

## **Exploring Social Innovation and Time Bank: Focus on the Elderly Healthcare in the Gangwon Province**

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**Abstract** Serious social problems related to the elderly have appeared in the Gangwon Province because the population in this area is rapidly aging. Gangwon has the highest suicide rate and the highest percentage of single households. In the process of preparing for the super-aging society, Time Bank (TB) System has been actively used in 34 countries, especially in the United States, the United Kingdom, and Japan. In Korea, the Gumi Senior Club has joined this system since 2004. TB is a multilateral exchanged system based on the philosophy that everyone's time is valued equally. Time credits are given to the person who provides social services, such as citizen participation and elderly care. People receive the desired services using time credits or donating them. If this system were applied to the Gangwon Province in accordance with its characteristics, it would help to reduce the elderly's prejudices and manage their diverse health problems. A virtual local currency using IT technologies is needed to boost the regional economy. The elderly's participation in TB is strongly needed. Future research about the effectiveness of health management is then discussed.

**Keywords** Social innovation, Time Bank, healthcare, Gangwon Province, virtual local currency

### **I. Introduction**

According to statistics released by the National Statistical Office, the elderly population of the Gangwon Province (14% of the population aged 65 and over) accounted for 17.6% of the total population, while the low fertility rate and the aging phenomenon have intensified since 2005; the province has been steadily moving into an aging society (National Statistical Office, 2017a). A more serious problem is that the elderly population ratio of the eight cities and counties of the Gangwon Province (Yangyang, Yeongwol, Hoengseong, Goseong, Pyeong-chang, Jeongseon, Hongcheon and Samcheok) already exceeded 20%. (North-east District Statistical Office, 2017).

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In the Gangwon Province, with 32.1%, the proportion of one-person household is the highest in the nation, especially with the increase in the 60+ age group, which is very high (National Statistical Office, 2017b). The number of elderly people in the Gangwon area is rapidly increasing due to aging, divorce rates, and economic problems. Gangwon-do has the highest suicide rate among elderly people in the nation (Jeong et al., 2017). In addition, there are various social problems such as missing persons with dementia, lonely death, surge of crimes against the elderly, and shortage of agricultural workers (Lee, 2017).

The demand for elderly welfare services such as health, medical care, economic support, housing, leisure activities, and social security is increasing, which is directly linked to the burden of supporting young people (Park, 2013). In the past, the economic (poverty), emotional (alienation), and health (sickness) problems faced by the elderly have been addressed through family support functions, but modern society has changed the family structure and functions due to rapid economic fluctuations, urbanization, and the rise of nuclear family. The role of the central government and local administration in the welfare policy for the elderly has a great influence on the lives of the people. However, the welfare services for the elderly implemented by the state led to a blind spot owing to the lack of organic linkage between the central government, National Health Insurance Corporation and local governments (Kim, 2015). In particular, the elderly people in Gangwon are recognized as beneficiaries of welfare services, but they are not able to utilize them as human resources that actively promote their region's economic development, resulting in substantial social and economic harm (Kim et al., 2014). There is also a widespread view of the elderly as social consumers and a burden to society. There is evidence that the elderly are regarded as nonproductive and vulnerable, according to dental hygiene students responsible for oral health of the elderly in the future (Jung and Kim, 2013). In this way, the image of the elderly is being shaped through commercial television advertisement as people being supported by their family and society because of lack of health and social role (Kim, 2009). In addition, current affairs TV programs take a negative approach to the elderly problem due to aging (Kim and Park, 2014).

The Gangwon Province is a typical medically vulnerable area among 17 metropolitan cities and provinces nationwide (Kim and Kim, 2015; Jeong et al., 2017) and there are not many mental health-related medical institutions (Ministry of Health and Welfare, 2014), indeed, some areas have no medical institutions (Central Mental Health Welfare Project Support Team, 2014). Gangwon-do is expected to have more than 40% elderly people of the total population by 2045 (National Statistical Office, 2017a), although the medical resources are remarkably low. Given the negative view of the elderly as a cost element (Jung and Kim, 2013), central government-based elderly welfare

services not organically linked with local governments need to be improved (Kim et al., 2014). In order to solve the various health problems of the elderly in Gangwon area, the provision of practical assistance is required by identifying the needs and the level of experience as well as the needs of human resources and welfare services in the process of searching for specialized measures (Choi and Yang, 2015). In particular, there is a need to pursue policies relevant to the characteristics of the Gangwon area, which has a high percentage of elderly population and a high proportion of farm households (Kim et al., 2011; Kim et al., 2014; Kim, 2004).

In order to solve social problems such as those connected to industry, public service, and welfare through participation and collaboration of diverse memberships from all over the world, there are active attempts toward social innovation (Jung, 2018). In particular, there is a sustained interest in the Time Bank system to solve the social problems arising from the rapid increase in the elderly population and the structural problems arising from the capitalistic market economy system (Son and Kim, 2015; Cahn and Gray, 2015). Time Bank is a model for exchanging social services through time, changing the position and role of the social underprivileged constituency based on the concept of co-production (Cahn, 2000). We try to cultivate social capital by giving equal value of time to the various types of labor being exchanged. In particular, the Time Bank model reinforces local communities by increasing the trust and sense of community among the elderly, through their active participation (Collom, 2008; Yuan et al., 2018). This Time Bank movement has become an effective model for managing the health problems of the elderly, the disabled, and the social underprivileged, and resolving health disparity (Lasker et al., 2011). It is expected to present a new market economy model through social change and to restore sustainable regional development and community.

In Korea, interest in the Time Bank system is high (Kwon, 2017; Han, 2015), but there are very few institutions that actually operate it. The Gumi Senior Club has been operating since 2004. In 2015, the Seoul-Nohon area has joined in (Time Bank Korea, 2018). It is necessary to examine the characteristics of the local community in Korea and evaluate the effects of the Time Bank system objectively in terms of its setting up and success. The purpose of this study is to explore the health promotion strategies of the elderly by applying the Time Bank in the Gangwon area through an examination of domestic and foreign cases. In addition, this study investigates the actual conditions and improvements of welfare services for the elderly in the Gangwon area in the context of poor health problems. Next, we examine the concept of coproduction and the core value of the Time Bank management model, which is a social innovation movement, and we look at how the healthcare-related effectiveness evaluation was measured. Based on these findings, the research

suggest directions for the development of a regional health promotion model that will actively introduce the core concept of Time Bank into the Gangwon area and foster local communities and social capital.

## **II. Elderly Matters in the Gangwon Province**

### **1. Literature Review**

It was in the 1960s that the issue of the elderly began to be regarded as an academic subject, and it was not until the late 1970s that full-scale research was carried out. However, most of the studies focus on the elderly in urban areas, and the research on rural elderly people is relatively scarce, especially in the Gangwon area. However, the present difficulties such as poverty, illness, and alienation facing the elderly in the Gangwon area are serious. As a result of a questionnaire survey, 864 elderly people aged 65 and older residing in the towns and villages of the Gangwon Province (accounting for over 20% of the population) were interviewed in 2003. Demand for elderly welfare services focused on health promotion was the highest in order to provide a basic income guarantee plan by creating the side of the business centered on the village community. A one-stop service was established and a field service for local elderly people was highly valued, which involved service activities such as farm machinery repair, medical service at university hospital, beauty and beauty service. It was also pointed out that there was a need to strengthen the social and cultural life, and to consolidate support for remote areas by eliminating the gap between local and local governments. There is also a need to develop various countermeasures according to the age of the elderly. Specifically, in the case of the elderly aged between 65 and 70, it was found that the elderly people aged 70 or older were required to provide active support such as a pension scheme.

Research has also been conducted on the effectiveness of establishing social support networks to increase liaison to address elderly people's loneliness given the proportion of elderly living alone in the Gangwon area (Kim et al., 2011). From May 10 to October 10, the situation of ten elderly people living in Yeongwol-gun, Gangwo-do, was compared before and after the intervention of the local communication network. It was found that the network contributed to the improvement of daily physical activity such as going up and down stairs and bathing alone. Especially, positive changes were visible due to psychological factors. The research confirmed that these elderly were motivated, emotionally stabilized, not subjected to depression, and ultimately enjoying an improvement of their quality of life. However, the local network

does not contribute to the increase in physical activity when it comes to strenuous efforts such as violent exercise or heavy lifting. The blind spot in the problem of welfare service exists due to limited public support given the number of elderly living alone.

A study examined 19 elderly people aged 50 and older residing in Hoengseong-gun, Gangwon-do, who experienced welfare services and welfare needs (Choi and Yang, 2015). First, it is found that the information delivery system for job support services and the creation and operation support for village joint business should be improved as an economic factor. Next, the elderly living alone, who are beneficiaries of housekeeping services, were generally satisfied with regards to security checks and shopping services, but the issue of beneficiary equity (the question of excluded services) was mentioned. There were also cases where food could not be purchased due to lack of transportation, and the nutritional deficiency problem of the elderly was also raised. In addition, the use of public health centers by rural elderly people is low, while the need for physical therapy, exercise equipment, and *jjimjilbang* for health care is high; the need for the establishment of public health centers is high. University courses for the elderly, which is part of the lifelong education program, was highly satisfactory, and education programs such as Korean language education, folklore class, and volunteer schemes were suggested. In addition, it was pointed out the necessity to increase the old-age wage to reflect today's realistic conditions and to provide a differentiated support according to income.

The results of this study are summarized as follows. First, the characteristics of the rural villages and the interaction patterns among the elderly people were investigated in the three villages of the Gangwon area (Yonggok-ri, Hapyeong-ri and Jungam-ri). Though the three villages of Yonggok-ri, Hapyeong-ri and Chung-ami are located in the same administrative district, different parts of their daily life were observed. In the case of Chunggok-ri, it was difficult to unify the villagers because of the long conflicts caused by the serious antagonism between the surname and the family, and they were located on the second floor of the building. Even in the case of Tepyeong-ri, the elderly people in the village were unable to interact with each other because they did not spend time for individual work. Even the door of the old house with expensive equipment was locked and only a few members of the village had the keys.

On the other hand, in Jungam-ri, the elderly men and women were living in harmony, and their bonds were strong. Compared to the other two villages, Jungam-ri did not have an antagonism between the surnames. They shared a historical experience of the war and strong bonds connected them. In particular, they were involved in craftwork in a senior-citizen center, the income from selling was used for traveling together. Sharing their incomes had a positive

experience. This indicated that how much space is provided for the elderly in the village and the space utilization have an important influence on activating the interaction patterns among the elderly. Second, there is a need to consider ways to maintain the characteristics of an aging-friendly rural community so that the elderly are not marginalized in the economic activity areas dominated by young people.

## **2. Health Behavior of the Elderly in the Gangwon Area**

In the process of checking the elderly welfare service according to the individual needs of elderly people in the Gangwon area, the problem of nutritional deficiency has emerged (Choi and Yang, 2015). This is a vulnerable health problem newly observed in the case of rural elderly people, not identified in previous studies. Despite being locally close to the region, there are differences in the health behavior of elderly people due to their ecological and social/environmental characteristics. The present situation and characteristics of health behaviors by the elderly in the Gangwon area by sex, age, year, and cause of death will be examined.

According to the Health Statistics released by the Ministry of Health and Welfare and the Disease Control and Prevention Division in 2014, the Gangwon Province has high smoking and drinking rates, low exercise rate (the number of people who exercise regularly during the past month), high prevalence of diabetes mellitus and high prevalence of hypertension (Kim, 2015). According to the same data, the major cause of death in the Gangwon Province is attributable to the considerably weak health due to many lifestyle factors such as cancer, cardiovascular disease, suicide, hypertension, and diabetes. According to statistics of the National Statistical Office (NSO), the national standard mortality rate (the number of deaths per 100,000 population) is 337.2 people nationwide, compared with 368.8 people in the Gangwon Province, followed by Chungbuk (372.5 people, 2016). In addition, the death rate due to pneumonia (26.7, average 17.2) and the mortality due to liver disease (13.0, average 9.5) are the highest in the nation.

Table 1 shows the number of deaths by gender and age of the population aged 60 and over in 2006, 2015 and 2016 in the Gangwon Province. The total number of deaths was 10,421 in 2006, 11,301 in 2015, and 11,437 in 2016 – an increase of 1,016 deaths per year compared to the previous year, that is, an increase of 136 persons over the year. By gender, the number of men's death increased by 131 to 6,376 in 2016 compared to 6,245 in 2015, and by five in the case of women. As a result, it can be seen that the proportion of men's death is higher than that of women among people over 60 in the Gangwon Province, compared to 2015 against 2016. By age, the death toll from people

60 to 69 and 80 to 89 increased, while the number of deaths from those 70 to 79 and over 90 decreased. Among males, the number of deaths in the 60-89 age group continued to increase, while those aged 90 and older decreased. In contrast, the number of deaths among women aged 60 to 69 and over 90 years has increased while the number of deaths from 70 to 89 has declined.

**Table 1 Number of deaths and population over 60 in the Gangwon area (person)**

		Age (yr)				
		Total	60-69	70-79	80-89	90≤
Total	2006	10,421	1,973	2,713	2,689	756
	2015	11,301	1,391	3,165	3,357	1,364
	2016	11,437	1,480	3,147	3,452	1,359
	From Change 2015	136	89	-18	95	-5
Male	2006	5,886	1,424	1,470	1,034	227
	2015	6,245	997	1,947	1,375	430
	2016	6,376	1,052	2,017	1,472	390
	From Change 2015	131	55	70	97	-40
Female	2006	4,535	549	1,243	1,655	529
	2015	5,056	394	1,218	1,982	934
	2016	5,061	428	1,130	1,980	969
	From Change 2015	5	34	-88	-2	35

Unit: person

Based on national statistics portal data as of September 2017, Table 2 shows the number of deaths and the mortality rate (per 100,000 people) attributable to major causes of death for elderly people aged 65 years or older in 2015 and 2016 in the Gangwon Province. The main causes of death are as follows: 1) neoplasms, 2) circulatory diseases (hypertension, heart disease, cerebrovascular disease), 3) respiratory diseases (pneumonia), 4) signs and symptoms not otherwise specified and 5) outsiders (transportation accident, falling, drowning, poisoning by dangerous substance, exposure, suicide, killing) in diseases morbidity and mortality.

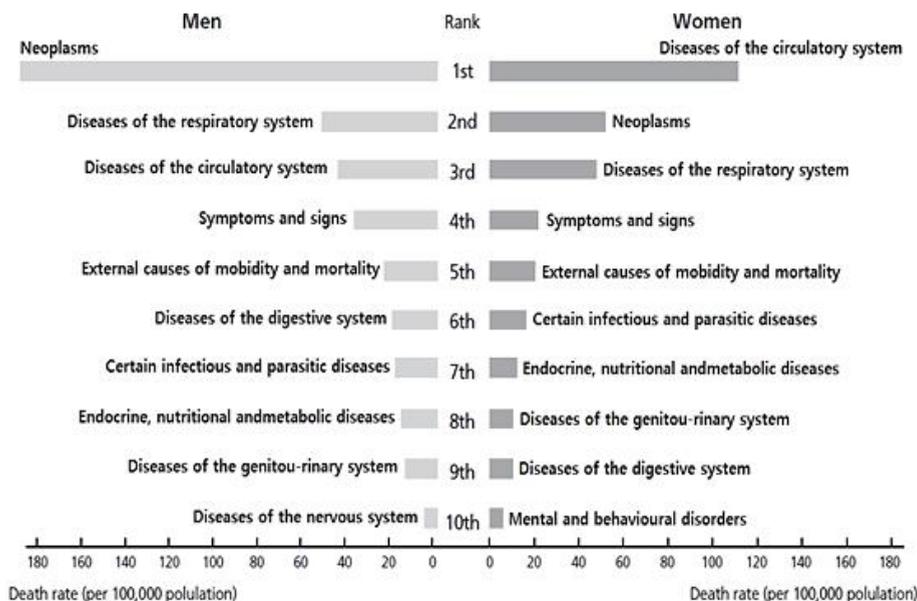
**Table 2 The cause of death of elderly over 65 years in the Gangwon area**

Ranking	2015			2016		
	Cause of death	Number of deaths	Death rate	Cause of death	Number of deaths	Death rate
1	Neoplasm (cancer)	2,161	845.2	Neoplasm (cancer)	2,240	859.6
2	Circulatory system disease	2,118	828.4	Circulatory system disease	1,998	766.8
3	Diseases of the respiratory system	1,274	498.3	Diseases of the respiratory system	1,582	607.1
4	Signs and symptoms not otherwise specified	674	263.6	Signs and symptoms not otherwise specified	861	330.4
5	External factors of disease morbidity and mortality	556	217.5	External factors of disease morbidity and mortality	507	194.6
6	Endocrine, nutritional and metabolic diseases	479	187.3	Specific infectious and parasitic diseases	290	111.3
7	Diseases of the digestive system	304	118.9	Endocrine, nutritional and metabolic diseases	283	108.6
8	Diseases of the genitourinary system	256	100.1	Diseases of the digestive system	271	104.0
9	Specific infectious and parasitic diseases	229	89.6	Diseases of the genitourinary system	230	88.3
10	Mental and behavioral disorders	216	84.5	Diseases of the nervous system	177	67.9
11	Diseases of the nervous system	207	81.0	Mental and behavioral disorders	160	61.4
12	Diseases of the musculoskeletal system and connective tissue	70	27.4	Diseases of the musculoskeletal system and connective tissue	54	20.7
13	Diseases of skin and subcutaneous tissue	32	12.5	Specific disorders that involve blood and hematopoietic organ disease and immune mechanisms	23	8.8
14	Specific disorders that involve blood and hematopoietic organ disease and immune mechanisms	21	8.2	Diseases of skin and subcutaneous tissue	19	7.3
15	Congenital anomalies, deformations, and chromosomal abnormalities	4	1.6	Congenital anomalies, deformations, and chromosomal abnormalities	1	0.4

Unit: per 100,000 population, person, %

Compared to 2015, mortality rates due to certain infectious and parasitic diseases (respiratory tuberculosis, sepsis) are higher than endocrine, nutritional and metabolic diseases (diabetes) by 2016. It is estimated that the death toll from the MERS (Middle East Acute Respiratory Syndrome) virus, which spread from May 20, 2015 to July 28, 2015 increased. In 2015, mental and behavioral disability was the tenth cause of death, but in 2016 the mortality rate of the neurological disease (Alzheimer's disease) was higher.

Figure 1 shows the mortality rates of major causes of death according to the gender of elderly people over 65 in 2016 in the Gangwon Province. In the case of the elderly men, the causes of death include, in the order, neoplasms (cancer), respiratory diseases (pneumonia, chronic diseases), circulatory diseases (hypertension, heart disease, cerebrovascular disease) (cancer), and respiratory system diseases. Next, malnutrition was followed by digestive system diseases (liver disease); elderly women were affected by certain infectious and parasitic diseases (respiratory tuberculosis, sepsis). While there is a difference in ranking by cause of death, there is a similar tendency between genders; while the cause of death for elderly males is related to the nervous system disease (Alzheimer's disease), in the case of elderly females it is linked to mental and behavioral disability.



**Figure 1 Causes of death over 65 years in the Gangwon (2016)**

### **3. Characteristics of Suicide and Prevention Plan in Gangwon**

According to data from the National Statistical Office (NSO), the death rate due to deliberate self-harm (suicide) in the Gangwon Province is 28.7, the highest in Korea (22.7) (Statistics Korea, 2016). Suicides are due to various factors such as psychological factors - anxiety and depression, social, cultural and environmental factors such as individualism and life-style trend (Kim, 2015). In addition, the study found that the number of suicide deaths among the elderly over 60 relate to the weakened social support network, physical illnesses and psychiatric disorders. The study shows that the increasing trend of disease has a great influence on the increase in the rate of suicide in Gangwon-do (Jung, 2009).

The Gangwon-do area has a low population density due to its geographical characteristics and has a smaller population than a city area. It is difficult to detect signs of suicide due to the low density of population and frequent contact with people (Kim et al., 2016). The rugged terrain and topography make it difficult for local people to access medical care, and access to the local mental health promotion center for depression counseling and treatment is also low. In addition, there are many regions where have no mental health-related medical institutions at all (Central Mental Health Welfare Project Support Team, 2014) and it is only one province that has no mental health facility or users in Korea as of December 2017 (Public Data Portal, 2018).

However, the prevalence of mental health disorders in Gangwon-do is very high. In the last seven years (2007-2013), research was conducted on the productivity of mental illness-related medical resources (Seo et al., 2016). The number of mental hospitals, psychiatric hospitals, and psychiatrists in 16 metropolitan cities and provinces used as input variables, and the number of patients who visited the mental hospitals was analyzed by region. As a result, Gangwon-do showed the greatest increase in productivity. In other words, medical resources, which are input variables over the last seven years, remained weak, but the number of outpatients increased explosively. However, Gangwon-do does not have sufficient financial resources to manage the residents in a systematic fashion (Choi and Yang, 2015). In particular, many elderly over 65 in Gangwon-do require special attention because of economic difficulties, loneliness and alienation due to social isolation (Jeong, 2009). As a result of analyzing a total of 961,826 people in Gangwon-do, data from National Health Insurance Corporation as of December 2015 show the precarious situation of the elderly in the Gangwon area. In the Gangwon Province, the proportion of people without income is 14.3%, among which the elderly people over 60 are the most dominant (Chung et al., 2017).

As a result, there are 18 municipal mental health promotion centers and regional mental health institutions (Gangwon Provincial Mental Health Welfare Center, 2018) part of comprehensive measures to prevent suicide at the national level in the Gangwon Province. In addition, there are mental health and depression prevention programs and group counseling programs following the life cycle - childhood, adulthood, and popularity. However, the policy is limited to the individual-centered mental health services, and there is no systematic support system for socio-economic and vice-ministerial level. In addition, educational and public relations activities seeking to inform about the seriousness of the suicide problem and to reduce prejudice targeted to the unspecified number of people are not enough to reduce the suicide rate of the Gangwon Province (Kim et al., 2016).

Suicidal behavior is a broad concept that encompasses suicidal ideation, suicidal plan, suicidal attempt, and completed suicide (Harwood et al., 2006; O'Carroll et al., 1996). Most studies on suicide are centered on suicidal ideation (Kim, 2015) because studies on suicidal behavior have limitations in securing sampling. It is important to recognize that suicidal ideation is receiving social support from the people around you. As a result of conducting a questionnaire survey on 1,419 self-employed workers in the Gangwon Province, the subjects who did not communicate with their neighbors were 1.955 times more likely to commit suicide than those who had contact at least once a week (Kim et al., 2016). In a study of factors influencing suicidal ideation among 15,246 elderly people aged 65 or older residing in Gangwon-do, the frequency of contact with neighbors was adjusted to prevent suicidal thoughts from elderly living alone (Hwang et al., 2017). In a study conducted on 492 elderly people aged 65 or older residing in Gangwon-do, the level of depression was lower as the social support (family support, friend support, significant others support) was higher (Kim and Choi, 2015). For the low-income elderly people who are vulnerable to suicide in the Gangwon-do area, the cut-off from the network and social isolation are threatening not only mental health, but also physical health. We need to encourage frequent contact with our neighbors as a practical way of promoting the health of those alienated from our society. Frequent interactions with neighbors can enhance the sense of solidarity and sociality, which can act as a driving force to live a healthy life by strengthening the psychological sense of security and will to life (Jung and Choi, 2017).

The Gangwon Province lacks the financial resources of local governments allocated to health and welfare, and there are welfare blind spots. Due to geographical characteristics, it is difficult to access and systematically manage medical services. Due to the increase in the number of households and a rapidly aging population, various social problems related to the elderly are being amplified. It is urgent to establish effective policy measures that reflect

the regional characteristics where the elderly live in Gangwon-do to improve health and promote health. One hopeful point is that rural communities in the Gangwon Province still live in the same area for a long time, unlike cities, and the formation of community bonds can naturally be strengthened by taking into consideration personal and family history (Han et al., 2005). It is important to provide an opportunity for villagers who share a lifetime celebration to gather together and interact with one another. Social innovation, which attempts to solve various social problems by encouraging active participation in the civil society, can ultimately lead to social change. We will look at a Time Bank system that takes care of the underprivileged in the welfare blind spot through a reciprocal relationship between the locals through a practical action plan.

### **III. Social Innovation and Time Bank Operation Model**

#### **1. Concept and Area of Social Innovation.**

Poverty and exclusion and isolation of low-income people are a socially difficult problem that is not fundamentally solved, despite the fact that there has been welfare financing for decades due to low fertility, low growth, polarization, and aging. As the demand for universal welfare increases and the welfare budget is expanded, the burden on the government and local governments is increasing. In the process of providing social welfare services, the unilateral delivery system between provider and beneficiary hampers activation of regional welfare governance by keeping service users in passive actors rather than active participants (Kim et al., 2014).

There are active efforts to lead social innovation in various fields such as the United States, the United Kingdom, Finland, Germany, and other countries, including industries, public services, and welfare. In order to solve social and technological problems, efforts are evolving toward the goal of economic growth, improvement of quality of life at the national competitiveness center, and transformation into a sustainable society (Sung, 2013). Social innovation is represented by public innovation, market innovation, and innovation in the socio-economic area through active participation and collaboration of diverse social members (Jung, 201).

First, social innovation in the public sphere encourages citizen participation and community activation, and urges society to change into a sustainable system. For example, in 2004, at age 29, three young MIT engineers catered for a brother victim of amyotrophic lateral sclerosis (ALS), a chronic rare disease (Smith, 2014), through a platform called “PatientsLikeMe”. Because patients can sign up anonymously, they share information about their illness

frankly without the burden of exposure to personal information. Patients are categorized according to a number of specific diseases, they record their own status, how the symptoms are progressing, what medicines have been taken, from when, and their effects/side effects. Based on voluntary data from actual patients in 2011, a paper refuting existing medical research has been published in *Nature Biotechnology* (Wicks et al., 2011). In a paper published in the 2008 *PNAS*, “Lithium can slow down the progression of ALS,” the experience of 149 actual patients over one year is tracked, revealing that this method is ineffective. As of February 2018, 600,000 subscribers are sharing information on more than 2,800 diseases (Patienslikeme, 2018).

Next, market innovation aims to solve social problems by leading corporate social responsibility with entrepreneurship. For example, *Life* magazine, published in New York in June 1996, published a picture of a 12-year-old Pakistani boy sewing a soccer ball with a clearly visible Nike logo (Vogel, 2006). After this report, civic groups and consumers worldwide protested to Nike and began boycotting the company. The media subsequently reported on the claims of child labor, underpaid workers and poor working conditions in most of Asia. To address this problem, Nike has implemented sustainable and fundamental measures by innovating the social and environmental conditions of the global supply chain (Porteous and Rammonhan, 2013).

Finally, it means that social enterprise is the main subject with social economic innovation, and it explores the welfare blind spot or improves public service quality. For example, the German design studio ‘Urban-Think Tank’ carried out a project to build a four-story ‘Vertical Gym’ in the slums of Venezuela’s capital, Caracas (U-TT, 2018). The Caracas region had the highest crime and murder rates in South America, and there were no public sports centers, even though 60% of the population resides in the slums. After the first vertical gym was built in 2004, the crime rate in the surrounding area decreased by 30% (BBC, 2012). Drug use and obesity rates also dropped. As of July 2014, 15,000 people use the sports facility a month (Lane, 2014). In this new public facility, children participate in sports, recreation, and cultural events, and develop fair play spirit and citizenship. The crime rate, which has been increasing even with the reinforcement of the police force and penal system, has been considerably reduced due to the establishment of the public gymnasium facility.

## **2. Time Bank Operation Principle and Co-production**

In 2018, a movement arose to promote social innovation and thus solving societal problems by emphasizing citizen participation and collaboration. A typical example of this social innovation is Time Bank (Craig, 2009). Edgar S.

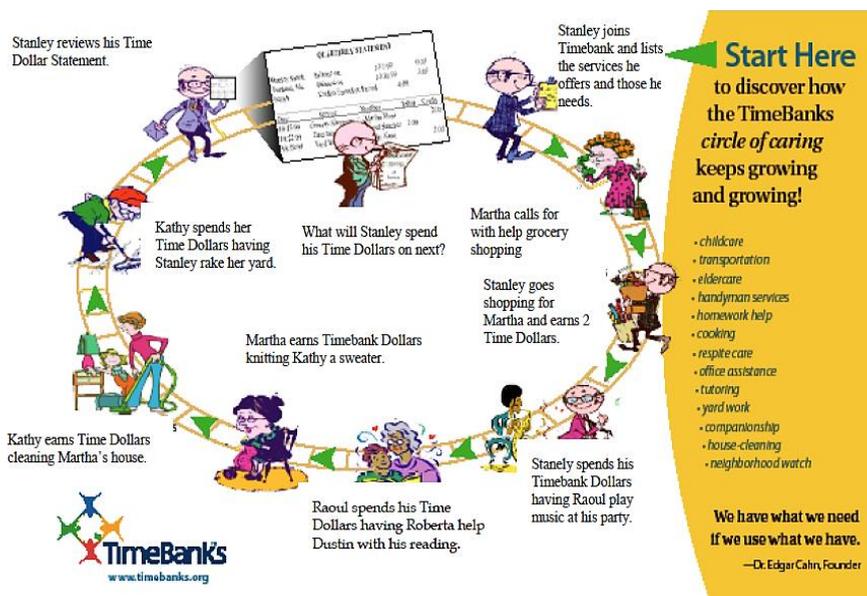
Cahn of the United States proposed a time banking movement, a new social service model that redefines the value of labor on a time basis and builds a reciprocal relationship among people (Cahn and Gray, 2015). The Time Bank system is based on the philosophy that “all hours have equal value” (Cahn, 2000; Ostrom, 1996). Time banking, a time-based, multi-party exchange system that began in the United States in the 1980s, is a system that provides equal resources for everyone in the community, working as one system. For example, Chul-soo goes to the market for a local resident, Ms. Choi, and gets a time credit in exchange for an hour of volunteer work. Afterwards, he pays a time credit to his neighbor Mr. Kim, who gives a "map of the farm" at a local meeting. Each work is considered and valued equally, based only on how much time it takes to provide the service. Figure 2 shows the process of exchanging and circulating social services among local residents through the Time Bank system. The types of services offered in the community include dog walking, language translation, home repair, tutoring, moving assistance, cooking, shopping, transportation, housekeeping, hair or makeup, companionship, budgeting, child care, interior design, and others.

Time Bank refers to a program or institution that is the subject of time banking by linking people with needs to people who want to serve (Time Banks USA, 2018). Individuals wishing to participate in the Time Bank exercise in their communities can join the Time Bank in their local area. Community Weaver, a free online time banking software program, can be used to identify needs or provide services to local residents who want social services and to inform about events and receive alerts from their Time Bank community. If residents use the Community Weaver 3 program, which was launched in April 2015, they can create a new Time Bank with an initial running cost of about \$25. Weaver 3 program, which is an improved version compared to the initial Weaver program, allows to track how much time credit is accumulated and used by Time Bank members. It can also be applied to screens of IT devices of any size, such as smartphones, iPads, desktop computers, and laptops, without blurring or cracking the image.

The basic philosophy of the Time Bank system is co-production. Within this central value, the providers of government services, receivers, beneficiary families, and communities are aiming for a public service delivery system that establishes equal and reciprocal relationships (Boyle, 2003). In other words, the one-way delivery system that distinguishes the roles between 'beneficiary (or consumer)' who is only accustomed to receiving services manually and 'provider (or producer)'. The Time Bank model emphasizes that the beneficiary must also be recognized as an equal productive partner participating 'in the service provision.

Therefore, unlike the traditional welfare service model, there is no one-sided beneficiary or one-sided provider in the Time Bank system (Han, 2015). In his

book “No More Throw-Away People” (Cahn, 2000), Cahn presented five core values of time banking systems that must be realized through co-production, (Time Banks USA, 2018). Figure 3 shows them - assets, definition of new labor, reciprocity, respect, and social capital.



Source: Time Banks USA, [Http://www.timebanks.org](http://www.timebanks.org)

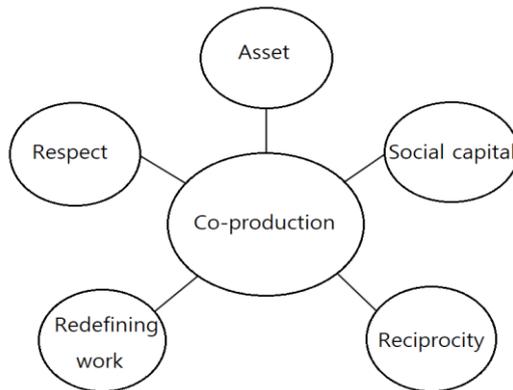
**Figure 2 Circulation process of services exchanged through Time Bank**

The first in the core value of Time Bank operations is asset, something of value to share with someone else. Asset underlines that no one is worthless in the world and that everyone is a contributor to society in his or her own way.

The second core value is redefining work, emphasizing that in a modern society there is a form of labor that is not easily realized in financial terms. For example, it is possible to form a close family relationship, reactivate neighbors, realize democracy, keep the environment sustainable without destroying it, implement social justice, and care for the weak. These activities should be recognized as equally worthwhile labor in the market and compensate by time credits.

The third core value is reciprocity. It means that no one performs one-sided helping work, but both recipients and givers are involved in a mutually beneficial enterprise. Such reciprocity plays an important normative role in promoting cooperation among local communities by lowering transaction costs. In other words, the recipients' reciprocity has the same value as the providers'

reciprocity. It is a two-way relationship (Roh, 2012). In particular, comprehensive reciprocity plays a role in resolving conflicts between individual interests.



**Figure 3 Five core values of Time Bank linked by co-production**

The fourth core value is social capital, which must be continuously invested in for the maintenance of the social network created by trust, mutual benefit, and citizen participation as much as constructing economic infrastructure such as roads, ports, and living facilities. Social capital is a resource that can achieve mutual economic benefits by bringing about coordination and cooperation while remaining in the sphere of informal relations among members of the community (Roh, 2012).

The fifth core value is respect. Respect for individual expression and choice, such as freedom of speech and freedom of religion, is at the heart of democracy. If someone is not respected, we community participants get hurt in some way. Respect should not be granted in the hope that people will be deserving of this respect at some point in the near future, but that the other person is worthy of respect here and now.

### **3. Time Bank Overseas Cases and Healthcare Effect**

As of 2018, Time Bank has been operating in 32 countries, including the US, China, Russia, the UK and other countries in Europe, Africa and Asia (Yuan et al., 2018; Time Banks USA, 2018). In the United States, the number of registered Time Banks is around 500 and the number of registered members is over 37,000, ranging from the smallest with 15 to the largest with 3,200 members (Cahn and Gray, 2015).

The Time Bank model can be launched by small groups of individuals, families or friends, and can be run by local organizations, agencies, public

bodies or local governments. Therefore, the registered members can join not only the local residents, but also local businesses, sports centers, and nursing organizations. The application method can be adjusted according to the participants' requirements. It works by the mutual service exchange method through reciprocal relationship among the core value members. In other words, it does not create boundaries among suppliers and providers of social services, but manages and integrates into the community elderly and disabled people who may be alienated by society.

This is different from volunteering in that all members are guided by an operating principle in which one another provides services to one another (Cahn, 2000). Time banking, which emphasizes the mutual relief relationship of these community members, has a practical effect in managing the health problems of the participants and promoting health.

First, the UK's Time Bank has developed successfully, focusing on the healthcare sector at the institutional level, in conjunction with the reform of the National Health Service (NHS) (Kwon et al., 2016). In particular, the Rushey Green Time Bank in Catford is a representative example of Time Bank experimentation in healthcare services. In March 2000, Rush Green was listed as the 10th Time Bank institution in the UK and, according to a report by the New Economics Foundation (NEF), in February 2002, there were 68 participants, 59 individual members and nine institutional members, such as Rush Green Clinic, local nursing home, local church, etc. The Lewisham area, where Rush Green Time Bank is located, is economically devastated. Forty-one percent of participants have physical and mental disabilities and 30% are over 55 (Rushey Green Time Bank, 2018). St Thomas' Hospital, sponsored by the King's Fund, a policy-making think tank in the UK, worked together for two years on quantitative and qualitative research to determine how the Rush Green Time Bank impacted on its members (NEF, 2002). The results of the study showed that the presence of preventative health care, clinical health, the formation of social networks, and the self-perception of health increased and had a the positive effect on cost savings for the NHS, the UK healthcare system. In other words, through the Time Bank, not only the physical and mental health of the participants improved, but also national medical cost savings were achieved. In addition, Spice Time Bank, a UK state-based welfare model, was born to test the possibility of local currency at the Institute for Community Currencies (WICC) at the University of Wales (Spice Time Credits, 2018). The Spice Time Bank, which has been operating since 2008, is a model based on public service systems that are provided to local residents by private organizations or local governments rather than person-to-person exchanges. By 2018, 35,000 people in England and Wales have earned time credits and run a variety of health care programs. For example, the Haringey time credit operated in England focuses on mental health and substance abuse

recovery in partnership with the Haringey Council and St Mungo's Hospital. Time credits can be used to pay for participation in community activity programs or to pay for exercise centers.

Next, Sentara Healthcare, located in Richmond, Virginia, is a nonprofit medical center for Virginia and North Carolina residents. The agency conducted a study of the peer support effects offered to patients with asthma through Time Bank (NEF, 2002). The results of the study were dramatic, with Time Bank operations cutting 74% of emergency room admissions and made savings of \$217,000.

A study was also conducted to measure the effects of Time Bank activities on physical and mental health for Time Bank members associated with the Lehigh Valley Hospital in Pennsylvania (Lasker et al., 2011). As a result of an experimental study involving 160 members of the actual Time Bank, the participation rate in the service exchange among men, low-wages earners and part-timers was the highest. The attachment to institutions was higher among women, older people, lower-educated participants, and those with higher participation. The increase in physical health due to Time Bank activity was higher for single-person households and those with higher participation. Mental health was significantly associated with general health changes, the number of services exchanged, and a sense of solidarity with the agency. In conclusion, the sense of belonging and social capital formation through the Time Bank served as a key factor in promoting well-being among members. In particular, activities through the Time Bank were effective in promoting the health and the sense of belonging among the elderly, the low-income group, and the single-person households.

Japan, with a larger aging population than Korea, is trying to provide, at the government level like the UK, health care services to the elderly and disabled people who are not in the community. In 1973, Volunteer Labor Bank, the first Time Bank in the world, started in Osaka (Hayashi, 2012). In the meantime, along with various activities to encourage volunteer activities, the Sawayaka Welfare Foundation (SWF) (Nakagawa et al., 2011) launched a system of tickets for a caring relationship service called 'Fureai Kippu' in 1992. Through the exchange of time credits, members of all ages exchange services and form mutual support networks. It provides time credit and cash; save credits to younger members so they can later use them when they are sick or older, and encourage others to give credits. Unlike Time Bank models in other countries, long-distance care services are available in Fureai Kippu. As family support functions decline, participating members can transfer credits to their elderly parents living in remote areas and organize credit-to-credit transactions for them to use when they want the service. Fureai Kippu, an extension model for managing the health of the elderly through active citizen participation, is

evaluated to be more cost-effective, flexible, and human than top-down healthcare under the state leadership (Hayashi, 2012).

In Japan, the Local Exchange Trading System (LETS) is operated in order to energize the local economy and assist the economy in the operation of the Time Bank. The Peanuts Club is Japan's oldest local monetary time-money community established in 1999 and is the most successful model (Kim, 2017).

In Chiba Prefecture, the time currency 'peanuts' is used, where participating members take care of the children of local residents, repair their computers, and earn time coins for the amount of time they have worked. 'Peanuts' can then be used to purchase a product or exchange it with the labor of another member. Farm products (27.5%) and health services (17.4%) are the most frequently traded items through 'Peanuts'. The clinic, which is affiliated with the Peanuts Club, encourages people to pay for their time on behalf of the local health insurance system.

## **IV. Conclusion and Discussion**

### **1. Strengthening Interaction with Various Age Groups**

In Gangwon-do, the overall health status is significantly weaker than in other regions when examining the main health indicators related to health behavior, medical use (hospital's untreated rate due to economic reasons), quality of life, and use of health institutions (Kim et al., 2015; Jeong et al., 2017). The suicide rate is the highest in Korea (National Statistical Office, 2016), and the growth rate of single-person households is the highest in the nation, especially the number of elderly 60 or older living alone. The high suicide rate at Gangwon-do is prevalent among the elderly over 70 (Jeong et al., 2017). The purpose of this study was to investigate the present status, health behavior and suicide rate of elderly welfare services in Gangwon-do.

First, it is necessary to strengthen local communities that enhance solidarity and sociality by reflecting regional characteristics of the Gangwon Province. Gangwon-do does not have an organic cooperation system between the central government and regional municipalities in implementing elderly welfare services (Kim, 2015). In addition, health and welfare resources are seriously lacking. As of December 2017, there are a number of mental health and residents facilities in the country that have a record of '0' (Public Data Portal, 2018), and there are many mental health hospitals (Central Mental Health Welfare Business Support Desk, 2014). In this situation, it is hoped that there is still a community culture that can be formed based on the network of long bond among the Gangwon Province community members. These community

characteristics can play a positive role in social bridging by preventing the isolation of the elderly and expanding their sense of belonging. Especially, frequent comings and goings with local neighbors have a positive effect on depression and prevention of suicide. In the study of the psychological state of the elderly according to sex and age, it was confirmed that aged men living alone in the Gangwon area need active intervention to strengthen communication with their neighbors and contact with people (Kim and Choi, 2015).

In the world, social capital is formed on the basis of local community and the Time Bank system is actively utilized to manage the health problems of isolated people such as the elderly and the disabled. The Time Bank model operates on a philosophy that posits that all types of labor are equally worthwhile, on the basis of a fair time for all humans, so that the shortcomings of the capitalist society can be healed (Cahn, 2000). Modern society has entered into a rapidly aging population phase, and there is a widespread negative view of the elderly as a costly to the community. These images are being reinforced in the mass media advertising, and even in current affairs programs.

It is important that the elderly participate in the social innovation movement that seeks to solve social problems through active citizen participation as the government lacks public resources. The research has confirmed that the role of the elderly is also important in the Time Bank model spontaneously formed via neighbor-to-neighbor interaction. In the Time Bank community, which involved a total of 950 people over 87 months (from January 1998 to March 2005), seniors exchanged services with members of various age groups (Collom, 2008). These positive experiences led to elderly people being easily integrated into the society as a whole, and they were also effective in promoting a sense of efficacy and well-being. Minors have also proven to be mutually beneficial by exchanging services with the elderly and forming social capital. In particular, the interaction between the elderly people and younger members is effective in fighting prejudices against the elderly (being conservative and with poor health). The negative image of the elderly held by dental hygienists and students in the Gangwon area, was significant (Jung and Kim, 2013). However, as the number of elderly people grows in small cities, agriculture and fishing villages, and the number of brothers and sisters increases, the image of elderly people becomes more positive. Those who worked with them than among those who did not have volunteer experience in elderly welfare institutions saw the elderly in a more positive light. In this respect, the opportunity for young people to interact with the elderly can be increased through Time Bank activities, which form a reciprocal network of interactions among local residents. This will ultimately help a better understanding of the old people, members of society, and address prejudices. Through active participation in the Time Bank, the elderly themselves can

strengthen their social recognition and underline the help they can provide to society.

In order to operate a Time Bank model in the Gangwon Province, which provides a forum for villagers to communicate with each other through local communities, several points must be made. First, it is important for the elderly in the Gangwon Province to have spatial resources that provide opportunities to form bonds through interaction. The Gangwon Province has a higher proportion of rural areas, and the distance between rural areas is also greater. For example, although it is located in the same administrative region of the Gangwon Province and is geographically close, the daily life of the elderly in Chungcheong, Tepyong-ri, and Jungam-ri is different. Unlike the other two villages, Jungam-ri's community is coming together in the old town and interacts frequently (Han et al., 2005). As a result, the Jungam-ri area is strongly connected with 'a high level of consciousness. Currently, under the leadership of the government, public health welfare services are provided to the elderly in the Gangwon area centering on public health centers. However, the elderly have a low preference for using public health centers (Choi and Yang, 2015). On the other hand, mobile services such as repair of agricultural machinery, university's medical services, and beauty services by social organizations are very popular. The need for socio-cultural life is high, and the need to expand support for the welfare of the elderly, to develop the elderly program, and to promote the elderly sports facilities is also emphasized (Kim et al., 2016). In particular, there was a high demand for measures to improve social and cultural life by improving the per-capita level of resources (Kim, 2015). Therefore, considering the geographical characteristics, the economic base, social and environmental characteristics of the village, it is necessary to provide a space where elderly people in the Gangwon area can gather and interact. The space like the old house or the town hall should not be managed and controlled exclusively by a few villagers who have keys, but it should be easy accessible to use as open space by and for the elderly.

Next, in order for this village community to arise and be sustainable, the influx of young people should be encouraged. A Time Bank in which various services are exchanged can be operated so that various age groups can participate and exchange time with each other. If all of the participants in the rural areas provide the same work, it is hard to make deals and exchange differentiated services. Widening the age groups should be undertaken in order to diversify the services to be exchanged among the variety of actors in the community. In the mountains of Gangwon-do, it is necessary to create an environment that can satisfy housing, education, and employment. There is a need to study in depth the appropriate incentives to encourage the influx of young people.

## **2. Local Economy Activation, Time Credit, Virtual Local Currency**

Secondly, the most serious economic problems impacting the elderly in the Gangwon Province need to be resolved. Since the elderly population accounts for a high percentage of the Gangwon area and given its distinctive rural social characteristics, it is appropriate to use a model that energize the local economy centering on aging small farmers. In order to guarantee the income of local communities, it is necessary to set up a program to create joint village projects in order to meet the characteristics of rural areas. As a pilot approach, it was proposed to establish a small-scale food cooperative association in order to establish a socio-economic basis in the abandoned mine area in the Gangwon Province (Kim et al., 2014). This is based on a policy thinking that there is a problem with the existing large hardware-based business model that is not suitable given the characteristics of the Gangwon-do area. In addition, it is possible to provide an integrated service that links both the consumer and the supplier by operating a social enterprise centered on the aging society. There are social enterprises that supply cleaning services, hygiene management and water tank cleaning, such as the 'Wonju Elderly Consumer Cooperative Association', and the elderly society (Park, 2013). It is necessary to develop a model that creates jobs and secures a certain level of income based on competitive resources found in the region.

Time credits can be combined with the active development of village-based projects. Since 2004, the 'Gumi Johann Mission Center' has operated the Time Bank model for the first time in Korea to solve the problem encountered by local people through the power of local residents. One hour of service for members of the Time Bank or for the community, a community ring is added to the Gumi Love Corner Bank (Gumi Johann Mission Center, 2018). The love ring is used when you need help, or to a neighbor who needs help so that the neighbor can get help. Through this multilateral service exchange system, social contributions such as deprived elderly care, care for the neighbors, and citizen participation are rewarded in the capitalist market as valuable labor activities. Looking at the circulation service that is exchanged through the love ring in reality, the 76-year-old woman delivers a lunch box to 87-year-old woman and gets a love chain. Again, I pay my love ring for the beauty service (dyeing) provided by the 21-year-old beauty volunteer. A volunteer who becomes disabled by a car accident will check with his elderly person on his/her phone and earn a love ring. Traditional welfare services keep beneficiaries in a passive presence, but within the Time Bank system, they are wary of the exhaustion of volunteers and the increasing dependence of the beneficiaries. Through co-production, the basic philosophy of time banking, beneficiaries and providers form mutually beneficial relationships in equal

relationships. In this process, local currencies such as love rings contribute greatly to service activation (Choi and Kim, 2014).

The form of local currency is also an important factor in activating the operation of the Time Bank system. One of Japan's representative local money-denominated time currencies, 'Peanuts', was initially operated by exchanging coupons (Shin, 2013). However, the frequent loss of coupons has changed the way the Peanuts score is recorded on the books, and now it has been changed to record books on a computer or smart phone. The introduction of virtual money system using IT technology has also been proposed (Ryu, 2015). Interestingly, since 2015, Nowon-gu, a participant in the Time Bank movement, has begun to actually implement this. On February 1, 2018, 'Nowon Coin', the virtual local currency based on the block chain, is commercializing for the first time in the world (Local Currency Nowon, 2018). Nowon-gu provides Nowon Coin, to inhabitants who volunteer and donate in Nowon-gu. One hour of volunteer work is same as 700 Nowon coin. It can be used not only at public franchisees such as public parking lots, but also at private franchisees such as bookstores, cafes, and academies. The Gangwon Province has been severely stagnated, as various attempts have been made to solve community problems in other areas. In 2012, the Gangwon Development Research Institute attempted to introduce a local voucher system by operating a 'local food direct sales center' linking major tourist attractions (Jee and Lee, 2012). In this way, we tried to use the local currency in the local market such as the vicinity of 'Chuncheon rail bike', 'Wonju', 'Gangneung', and 'Jeongseon 5'. However, as of October 2017, there is no one-model market in the Gangwon Province that can use Onnuri e-vouchers (Jin, 2017). The worrying situation is that the 2018 Gangwon gift voucher budget has been partially cut due to the controversy (Park, 2018).

It is necessary to find a way to actively promote regional economies and revitalize local economies that help the economic independence of the underdeveloped merchants.

### **3. Improvement Plan of Elder Healthcare in Gangwon**

Third, the attention on the elderly in the Gangwon area needs to focus on vulnerable health problems and operate the Time Bank system. Through examples from the US, UK, and Japan, we documented that time banking improves the physical and mental health of participating members and reduces medical costs. Unlike the situation overseas, Time Bank is not actively operating in Korea yet. However, there is a high expectation that the Time Bank operating model can provide a practical mode of action to create a new welfare environment. In order to apply the Time Bank to the Gyeongsangbuk-

do region, it was suggested to revitalize the system (Kwon et al., 2016). In addition, extensive research is needed to examine the Time Bank model deployed in Korea. So far, in-depth group interviews have been conducted with related field experts and participants mainly in the Gumi Senior Club (Kwon, 2017). Also, a study on the general status of senior love ring bank operated by the Gumi Senior Club, for example, looking at the number of clients, participants, and lovers (Lee, 2015) was also conducted. There are no domestic studies to verify the effectiveness of Time Bank on participants' healthcare. In the short and long term, it is necessary to carry out various research on the effects of the Time Bank system that includes participants, program executives, coordinators, and experts. To this end, research should be conducted to develop indicators for performance analysis. The UK's NEF (2002) measured confidence, self-esteem, attitudes towards health behavior and health care, and cost aspects of the National Health Service (NHS) as psychological factors. Lehi Valley Hospital in the United States examined the mental health promotion effects as well as the physical health of participating members (Lasker et al., 2011). There, the Center for Disease Control and Prevention has identified emergency room attendance rates and medical costs for asthma patients for two years (NEF, 2002). It will, thus, be possible to measure the hospital re-examination rate such as the number and duration of hospitalization, outpatient visits to the medical institutions of the participating members of the Time Bank, and to derive performance indicators and implementation tasks.

Next, in the process of identifying the health problems of the elderly in the Gangwon Province, the problem of nutritional deficiency due to lack of transportation was raised (Choi and Yang, 2015). For example, Jungam-ri residents have to go to the city to buy goods or go to the hospital because there is no supermarket, public health center, or small shops in the village. Buses run only four times a day (Han et al., 2005). As such, the Gangwon Province is a major medically vulnerable area and suffers great disadvantages in terms of medical care and transportation. There are a total of six areas that require more than 30 minutes of travel time to reach general screening institutions compared to the total area of municipal administrative districts (cities and counties), including Samcheok, Inje, Yeongwol, Hwacheon, Hongcheon, and Jeongseon (Kang et al., 2015). There are nine` more local governments where it takes more than 30 minutes to reach cancer screening institutions. These are Hongcheon, Inje, Yeongwol, Samcheok, Hwacheon, Hoengseong, Jeongseon, Yanggu, and Pyeongchang. Accordingly, it is necessary to encourage the most active exchange of 'transportation support services' in the process of applying Time Bank in the Gangwon area. There is a need to classify the elderly into a class that provides labor in the village joint project (the first class) and a class that does not have such ability and should receive unilateral benefits (the

second class). Only the first class belongs to the time banking operation, and the second class of elderly people should have a more active care program, such as Dong Residents Center (so called Chatdong). If a second-class elderly person needs to go to hospital and there is no means of transportation, instead of directly paying for the vehicle of town or village office, the vehicle owner living in the same village would lend the vehicle. By providing credit using banking, the village community can run it.

Based on national statistical data, 'unspecified symptoms and signs' were the fourth leading cause of death among the elderly in the Gangwon area. A more detailed study on the causes of death of elderly people in this area is needed.

There is also a need to look at health promotion aspects differently depending on the nature of the welfare services program. In contrast to other exercise programs, local contacts between elderly living alone showed no effect on energetic physical activity enhancement (e.g., one-step stair climbing or running) (Kim et al., 2011). However, it has been confirmed that this contributes to the psychological stability and motivation of elderly living alone and the possibility of preventing depression.

The purpose of this study is to identify the various problems faced by elderly people in Gangwon-do and to examine the Time Bank system as a way to improve social welfare services to manage this community's health. We also examined the actual Time Bank operating model and the health promotion effects measured in the US, UK, and Japan. Depending on the country and region, only a small number of individual members participate in the model and the group membership can be combined and modified. Although the cost of labor is reimbursed through time, it is possible to pay only in local currency, be offered in cash, traded or donated. Fundamentally, however, Time Bank aims to exchange social services on a time scale in a reciprocal relationship, regardless of the beneficiary and provider, in line with the core ideological cooperative production. This strengthens the community-centered network and forms social capital, which serves as a practical action plan for the super-aging society.

Gangwon-do and Chungcheong Provinces have had similar characteristics for the last 10 years. This study suggests that a Time Bank management plan that meets the characteristics of the Gangwon area can be applied to other areas such as Chungcheong Province where aging-related problems are serious. In the future, we should seek ways to increase the participation of local elderly people and various age groups in the Time Bank movement. In addition to looking at local currency, research should be conducted to develop alternatives to increase participation rates, and to examine the effects of media platforms (websites and mobile) in use. As an effective model of social innovation, it is also necessary to develop a public message that encourages the Time Bank

movement to resolve social problems through active civic participation in the context of worsening conditions of a capitalist society.

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