

Development and Evaluation of the Elderly Health Mileage Program to Promote Exercise*

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I. Introduction

In Korea, 81.3% of the elderly have one or more chronic diseases (Jung, Lee, Park, Lee, & Lee, 2012). Moreover, the medical expenses of the elderly population were 21.9 trillion won in 2015, accounting for 37.8% of total medical expenses. This represents a 9.7-fold increase from 2.3 trillion won in 2000 (Lee, Jung, Whang, & Choi, 2017). This trend is expected to continue since the elderly population has been increasing. To suppress increases in elderly medical expenditures, the morbidity rate of chronic diseases should be reduced. To accomplish this, it is necessary to reduce unhealthy behaviors such as smoking, drinking and obesity (Lee, 2011). According to the 2014 Senior Survey, exercise at below the recommended level increased from 11.3% to

14.2% when compared to 2010 (Jung et al., 2014). Therefore, proper exercise programs for Korean elderly should be extended to more people. The "one hundred years' exercise program" offered by the National Health Insurance Service (NHIS) is the most well-structured program among current elderly exercise programs. Many elderly exercise programs are conducted less than three times a week and are not managed by exercise instructors (Kim & Chun, 2013; Lee, Jung, Oh, Yum, & Kim, 2011). However, the "One hundred years' exercise program" is guided by professional instructors and the content of the program consists of a standardized array of varied exercises, including indoor and outdoor exercises, and self-assisted exercises. In addition, this program is conducted more than twice a week and meets the WHO recommended standard of 150

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minutes per week (WHO, 2013). According to the report of the effect of this program, there have been improvements in health awareness, muscular strength, endurance, and depression as well as a higher satisfaction about this program amongst participants (National Health Insurance Service, 2012). However, due to the minimum requirement of the number of participants when an exercise program launched, the spread of the "One hundred years' exercise class" has been limited. Accordingly, quality management for the elderly exercise programs being implemented by various organizations and measures for expansion of the elderly exercise program are needed. In addition to NHIS, public health centers are also conducting exercise programs for the elderly; however, these programs must be standardized and expanded (Yoon, Jun, & Lee, 2002). In general, a variety of efforts are needed to provide well-structured exercise programs to a larger number of the elderly population.

To reduce unhealthy behaviors and maintain and increase healthy behaviors, insurers in other countries have developed activities to promote the health status and offered incentives according to improvements in health status. Incentives for preventative actions lead to changes in attitude amongst the insured and, in the long run, reduce national health expenditures. In Germany, individuals with chronic diseases who participate in health promotion, prevention, and screening programs are offered bonuses such as cash, gifts, or deductions in payment (Schmidt, Gerber, & Stock, 2009); however, a large economic gap has arisen in health status as more people with higher income partake in the preventive services, which has led to serious concerns (Schmidt, Gerber, & Stock, 2009). There have

been reports from the United States of a rise in unhealthy behaviors amongst individuals in some states that have implemented a disincentive (salary limit) for those with Medicaid who refuse to partake in preventive services (Gingerich, Anderson, & Koland, 2012). There are positive and negative effects of financial incentives for prevention (Gingerich et al., 2012; Relton, Strong, & Li, 2011), and the subjects' characteristics should be considered when applying such incentives. In the case of economically disadvantaged or low-income people, when incentives were provided in a simple way, the incentives are effective (Relton et al., 2011). However, only short-term effects have been measured in most studies; therefore, evidence regarding the long-term effects of incentives in prevention programs is inadequate (Relton et al., 2011). A cost-benefit analysis of the prevention bonus program in Germany revealed that the average health care cost per capita decreased by 241 euros per year (Stock et al., 2008). Because incentives in prevention programs have been shown to have positive effects on health behavior, they will likely be useful when applied to Korean elderly.

II. Purpose

This study was conducted to develop an elderly health mileage program and to evaluate the feasibility of the program. The elderly health mileage program was developed based on a literature review, in-depth interview with exercise instructors and expert opinions. We selected three regions to apply the elderly health mileage program considering urbanization and inequality. The effects of the elderly health mileage program were then evaluated in three selected regions.

III. Methods

1. Study framework

This study was conducted by the health promotion program planning process. The process of this study is outlined in Figure 1. We used a qualitative method in the program development process and a quantitative method during evaluation of the program.

2. Assessment

1) Literature review of exercise programs for the elderly

Search terms such as 'elderly,' 'exercise,' and 'systematic review [Publication Type]' were used in a PubMed search of the effects of exercise on elderly individuals (search date: July 31, 2013). A total of 460 studies were found within the last five years. Inclusion criteria were 1) study subjects were over 65

years of age, 2) the study investigated the effectiveness of exercise programs, 3) publication type was systematic review. Nineteen studies that met the inclusion criteria were reviewed. Moreover, exercise guidelines for the elderly developed by expert groups such as the WHO and the American Heart Association were reviewed.

2) Review of relevant programs in Korea and other countries

To refer to the application of a health related incentive system in Korea, the 'Incheon Health Point System' as a relevant program in Korea was investigated by reviewing the research report. Relevant programs in other country were identified through literature review, and we investigated them of Japan and Germany in person. For an in-depth study of a program in Japan, Kitakyushu was visited from August 31, 2013 to September 3, 2013 to investigate the Japanese health mileage program by meeting

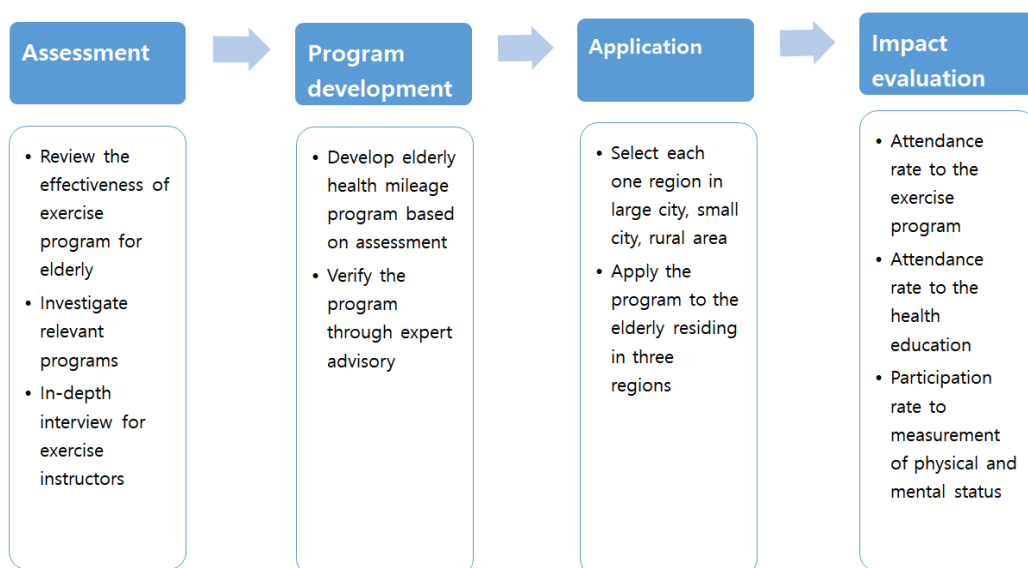


Figure 1. The Framework of This Study

with the public officer at City Hall and acquiring relevant official documents. The benefits of prevention programs in Germany were investigated by translating the homepage of one of the health insurance providers, Barmer-GEK.

3) In-depth interview with exercise instructors

To understand the importance of the role of the exercise instructor in the elderly exercise program, seven elderly exercise program instructors were interviewed in-depth. The interview was conducted for about two hours, during which time we presented the following open-ended question, "What factors influence the elderly's participation in the exercise program?" Interviewees' responses were recorded in an electronic device and the recorded material was translated into written records. We selected meaningful statements by reviewing them. The categories and subcategories were derived by integrating and reclassifying meaningful statements.

3. Development of the elderly health mileage program (EHMP) and verification of validity

We developed the EHMP program using a variety of data. Specifically, the criteria for the exercise program were based on our literature review, while the standards for mileage accumulation were established by reference to relevant cases in Korea and other countries. Additionally, factors derived from the in-depth interview were reflected in the operational process of the EHMP. Two professors in public health, one professor in physical education, two public health experts and one social welfare expert reviewed content validity of the EHMP.

4. Selection of areas and subjects

The EHMP was designed to improve participation in the exercise program and to cover all elderly in a community. There were not enough resources to implement the EHMP over an entire community, so we took into consideration age and geographical accessibility. Elderly people using senior centers were selected as subjects of EHMP because the senior centers were located near their residences.

We selected three areas for pilot projects considering urbanization, community cooperation, community networking, willingness to participate, senior center accessibility, and the proportion of the population. D-gu (a large city), S-si (a medium to small city), and Y-gun (a county district) were selected, and 677 individuals from D-gu, 1,225 from S-si, and 973 from Y-gun participated, resulting in a total of 2,875 individuals participating in the EHMP.

5. Evaluation

1) Impact evaluation

When evaluating health programs, the outcome can be classified into two categories. One is impact evaluation, which reflect short-term results such as knowledge and attitude, while the other encompasses the ultimate goals, such as a reduction in mortality and morbidity (Yoon et al., 2010). Because it takes a long time to assess the ultimate outcomes, we used impact evaluation indicators. The purpose of the EHMP is to increase the rate of participation in the exercise program by providing incentives. Therefore, the indicators for impact evaluation were the proportion of elderly participating in health mileage programs, the proportion of elderly receiving

gifts as incentives, and the number of elderly receiving health education.

2) Data collection

At the start of the EHMP, characteristics of subjects were recorded in Excel files. Age, gender, exercise type, the organization that provided exercise program, monthly attendance status and pre- and post-measurements for physical and mental status were uploaded to the files. After the exercise program, exercise instructors uploaded the file and performed pre- and post-measurements. Pre-measurements were conducted in the second or third week of August, 2015 and post-measurements were carried out in the third or fourth week of November, 2015.

3) Analysis

To evaluate the impact of EHMP, we used descriptive statistics such as frequency, percentage, average, and standard deviation.

6. Ethical considerations

We explained to the participants that this study was regarded as a pilot project for the EHMP, after which we collected information regarding the participant's gender, residence, age, demographics, and physical and mental status. Participants were also informed that the measurements and survey results would not be used for purposes other than the pilot project. This study was approved by the Ethics Committee of the Gachon University (Approval No: 1044396-201504-HR-016-01).

IV. Results

1. Assessment

1) Literature review of exercise programs for the elderly

Overall, 19 studies were selected for the literature review. In the majority of the studies, exercise programs consisted of 40 minutes to one hour sessions two to three times per week, and the exercise period lasted from six weeks to six months. Although the time frame varied, there appeared to be insufficient data regarding the effects of the exercise period to draw any conclusions on program length (Chou, Hwang, & Wu, 2012; Gomez-Cabello, Ara, Gonzalez-Aguero, Casajus, & Vicente-Rodriguez, 2012; Liu, & Latham, 2011; Marzolini, Oh, & Brooks, 2012; Patel, Newstead, & Ferrer, 2012; Peterson, Rhea, Sen, & Gordon, 2010; Tseng, Gau, & Lou, 2011; Windle, Hughes, Linck, Russell, & Woods, 2010). The WHO and other professional organizations recommends that the elderly perform medium-intensity exercise, 150 min/week, for 6 months (WHO, 2013).

2) Review of relevant programs in Korea and other countries

We reviewed the health point system implemented in Incheon, Korea as a relevant program. Health centers and the NHIS, in collaboration with private clinics, established an integrated chronic disease registration and management system. Subjects participating in this program were provided incentives. Through role sharing with the public sector, the NHIS took charge of the relevant budget while the Centers for Disease Control and the community health centers operated the management system. The following are the types and amount of incentives that participants can receive. A total of 5,000 points were given for registration, 1,000 points for visitation, 1,000 points for

examination (once every six months), and 2,000 points for education (three sessions per year). The maximum amount of points that could be deposited in a year was 20,000 Korean won (Yim, 2009). Subjects who registered in this program showed a higher disease recovery rate than those who did not (Jung et al., 2013). Moreover, the group that received education had a better understanding of hypertension and diabetes than the group that did not (Lee, Yim, Im, Oh, & Han, 2013). There were several relevant cases in Japan and Germany. The local government in Kitakyushu, Japan introduced health mileage as an instrument to carry out the 'New Health Promotion Policy.' In that program, if a person receives medical screening or attends a health promotion program, they receive one point. When a person collects five points or more, they can exchange the points for a gift. As a result, the number of people who receive health screening has increased. In Germany, Barmer-GEK, which is one of the largest health insurance companies in the country, provide subscribers who attend a health promotion or prevention program or receive a health screening various numbers of points. If they accumulate 500 or more points, they can exchange them for gifts or cash. If the subscribers are confirmed to have improved their physical ability, they are eligible for a maximum of 100 euros compensation from the insurance company (Barmer Gek, 2013). Stock et al.(2010) separated individuals into two groups of 70,429 each matched by gender, age, region, health insurance eligibility (insurance status), and annual medical costs, those who had subscribed to receive prevention awards at the Barmer Disease Center and those who had not. Comparison of the groups revealed that

those who subscribed to the prevention awards program reduced their healthcare spending by €177.48, and that this reduction was related to hospital costs, medication, and other expenses (Stock et al., 2010).

3) In-depth interview with exercise instructors

Through in-depth interviews, we extracted four factors (instructor-related factors, accessibility factors, program-related factors, and participant-related factors) influencing exercise performance amongst the elderly. Instructor-related factors included ongoing interest and leadership, intimate relationships with the participants, and personalized service. Accessibility factors included the number of programs available relative to the demands and needs of rural areas. There were problems associated with limitations on the maximum number of participants, cooperation with senior centers and welfare facilities in terms of space, and a lack of instructors at locations with exercise equipment. These findings indicate there is a need for diverse programs in terms of program management and tangible goals, as well as an effective checklist to monitor goals and outcomes. In addition, a subcategory regarding age-related diseases and symptom management was devised. Problems with symptom management included a lack of individual awareness of the need to exercise, a lack of knowledge regarding the correct ways to exercise, the atmosphere in the senior centers, motivation, and an inadequate sense of accomplishment.

2. Development of the Elderly Health Mileage Program

Based on various data, we developed the Elderly Health Mileage Program (EHMP) as

follows. The operating procedure is divided into four steps (Table 1). First, a regional committee is organized. Second, the committee reviews and approves the exercise programs in the community according to the standards set forth. Third, the elderly register in the exercise programs. Whenever the enrolled elderly participate in the exercise program, they accumulate mileage. Fourth, the elderly can use their mileage if the amount reaches a certain level at the end of the exercise program.

The NHIS played a central role in the planning and management of the EHMP, because the EHMP was operated with funds from the NHIS. However, it was necessary to establish a system of cooperation with relevant regional organizations to improve the exercise activities of the elderly. To operate the EHMP, institutions within the community that manage the health of the elderly and sports-related

organizations shared the program's objectives and contents. Each organization participated in a steering committee and managed the actual programs together. The role of the exercise instructor was found to be most important for successful operation of the EHMP based on in-depth interviews. Therefore, before the EHMP was implemented, preliminary training was conducted to empower exercise instructors. Specifically, the instructors performed attendance management, as well as pre- and post-measurement of physical and mental status in addition to exercise instruction.

3. Application of the EHMP

1) General characteristics of the elderly participated in the EHMP

Amongst participants, the proportion of women was > 85%. Participants in D-gu were

Table 1. The Four Steps of the Elderly Health Mileage Program

Step		Contents
1	Building a committee for the EHMP*	Organizing and operating a committee for the EHMP
2	Accreditation for exercise program for the EHMP	Accreditation criteria for exercise program for the EHMP <ul style="list-style-type: none"> • Exercise type: Aerobic muscular strength exercise • Exercise intensity: high strength 75mins/week, moderate strength 150mins/week(For the elderly who are frail, exercise program could be performed two times a week) • Exercise duration: minimum of six months • Participants should take pre and post physical and mental measurement. • Exercise Instructors should be trained on how to apply and operate the EHMP.
3	Mileage accumulation	<ul style="list-style-type: none"> • Register to an exercise program & measure physical and mental status (pre): 50 points(At the beginning with measurement) • Attend the exercise program : 2 points per a time • Measure physical and mental status (post): 10 points(At the end with measurement) • Attend a health education: 5 points(up to 4 times) • Total: 200 points(based on each person)
4	Using accumulated mileage	<ul style="list-style-type: none"> • 100 points: gift of 10,000 Korean Won • 200 points: gift of 20,000 Korean Won

* EHMP: Elderly health mileage program

on average 79.3 years of age, while those in S-si were 77.7 years old and those in Y-gu were 75.9 years old. Exercise categories varied by region. Silver-exercises for the elderly made up the highest proportion in all three regions. Y-gu had a high proportion of yoga and Qigong. D-gu and S-si showed high rates of participation

in the exercise programs offered by the NHIS. The rate of participation in Y-gun was highest when the programs were offered by health centers (Table 3).

4. Impact evaluation of the EHMP

Table 2. The Process of the Elderly Health Mileage Program

Process	Date	
• Selection of three regions applying the Elderly Health Mileage Program	7.22	
• Pilot Project Presentation to related organizations in three regions	7.24 ~ 7.29	
• Organizing health mileage committee	8. 2 ~ 8. 5	
• Education for the elderly health mileage to the exercise instructor	8.13	
• Approval of exercise program in accordance with health mileage	July	
• Proceeding the exercise programs • Applying and accumulating health mileage	• Registration of exercise programs	8.10 ~ 8.24
	• Measure physical and mental status(pre)	
	• Participate in the exercise programs and health education	Aug ~ Oct
	• Accumulating health mileage	
• Complete the exercise programs	11.24 ~ 12. 4	
• Measure physical and mental status(post)		
• Exchange the mileage for gifts	12.15 ~ 12.26	
• Evaluation for the elderly health mileage	12. 8 ~ 12.31	

Table 3. General Characteristics of the Participants in the Elderly Health Mileage Program

		D-gu		S-si		Y-gun	
		n	%	n	%	n	%
Gender	Male	44	6.9	160	14.6	129	13.8
	Female	597	93.1	938	85.4	808	86.2
Age (year)	65~69	32	4.9	100	8.6	141	15.1
	70~74	111	17.1	259	22.2	227	24.3
	75~79	193	29.6	345	29.5	278	29.8
	≥80	315	48.4	465	39.8	287	30.8
	Mean(±SD)	79.3(±6.19)		77.7(±6.59)		75.9(±6.44)	
The type of exercise	Silver gymnastics	612	90.4	1,225	100	503	51.7
	Yoga					326	33.5
	Aerobic	44	6.43				
	Stretching	63	9.3			9	0.9
	Qigong					113	11.6
	Other	2	0.3			22	2.3
The organization that provided exercise program	National health insurance service	415	61.3	546	44.6	291	29.9
	The Korean senior citizen association			398	32.5	171	17.6
	Community health center	61	9.0	47	3.8	427	43.9
	Welfare center	80	11.8	206	16.8		
	Korea council of sports for all	121	17.9	28	2.3	84	8.6
Total		677	100	1,225	100	973	100

The percentage of elderly who received gifts from the EHMP was 84.5% in D-gu, 91.1% in S-si, and 87.8% in Y-gun. The percentage of elderly who received health education once a month was 29.4% in D-gu, 87.8% in S-si, and 58.0% in Y-gun. These findings reveal a significant difference between regions. The percentage of the elderly who took part in before and after measurements of their physical and mental capacities was 85.2% in D-gu, 89.9% in S-si, and 90.6% in Y-gun (Table 4).

V. Discussion

This study aimed to develop EHMP as an incentive-based program for health promotion of the elderly and to evaluate its effects. Although there are reports showing the effectiveness of incentives applied to preventive services, others have shown that they can worsen health inequality (Schmidt et al., 2009). In consideration of these factors, the EHMP was applied at exercise programs of senior centers, the most widespread facilities for the elderly, to ensure that accessibility would not be a barrier to the program.

The EHMP encourages exercise instructors to provide effective exercise programs based on guidelines recommended by the WHO and other

professional organizations. According to previous studies, 85.6% of elderly exercise programs were conducted less than 10 times a month, with this number increasing to more than 90% in rural areas (Lee et al., 2011). In addition, a review of the literature on physical activity programs for fall prevention conducted by Kim and Chun revealed that, among 32 studies, 56.3% operated for less than 12 weeks and 31.2% operated for just 12 weeks (Kim & Chun, 2013). According to the results for approval for exercise program based on the criteria of the EHMP, exercise programs that occurred 1-2 times per week or lasted for six weeks were not approved. The regional operations committee proposed that the NHIS lend financial support to the unapproved programs because of the short duration. As a result, the committee coordinated and provided a six-month program by combining two short-term programs. The EHMP offered by various community organizations showed differences in exercise types and operating routines. There was considerable difficulty in providing elderly exercise programs of the same intensity and frequency to all participants, indicating the need for an organization that can control and manage various elderly exercise programs at the community level. The regional operation

Table 4. Completion of Exercise Programs, Taking Health Education, and Measurement of Physical and Mental Status

Participants	D-gu	S-si	Y-gun
	N(%)	N(%)	N(%)
The number of participants	677(100)	1,225(100)	973(100)
The number of participants received the gift (Completion of exercise program)	572(84.5)	1,116(91.1)	854(87.8)
The number of participants who took health education at least once a month	199(29.4)	1,076(87.8)	564(58.0)
The number of participants measured physical and mental status (pre and post)	577(85.2)	1,101(89.9)	882(90.6)

committee played that role. The committee in Y-gun, which conducted management of exercise programs, actively identified the main problems with the programs and modified the financial allocation plan for the next year accordingly. This committee provided a successful example of a regional operations committee; however, the committees of the other two regions were not as successful. Therefore, it is necessary to analyze how the committee of Y-gun played such an effective role in this short amount of time.

This study conducted a pilot project in three selected areas and impact evaluation was carried out. Although there were regional differences, the proportion of senior centers granted approval to implement the EHMP was approximately 30%-40%. However, it was 91% in Y-gun due to financial support from the NHIS. Without such support, it would have been much lower. The EHMP approval standards, which are based on recommendations by the WHO and other professional organizations are as follows: medium-intensity exercise, 150 min/week, for 6 months. Most unapproved programs have a shortage of exercise periods. Despite the introduction of the EHMP with financial support from the NHIS, the proportion of senior centers that did not operate exercise programs was still very high. If the standards of the EHMP applied to all exercise programs of the senior centers, without the necessary financial support from the NHIS, the number of exercise programs that meet the standards would decrease, as would the number of the elderly covered by the EHMP. Accordingly, investment in infrastructure and financial support for exercise programs is desperately needed.

The region with the largest elderly participation was S-si, with 91.1%, while the

region with the lowest was D-gu, with 84.5%. All three regions showed a participation rate of over 80%, which demonstrates high participant compliance with the EHMP programs. Unlike traditional exercise programs, the EHMP requires before and after measurements of physical and mental status. When provided with the results of these measurements, participants were able to assess the direct effects of the programs and see improvements directly, which provided motivation to continue exercising. There are two types of incentives for preventive service, process incentives and results incentives. When participants took part in the exercise programs, before and after measurements, and health education, they earned a certain amount of mileage as a process incentive (Schmidt, Asch, & Halpern, 2012). To use results incentives, it is necessary to measure the effects of the exercise programs. Differences between before and after measurements allow assessment of the effects of the exercise programs. However, taking before and after measurements is a time-consuming process that must be conducted by exercise instructors. As a result, taking measurements often becomes a burden for instructors. Moreover, exercise instructors are paid in accordance with their time; therefore, it is necessary to compensate them for the time required for the measurement, which can increase program costs. For the EHMP to become more widely adopted without significantly increasing costs, efficient alternative means of measurement are needed. Since the long-term effects of the EHMP has been confirmed based on evaluation for 2-3 years, the measurement process can be omitted or replaced by random sampling.

Exercise programs for the elderly are more

effective when implemented with health education (Im & Mun, 2013). Therefore, the EHMP is designed to provide mileage, even when participating in health education. When the subjects participate in health education, they should be able to record their mileage. Analysis of the proportion of participants undergoing one or more health education seminars in a month revealed differences between regions (D-gu, 29.4%; S-si, 87.8%). The mileage for health education was designed to be given when the subjects voluntarily participated in health education. Most participants preferred when educators visited the senior centers than going and listening to health education at the public health centers. It may not be difficult for public health centers and the NHIS to offer health education at the senior centers; however, it would be unlikely for the Korean Sports Association and Senior Association to do so. In D-gu, the proportion of exercise programs conducted by the Korean Sports Association was high, but the rate of participation in health education was low, indicating that the incentive method designed for facilitation of health education was not effective. Few organizations have the ability to offer health education by themselves, and the expansion of infrastructure for supply of health education is needed. Therefore, mileage for health education needs to be modified to reflect the actual conditions in the field.

Although it is recommended that exercise programs for the elderly run for 6 months or longer, there is not sufficient data to measure the long-term effects for 6 months or longer (Choi & Lee, 2013). Several studies have addressed the need for measurement of long-term effects. In the EHMP, the criterion for exercise programs of 6 months or more was

met, but the effect was evaluated after 3 months because of various constraints. Therefore, in future studies, it is necessary to measure the effects after application for more than 6 months.

VI. Conclusion

This study was conducted to develop the EHMP for health promotion and to evaluate its effectiveness. To develop the EHMP, we reviewed studies on exercise programs for the elderly, investigated relevant cases in Korea and in other countries, and conducted in-depth interview with exercise instructors. Based on the investigation results and expert opinions, we developed the EHMP. We then selected one region in a large city (D-gu), small city (S-si) and rural area (Y-gun) for implementation. More than 80% of the participants completed the exercise program, and 84.5%, 91.1% and 87.8% of the participants received gifts in D-gu, S-si, and Y-gun, respectively. The regional operation committees played an important role in distributing and coordinating exercise programs in the three areas. When we apply the EHMP in other regions, it will be necessary to consider the characteristics of the region for efficient operation of the committee. Since it takes a great deal of time and effort to conduct pre-and post-program measurements, there is a need for cost-effective measures to replace this process. Human resource support such as health education instructors to the Korean Sports Association and the Senior Association is required. To expand the EHMP, it is necessary to increase the infrastructure available for elderly exercise programs.

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ABSTRACT

Development and Evaluation of the Elderly Health Mileage to Promote Exercise*

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Purpose: The purpose of this study was to develop a Health Mileage Program (EHMP) to promote exercise amongst the elderly and assess the feasibility of the program. **Methods:** A literature review to identify the effects of exercise in the elderly was conducted. Relevant cases were investigated and in-depth interviews with exercise instructors were conducted, after which the EHMP was developed based on the assessment and tested in three regions. The outcome was evaluated using indicators such as attendance rate, number of participants, proportion of participants who received health education, and proportion of participants who measured their physical and mental status. **Results:** Based on assessment, we developed an EHMP composed of four steps. Following application of the EHMP in three regions, $\geq 80\%$ of the participants received incentives. Additionally, $\geq 85\%$ of participants underwent measurement of their physical and mental status. The proportion of participants who received health education differed among regions. **Conclusion:** The EHMP program increased participation and interest in exercise programs for the elderly. However, there is concern regarding availability due to regional differences in resources related to elderly exercise; therefore, it will be necessary to invest in infrastructure, including facilities, and knowledgeable instructors.

Key words : Aged, Reimbursement, Incentive, Health promotion, Exercise

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