 79 years (%) [Internet]. Geneva: World Health Organization; [updated 2024 Jan 8; cited 2025 Jan 31]. Available from: https://data.who.int/indicators/i/7DA4E68/608DE39
2. Chung KH. 2017 National Survey of Older Koreans-Findings and Implications. Policy report. Sejong: Korea Institute for Health and Social Affairs; 2018. Jan;Report No.: 2018-01.
3. Ministry of Health and Welfare; Korea Disease Control and Prevention Agency. The 5th National Health Promotion Plan (2021–2030) [Internet]. Sejong: Ministry of Health and Welfare; c2021 [cited 2025 Jan 2]. Available from: http://www.mohw.go.kr
4. Kim JI. Levels of health-related quality of life (EQ-5D) and its related factors among vulnerable elders receiving home visiting health care service in some rural areas. Journal of Korean Academy of Community Health Nursing. 2013;24(1):99–109. https://doi.org/10.12799/jkachn.2013.24.1.99
5. The Committee on Low Fertility and Aging Society. 13th Population Emergency Measures Meeting: "Current Status of Elderly Poverty and Implications for Elderly Income Security.". Korea Institute for Health and Social Affairs; c2025;[cited 2025 May 29]. Available from: http://betterfuture.go.kr
6. Chung KH. Evaluation, Policy Issues and Strategies Regarding Welfare Policies for Older Persons. Policy Report. Sejong: Korea Institute for Health and Social Affairs; 2017. Oct;Report No.: 2017-10.
7. Committee of Clinical Practice Guideline of the Korean Society of Lipid and Atherosclerosis. Korean guidelines for the management of dyslipidemia. 5th ed. Seoul: Korean Society of Lipid and Atherosclerosis; 2022. p. 173.
8. Ha KH, Kwon HS, Kim DJ. Epidemiologic characteristics of dyslipidemia in Korea. Journal of Lipid and Atherosclerosis. 2015;4(2):93–99. https://doi.org/10.12997/jla.2015.4.2.93
9. Koay K, Schofield P, Gough K, Buchbinder R, Rischin D, Ball D, et al. Suboptimal health literacy in patients with lung cancer or head and neck cancer. Supportive Care in Cancer. 2013;21(8):2237–2245. https://doi.org/10.1007/s00520-013-1780-0
10. World Health Organization. Health literacy [Internet]. Geneva: World Health Organization; 2024 Aug 5 [cited 2025 Jun 25]. Available from: https://www.who.int/news-room/fact-sheets/detail/health-literacy
11. Chung HJ, Bae JH. The influence of health literacy and social support on medication adherence in eldery with chronic diseases. Journal of Digital Convergence. 2018;16(7):419–428. https://doi.org/10.14400/JDC.2018.16.7.419
12. Jung TY, Jung KT, Kim YM. Information searching behavior for medical institutions of spine patients and searching outcomes. Health Policy and Management. 2013;23(3):266–280. https://doi.org/10.4332/KJHPA.2013.23.3.266
13. Oh JH, Park EO. The impact of health literacy on self-care behaviors among hypertensive elderly. Korean Journal of Health Education Promotion. 2017;34(1):35–45. https://doi.org/10.14367/kjhep.2017.34.1.35
14. Rhee TG, Lee HY, Kim NK, Han GH, Lee JH, et al. Is health literacy associated with depressive symptoms among Korean adults? Implications for mental health nursing. Perspectives in Psychiatric Care. 2017;53(4):234–242. https://doi.org/10.1111/ppc.12162
15. Park HJ, Yoo SY. The effects of depression, social support and self-efficacy on psychological well-being in the elderly. The Journal of the Convergence on Culture Technology. 2024;10(5):1–9. https://doi.org/10.17703/JCCT.2024.10.5.1
16. Kim JI. A study on factors affecting perception of social isolation in the elderly: Focusing on capital and non-capital region. The Korean Journal of Local Government Studies. 2024;28(2):163–188. https://doi.org/10.20484/klog.28.2.163
17. Song MR, Kim EK, Yu SJ. A study of ADL, social support, self-efficacy between the aged groups with and without depression. Korean Journal of Social Welfare Research. 2010;24:61–79.
18. Kim SY, Heo SH, Chang SJ. The effects of socioeconomic deprivation on health status in the elderly: Focusing on the mediating role of depression. Health and Social Welfare Review. 2018;38(1):88–124. https://doi.org/10.15709/HSWR.2018.38.1.88
19. Johnson MO. The shifting landscape of health care: Toward a model of health care empowerment. American Journal of Public Health. 2011;101(2):265–270. https://doi.org/10.2105/AJPH.2009.189829
20. Sorensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: A systematic review and integration of definitions and models. BMC Public Health. 2012;12(1):80. https://doi.org/10.1186/1471-2458-12-80
21. Lee SH, Jun SS. Effects of an empowerment program on self-esteem and depression for low-income elderly women living alone. Journal of Korean Academy of Psychiatric Mental Health Nursing. 2012;21(4):311–320. https://doi.org/10.12934/jkpmhn.2012.21.4.311 22

22. Shin DS, Kim CJ, Choi YJ. Effects of an empowerment program for self-management among rural older adults with hypertension in South Korea. The Australian Journal of Rural Health. 2016;24(3):213–219. https://doi.org/10.1111/ajr.12253
23. Gabitova G, Burke NJ. Improving healthcare empowerment through breast cancer patient navigation: A mixed methods evaluation in a safety-net setting. BMC Health Services Research. 2014;14:407. https://doi.org/10.1186/1472-6963-14-407
24. Brown C, Bornstein E, Wilcox C. Partnership and empowerment program: A model for patient-centered, comprehensive, and cost-effective. Clinical Journal of Oncology Nursing. 2012;16(1):15–17. https://doi.org/10.1188/12.CJON.15-17
25. Wilson TE, Kay ES, Turan B, Johnson MO, Kempf MC, Turan JM, et al. Healthcare empowerment and HIV viral control: Mediating roles of adherence and retention in care. American Journal of Preventive Medicine. 2018;54(6):756–764. https://doi.org/10.1016/j.amepre.2018.02.012
26. Yun KS, Choi JK, Song IU, Chung YA. Smartphone-based point-of-care cholesterol blood test performance evaluation compared with a clinical diagnostic laboratory method. Applied Sciences. 2019;9(16):3334. https://doi.org/10.3390/app9163334
27. Lee TW, Kang SJ. Development of the short form of the Korean health literacy scale for the elderly. Research in Nursing & Health. 2013;36(5):524–534. https://doi.org/10.1002/nur.21556
28. Park YI. Effect of the self-regulation program for hypertensives: synthesis and testing of Orem and Bandura's theory [dissertation]. [Seoul]: Seoul National University; 1994. 120 p.
29. Kee BS. A preliminary study for the standardization of geriatric depression scale short form-Korean version. Journal of Korean Neuropsychiatric Association. 1996;35(2):298–307.
30. Yu SJ, Song MS, Lee YJ. The effects of self-efficacy promotion and education program on self-efficacy, self-care behavior, and blood pressure for elderly hypertensives. Journal of Korean Academy Adult Nursing. 2001;13(1):108–122.
31. Chang AK, Fritschi C, Kim MJ. Nurse-led empowerment strategies for hypertensive patients with metabolic syndrome. Contemporary Nurse. 2012;42(1):118–128. https://doi.org/10.5172/conu.2012.42.1.118
32. Lin SC, Chen IJ, Yu WR, Lee SD, Tsai TI. Effect of a community-based participatory health literacy program on health behaviors and health empowerment among community-dwelling older adults: A quasi-experimental study. Geriatric Nursing. 2019;40(5):494–501. https://doi.org/10.1016/j.gerinurse.2019.03.013
33. Kang EH, Kim CS. The effectiveness and application of self-health management program in patients with hypertension through self-help groups. Health Service Management Review. 2017;11(1):23–35. https://doi.org/10.18014/hsmr.2017.11.1.23
34. Kim MS, Song MS. Effects of self-management program applying Dongsasub training on self-efficacy, self-esteem, self-management behavior and blood pressure in older adults with hypertension. Journal of Korean Academy Nursing. 2015;45(4):576–586. https://doi.org/10.4040/jkan.2015.45.4.576
35. Lee SH, Jun SS. Effects of an empowerment program on self-esteem and depression for low-income elderly women living alone. Journal of Korean Academy of Psychiatric and Mental Health Nrusing. 2012;21(4):311–320. https://doi.org/10.12934/jkpmhn.2012.21.4.311