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ORIGINAL ARTICLE

The Relationship between Social Participation and the Health Related Quality of Life of the Community-Dwelling Elderly in South Korea

Sookkyoung BAE [1], Minji KIM [2], Eunju LEE [3], Gimin LEE [4]

1) General Manager, Nowon Senior Welfare Center
15, Nowon-ro 16-gil, Nowon-gu, Seoul, Korea, 139-779
insight127@hanmail.net
2) Division of Biostatistics, Tohoku University Graduate School of Medicine
3) Director, Dobong Senior Welfare Center
4) General Manager, Korea Association of Senior Welfare Centers

ABSTRACT

The subjective sense of well-being of the elderly is a significant variable in social participation and the high level of the subjective sense of well-being is expected to contribute for community development. This study aimed to provide empirical and fundamental information for the development of social participation program by reviewing the relationship between diverse social participation and health related quality of life of the community-dwelling elderly and the factors to decrease health related quality of life. In results of research, it was found that there were differences of health related quality of life of the community-dwelling elderly by social participation programs. There was no difference among the scores of CHIEF by social participation programs. As for SF-36, the participants in senior employment program showed higher level of scores in all items than those in other social participation programs. Regardless of the types of social participation programs, most of respondents presented the high level of the performance ability of ADL and IADL.

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I. Background

The social problems caused by aging including prolonged life expectancy and low fertility have been intensified in South Korea. The elderly population rate was 11.4% (5,656,000 persons of 65 and over) in 2011; due to the tendency of rapid aging, it is forecasted to reach 14.0% in 2017, which means aged society (Statistics Korea 2011). In spite of the aging of population and the significance of social participation of the elderly, studies on the elderly tend to excessively focus on the productivity of the elderly or their social contribution, but their needs and satisfaction in the aspect of the demand side have not gained sufficient attention (The Korea Institute for Health and Social Affairs 2007).

The subjective sense of well-being that is related to psychological and physical health has been proved to be a significant variable in social participation and to be significantly influenced by external environment factors including social support (Koh SD, Joe SH 1997, Shin DS, Hong CS 1997). The sense of loss of the elderly that has been induced by the life of old age, especially the loss of role due to retirement, has led them to participate in social activities. According to the scholars of activity theory, the elderly whose quality of life has lowered by retirement may heighten their quality of life through social participation, for example hobby-related activities or voluntary participations in some organizations (Joh Yong Ha 2009); Knapp (1976) proved that the more the elderly participate in social activities, the higher life satisfaction they have; and Chapman and Beaulet (1983) found that social participation highly contributes for the degree of life satisfaction of the elderly by measuring the degree of social participation with the degree of social activities and the frequency of social contacts.

It is very difficult to clearly identify the types of social activities in old age that may be utilized to define social participation and even they are often overlapped one another, which is caused by the complexity that social activity and participation retain (The Korea Institute for Health and Social Affairs 2007). First, the definition of social participation may be different depending on what to focus on, because social participation is varied by the person or group who are related with, places or purposes, e.g. with neighbors, in community or state, or for friendship or other purposes and includes formal and informal relationship. Second, even among the elderly in the same social activity, the motivations to lead them to participate in may be different from one another; the needs of human beings cannot be met by only one activity. Third, social activity and participation themselves are diverse; what they will choose is up to their own choice among many and diverse activities including economic activity to aim to economic compensation, activity to just kill time, activity to keep relationship or activity to acquire information and opportunity. To satisfy these diverse needs of social participation, government has expanded diverse social welfare services for the elderly, centering on senior welfare centers, home care service centers, public health center and gyeong-ro-dang (hall for senior citizens).

Social participation is closely related with the health of the elderly. Because the concept of life expectancy includes the period that people live with diseases or disabilities, the prolonged life expectancy does not always mean the higher health related quality of life. While life expectancy has increased by five years from 76.5 years in 2001 to 81.2 years in 2011 (Statistics Korea 2011), according to 2011 National Elderly Survey, 89.5% of age 65 and over had more than one chronic diseases, which was much higher than 71.3% in 2008 (The Korea Institute for Health and Social Affairs 2011). In South Korea, since the Long-term Care Insurance for the Elderly was introduced in 2008, a lot of elderly people began to be given long-term care services in facilities or communities. Because the elderly prefer to live a healthy and independent life in their old age, the home and community care aims to promote the healthy aging within community, which is the reason that their social participations need to be supported from when they are healthy (Kim Hye Sook 2009). The Welfare Law for the Elderly aimed to promote the health and welfare by finding the measures for the health and the stabilization of livelihood of the elderly. According to the law, senior welfare centers have contributed for the health improvement of the elderly through diverse social participation program (Ministry of Health and Welfare 2007). For this reason, while the studies on social participation, life satisfaction and mental health of the community-dwelling elderly have been frequently conducted, the studies on the relationship between various ways of social participation and health related quality of life has not been often carried out yet, even though, as for the health related studies on social participation of the elderly, there were some studies to have reviewed the relationship between some specific social participation program and mental health and health related quality of life of the elderly including studies by Kim Jee na (2011) and Park Jeong sook and Oh Yun jung (2006).

The necessity of fundamental information for the establishment of welfare policy for the elderly has increased, as the characteristics of the elderly have been changed over time rapidly and diversely. This study aimed to provide empirical and fundamental information for the development of social participation program by reviewing the relationship between diverse social participation and health related quality of life of the community-dwelling elderly and to identify the factors to decrease health related quality of life and furthermore, to suggest the necessity and the way of activating social participation of the elderly by applying the information to social welfare-related groups and organizations.

II. Methods

This is the retrospective observational study that was carried out by questionnaire for a month from March to April, 2009.

1. Research Subject

The subjects of this study were 867 elderly people (129 males and 738 females) who lived in Nowon-gu(district), Seoul and were involved in social participation; the types of social participations are presented in Table 1. Social participation programs that the elderly has participated in include social education program, services for the elderly living alone, functional rehabilitation training and senior employment program; those programs are implemented in senior welfare centers. In addition, the users of gyeongro-dang(the halls of senior citizens) were also included, because they participated in leisure activities there (Shin YS & Kim EH 2009).

<Table 1> The Number of the Elderly who Participate in Social Participation Program

Types of Program	Persons (%)
Social Education Program	228(26.3)
Services for the Elderly Living Alone	299(34.5)
Functional Rehabilitation Training Service	86(9.9)
Senior Employment Program	117(13.5)
Gyeongro-dang	137(15.8)
Total	867(100)

2. Questionnaire Items

Questionnaire items are as follows; for demographic information, age, gender, education background, marital status, types of family and religions; for income related information, whether to work and the amount of income; and for health related information, whether to have diseases, to need assisting devices and to need care. The items related to health includes arthritis, high-blood pressure, urinary incontinence, renal impairments, peptic ulcer, depression, lumbar pain, anemia, sleep disorder, neuralgia, diabetes, cancer, osteoporosis and disk for the kinds of diseases and wheelchair, glasses, cane stick, hearing aid and walker for the kinds of assisting devices.

3. Measurements

Barthel Index(BI) (Mahoney & Barthel 1965) and Frenchay Activity Index(FAI) Korean version (Han CW, et al. 2009) were employed to evaluate the activities of daily living,

Barthel Index(BI) consists of 10 items to assess the basic activities of daily life such as feeding, bathing, walking and toilet use. The elderly who obtained 100 points from BI,

which is the maximum possible score of it, do not need any help for basic activities of daily life, but the elderly under 100 points have at least one activity that needs the help, even though it could be just a part of the activity. Frenchay Activities Index(FAI) is the scale to measure the instrumental activities of daily life such as preparing main meals, performing housework and social outings. It consists of 15 items (the maximum possible score of each item is 3 points and the total would be 45 points). The lower scores that elderly obtained from FAI assessment indicate the more impediments they have. The reliability of this study was Cronbach's alpha=0.758.

The Korean version of Crag Hospital Inventory of Environmental Factors(CHIEF) (Han CW, et al. 2005) was employed to evaluate environmental factors to social participation. This inventory is composed of 25 items to evaluate how often people have problems that may be barriers to social participation at school or work or in natural environment. According to the occurrence frequency of problems, the score of each item ranges from 0 to 4 and, when the problems occur, 1 or 2 scores of weight may be added; the CHIEF score is gained by calculating the average of all the scores of items that were given weights. The higher scores that elderly obtained indicate the more impediments they have in social participation. The reliability of this study was Cronbach's alpha=0.886.

The short version of Geriatric Depression Scale(GDS) (Sheikh & Yesavage 1986) to identify depression was used for the part of mental function. The short version consists of 15 items and the maximum possible total score is 15 points. The higher score that elderly obtained from GDS indicates the more depressed they are. The pre-studies that had been carried out for Korean Elderly suggested that the minimum acceptable score is 8 points (Jo Maeng-Je et al. 1999). Moreover, Mini-Mental State Examination (MMSE-KC) (Lee Dong-Young et al. 2002) to evaluate cognitive function was employed and its maximum possible score is 30 points. Its norms differ depending on education level and ages (e.g. it could be considered that, if the female elderly who are 65~79 years old with 4~6 years of education scored under 20.5, they are out of the norm).

At last, the Korean version (Han CW, et al. 2004) of Short-Form 36-Item Health Survey (SF-36) was added. The SF-36 comprises eight health sub-scales: Physical Functioning (PF), Social Functioning(SF), Role Physical(RP), Role Emotional(RE), Mental Health(MH), Vitality(VT), Bodily Pain(BP), General Health(GH). Each subscale is converted to 100 points and largely divided into Physical Health(PH) and Mental Health (MH) again.

4. Data Collection

All the data was obtained from the personal interview based on the questionnaire, which was administered by the trained social workers for this survey and conducted from March to April of 2009; omitted requiring information was supplemented for three

months. In addition, the survey was carried out for the participants that consented to the survey after reading the purpose of this study and privacy policy.

5. Statistical Analysis

All statistical analyses were carried out using the Statistical Package for Social Sciences (SPSS 12.0K for Windows). Frequency analysis and descriptive statistics as well as t-test and ANOVA for Pearson Chi-Square and analysis between groups were employed for statistical methods.

III. Results

1. Demographic Characteristics

As for the demographic characteristics, the mean age was 75.2 (SD=6.5). The highest age was 95 and the lowest age was 64; 45 respondents (5.3%) who are under 65 years old were included. The average of education period was 6.5 years, but it was found that 20.5% of respondents did not received formal education including 162 females and 8 males. While male respondents are more likely to have spouse, the majority of female respondents did not have spouse. The elderly living alone held 54.6% and the elderly living with their spouses held 16.5%. As for religions, there were 273 respondents (31.5%) in Protestantism, 233(26.9%) in Buddhism and 168(19.4%) in Catholics; 180 respondents (20.8%) had no religion.

As for the income, 835 respondents (97.0%) were not working and there was no significant difference between male and female respondents. The monthly income of 87.9% of respondents was less than 1,000,000 won; the average monthly income of male respondents was 777,000 won and that of female respondents was 458,000 won.

As for the condition of health, 765 respondents (88.2%) had diseases to need to manage or be getting treatment and more male respondents had diseases than females did. Even though it was not shown in Table, it was found that respondents had arthritis(414, 54.1%), high blood pressure(408, 53.5%), diabetes(148, 19.3%) and lumbar pain(131, 17.1%) (multiple responses). Also, 673 respondents (77.6%) were using assisting devices; 551 respondents (86.0%) with glasses, 112(17.5%) with cane stick, 6(0.9%) with wheelchair and 17(2.7%) with walker (multiple responses). As for the question to ask whether to need other's care, 71.5% of respondents answered that they need other's care (Table 2).

<Table 2> Demographic Characteristics of Subjects

Items	Male n=129	Female n=738	Total n=867	t or chi-square
Age(SD)	74.1(6.7)	75.4(6.5)	75.2(6.5)	-2.145*
Education Level(year, SD)	10.0(4.8)	5.9(4.6)	6.5(4.8)	9.102*
Marital Status (%)				
Single	73	158	231(26.6)	78.180*
Married	48	546	594(68.5)	
Others	6	31	37(4.3)	
Type of Family (%)				
Living alone	47	426	473(54.6)	
With a spouse	45	98	143(16.5)	44.328*
With children	23	112	135(15.6)	
Others	13	102	23(2.7)	
Religion (%)				
Protestantism	34	239	273(31.5)	
Buddhism	30	203	233(26.9)	38.039*
Catholic	15	153	168(19.4)	
None	50	143	193(20.8)	
Occupation (%)				
Hired	3	23	26(3.0)	0.220
None	124	711	835(96.3)	
Monthly Income (%)				
Under 100,000 won	5	60	65(7.5)	26.631*
100,000 to under 1,000,000 won	96	601	697(80.4)	
1000,000 to under 2,000,000 won	16	55	71(8.2)	
2,000,000 to under 3,000,000 won	6	16	22(2.5)	
3,000,000 to under 4,000,000 won	3	3	6(0.7)	
Diseases (%)				
With diseases	92	673	765(88.2)	40.316*
None	36	64	100(11.5)	
Assisting Devices (%)				
Using	109	564	673(77.6)	4.121*
None	20	174	194(22.4)	
Care Level (%)				
Care level 2	0	3	3(0.3)	2.468
Care level 3	1	3	4(0.5)	
Care is needed	23	170	193(22.3)	
No care is needed	94	526	620(71.5)	

*p<0.05

2. Activities of Daily Living by Social Participation Programs

In results of BI, 760 respondents (87.7%) gained 100 scores, which showed that they did not have difficulty in activities of daily living, and 107 respondents (12.3%) answered that they have more than one problem in activities of daily living in functional rehabilitation training(24, 27.9%), living alone (48, 16.1%) and using of gyeongro-dang (21, 15.3%).

In results of FAI, while over 40% of respondents who were participating in social education program or senior employment program gained 30 scores, the majority of respondents who were participating in activities in gyeongro-dang or programs for the elderly living alone only gained 20 to 29 scores; among the respondents (10.5%) who were participating in functional rehabilitation training, only 9 respondents gained over 30 scores and 13 respondents (15.1%) only gained less than 10 scores. Even though it was

not shown in the Table, it was found that there was weak significance between BI and FAI values (r=0.29, p<0.001) (Table 3).

<Table 3> Activities of Daily Living by Social Participation Programs

Items	Social Education Program n=228	Services for the Elderly Living Alone n=299	Functional Rehabilitation Training Service n=86	Senior Employment Program n=117	Gyeongro-dang n=137	Total n=867	Chi-square
BI(%)							
Means (SD)	99.7(1.5)	97.6(7.9)	96.8(6.5)	99.7(1.5)	95.8(12.9)	98.1(7.4)	
Less than 100	10(4.4)	48(16.7)	24(27.9)	4(3.4)	21(15.3)	107(12.3)	46.148*
100	218(95.6)	251(87.2)	62(72.1)	113(96.6)	116(84.7)	760(87.7)	
FAI(%)							
Means (SD)	27.0(8.0)	24.0(5.8)	20.3(7.6)	26.9(7.9)	24.1(7.7)	24.9(7.4)	
30 and over	109(47.8)	58(20.1)	9(10.5)	52(44.4)	26(19.0)	254(29.3)	
20-29	86(37.7)	182(63.2)	43(50.0)	43(36.8)	90(65.7)	444(51.2)	131.419*
10-19	20(8.8)	54(18.8)	21(24.4)	19(16.2)	10(7.3)	124(14.3)	
Less than 10	13(5.7)	5(1.7)	13(15.1)	3(2.6)	11(8.0)	45(5.2)	

The means was excluded from the values of Chi-square and p value. *p<0.05

3. Environmental Barriers by Social Participation Programs

In results of CHIEF, 400 respondents (53.4%) gained zero (0) point, which means that they don't have any environmental barriers. Among the respondents who were participating in functional rehabilitation training, the ratio of respondents who gained over 0.5 score was the highest (18, 23.4%) (Table 4).

<Table 4> Environmental Barriers by Social Participation Programs

Items	Social Education Program n=186	Services for the Elderly Living Alone n=257	Functional Rehabilitation Training Service n=77	Senior Employment Program n=101	Gyeongro-dang n=128	Total n=749	Chi-square
CHIEF(%)							
Means (SD)	0.2(0.4)	0.2(0.6)	0.2(0.3)	0.2(0.3)	0.2(0.3)	0.2(0.5)	
0	94(50.5)	154(59.9)	31(40.3)	63(62.4)	58(45.3)	400(53.4)	38.439*
0.01~ 0.5 less	74(39.8)	89(34.6)	28(36.4)	27(26.7)	51(39.8)	269(35.9)	
0.5~ 1 less	13(7.0)	10(3.9)	16(20.8)	8(7.9)	12(9.4)	59(7.9)	
1 and over	5(2.7)	4(1.6)	2(2.6)	3(3.0)	7(5.5)	21(2.8)	

The means was excluded from the values of Chi-square and p value. *p<0.05

4. Mental Functioning by Social Participation Program

In results of GDS, the average score of male respondents was 5.0 (SD=4.6); the respondents who gained 8 scores, which showed that it is strongly possible that they may have depression, were 306 (35.3%) and particularly among them, the ratio of the elderly living alone was high (Table 5). In results of MMSE, it was presented that 85 respondents (9.8%) gained less than 20 scores, which shows that they may be at risk of dementia. The level of cognitive functions of the respondents who were participating in functioning rehabilitation training was lower than that of others; there were 40 respondents who gained less than 20 scores (Table 5).

5. Health Related Quality of Life by Social Participation Program

In results of SF-36, among all the eight subareas, the health related quality of life of the respondents who were participating in senior employment program was the highest, but that of those who were participating in functioning rehabilitation training was generally lower than that of others; there were significant differences among each program (ANOVA, p<0.001)(Table 6).

<Table 5> Mental Functioning by Social Participation Program

Items	Social Education Program n=228	Services for the Elderly Living Alone n=299	Functional Rehabilitation Training Service n=86	Senior Employment Program n=117	Gyeongro-dang n=137	Total n=867	Chi-square
GDS(%)							
Means (SD)	3.6(3.3)	9.1(4.2)	7.4(4.0)	3.6(3.3)	4.2(4.6)	6.0(4.6)	191.563*
Less than 7	198(86.8)	109(36.5)	46(53.5)	100(85.5)	109(79.6)	561(64.7)	
8 and over	31(13.6)	190(63.5)	40(46.5)	17(14.5)	28(20.4)	306(35.3)	
MMSE(%)							
Means (SD)	25.1(2.9)	24.2(3.7)	19.8(4.5)	25.7(3.2)	23.6(3.0)	24.1(3.8)	152.512*
Less than 20	7(3.1)	28(9.4)	40(46.5)	4(3.4)	6(4.4)	85(9.8)	
20 and over	221(96.9)	271(90.6)	46(53.5)	113(96.6)	130(94.9)	781(90.1)	

The means was excluded from the values of Chi-square and p value. *p<0.05

<Table 6> Health Related Quality of Life by Social Participation Programs

Items	Social Education Program n=228	Services for the Elderly Living Alone n=299	Functional Rehabilitation Training Service n=86	Senior Employment Program n=117	Gyeongro-dang n=137	Total n=867	F
Physical Functioning	70.7(21.9)	53.6(25.8)	49.5(26.0)	84.4(19.3)	43.9(19.4)	60.3(26.6)	71.693*
Role Physical	71.5(26.9)	63.8(26.2)	58.1(31.8)	86.4(20.0)	65.3(17.3)	68.5(26.3)	22.681*
Bodily Pain	62.9(25.4)	60.1(21.7)	59.1(27.3)	84.6(22.1)	64.5(16.5)	64.8(24.0)	27.236*
General Health	57.2(24.9)	42.1(21.9)	43.6(26.4)	69.3(20.7)	52.9(12.2)	51.6(23.8)	40.049*
Role Emotional	79.5(26.5)	66.9(26.0)	69.9(30.8)	89.8(17.6)	65.6(15.4)	73.4(25.7)	26.288*
Social Functioning	84.9(20.6)	74.7(22.3)	75.9(26.9)	91.1(16.6)	62.5(14.5)	77.8(22.4)	39.754*
Mental Health	77.7(18.8)	56.7(19.9)	57.6(24.7)	77.4(18.3)	55.6(8.9)	64.9(21.3)	66.060*
Vitality	61.2(20.8)	42.6(19.5)	45.3(22.8)	71.4(20.1)	54.7(8.3)	53.6(21.6)	63.836*

* p<0.001

IV. Implications

This study showed that social participation programs are closely related to activities of daily living, environment barriers, cognitive functions and health related quality of life of the community-dwelling elderly.

In results, the FAI score of the participants in social education program was the highest among those of other social participation programs and the BI score of them was also the second highest next to that of the respondents who were participating in senior employment program; that is, the participants of social education program were in the highest level of activities of daily living and instrumental activities of daily living.

In the meantime, in the results of CHIEF, among the average scores of each social participation program was no difference; particularly the score of 59.9% of respondents who were getting the services for the elderly living alone was zero (0), for the range of their actions is usually limited within their house, because the services include regular visiting or telephoning to ask how they are doing. In addition, as for the elderly living alone, the situation that their contacts with others are more limited than those of participants in other social participation programs may have caused the highest score in depression.

Regardless of the types of social participation programs, most of the participants presented high levels of activities of daily living and instrumental activities of daily living. These results were partially similar with the study of Sohn (2009) on health condition, activities limitation, ADL and IADL. Among the scores of health related quality of life of whole respondents, the score of ADL performance was the biggest; it is the same results with the precedent study (Kim H, et al 2010) that the performance ability of ADL becomes the basic factor to evaluate health related quality of life, because the community-dwelling elderly had no difficulty in participating in social participation programs.

The health related quality of life of participants in senior employment program was higher than that of those in other programs. According to the precedent studies, senior employment program may motivate their life and is good for the mental and physical health, because it enables the elderly to develop the sense of achievement by participating in social and economic activities; when participating in social activities, diverse functions may be acquired and the sense of achievement and self-esteem may be improved (Bosse R, et al 1987, Salancik GR 1977). Just like the results of the precedents studies, the results of this study showed that the sense of achievement from jobs influences health related quality of life most strongly.

Among the socio-demographic characteristics, except for the items to ask whether to work and to need care, there was difference by gender in all items (Table 2). The female elderly are more likely to become dependent on children than the male elderly, because they are apt to have no jobs or income after the bereavement of spouse or divorce. In

particular, the oldest old female elderly are more likely to be more dependent and to have chronic diseases and no caregiver than the young old female elderly; the short period of education and the lack of social participation have led them to have difficulty in performing activities of daily living. The situation that the population of the female elderly has increased and their life expectancy has been prolonged has to be dealt with as the sociological phenomenon and the quality of life of the female elderly has to be improved prospectively (Joh Yong Ha 2009).

Meanwhile, the ranges of social participation include economic activities and the productive aging or productive activities of the elderly. In the category of living time, social participation is rather classified into leisure than work by recognizing social participation as one that individuals can utilize freely rather than as one that means paid work. However, it was emphasized that the range of productive jobs does not need to be limited to paid work and diverse social participations are the important source to create social value and contribution. In addition, the results of studies that various social participations positively affect life satisfaction and the quality of life of the elderly have been reported. However, social participation of the elderly in South Korea has not been active (Kim Jin Wook 2006). This study suggested that social participation programs significantly affect the subjective sense of health by understanding the current situation of health related quality of life by social participation of the community-dwelling elderly and by proving that there were differences in health related quality of life by social participation program.

This study also has limitations; first, the big difference between numbers of male and female decreased the reliability of results related gender; second, it was difficult to find the variables that may affect social participation program, because socio-demographical characteristics of respondents by social participation programs were not analyzed; and third, errors in individualization in the process of analysis may occur. However, this study emphasized the importance of social participation program by comparing and reviewing health related quality of life among various social participation programs.

Generally when people enters old age life, they may think that the pathological and physical declination is natural as they lose the control power of their life and they become dependent on medicine and medication by stopping the activities to stay healthy (Rodin&Langer 1977). It, however, has been reported by many studies that physical activities are indispensable to the elderly. Furthermore, because physical activity enable the elderly to keep and improve mental health and prevent the mental degeneration, physical activity program that helps them keep their physical health and secure social activity regularly needs to be developed (Wang Myoung Ja 2010). The results of this study suggested that the program that helps the community-dwelling elderly simultaneously do physical activity for health and productive activity for the sense of achievement is the best way for social participation.

V. Conclusion

This study proved that the social participation of the community-dwelling elderly is closely related to health related quality of life and suggested that their subjective sense of health is an essential factor for social participation. Therefore, to maintain the independent and high quality of life of the elderly, the programs to improve and support participation in community activities that enable them to practice physical and productive activities and to improve self-care ability related to living and health. This study is expected to contribute for the exploration and development of social participation programs of the community-dwelling elderly who have used senior welfare centers in the future as the fundamental information.

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