



■ Working Paper 2013-03

## Usage of medical services in farming and fishing villages and measures to enhance accessibility

Dongjin Kim

Usage of medical services in farming and  
fishing villages and measures to enhance  
accessibility

Dongjin Kim, Associate Research Fellow

© 2013

Korea Institute for Health and Social Affairs

All rights reserved. No Part of this book may  
be reproduced in any form without permission  
in writing from the publisher

Korea Institute for Health and Social Affairs  
Jinhungro 235, Eunpyeong-gu, Seoul 122-705,  
Korea

<http://www.kihasa.re.kr>

ISBN: 978-89-6827-116-8 93510

---

# Contents

## CHAPTER 1

<b>Introduction</b> .....	1
Section 1. Need and purpose of research .....	3
Section 2. Scope and content of research .....	5

## CHAPTER 2

<b>Changes in overall conditions in rural aresa</b> .....	9
Section 1. Changes in demographic composition .....	11
Section 2. Changes in economic conditions .....	17
Section 3 Change in levels of health .....	21

## CHAPTER 3

<b>Health care resources in rural communnities</b> .....	29
Section 1 Health care human resources .....	31
Section 2 Health care establishments .....	36

## CHAPTER 4

<b>Rural residents' pattern of medical service usage and their desire for health promotion services</b> .....	45
Section 1 Summary of the survey .....	47
Section 2 Survey results .....	48

---

CHAPTER 5

**Measures to enhance accessibility to health care services for rural residents** ..... 71

- 1. Setting standards for health care services ..... 74
- 2. Building linkage between health care services ..... 77
- 3. Participation of residents ..... 78

**References** ..... 84

## List of Tables

〈Table 2- 1〉 Trend of imbalance in rural population .....	10
〈Table 2- 2〉 Prevalence rates of acute and chronic diseases by region, and gender (age standardized) .....	14
〈Table 2- 3〉 Unmet medical care for acute and chronic diseases by region and gender (age standardized) .....	15
〈Table 2- 4〉 Income levels of farming and fishing families .....	16
〈Table 2- 5〉 Poverty rate of households by region (based on disposable income) .....	17
〈Table 2- 6〉 Poverty rates of elderly households (based on disposable income and minimum cost of living) .....	18
〈Table 2- 7〉 Prevalence rates of chronic diseases among farmers (fishers) and non-farmers(fishers) .....	20
〈Table 2- 8〉 Prevalence rates of chronic diseases among farmers (fishers) and non-farmers (fishers) .....	21
〈Table 2- 9〉 Health levels of Gun and Gu areas compared by mortality rates of causes of death .....	22
〈Table 3- 1〉 Allocation of doctors by region .....	29
〈Table 3- 2〉 Allocation of medical resources by region (2002) .....	30
〈Table 3- 3〉 Status of health care resources (public sector) compared with registered population .....	31
〈Table 3- 4〉 Number of personnel deployed in actual health care service tasks by type of health centers .....	33
〈Table 3- 5〉 Status of public health care establishments by region .....	34
〈Table 3- 6〉 Status of health care establishments (health centers, health center branches and health clinics by region) .....	35

〈Table 3- 7〉 Number of health care establishments per population of 100,000 by region .....	36
〈Table 3- 8〉 Distribution of medical establishments and hospital beds ..	37
〈Table 3- 9〉 Distribution of medical institutions and hospital beds in urban and rural areas by year .....	38
〈Table 3-10〉 Regions without emergency medical institution (as of 2008) .....	39
〈Table 3-11〉 Distribution of emergency medical institutions in urban and rural areas (as of 2011) .....	40
〈Table 3-12〉 Number of Shi/Gun/Gu with none or fewer than 50 childbirth cases recorded by regional medical institutions (2001~2010) .....	42
〈Table 4-1〉 Ratio of respondents by region .....	47
〈Table 4-2〉 General characteristics of the respondents .....	48
〈Table 4-3〉 Current health conditions of the respondents .....	50
〈Table 4-4〉 Transportation means .....	53
〈Table 4-5〉 Length of time taken to reach medical institutions .....	54
〈Table 4-6〉 Obstacles to treatment of diseases .....	55
〈Table 4-7〉 Subjective perception about service and quality of treatment of local health centers or medical institutions .....	56
〈Table 4-8〉 Whether the respondent ever experienced emergency and type of emergency experienced .....	57
〈Table 4-9〉 First contact in emergency and time interval .....	57
〈Table 4-10〉 Obstacles to handling emergency situations .....	59
〈Table 4-11〉 Whether the respondent makes their own effort to manage their health .....	60
〈Table 4-12〉 Reasons for not taking care of health .....	61

〈Table 4-13〉 Types of activities the respondent do for health (multiple answers are allowed) .....	62
〈Table 4-14〉 Whether the respondent thinks what they are currently doing is enough and if not, what additional programs the respondent is interested in .....	63
〈Table 4-15〉 Whether the respondent has ever used services provided by public and private institutions1) .....	64
〈Table 4-16〉 Interested health promotion services .....	65
〈Table 4-17〉 Types of services provided by public and private institutions .....	66
〈Table 4-18〉 (For current service users)_Whether the services are enough/If not, what services they would like to receive .....	67
〈Table 5-1〉 Emergency service related items and details .....	74
〈Table 5-2〉 History of the community nursing system .....	80
〈Table 5-3〉 Facilities and staff of health clinic .....	80
〈Table 5-4〉 Medical treatment and health care tasks of community nurses .....	81

---

## List of Pictures

[Picture 2-1] Trend and forecast of demographic changes in rural areas .....	11
[Picture 2-2] Yearly trends of prevalence rates by region .....	19
[Picture 2-3] Trend of standardized mortality rates in Gu, Shi, and Gun areas nationwide .....	22
[Picture 2-4] Rates of accidents caused by farm labor .....	24
[Picture 2-5] Trend on health care spending in farming and fishing communities nationwide .....	25
[Picture 3-1] Trend of regions without ob/gyn clinics for childbirth ·	41
[Picture 4-1] Usage of medical institutions in local areas: city/province ·	51
[Picture 4-2] Usage of medical institutions in local areas: city/province: city, county, district .....	52
[Picture 4-3] Ambulance emergency response time & travel time to the medical institution .....	58
[Picture 5-1] Factors that affect health .....	78





## Chapter 1

### Introduction



# 1

## Introduction <<

### **Section 1. Need and purpose of research**

In major developed countries like Sweden, the United States, and Italy, it has been known that residents in farming and fishing villages show lower morbidity or mortality rates than their urban counterparts. This is because people in the rural areas smoke less, drink less, do more physical activities, and eat healthier foods than urban residents. In other words, rural residents enjoy better living environments and better life styles (Su-jin Lee, 2012).

However, health care conditions in Korean farming and fishing villages are much poorer than in the urban areas to the degree that such gap is giving rise to the issue of social inequality. Given the potential changes that will take place in the health care environment of the rural areas, conditions could presumably deteriorate further.

In recognition of such issue, there have been various efforts to improve health care conditions in farming and fishing villages while addressing regional inequality in health care resources. One prime example is deployment of public health and establishment of health clinics in the 1980s, which were

#### 4 Usage of medical services in farming and fishing villages and measures to enhance accessibility

aimed at making sure that there are no doctorless villages. Such policies certainly helped address health care issues in Korean rural areas to a certain degree but the improvement was less than hoped for (Gyeong-hwan Choi, 2008).

Under such circumstances, the Project for Improvement of Health Care Services in Farming and Fishing Villages is under way with the support of the Special Tax for Rural Development. The tax was introduced to make the agricultural, forestry, and fishery industries more competitive, improve the living environment of farming and fishing villages, and ensure the welfare of residents in those villages as there were concerns over stagnation of farmers' income and the income discrepancy between urban and rural areas caused by the increased import of agricultural products after the conclusion of the Uruguay Round negotiation in 1994. Nonetheless, though it is true that the project led to the improvement of health care in terms of facilities and equipment at rural health centers, there is still a long way to go until we can expect rural residents' health to improve.

The share of the population living in farming and fishing villages dropped from 20.8% in 2000 to 18.0% in 2010 while the population aged 65 or over increased from 14.7% in 2000 to 20.9% in 2010. In addition to these demographic changes, there are socioeconomic changes, such as the increase of the income level and heightened interest in health, and also changes in travel patterns due to the development of transportation and

communications. All these illustrate that health care conditions are rapidly changing in the rural areas.

As the Health Center Law<sup>1)</sup> was replaced by the Regional Public Health Act<sup>2)</sup>, the process of health care policy-making also turned from top-down to bottom-up. The enactment of the National Health Promotion Act and Mental Health Act<sup>3)</sup> laid the foundation for undertaking health related projects. Therefore, it is fair to say that overall conditions certainly improved. However, government policies are still failing to keep up with the rapidly changing reality in the health care conditions of the rural areas.

This research is intended to analyse the usage of medical services by residents in farming and fishing villages where there is a shortage of health care resources, and to look into possible measures to enhance accessibility to medical services so that the unanswered demand for medical services will eventually be met.

## **Section 2. Scope and content of research**

This study is focused on exploring the status of health care service usage of residents in farming and fishing villages and deliberating on measures to enhance accessibility to health care services by taking into account the changing health care

---

1) Enacted in 1962

2) Enacted in 1995

3) Both were enacted in 1995

environment in the rural areas.

To this end, this research is intended to analyze present conditions of farming and fishing villages from various angles by analyzing demographic and socioeconomic changes in the villages and health conditions of their residents.

In addition, a survey was conducted to find out how well health care services are utilized by residents in those villages and how accessible such services are and how satisfied the villagers are about the services. Lastly, suggestions are made on measures to improve accessibility of health care services in the rural areas.



## Chapter 2

# Changes in overall conditions in rural areas





# 2

## Changes in overall conditions in rural areas <<

### Section 1. Changes in demographic composition

#### 1. Declining and ageing population

The population in Korea's rural areas is on the constant decline due to low birth rate and the young generation's tendency to move to the cities (Mi-ae Lee, 2010).

The rural population, which was above 18 million in 1970, dropped to 8.76 million in 2010. That is, the population dropped to 47% in just 40 years. The population of children and teenagers between the ages of 0 and 14 declined from about 8 million in 1970 to about 1.3 million in 2010 (only 1/6 of the 1970 population). In contrast, the elderly population aged 65 or over increased about 2.3 times. As a result, the demographic structure of rural communities changed from a triangle shape to an inverted triangle shape (Samsung Economic Research Institute -SERI- 2012).

The proportion of the young population aged 14 or under in rural communities is below the national average and it is expected to decline further. Also, the pace of population ageing in those communities will remain rapid, and the proportion of

the elderly population, 20.6% in 2010, is predicted to reach 24.3% in 2015 and 27.8% in 2020.

<Table 2-1> Trend of imbalance in rural population

(Unit: 1,000 persons, %)

	1970	1980	1990	2000	2005	2010
Rural population	18,173	16,002	11,102	9,381	8,764	8,758
Population of children and teenagers (Proportion)	8,173 (45.0)	5,713 (35.7)	2,625 (23.6)	1,735 (18.5)	1,495 (17.1)	1,287 (14.7)
Working age population (Proportion)	9,227 (50.8)	9,392 (58.7)	7,473 (67.3)	6,287 (67.0)	5,651 (64.5)	5,665 (64.7)
Population aged 65 or over (Proportion)	77.3 (4.3)	897 (5.6)	1,004 (9.0)	1,359 (14.5)	1,618 (18.5)	1,806 (20.6)

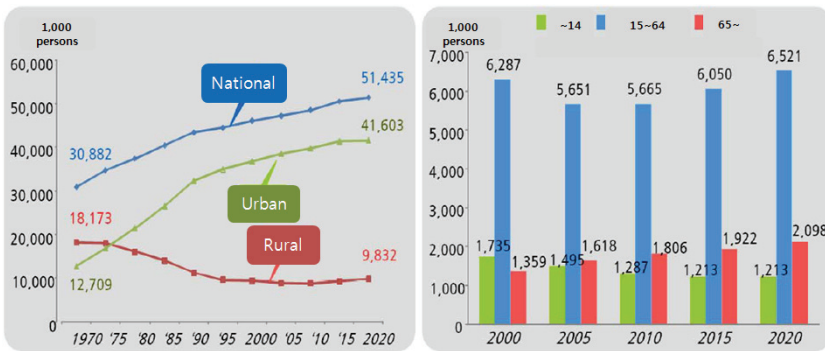
Data: Statistics Korea, Population and Housing Census, each year; SERI, SERI Economic Focus, 2012. Recited.

In the meantime, some researchers have predicted a new change in rural demographic composition. According to the Korea Rural Economic Institute (2012), the rural population would hit the bottom in 2010 and then gradually bounce up. The expected increase is mainly driven by increases in the working-age population. The working age population of rural communities is expected to recover its 2000-level of 6.52 million by 2020 (SERI, 2012).

Such increase in the rural population and changes in demographic structure will be triggered by population inflow from outside generated by regional development, increasing tendency to return to farming, marriage migration, and so on. Since the demographic structure in the rural areas is moving

away from population ageing and declining, and is beginning to have more diverse components, policies need to be made in order to accommodate such new trends. Particularly, policies need to be made and operated in the way that addresses gaps between the urban and rural areas while at the same time, helping rural communities to preserve their unique characteristics (SERI, 2012), which is why it is more important than ever to focus on meeting the increasing demand for health and welfare.

[Picture 2-1] Trend and forecast of demographic changes in rural areas



Data: SERI, SERI Economic Focus, 2012. Recited.

## 2. Increase of female population

Though the population in farming and fishing communities are declining due to low birth rate and the young generation's outflow to the cities, the female population is on the rise, a trend influenced by changes in farming systems and a rising number of female marriage migrants (Hye-jeong Kang, 2007).

The year 2000 was a turning point when marriage migrants began to flow in to rural communities in large numbers. Of all the marriage migrants in Korea, 81.1% entered the country in 2000 or later and the number of female marriage migrants who came to live in Korea's rural communities between 2000 and 2010 is estimated to be 63,631 (SERI, 2012).

In the past, the center of a family unit in the rural community was the father and the son, but now the center is moving towards the married couple and the number of male farmers is declining faster than their female counterparts. As a result, female farmers are playing an increasingly important role in farming, which in turn has given rise to changes in farming patterns. For instance, rice used to be the most commonly grown crop whose farming was reliant on male labor or machines but currently, growing vegetables, fruits and flowers which is mostly reliant on female labor is becoming increasingly common. This results in increasing participation of women in farming (Hye-jeong Kang, 2007).

Women living in farming and fishing communities are not presumed to be in good health conditions as there is a high likelihood that they are socially and economically vulnerable, a high proportion of those women participate in labor and they are at risk of being exposed to hazardous substances like pesticides.

Hyeong-cheol Shin and others (2009) analyzed the health conditions and status of medical service usage among women in farming communities by conducting a survey of 37,108 adults aged 20 or older. The analysis showed that the prevalence rates of and unmet care needs for chronic diseases were higher among women than men and were also higher in the rural areas than in the urban areas.

It is obvious that the prevalence rates of chronic diseases are higher in rural areas and among women because the proportion of the elderly population is higher in rural areas and among women. However, even after the age factor was controlled, the same trend was observed.

## 14 Projecting Social Expenditure and Total Tax Burden in Korea

〈Table 2-2〉 Prevalence rates of acute and chronic diseases by region, and gender (age standardized)

	Region	Prevalence rate(%)		Odds ratio			
		Female	Male	Female	(95%CI)	Male	(95%CI)
Subjective unhealthiness	Farming and fishing communities	3.38	2.48	2.30	(2.38~2.40)	1.81	(1.80~1.81)
	Small cities	1.70	1.32	1.67	(1.67~1.68)	1.31	(1.30~1.31)
	Large cities	1.62	1.11	1.52	(1.52~1.53)	1.00	-
	Subtotal	1.98	1.43	1.39	(1.39~1.39)	1.00	-
Chronic diseases	Farming and fishing communities	7.23	6.15	2.23	(2.22~2.24)	1.52	(1.52~1.53)
	Small cities	5.74	5.23	1.77	(1.76~1.77)	1.42	(1.4~1.42)
	Large cities	5.27	4.49	1.41	(1.42~1.42)	1.00	-
	Subtotal	5.79	5.05	1.36	(1.35~1.36)	1.00	-
Chronic diseases	Farming and fishing communities	0.92	0.55	1.62	(1.62~1.63)	0.94	(0.94~0.95)
	Small cities	0.89	0.51	1.62	(1.61~1.63)	0.89	(0.88~0.89)
	Large cities	0.97	0.57	1.77	(1.77~1.78)	1.00	-
	Subtotal	0.93	0.54	1.78	(1.77~1.79)	1.00	-

Data: Research on health conditions and medical care usage of women in the rural areas by Hyeong-cheol Shin and others, the 34th edition of *the Journal of Korean Association of Agricultural Medicine and Community Health*, 2009.

(Table 2-3) Unmet medical care for acute and chronic diseases by region and gender (age standardized)

	Region	Unmet care (%)		Odds ratio			
		Female	Male	Female	(95%CI)	Male	(95%CI)
Chronic diseases	Farming and fishing communities	15.2	14.3	1.29	(1.28~1.29)	1.14	(1.12~1.15)
	Small cities	15.1	15.6	1.11	(1.11~1.12)	1.10	(1.10~1.12)
	Large cities	12.7	14.1	0.92	(0.91~0.92)	1.00	-
	Subtotal	14.2	14.7	0.99	(0.99~1.00)	1.00	-
Acute diseases	Farming and fishing communities	5.0	1.2	2.39	(2.32~2.49)	0.51	(0.49~0.54)
	Small cities	2.5	1.2	0.99	(0.96~1.01)	0.49	(0.47~0.51)
	Large cities	3.5	2.5	1.40	(1.37~1.43)	1.00	
	Subtotal	3.5	1.9	1.87	(1.85~1.92)	1.00	

Data: Research on health conditions and medical care usage of women in the rural areas by Hyeong-cheol Shin and others, the 34th edition of *the Journal of Korean Association of Agricultural Medicine and Community Health*, 2009.

As for the reason why the rates of unmet care are higher among women than men in rural communities, women are known to be more conscious of economic burden than men even within the same family. Therefore, women in rural communities where access to medical services is more difficult than in the cities may have reacted more sensitively to the possible cost they would have to bear (Hyeong-cheol Shin and others, 2009).

## Section 2. Changes in economic conditions

According to the data published by Statistics Korea, the income level of a farming household is only 59.1% of what an urban household earns and that of a fishing household is only

75.8% as of 2011.

Fishing households also earn less than households in the cities but the situation is even more serious in farming households whose increase of income since 2005 has been almost unnoticeable. In 2005, the income level of farming households was 78.2% of that of their urban counterparts, but it sharply dropped to 59.1% in 2011.

<Table 2-4> Income levels of farming and fishing families

	2005	2006	2007	2008	2009	2010	2011
Income of farming households	30,503	32,303	31,967	30,523	30,814	32,121	30,148
- Farming income	11,815	12,092	10,406	9,654	9,698	10,098	8,753
- Non-farming income	18,688	20,212	21,562	20,869	21,116	22,023	21,395
Ratio of farming household income to urban household income	78.2	78.2	72.5	65.3	66.6	66.8	59.1
Income of fishing households	28,028	30,006	30,668	31,176	33,945	35,696	38,623
- Fishing income	11,950	11,603	11,975	13,801	16,220	16,607	20,428
- Non-fishing income	16,078	18,403	18,693	17,375	17,725	19,089	18,195
Ratio of fishing household income to urban household income	71.8	72.6	69.5	66.7	73.4	74.2	75.8

Note: Non-farming (fishing) income is the sum of incomes from other businesses, incomes from non-business sources, transfer incomes, and non-ordinary incomes

Data: 『Economic Statistics of Farming Families』and 『Economic Statistics of Fishing Families』of Statistics Korea; website of Statistics Korea (<http://www.index.go.kr>)



Accordingly, the rural areas showed higher poverty rates than the urban areas. When measured by the minimum cost of living, the poverty rate in farming and fishing villages was 18.6% in 2009, 6.2%p higher than the 12.4% of urban families. When the threshold of poverty was set at 50% of the median income, the gap widened even further; the poverty rate of farming and fishing households in 2009 was 31.5%, which means that almost one in every three households in rural communities was in poverty.

<Table 2-5> Poverty rate of households by region (based on disposable income)

(Unit: %)

Classification		Minimum cost of living	Median income		
			40%	50%	60%
Farming & fishing households	2005	30.0	31.5	41.0	47.2
	2006	20.8	24.7	35.0	42.6
	2007	18.5	23.8	33.9	42.2
	2008	15.5	23.3	33.8	42.6
	2009	18.6	21.5	31.5	40.2
Cities	2005	12.8	13.0	18.4	23.7
	2006	11.0	12.7	18.7	24.1
	2007	10.1	12.6	18.4	23.8
	2008	8.5	12.4	18.1	23.4
	2009	12.4	10.3	16.1	21.7
Total	2005	14.2	14.5	20.3	25.6
	2006	11.9	13.8	20.2	25.7
	2007	10.9	13.7	19.9	25.7
	2008	9.2	13.5	19.6	25.4
	2009	13.0	11.4	17.6	23.6

Data: The Korea Institute for Health and Social Affairs (KIHASA), Korea Welfare Panel, each year; Tae-wan Kim and others, 2011 recited

The prevalence of poverty among elderly households is even more serious. As of 2009, 38.0% of the households of single

elderly persons and 30.7% of the households of elderly couples were living below the poverty line. Given the high proportion of the elderly population in rural communities, it is considered urgent to improve the poverty conditions in those communities for lone-elderly and elderly-couple households.

〈Table 2-6〉 Poverty rates of elderly households (based on disposable income and minimum cost of living)

(Unit: %)

Classification		Single elderly member	Elderly couple	With children	Ordinary households
Farming and fishing households	2005	59.5	51.4	37.4	14.8
	2006	50.8	37.3	21.2	8.0
	2007	44.0	30.2	15.7	7.4
	2008	33.7	26.9	12.4	6.9
	2009	38.0	30.7	17.0	9.3
Cities	2005	43.2	34.9	20.3	7.6
	2006	38.0	31.1	15.6	6.2
	2007	36.1	33.5	14.1	4.6
	2008	32.6	24.7	11.0	4.7
	2009	35.3	27.3	14.5	9.0
Total	2005	45.9	37.9	22.3	8.0
	2006	40.3	32.3	16.3	6.3
	2007	37.7	32.7	14.3	4.8
	2008	32.9	25.2	11.2	4.7
	2009	35.9	28.1	14.8	9.0

Note: 1) A change of weight caused deviation from the estimates in the existing research

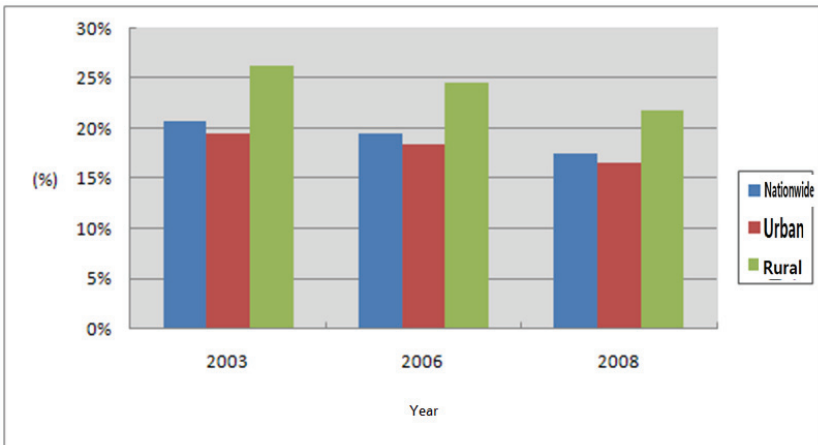
Data: Data: The Korea Institute for Health and Social Affairs (KIHASA), Korea Welfare Panel, each year; Tae-wan Kim and others, 2011 recited

## Section 3. Change in levels of health

### 1. Prevalence rates of acute and chronic diseases

Extended life expectancy and population ageing are phenomena witnessed in most developed and developing countries in the world. Korea is also rapidly changing into an ageing society with increasing numbers of patients with chronic diseases. As there is a shortage of labor in rural communities because of the young generation's tendency to leave for cities, the elderly population is involved in excessive physical labor and as a result, they suffer from chronic diseases. In short, population ageing in rural communities is causing a serious health care issue.

[Picture 2-2] Yearly trends of prevalence rates by region



Data: Statistics Korea「Social Survey Report」

Compared with people who are not farmers or fishers, the prevalence rates of chronic diseases were higher among farmers and fishers. Especially, among people aged between 40 and 49, the prevalence rates among farmers and fishers were 30% higher and the overall prevalence rates of chronic diseases among farmers and fishers regardless of age were also 15% higher than their counterparts who are not engaged in farming and fishing.

〈Table 2-7〉 Prevalence rates of chronic diseases among farmers (fishers) and non-farmers(fishers)

(Unit: %)

Age	Farmers and fishers (A) (N=1,697)	Non-farmers and fishers (B) (N=19,840)	A/B
30~39	36.1	31.7	1.10
40~49	54.3	41.9	1.30
50~59	71.1	61.1	1.14
60~69	84.0	77.5	1.08
Average	61.4	53.5	1.15

Data: Kim KR et al, 2005; Su-jin Lee, 2012 Recited

When broken down by types of diseases, the prevalence rates of conditions caused by impairment or addiction showed the biggest difference between farmers (fishers) and non-farmers (fishers) - 2.5 times more prevalent among farmers (fishers) - followed by muscular skeletal diseases, gastrointestinal diseases, and mental/behavioral/neurological disorders.

(Table 2-8) Prevalence rates of chronic diseases among farmers (fishers) and non-farmers (fishers)

(Unit : %)

	Farmers and fishers(%)-A	Non-farmers and fishers (%) -B	A/B
Impairment/addiction	0.89	0.34	2.50
Muscular skeletal diseases	61.50	25.13	2.45
Gastrointestinal diseases	19.89	12.41	1.60
Mental/behavioral/neurological disorders	6.06	3.80	1.59
Eye/ear diseases	4.71	3.28	1.44
Endocrine/nutritional/metabolic/blood/haematopoiesis disorders	8.47	6.74	1.26
Cardiovascular diseases	20.55	16.41	1.25
Respiratory diseases	7.95	6.77	1.17
Malignant tumors	1.21	1.39	0.87

Data: Kim KR et al, 2005; Su-jin Lee, 2012 Recited

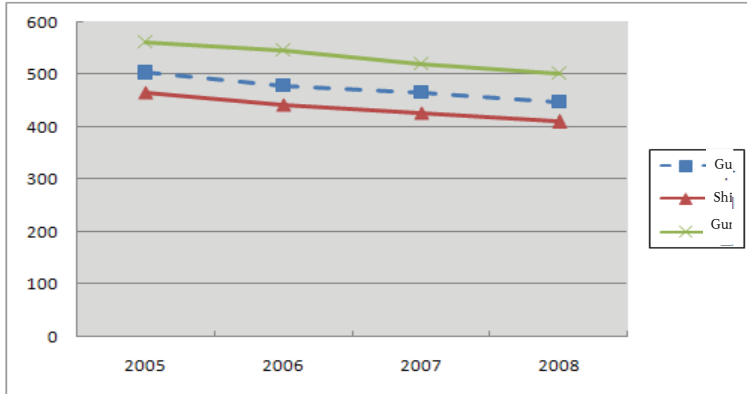
## 2. Mortality rate<sup>4)</sup>

In order to understand the differences in mortality by region, we looked at the analysis of the age standardized mortality rates between 2005 and 2008 compiled by Statics Korea. In general, the mortality rate was much higher in the Gun(county) areas than the Gu(district of a large city) or Shi(city) areas. After the age was standardized, the Gu areas showed higher mortality in some causes of death but in general, the Gun areas had the highest mortality rates.

4) Baek-ju Na, "Research on Performance Assessment of the Medical Service Improvement Project for Farming and Fishing Communities," 2010

22 Projecting Social Expenditure and Total Tax Burden in Korea

[Picture 2-3] Trend of standardized mortality rates in Gu, Shi, and Gun areas nationwide



Data: Baek-ju Na, Research on Performance Assessment of the Medical Service Improvement Project for Farming and Fishing Communities, December, 2010. 12, Ministry of Health and Welfare

The leading causes of death in the rural communities were liver failures, chronic lower respiratory diseases, pneumonia, lung cancer, impairments, traffic accidents, homicides, suicides, respiratory tuberculosis.

<Table 2-9> Health levels of Gun and Gu areas compared by mortality rates of causes of death

Causes of deaths with significantly high mortality rates in Gun areas	Causes of death with similar mortality rates in urban and rural areas
Liver diseases, chronic lower respiratory diseases, pneumonia, lung cancer, all types of impairments, traffic accidents, homicides, suicides, respiratory tuberculosis	Heart disease, cardiac infarction, diabetes, all types of cancers, uterine cancer

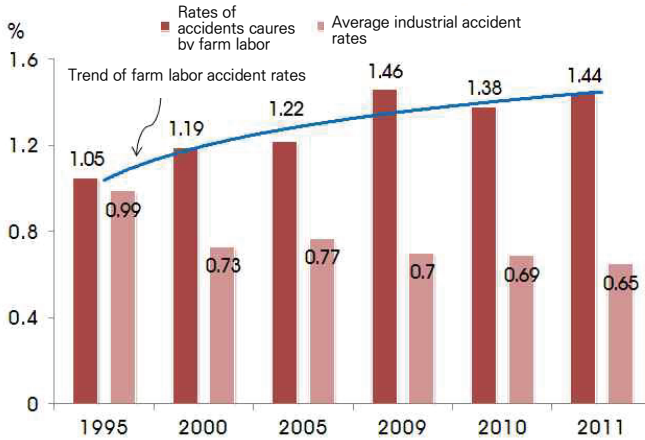
Data: Baek-ju Na, Research on Performance Assessment of the Medical Service Improvement Project for Farming and Fishing Communities, December, 2010. 12, Ministry of Health and Welfare

### 3. Impairments related to farming

Apart from chronic diseases, farmers and fishers have high probabilities to have health issues related to their occupations. Accidents are the most critical of all because accidents are often fatal and could cause many complications, which in turn could lead to large economic losses. With the dramatic downsizing and ageing of farming workforce, farming is increasingly reliant on machines and it has been reported that accidents involving agricultural machinery are increasing (Hyeon-sul Lim, 2002; Gamshin, 2006 Recited).

The accident rate in the farming sector in 2011 was 1.44% whereas the overall industrial accident rate was 0.65, which illustrates that more negligent accidents are happening in farming than other sectors (Seong-hyeok Hwang, 2012). Since the accident rates in farming and fishing are on the rise while the overall industrial accident rates are declining, there is an urgent need to come up with measures to tackle this issue.

[Picture 2-4] Rates of accidents caused by farm labor



Data: The Rural Development Administration, 2011 farm indicators

#### 4. Health care cost

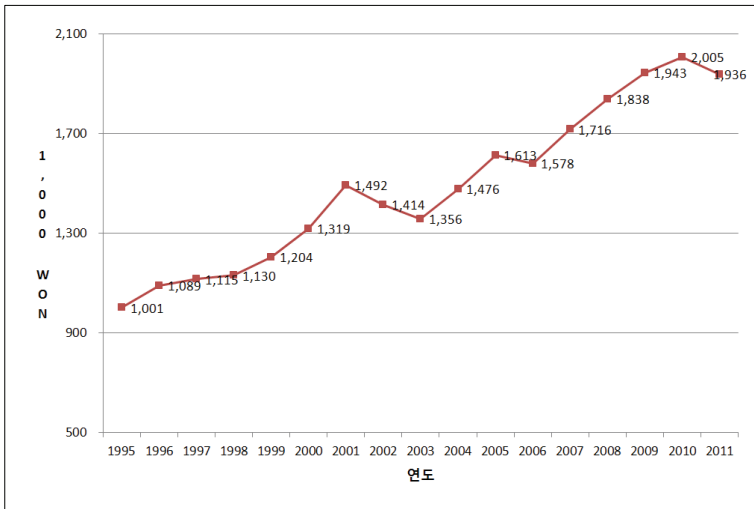
Farming households' spending on medical care are also on the gradual rise with population ageing, the subsequent increase of chronic disease prevalence rates, and the increase in the occurrence of accidents.

According to Statics Korea, in 2011, farming households' spending on medical care (KRW1.966 million) was 3.2% higher than that of urban households (KRW1.876 million). In addition, the share of medical expenses in the total spending was 8.7% in farming households compared with 6.6% in urban households (Seong-hyeok Hwang, 2012)



Given the fact that the total spending of farming households was about 77.2% of that of urban households in 2011, it can be inferred that farming households feel more pressure about medical spending than urban households. Since farmers need to go to large cities when they are seriously ill because of the shortage of medical facilities, the actual spending will be higher when all the additional costs such as travel and accommodation expenses are considered (Seong-hyeok Hwang, 2012).

[Picture 2-5] Trend on health care spending in farming and fishing communities nationwide



Data: Gyeonggi Regional Statistics Office, 2012.





## Chapter 3

# Health care resources in rural communities



# 3

## Health care resources in rural communities <<

### Section 1. Health care human resources

According to the data of the Korean Medical Association, more than 60% of Korean doctors are concentrated in large cities, and of the rest, 40%, 34% are in small and medium sized cities, which means medical resources allocated in the rural areas are less than 5%.

Given the fact that the population in farming and fishing communities accounts for 11% of the total population of the nation (City Portal of the Ministry of Land, Transport and Infrastructure, 2011), it can be assumed that there is no small gap between the allocation of medical resources of urban and rural areas.

<Table 3-1> Allocation of doctors by region

(Unit: Number of persons, %)

	Large cities		Small cities		Rural areas (Gun)		Total	
2001	33,662	61.6	18,027	33.0	2,968	5.4	54,657	100.0
2002	36,140	62.4	19,124	33.0	2,622	4.5	57,886	100.0
2003	37,444	62.6	19,676	32.9	2,712	4.5	59,832	100.0
2004	41,575	61.3	23,133	34.1	3,145	4.6	67,853	100.0
2005	41,856	61.0	23,588	34.4	3,146	4.6	68,590	100.0
2006	43,775	61.6	24,129	34.0	3,111	4.4	71,015	100.0
2007	45,240	60.8	25,621	34.4	3,562	4.8	74,423	100.0

Data: The Korea Medical Association(2008),<sup>†</sup>2007 Nationwide Member Survey Report<sub>1</sub>.

The regional gap was the largest in terms of allocation of nurses and full time doctors because only 4.7% of the nurses and 4.9% of the full time doctors across the nation are working in the rural areas. The gap is relatively smaller in terms of non-full time doctors and oriental doctors with 15.8% and 7.4% of them allocated in the rural areas.

〈Table 3-2〉 Allocation of medical resources by region (2002)

(Unit: Number of persons)

Region	Full time doctors	Non-full time doctors	Dentists	Oriental doctors	Nurses
Cities	55,026 (94.9)	824 (76.6)	13,931 (93.7)	9,186 (91.6)	72,430 (95.2)
Rural areas	2,862 (4.9)	169 (15.8)	840 (5.7)	746 (7.4)	3,564 (4.7)
Total	57,983 (100.0)	1,070 (100.0)	14,865 (100.0)	10,024 (100.0)	76,089 (100.0)

Data: Ministry of Health and Welfare, Annual Health and Society Statistics (Rural Development Administration, 2004 Rural Life Indicator 2005, Recited)

The number of the public health doctors who are making up for the shortage of medical resources in the rural areas decreased from 5,028 in 2008 to 3,300 in 2010. The 2010 data of the National Assembly Research Service predicted the number of public health doctors to decrease to 931 by 2020<sup>5)</sup>.

As for public health doctors, what is as important an issue as the decline in number is the need for improvement of their

5) March 4, 2011, The Farmers Newspaper

skills. As most public health doctors are those who did not go through internship, there are increasing voices calling for systematic training on emergency treatment and so on. According to a research, the emergency treatment capabilities of the public health doctors stationed in the island areas fall far short of the desired level because training opportunities for the doctors are very rare while there is a high demand for emergency treatment in the remote rural areas (Je-hyeon Suh and others, 2011).

The comparison of the distribution of medical resources is shown bellow. If you look at the number of people allocated to a single medical staff, the number is lower at the Doe (province) level than at the Gwangyeoksi (metropolitan city) level. This has to do with the fact that metropolitan cities have higher population densities:

〈Table 3-3〉 Status of health care resources (public sector) compared with registered population

(Unit: Number of persons)

	Registered population	Manpower at health centers		Manpower at health center branches and health clinics	
		Manpower	Population per head	Manpower	Population per head
2002	48,229,948	18,558	2,598.9	7,205	6,694.0
2003	48,386,823	19,207	2,519.2	7,531	6,425.0
2004	48,583,805	19,735	2,461.8	7,546	6,438.4
2005	48,782,274	19,812	2,462.3	7,647	6,379.3
2006	48,991,779	20,010	2,448.4	7,646	6,407.5
2007	49,268,928	20,003	2,463.1	7,487	6,580.6
2008	49,540,367	20,181	2,454.8	7,400	6,694.6
2009	49,773,145	20,600	2,416.2	7,628	6,525.1

### 32 Projecting Social Expenditure and Total Tax Burden in Korea

	Registered population	Manpower at health centers		Manpower at health center branches and health clinics	
		Manpower	Population per head	Manpower	Population per head
2010	50,515,666	20,040	2,520.7	7,309	6,911.4
2011	50,743,284	12,808	3,961.8	7,230	7,018.4
Seoul	10,249,679	2,540	4,035.3	47	218,078.3
Busan	3,550,963	585	6,070.0	62	57,273.6
Daegu	2,507,271	369	6,794.8	56	44,772.7
Incheon	2,801,274	418	6,701.6	170	16,478.1
Gwangju	1,463,464	267	5,481.1	74	19,776.5
Daejeon	1,515,603	221	6,857.9	42	36,085.8
Ulsan	1,135,494	199	5,706.0	57	19,920.9
Gyeonggi	11,937,415	1,819	6,562.6	650	18,365.3
Gangwon	1,536,448	811	1,894.5	490	3,135.6
Chungbuk	1,562,903	559	2,795.9	544	2,873.0
Chungnam	2,101,284	832	2,525.6	888	2,366.3
Jeonbuk	1,874,031	763	2,456.1	815	2,299.4
Jeonnam	1,914,339	1,009	1,897.3	1,244	1,538.9
Gyeongbuk	2,699,195	1,136	2,376.1	1,133	2,382.3
Gyeongnam	3,308,765	1,101	3,005.2	862	3,838.5
Jeju	576,156	179	3,218.7	96	6,001.6
Average of Si and Do	3,170,893	801	4,274	452	28,449
Average of metropolitan cities	2,162,345	343	6,269	77	32,385
Average of Do	3,056,726	912	2,970	747	4,756

Note: Seoul was excluded in health care organization (health centers, health center branches and health clinics), health care sector (doctors, dentists, oriental doctors, pharmacists, dieticians, etc.) and in the average of metropolitan cities.

Data: <sup>1</sup>Korea Statistical Information Service (kosis) of Statistics Korea and <sup>2</sup>2010 Health and Welfare Statistics Report of the Ministry of Health and Welfare (the 57th edition, January 2012. Recited

If you compare the number of personnel who was actually placed in health care related tasks by each type of health centers, the number is lower at the health centers in Gun areas than in Seoul or other metropolitan cities.



Since such gap is more evident in such areas as home visit health care service and health promotion projects, there are concerns that the shortage of manpower in those areas could lead to inequality in services.

(Table 3-4) Number of personnel deployed in actual health care service tasks by type of health centers

(Unit: Number of persons)

	Average	The type found in Seoul	Metropolitan city type	General city type	Semi-urban city type	County type	Health clinic type
Total	42.5	66.0	44.6	37.7	45.8	31.2	47.8
Health promotion	7.2	11.3	8.8	6.5	7.6	5.5	4.2
Infectious diseases	8.5	15.2	11.7	8.1	9.3	4.9	3.7
Chronic diseases	1.4	2.2	1.3	1.3	1.7	1.0	1.2
Mental health	1.8	3.0	2.0	2.4	1.4	1.1	1.4
Home visit health care	3.7	7.5	4.4	2.7	4.4	2.2	2.6
Medical treatment	8.5	10.3	4.4	6.4	8.5	7.8	23.5
Various experiments & examinations	4.0	7.6	4.0	3.8	4.0	2.6	4.5
Maternal and child health	1.4	2.3	2.0	1.3	1.6	1.0	1.5
Dental health	1.8	1.1	1.4	1.6	3.1	1.6	1.7
Medical expense support for rare and intractable diseases	0.6	0.8	0.7	0.5	0.6	0.4	0.6
Rehabilitation	1.6	2.2	1.8	1.7	1.9	1.2	1.4
Medical check-up	1.9	2.5	2.0	1.3	1.8	1.7	2.7

Note: Extracted from the third Regional Health Care Plan of the Ministry of Health and Welfare (Public Health Care Project Support Group of Korea Health Industry Development Institute)

Data: Su-jin Lee and others, Development of Policies and Action Plan for Re-defining Functions of Regional Health Establishments, Korea Health Industry Development Institute, the Ministry of Health and Welfare, 2008 (Recited)

## Section 2. Health care establishments

Integration of health center branches and health clinics has been under way to ensure efficient operation of health care establishments in rural communities by reflecting the changing circumstances such as declining population and improved transportation and communications infrastructure in the rural areas. The number of health clinics has constantly decline from 2,039 in 1995 to 1,908 at the end of 2011.

〈Table 3-5〉 Status of public health care establishments by region

(Unit: Number of establishments)

Classification	Type			
	Total	Health centers	Health center branches	Health clinics
Total	3,479	254	1,314	1,911
Large cities	124	69	31	24
Cities	Dong	161	91	38
	Eub · Myeon	1,290	9	510
Rural areas (Gun)	1,904	85	735	1,084

Note: As of December 2011

Data: Press release of the Ministry of Health and Welfare (September 3, 2012) and reanalysis of raw data at 『Korea Statistical Information Service (kosis)』of Statistics Korea.

(Table 3-6) Status of health care establishments (health centers, health center branches and health clinics by region)

(Unit: Number of establishments)

	Total	Health centers	Health center branches	Health clinics
1995	3,604	238	1,327	2,039
2000	3,417	242	1,269	1,906
2001	3,401	242	1,267	1,892
2002	3,401	242	1,268	1,891
2003	3,416	246	1,271	1,899
2004	3,420	246	1,273	1,901
2006	3,442	251	1,280	1,911
2007	3,473	251	1,314	1,908
2008	3,448	253	1,288	1,907
2009	3,449	253	1,287	1,909
2010	3,459	253	1,294	1,912
2011	3,466	253	1,305	1,908
Seoul	28	25	3	0
Busan	32	16	11	5
Daegu	26	8	9	9
Incheon	58	10	24	24
Gwangju	19	5	4	10
Daejeon	21	5	8	8
Ulsan	24	5	8	11
Gyeonggi	331	45	124	162
Gangwon	244	18	97	129
Chungbuk	267	13	94	160
Chungnam	415	16	159	240
Jeonbuk	407	14	150	243
Jeonnam	564	22	212	330
Gyeongbuk	557	25	219	313
Gyeongnam	410	20	172	218
Jeju	63	6	11	46

Data: 『Korea Statistical Information Service (kosis)』 of Statistics Korea, 『2010 Welfare and Health Statistics Report』 of the Ministry of Health and Welfare, the 57th edition, January 2012. Rearranged.

〈Table 3-7〉 Number of health care establishments per population of 100,000  
by region

(Unit: Number of establishments)

	Total	Hospitals/c linics	Dental clinics	Oriental medicine hospitals/cli nics	Health institutions	Pharmacies
Total	166.7	61.4	30.6	25.1	7.1	42.5
Seoul	207.6	76.6	45.8	33.8	0.3	51.2
Busan	173.3	68.3	31.4	28.8	0.9	43.8
Daegu	181.3	68.4	31.2	31.6	1.1	49.0
Incheon	138.0	53.4	26.3	19.7	2.2	36.4
Gwangju	165.7	64.4	34.6	22.0	1.1	43.5
Daejeon	172.5	67.9	30.1	29.5	1.4	43.6
Ulsan	146.2	54.7	29.6	25.6	2.2	34.1
Gyeonggi	137.9	51.5	27.8	20.0	2.8	35.8
Gangwon	155.8	52.4	21.9	22.3	17.1	42.2
Chungbuk	164.2	58.4	21.7	23.0	18.1	43.1
Chungnam	166.0	57.4	22.7	22.2	21.0	42.6
Jeonbuk	200.0	71.9	26.6	26.6	24.0	50.9
Jeonnam	179.8	59.3	22.1	18.7	32.7	47.0
Gyeongbuk	156.1	52.4	20.5	22.0	21.6	39.6
Gyeongnam	146.2	53.3	22.9	21.3	13.0	35.6
Jeju	161.3	59.0	27.0	23.9	11.5	39.8

Data: Young-ho Oh and others, 『2011 Survey on Health care resources』, the Ministry of Health and Welfare, 2011.

As for distribution of medical establishments in urban and rural areas, those in the rural areas account for 12.9% of all and the number of hospital beds in the rural areas accounts for 15.4% of all. In terms of the type of establishments, convalescent hospitals show the highest distribution of 23.1% in the rural areas, followed by hospital-level institutions (19.8%) and clinic-level institutions (13.4%). Compared with other types of medical institutions, general hospitals, dental clinics, and

maternity centers showed relatively low distribution in the rural communities.

In terms of the number of hospital beds, hospital-level institutions had the highest distribution in the rural areas (23.0%) followed by convalescent hospitals (21.6%) and clinical-level institutions (18.1%). General hospitals have only 18.1% of their beds in the rural areas, which illustrates the serious gap in accessibility to professional medical services between urban and rural areas.

<Table 3-8> Distribution of medical establishments and hospital beds

(Unit: Number, %)

classification	Rural areas (Gun)		Urban areas(Si)		Total	
	Institution	Bed	Institution	Bed	Institution	Bed
Total	6,803 (12.9)	63,318 (15.4)	45,818 (87.1)	347,054 (84.6)	52,621 (100.0)	410,372 (100.0)
General hospital	20 (6.6)	4,581 (3.6)	282 (93.4)	121,259 (96.4)	302 (100.0)	125,840 (100.0)
Hospital	187 (19.8)	25,847 (23.0)	758 (80.2)	86,545 (77.0)	945 (100.0)	112,392 (100.0)
Convalescent hospital	137 (23.1)	14,393 (21.6)	456 (76.9)	52,334 (78.4)	593 (100.0)	66,727 (100.0)
Clinic	3,516 (13.4)	17,432 (18.1)	22,749 (86.6)	78,860 (81.9)	26,265 (100.0)	96,292 (100.0)
Dental clinic	1,547 (11.5)	29 (10.9)	11,884 (88.5)	237 (89.1)	13,431 (100.0)	266 (100.0)
Oriental medicine hospital/clinic	1,392 (12.6)	1,034 (11.9)	9,641 (87.4)	7,666 (88.1)	11,033 (100.0)	8,700 (100.0)
Maternity center	4 (7.7)	2 (1.3)	48 (92.3)	153 (98.7)	52 (100.0)	155 (100.0)

Note: As of December, 2007

Data: Baek-ju Na, Data published by the Ministry of Food, Agriculture, Forestry and Fisheries, 2012.

When analyzed by year, in 2007, 12.9% of all medical institutions were distributed in rural communities while in 2009, the percentage dropped by 4.4% to 8.5%. The proportion of the hospital beds in the rural areas also dropped from 15.4% in 2007 to 12.0% in 2009.

〈Table 3-9〉 Distribution of medical institutions and hospital beds in urban and rural areas by year

(Unit: Number of institutions and beds)

	Rural areas (Gun)		Urban areas (Si)		Total	
	Institution	Bed	Institution	Bed	Institution	Bed
2007	6,803 (12.9%)	63,318 (15.4%)	45,818 (87.1%)	347,054 (84.6%)	52,621 (100.0%)	410,372 (100.0%)
2008	4,596 (8.5%)	51,606 (11.8%)	49,272 (91.5%)	384,263 (88.2%)	53,868 (100.0%)	435,869 (100.0%)
2009	4,726 (8.5%)	54,200 (12.0%)	50,724 (91.5%)	398,499 (88.0%)	55,450 (100.0%)	452,699 (100.0%)

Data: Reference Data for Key Businesses<sub>1</sub> of the Ministry of Health and Welfare, each year

As shown above, there are fewer medical institutions in the rural areas than in the cities but this is not only about the numbers. Since the gap is even bigger in terms of the distribution of high-level medical institutions, which can provide professional medical services, it could lead to a gap in the quality of medical services enjoyed by residents in rural and urban areas.

Furthermore, the gap in distribution widens over time, which indicates the need for policies to address the situation.

The reason that the gap in distribution of medical institutions

is problematic can be explained by accessibility to necessary medical services such as emergency treatment. According to the Ministry of Health, Welfare, and Family, 43 rural towns across the country including Ongjin in Incheon and Yanggu in Gangwon have no emergency medical treatment centers and there are 108 cities (Shi) and counties (Gun) with no emergency medicine specialist.<sup>6)</sup>

As part of the government's recent efforts to enhance accessibility to emergency medical services, 11 and 38 new regional emergency medical institutions were established in 2011 and 2012, respectively. Still, there are 24 counties which do not have any emergency medical center or regional emergency medical institution as of the end of 2011 (Internal data of Korea Rural Economic Institute, 2012)

〈Table 3-10〉 Regions without emergency medical institution (as of 2008)

Classification	Counties(Gun)
Counties without emergency medical institution (43)	<ul style="list-style-type: none"> <li>o Incheon (1): Ongjin-gun</li> <li>o Gyeonggi (2): Yeoncheon-gun, Gapyeong-gun</li> <li>o Gangwon (6): Hwacheon-gun, Pyeongchang-gun, Yanggu-gun, Inje-gun, Goseong-gun, Yangyang-gun</li> <li>o Chungbuk (2): Cheongwon-gun, Danyang-gun</li> <li>o Chungnam (3): Tae-an-gun, Cheongyang-gun, Cheongyang-gun, Yeonki-gun, Seocheon-gun</li> <li>o Jeonbuk (5): Sunchang-gun, Jangsu-gun, Muju-gun, Imsil-gun, Jinan-gun</li> <li>o Jeonnam (6): Youngam-gun, Shinan-gun, Gangjin-gun, Jindo-gun, Hapyeong-gun, Gokseong-gun</li> </ul>

6) As of December 2008

40 Projecting Social Expenditure and Total Tax Burden in Korea

Classification	Counties(Gun)
	o Gyeongbuk (10): Cheongsong-gun, Youngyang-gun, Youngdeok-gun, Cheongdo-gun, Goryeong-gun, Seongju-gun, Chilgok-gun, Yecheon-gun, Bonghwa-gun, Uleung-gun
	o Gyeongnam (5): Sangcheong-gun, Goseong-gun, Hapcheon-gun, Uiryeong-gun, Hamyang-gun
	o Jeju (2): Bukjeju-gun, Namjeju-gun (before the launch of Jeju Special Self-Governing Province)

Data: Internal data of the Ministry of Health and Welfare

As for the distribution of emergency medical institutions, as of 2011, both metropolitan emergency medical centers and specialized emergency medical centers were only in the urban areas while only 4.3% of all the regional emergency medical centers and only 22.3% of regional emergency medical institutions were in the rural areas.

<Table 3-11> Distribution of emergency medical institutions in urban and rural areas (as of 2011)

(Unit: Number, %)

	Metropolitan emergency medical center	Specialized emergency medical center	Regional emergency medical center	Regional emergency medical institution
Total	21 (100.0)	4 (100.0)	115 (100.0)	329 (100.0)
Rural areas (Gun)	0 (0.0)	0 (0.0)	5 (4.3)	72 (22.3)
Urban areas(Si)	15 (100.0)	4 (100.0)	110 (95.7)	251 (77.7)

Data: Internal data of Korea Rural Economic Institute

According to the analysis of the regional distribution of emergency medical services conducted by Korea Health

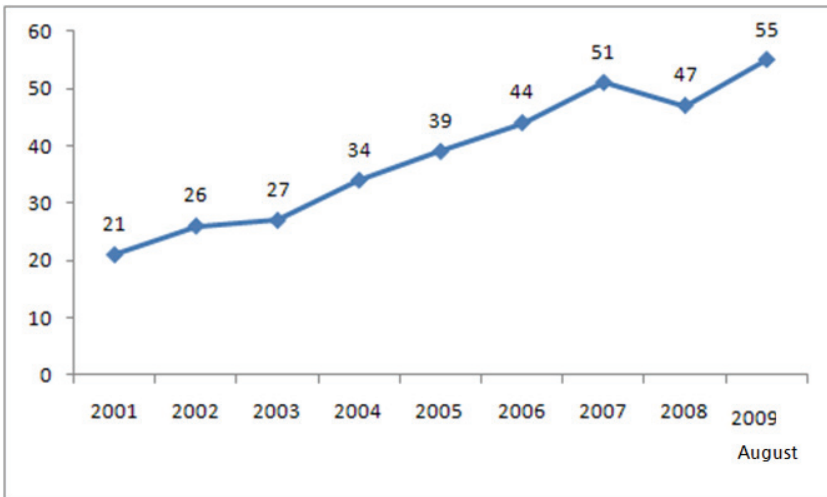


Industry Development Institute (2010), some regions have no any emergency medical centers at all when there is an excess supply of them in large cities (internal data of Korea Rural Economic Institute, 2012).

Another example that clearly shows the gap between urban and rural areas is the distribution of ob/gyn clinics for childbirth. In fact, it is a general trend that the ob/gyn clinics, which do not provide childbirth care, are increasing due to low medical fees but the phenomenon is more noticeable in the rural areas with the decline of the working age population.

[Picture 3-1] Trend of regions without ob/gyn clinics for childbirth

(Unit: Number of regions)



Data: 『2009 Health and Welfare White Paper』, the Ministry of Health and Welfare(2010).

According to the 2010 childbirth records compiled by the National Health Insurance Service, about 31 Shi/Gun/Gu had no case of childbirth. And according to the 2009 data of the Ministry of Health and Welfare, there is not a single ob/gyn doctor in 9 counties (Gun) such as Yangyang, Inje, Wanju, Jindo, Goryeong, Bonghwa, Youngyang, Goseong, and Hamyang (Baek-ju Na, 2012).<sup>7)</sup>

〈Table 3-12〉 Number of *Shi/Gun/Gu* with none or fewer than 50 childbirth cases recorded by regional medical institutions (2001~2010)

Classification	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No. of <i>Shi/Gun/Gu</i> with no childbirth case	7	14	26	31	33	41	44	41	29	31
No. of <i>Shi/Gun/Gu</i> with fewer than 50 childbirth cases	40	48	50	56	62	64	67	66	67	70

7) Data from the Ministry of Health and Welfare in October, 2009



## Chapter 4

# **Rural residents' pattern of medical service usage and their desire for health promotion services**



# 4

## Rural residents' pattern of medical service usage and their desire for health promotion services <<

### Section 1. Summary of the survey

The purpose of this survey is to identify rural residents' pattern of medical service usage and their desire for health promotion services in order to come up with measures to systematically mobilize resources in the regional communities for rural residents' promotion of health.

This survey was conducted on 1,000 adult men and women who are aged 20 or over and live in semi-urban cities (cities where urban and rural areas coexist) and rural areas for 7 days from April 2 to April 9, 2012 (except Sunday). It was a telephone survey conducted by a skilled telephone survey team from the Korea Institute for Health and Social Affairs.

For this survey, we selected a sample from semi-urban cities<sup>8)</sup> and 12 cities(Shi) and provinces(Doe), which include farming and fishing areas (Busan, Daegu, Incheon, Ulsan, Gyeonggi, Gangwon,

---

8) There are 51 semi-urban cities(Si) as of 2012: [Gangwon] Wonju, Chuncheon, Gangneung, Samcheok, [Gyeonggi] Yongin, Namyangju, Hwaseong, Pyeongtaek, Paju, Gwangju, Kimpo, Icheon, Yangju, Anseong, Pocheon, Kimhae, [Gyeongnam] Jinju, Yangsan, Geoje, Tongyoung, Sacheon, Milyang, [Gyeongbuk] Pohang, Gumi, Gyeongju, Gyeongsan, Andong, Kimcheon, Youngju, Sangju, Youngcheon, Mungyeong, Yeosu, Suncheon, Gwangyang, Naju, [Jeonbuk] Iksan, Gunsan, Jeongeub, Kimje, Namwon, [Chungnam] Cheonan, Asan, Seosan, Dangjin, Nonsani, Gongju, Boryeong, Gyeryong, [Chungbuk] Chungju, Jecheon

Chungbuk, Chungnam, Jeonbuk, Jeonnam, Gyeongbuk, and Gyeongnam) by applying Stratified Proportional Sampling based on proportionate quota sampling by region, gender, and age. For semi-urban cities, urban and rural areas were classified based on the respondents' addresses and the survey results' sampling error was  $95\% \pm 3.1\%$  points.

The survey was divided into two large sections - medical service usage and health promotion. The questionnaire about medical service usage included questions on health conditions of the respondent, their usage and satisfaction level of medical services and conditions of emergency treatment and the questionnaire about health promotion included questions on the respondent's day-to-day health management and their desire for health promotion services.

## **Section 2. Survey results**

### **1. General characteristics of respondents**

Of a total of 1,000 respondents, 61.9% were living in semi-urban cities and 38.1% were living in the rural areas. When the urban and rural parts of the semi-urban cities were separated, 37.3% were residents of the urban part and 26.4% were residents of the rural part of the semi-urban cities and 38.1% were living in the rural areas.

〈Table 4-1〉 Ratio of respondents by region

(Unit: No. of persons, %)

Urban part of semi-urban cities	Rural part of semi-urban cities	Rural areas	Total
373 (37.30)	246 (26.40)	381 (38.10)	100 (100.00)
Urban areas (Semi-urban cities)	Rural areas		Total
373 (37.30)	627 (62.70)		100 (100.00)

Women and men accounted for 51.10% and 48.90% of the total respondents, respectively. Though there were more women than men, the urban part of the semi-urban cities had a higher male population and the rural part had a slightly higher female population. When it comes to age, the urban part had a larger younger population whereas the rural part was mostly occupied by people aged 60 or over.

As for the compositions of the households, there were many households where parents and unmarried children live together in the urban part of the semi-urban cities while in the rural part, a large proportion of the households were those with a single member or a married couple only.

In urban areas, the households earning less than KRW1 million on monthly average accounted for 14.16%, which is lower than the 40.05% in the rural area. On the other hand, 41.14% of the households in the urban area earn KRW3 million or more on monthly average while only 16.45% of the rural households earn as much. This demonstrates that urban residents' monthly

average income is higher than that of rural residents.

In addition, the subjective health conditions were also worse among the rural residents than their urban counterparts. This is presumed to be because the average age of the rural population is older than the urban population.

〈Table 4-2〉 General characteristics of the respondents

(Unit: Number of persons, %)

Classification	Urban part of semi-urban cities (N=373)	Rural part of semi-urban cities (N=246)	Rural area (N=381)	Total (N=1,000)
Gender				
Male	193 (51.74)	123 (50.00)	173 (45.41)	489 (48.90)
Female	180 (48.26)	123 (50.00)	208 (54.59)	511 (51.10)
Age				
20~39	166 (44.50)	103 (41.87)	77 (20.21)	346 (34.60)
40~49	87 (23.32)	54 (21.95)	70 (18.37)	211 (21.10)
50~59	62 (19.62)	44 (17.89)	72 (18.90)	78 (17.80)
60~69	29 ( 7.77)	24 ( 9.76)	71 (18.64)	124 (12.40)
70 and older	29 ( 7.77)	21 ( 8.54)	91 (23.88)	141 (14.10)
Composition of households				
Single member	29 ( 7.77)	22 (8.94)	58 (15.22)	109 (10.90)
Married couples	52 (13.94)	47 (19.11)	127 (33.33)	226 (22.60)
With married children	7 ( 1.88)	1 ( 0.41)	9 ( 2.36)	17 ( 1.70)
With unmarried children	167 (44.77)	103 (41.87)	122 (32.02)	392 (39.20)
With grandchildren	1 ( 0.27)	2 ( 0.81)	3 ( 0.79)	6 ( 0.60)
With parents	97 (26.01)	63 (25.61)	51 (13.39)	211 (21.10)
Others	20 ( 5.36)	8 ( 3.25)	11 ( 2.89)	39 ( 3.90)
Monthly average household income				
Less than KRW500,000	14 ( 3.81)	19 ( 7.92)	63 (16.71)	96 ( 9.76)



Classification	Urban part of semi-urban cities (N=373)	Rural part of semi-urban cities (N=246)	Rural area (N=381)	Total (N=1,000)
KRW 500,000~ KRW1 million	38 (10.35)	39 (16.25)	88 (23.34)	165 (16.77)
KRW1~1.5million	38 (10.35)	18 ( 7.50)	48 (12.73)	104 (10.57)
KRW1.5~2 million	39 (10.63)	36 (15.00)	34 ( 9.02)	109 (11.08)
KRW2~2.5 million	51 (13.90)	30 (12.50)	52 (13.79)	133 (13.52)
KRW2.5~3 million	36 ( 9.81)	25 (10.42)	30 ( 7.96)	91 ( 9.25)
KRW3~3.5 million	52 (14.17)	18 ( 7.50)	28 ( 7.43)	98 ( 9.96)
KRW3.5~4 million	25 ( 6.81)	16 ( 6.67)	10 ( 2.65)	51 ( 5.18)
KRW4 million or more	74 (20.16)	39 (16.25)	24 ( 6.37)	137 (13.92)
Subjective health conditions				
Very healthy	39 (10.46)	17 ( 6.91)	24 ( 6.30)	80 ( 8.00)
Fairly healthy	144 (38.61)	104 (42.28)	124 (32.55)	372 (37.20)
Average	140 (37.52)	79 (32.11)	106 (27.82)	325 (32.50)
Moderately unhealthy	38 (10.19)	38 (15.45)	92 (24.15)	168 (16.80)
Very unhealthy	12 ( 3.22)	8 ( 3.25)	35 ( 9.19)	55 ( 5.50)

## 2. Status of medical service usage

### A. Status of usage of general medical services

Of the 1,000 respondents, 356 (35.60%) are receiving medical treatment or taking medicine, and by region, it is broken down to 29.76% (urban part of semi-urban cities), 30.08% (rural part of semi-urban cities) and 44.88% (rural areas), which shows that there are higher disease prevalence rates in the rural areas than in the urban areas. The rural areas also had more patients with diabetes, arthritis, and farming-related diseases than the urban areas. However, there were no regional differences in

terms of hypertension.

〈Table 4-3〉 Current health conditions of the respondents

Classification	Urban part of semi-urban cities (N=373)	Rural part of semi-urban cities (N=246)	Rural area (N=381)	Total (N=1,000)
Whether or not the respondent has been diagnosed of a disease by the doctor (Yes/No)				
Yes	111 (29.76)	74 (30.08)	171 (44.88)	356 (35.60)
No	262 (70.24)	172 (69.92)	210 (55.12)	644 (64.40)
Type of diseases (multiple choices are allowed)				
Hypertension	62 (55.86)	35 (47.30)	88 (51.46)	185 (51.97)
Diabetes	17 (15.32)	18 (24.32)	42 (24.56)	77 (21.63)
Arthritis	20 (18.02)	17 (22.97)	50 (29.24)	87 (24.44)
Cardiovascular disease	14 (12.61)	9 (12.16)	27 (15.79)	50 (14.04)
Farming-related diseases	5 ( 4.50)	9 (12.16)	18 (10.53)	32 ( 8.99)
Cerebrovascular disease	4 ( 3.60)	3 ( 4.05)	11 ( 6.43)	18 ( 5.06)
Others	32 (28.83)	30 (40.54)	51 (29.82)	113 (31.74)

In order to understand the medical service usage of the 356 respondents who are under treatment or medication, analyses have been made on the location of their medical institutions, their transportation means and the amount of time they spend for their treatments. The results are as follows:

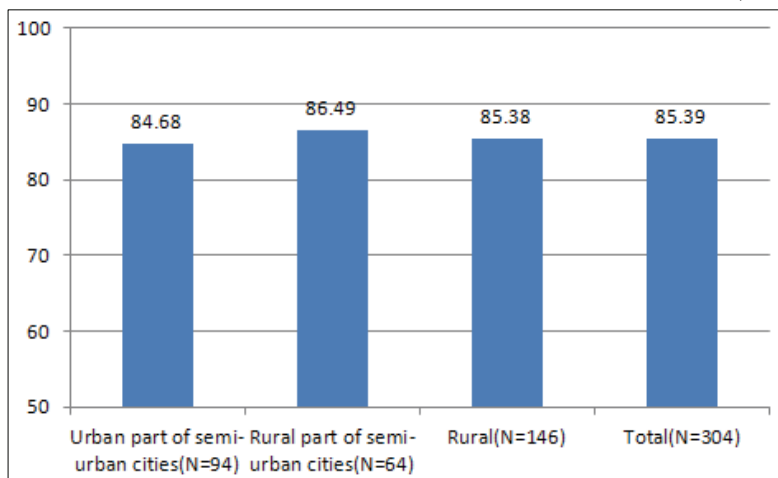
First, 85.39% of the 356 respondents use medical institutions located in the city or province they live in. However, when more specifically looked at by the levels of city, county, and

district, only 68.54% of the 356 respondents use the institution in their own cities, counties or districts.

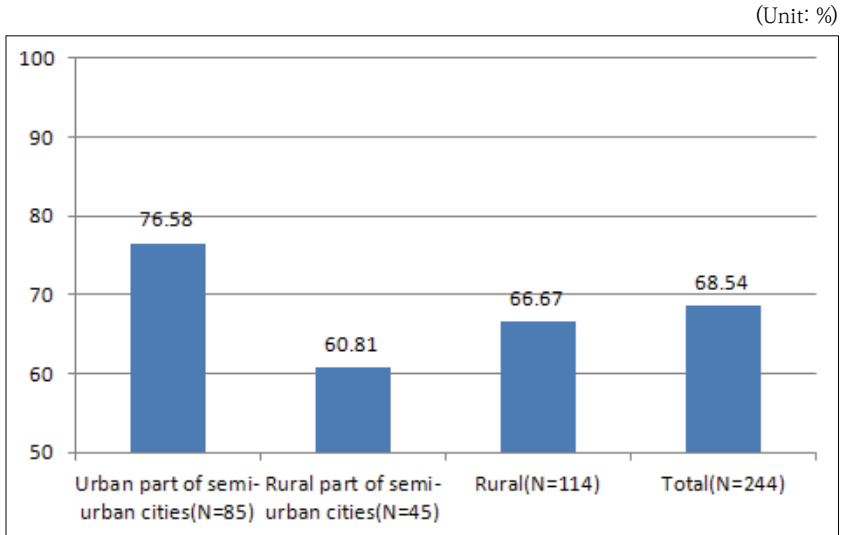
When broken down by the type of areas, 76.58% of the residents in the urban part of semi-urban cities, 60.81% of those in the rural part of semi-urban cities, and 66.67% of those in the rural areas use medical institutions in their own cities, counties, and provinces. This shows that the percentage of people using local institutions is lower in the rural areas than in the urban areas. Especially in the rural part of the semi-urban cities where the characteristics of cities and rural communities coexist, the percentage of people using institutions outside their local areas is higher than in other rural areas.

[Picture 4-1] Usage of medical institutions in local areas: city/province

(Unit: %)



[Picture 4-2] Usage of medical institutions in local areas: city/province: city, county, district



Second, when asked what transportation means they use to get to the medical institution, a majority, or 38.74% said "on foot" in the urban part of the semi-urban cities, while in the rural part of the semi-urban cities and in the rural areas, more people said "bus" or "car" than "on foot," which demonstrates relatively lower accessibility to medical institutions for rural residents than urban residents.

<Table 4-4> Transportation means

(Unit: %)

Transportation means	Urban part of semi-urban cities (N=111)	Rural part of semi-urban cities (N=74)	Rural areas (N=171)	Total (N=356)
Total	100.00	100.00	100.00	100.00
On foot	38.74	24.32	23.98	28.65
Bus	30.63	37.84	39.18	36.24
Car	22.52	32.43	28.65	27.53
Train	1.80	2.70	2.34	2.25
Taxi	1.80	0.00	2.92	1.97
Others	4.50	2.70	2.92	3.37

Third, when asked how long it takes for them to reach the medical institution, almost 50% (49.55%) of the 356 respondents living in the urban part of the semi-urban cities said "10 minutes or less" and only 18.02% said "1 hour or longer." In contrast, only 28.07% of the rural residents said "10 minutes or less" while 21.05% said "1 hour or longer." Given the fact that "bus" and "car" were mentioned more frequently than "on foot" among rural residents, it can be inferred that rural residents have lower accessibility to medical institutions than urban residents.

〈Table 4-5〉 Length of time taken to reach medical institutions

(Unit: %)

Time	Urban part of semi-urban cities (N=111)	Rural part of semi-urban cities (N=74)	Rural areas (N=171)	Total (N=356)
Total	100.00	100.00	100.00	100.00
10 min. or less	49.55	25.68	28.07	34.27
20 min. or less	20.72	24.32	19.30	20.79
30 min. or less	7.21	14.86	20.47	15.17
1 hour or less	4.50	16.22	11.11	10.11
1 hour or more	18.02	18.92	21.05	19.66

When asked to mention the biggest hurdle to their medical treatment, 43.70% of the respondents said "high cost" and 25.90% and 18.80% said "no caretaker" and "far distance to the hospital," respectively. This is a phenomenon witnessed in both urban and rural areas, which implies that the issues of medical cost and caretaker pose the biggest obstacle to treatment of diseases regardless of where they live.

(Table 4-6) Obstacles to treatment of diseases

(Unit: Number of persons, %)

Obstacles	Urban part of semi-urban cities	Rural area of semi-urban area	Rural area	Total
Total	373 (100.00)	246 (100.00)	381 (100.00)	1,000 (100.00)
High medical cost	173 (46.38)	113 (45.93)	151 (39.63)	437 (43.70)
Low quality of medical service	48 (12.87)	17 (6.91)	35 (9.19)	100 (10.00)
Far distance	46 (12.33)	52 (21.14)	90 (23.62)	188 (18.80)
No caretaker for the patient	99 (26.54)	58 (23.58)	102 (26.77)	259 (25.90)
Others	7 (1.88)	6 (2.44)	3 (0.79)	16 (1.60)

This survey showed that 39.53% of the respondents are satisfied with the service and quality of treatment provided by their local health centers or hospitals but 13.01% of them are not satisfied. Residents in the urban part of the semi-urban cities and residents in the rural areas showed similar percentages of satisfaction with their local medical institutions but the level of dissatisfaction was higher in the rural areas (3.16%) than in the urban areas (1.88%).

〈Table 4-7〉 Subjective perception about service and quality of treatment of local health centers or medical institutions

(Unit: Number of persons, %)

Satisfaction level	Urban part of semi-urban cities	Rural part of semi-urban cities	Rural areas	Total
Total	373 (100.00)	246 (100.00)	381 (100.00)	1,000 (100.00)
Very satisfied	15 ( 4.02)	10 ( 4.07)	21 ( 5.53)	46 ( 4.60)
Satisfied	130 ( 34.85)	83 ( 33.74)	136 ( 35.79)	349 ( 34.93)
Neutral	180 ( 48.26)	115 ( 46.75)	179 ( 47.11)	474 ( 47.45)
Dissatisfied	41 ( 10.99)	33 ( 13.41)	32 ( 8.42)	106 ( 10.61)
Very dissatisfied	7 ( 1.88)	5 ( 2.03)	12 ( 3.16)	24 ( 2.40)

## B. Status of emergency medical service usage

Only 234 (23.40%) of the total 1,000 respondents have experienced emergency situations. When asked about types of emergency situations they encountered, 71.79% said "emergency caused by diseases" and such phenomenon was witnessed both in the urban and rural areas.



(Table 4-8) Whether the respondent ever experienced emergency and type of emergency experienced

(Unit: Number of persons, %)

Type of emergency	Urban part of semi-urban cities (N=373)	Rural part of semi-urban cities (N=246)	Rural areas (N=381)	Total (N=1,000)
Experience of emergency	84 (22.52)	51 (20.73)	99 (25.98)	234 (23.40)
Type of emergency				
Accidents involving farm machinery	0 ( 0.00)	2 ( 3.92)	0 ( 0.00)	2 ( 0.85)
Emergency caused by diseases	62 (76.81)	26 (50.98)	80 (80.81)	168 (71.79)
Fall	3 ( 3.57)	5 ( 9.80)	4 ( 4.04)	12 ( 5.13)
Others	19 (22.62)	18 (35.29)	15 (15.15)	52 (22.22)

It turned out that most people call 119 first when there is an emergency. Of the 234 respondents who experienced emergency situations, 61.54% called 119 first, followed by family (29.49), self-handling (4.70%), and others such as neighbors or friends (4.27%).

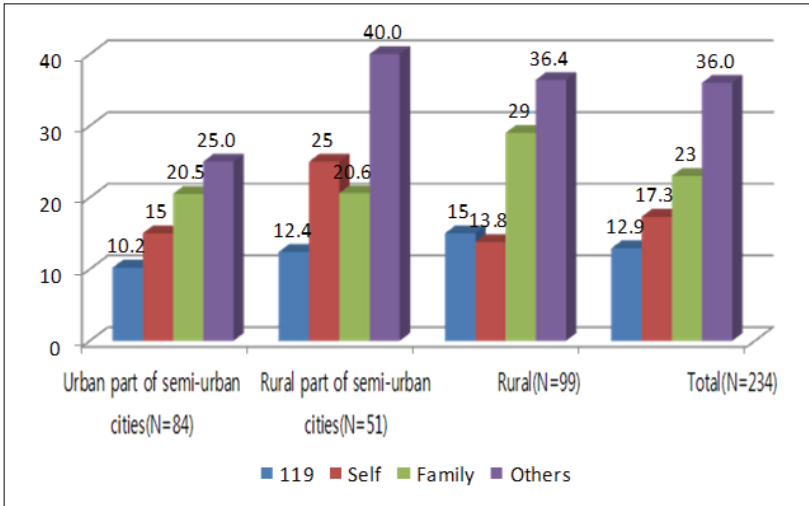
(Table 4-9) First contact in emergency and time interval

(Unit: %, Minute)

	Urban part of semi-urban cities (N=84)		Rural part of semi-urban cities (N=51)		Rural (N=99)		Total (N=234)	
	Contact	Time interval <sup>1)</sup>	Contact	Time interval <sup>1)</sup>	Contact	Time interval <sup>1)</sup>	Contact	Time interval <sup>1)</sup>
119	60.71	10.2	49.02	12.4	68.69	15.0	61.54	12.9
Self	4.76	15.0	5.88	25.0	4.04	13.8	4.70	17.3
Family	33.33	20.5	41.18	20.6	20.20	29.0	29.49	23.0
Others	1.19	25.0	3.92	40.0	7.07	36.4	4.27	36.0

Note: 1) 119: time taken until the ambulance arrived, other contacts than 119: time taken to reach the emergency medical institution (hospital, etc.)

[Picture 4-3] Ambulance emergency response time & travel time to the medical institution<sup>1)</sup>



Note: 1) 119: time taken until the ambulance arrived, other contacts than 119: time taken to reach the emergency medical institution(hospital, etc.)

When contacting 119, the ambulance response time was 12 minutes and 9 seconds on average and when the patients themselves go to the emergency medical institution, it took 17 minutes and 3 seconds. When they got help from family or others, it took 23 minutes and 36 minutes, respectively. Given the fact that in general, the ambulance response time is 10 minutes or less, there needs to be more efficient alternative ways of travel for those who do not contact 119 but handle the situation themselves or get help from others.

As for travel time by region, the ambulance response time and the time taken to reach the emergency room were much

longer in the rural areas than in the urban areas, which indicates the need for measures to improve emergency medical service for urban residents.

<Table 4-10> Obstacles to handling emergency situations

(Unit: %)

Obstacles	Urban part of semi-urban cities (N=84)	Rural part of semi-urban cities (N=51)	Rural area (N=99)	Total (N=234)
Total	100.00	100.00	100.00	100.00
No first aid-capable persons	39.29	31.37	39.39	37.61
Hard to find transportation means	5.95	9.80	8.08	7.69
The emergency room-equipped hospital is too far	17.86	33.33	27.27	25.21
It takes a long time for the 119 ambulance to arrive	7.14	9.80	9.09	8.55
No particular obstacles	25.00	15.69	14.14	18.38
Others	4.76	0.00	2.02	2.56

According to the survey, the biggest obstacle to handling an emergency situation is that there is no one capable of first aid (31.37 ~ 39.39%) but rural residents found other issues such as "The emergency room equipped hospital is too far," "It takes a long time for the 119 ambulance to arrive," and "hard to find transportation means" more serious than urban residents. This results shows that rural residents have lower accessibility to emergency medical services than urban residents.

### 3. Desire for health promotion services

#### A. Self health management conditions

Of the total 1,000 respondents, 58.90% said that they were making their own efforts to manage their health while 41.10% said they were doing nothing particular. It appeared that urban residents are slightly more keen on taking care of their health.

〈Table 4-11〉 Whether the respondent makes their own effort to manage their health

(Unit: Number of persons, %)

	Urban part of semi-urban cities	Rural part of semi-urban cities	Rural areas	Total
Total	373 (100.00)	246 (100.00)	381 (100.00)	1,000 (100.00)
Yes	221 ( 59.25)	148 ( 60.16)	220 ( 57.74)	589 ( 58.90)
No	152 ( 40.75)	98 ( 39.84)	161 ( 42.26)	411 ( 41.10)

The main reason why they do not take care of their health is that they do not have time to make extra effort (46.23%), but 30.66% of the respondents also said, "because I do not feel the need and do not know how." Since such trend is more widespread in the rural areas, there needs to be a more structured system to better promote health in rural communities.

〈Table 4-12〉 Reasons for not taking care of health

(Unit: %)

Reasons	Urban part of semi-urban cities (N=152)	Rural part of semi-urban cities (N=98)	Rural areas (N=161)	Total (N=411)
Total	100.00	100.00	100.00	100.00
Do not have time	54.61	47.96	37.27	46.23
Cannot afford	10.53	15.31	13.66	12.90
Do not feel the need	11.84	17.35	18.01	15.57
Do not know how	6.58	5.10	8.70	7.06
No good facilities or space around	5.92	7.14	10.56	8.03
Others <sup>1)</sup>	10.53	7.14	11.80	10.22

Note: 1) Most answers in the category of "others" had to do with "because I am already ill."

Most of those who do something to take care of their health were found to do "walking," "exercise (sports)," and "hiking." The survey shows rural residents prefer "walking," and "dietary adjustment" while urban residents prefer "exercise (sports)" and "hiking." As described in 〈Table 4-13〉, their activities were mostly limited to "walking," "exercise," and "hiking," which suggests the need for more diverse health management services.

〈Table 4-13〉 Types of activities the respondent do for health (multiple answers are allowed)

(Unit: %)

Types of activities	Urban part of semi-urban cities (N=221)	Rural part of semi-urban cities (N=148)	Rural areas (N=220)	Total (N=589)
Total	100.00	100.00	100.00	100.00
Medical check-up	3.62	2.70	4.55	3.74
Walking	42.99	41.22	56.82	47.74
Hiking	16.29	15.54	10.45	13.92
Exercise	52.94	46.62	31.82	43.46
Taking Dietary supplements	7.24	7.43	7.27	7.30
Dietary adjustment	9.05	10.81	15.45	11.88
Abstaining from drinking	2.26	0.68	3.18	2.21
Abstaining from smoking	1.36	0.68	2.73	1.70
Others	3.62	4.73	9.55	6.11

Of the 589 respondents who said that they were taking care of their health, 62.82% said they were doing enough but 37.18% said that what they were doing was not enough.

When asked what activities they would like to do additionally, they mentioned "exercise," "obesity management/nutrition management including dietary adjustment," and "chronic diseases management." What was notable is that rural residents had stronger desire than urban residents for "obesity/nutrition management," "chronic diseases management," and "mental and dental health management."

(Table 4-14) Whether the respondent thinks what they are currently doing is enough and if not, what additional programs the respondent is interested in

(Unit: Number of persons (%))

	Urban part of semi-urban cities (N=221)	Rural part of semi-urban cities (N=148)	Rural areas (N=220)	Total (N=589)
Total	221 (100.00)	148 (100.00)	220 (100.00)	589 (100.00)
Enough	143 ( 64.71)	95 ( 64.19)	132 ( 60.00)	370 ( 62.82)
Not enough	78 ( 35.29)	53 ( 35.81)	88 ( 40.00)	219 ( 37.18)
Interesting programs to those who responded "not enough" (multiple answers are allowed)				
Total	100.00	100.00	100.00	100.00
Smoking cessation	2.56	0.00	1.14	1.37
Sobriety program	0.00	0.00	1.14	0.46
Exercise	58.97	50.94	50.00	53.42
Obesity/nutrition management	15.38	9.43	20.45	15.98
Chronic diseases management	8.97	11.32	10.23	10.05
Mental health management	1.28	1.89	4.55	2.74
Dental health	2.56	1.89	4.55	3.20
Prevention of accident/farming-related diseases	0.00	3.77	1.14	1.37
Medical check-up	3.85	9.43	1.14	4.11
Others	11.54	15.09	17.05	14.61

## B. Status of health management services usage

The survey showed that only 11.70% of the 1,000 respondents have ever used health promotion services provided by health centers (health center branches and health clinics), the

National Health Insurance Service (NHIS), the Agricultural Technology Center, and social welfare or religious organizations. This is an indication that only a small percentage has experience of using health management services provided by the public or private sectors. (Please refer to Table 4-15).

When the survey asked the respondents who had never used services provided by public and private institutions what kinds of services they would like to have if there is a chance to receive health promotion services, 41.00% of the respondents mentioned "exercise" and other answers included "obesity/nutrition management," "chronic disease management," "mental health," "dental health," and "smoking cessation." There was a slight difference between the demands of urban and rural residents. Rural residents were more interested in "chronic diseases management" while urban residents were more interested in "smoking cessation," "obesity/nutrition management," and "dental health." (Please refer to Table 4-16)

〈Table 4-15〉 Whether the respondent has ever used services provided by public and private institutions<sup>1)</sup>

(Unit: Number of persons, %)

	Urban area of semi-urban cities (N=373)	Rural area of semi-urban cities (N=246)	Rural areas (N=381)	Total (N=1,000)
Total	373 (100.00)	246 (100.00)	381 (100.00)	1,000 (100.00)
Yes	29 ( 7.77)	16 ( 6.50)	72 ( 18.90)	117 ( 11.70)
No	344 ( 92.23)	230 ( 93.50)	309 ( 81.10)	883 ( 88.30)

Note: 1) Health centers (Health center branches, health clinics), the NHIS, Agricultural Technology Center, social welfare and religious organizations



〈Table 4-16〉 Interested health promotion services

(Unit: %)

	Urban area of semi-urban cities (N=334)	Rural area of semi-urban cities (N=230)	Rural areas (N=309)	Total (N=883)
Total	100.00	100.00	100.00	100.00
Smoking cessation	10.47	10.43	6.80	9.17
Sobriety	0.87	3.04	1.29	1.59
Exercise	45.35	33.04	42.07	41.00
Obesity/nutrient management	19.19	18.26	15.53	17.67
Chronic diseases management	11.34	21.74	20.71	17.33
Mental health	4.65	4.35	5.83	4.98
Dental health	6.10	6.09	4.53	5.55
Prevention of accident/farming-related diseases	0.87	1.30	1.29	1.13
Others	0.29	0.00	0.32	0.23
No desire for such services	0.87	1.74	1.62	1.36

When the survey asked those who were using services provided by public and private institutions the kinds of health management services they received, they mentioned "exercise," "chronic diseases management," "smoking cessation," "obesity/nutrition management" and so on.

〈Table 4-17〉 Types of services provided by public and private institutions

(Unit: %)

	Urban part of semi-urban cities (N=29)	Rural part of semi-urban cities (N=16)	Rural areas (N=72)	Total (N=117)
Total	100.00	100.00	100.00	100.00
Smoking cessation	13.79	12.50	11.11	11.97
Sobriety	6.90	6.25	2.78	4.27
Exercise	27.59	12.50	26.39	24.79
Obesity/nutrition management	20.69	12.50	8.33	11.97
Chronic diseases management	27.59	43.75	43.06	39.32
Mental health	3.45	-	5.56	4.27
Dental health	-	-	-	-
Prevention of accident/farming-related diseases	-	-	-	-
Others	-	12.50	2.78	3.42

Of the 117 respondents who were currently using services, 52.14% said that the health management services provided by public and private institutions were enough for their health management while 47.86% said they were not enough.

When the latter group of respondents were asked what additional services they would like to receive, they mentioned "exercise," "chronic diseases management," "obesity/nutrition management," "mental health," and "dental health." The desire for mental health services was stronger in the rural areas than in the urban areas.

Rural residents' pattern of medical service usage and their desire for health promotion services 67

〈Table 4-18〉 (For current service users)\_Whether the services are enough/If not, what services they would like to receive

(Unit: %)

	Urban part of semi-urban cities (N=29)	Rural part of semi-urban cities (N=16)	Rural areas (N=72)	Total (N=117)
Total	100.00	100.00	100.00	100.00
Enough	48.28	50.00	54.17	52.14
Not enough	51.72	50.00	45.83	47.86
If not enough, additional services they are interested in				
Total	100.00	100.00	100.00	100.00
Smoking cessation	0.00	0.00	2.78	1.71
Sobriety	-	-	-	-
Exercise	10.34	12.50	29.17	22.22
Obesity/Nutrition management	13.79	18.75	5.56	9.40
Chronic diseases management	27.59	25.00	11.11	17.09
Mental health	6.90	0.00	11.11	8.55
Dental health	13.79	6.25	5.56	7.69
Prevention of accident/farming-related diseases	0.00	0.00	1.39	0.85
Others	10.34	6.25	4.17	5.98
No desire for such services	17.24	31..25	29.17	26.50





## Chapter 5

# Measures to enhance accessibility to health care services for rural residents



---

# 5

## Measures to enhance accessibility to health care services for rural residents <<

It is a common phenomenon that during an economic crisis, the number of jobs and income levels decline and as a result, people in the middle income bracket tend to slide down to the lower income bracket and those in the low income bracket into poverty, which usually leads to higher demand for health care and welfare among the vulnerable population.

The vulnerable population is hit the hardest by the economic crisis because it is very hard for them to cope with socio-economic changes. Especially in the rural areas, where vulnerable people are concentrated such as senior citizens who live alone, families composed of grandparents and their grandchildren, and multicultural families, the living conditions could seriously deteriorate, and it also poses threat to their health.

The ageing of the rural population is expected to continue for some time and there is still no strong reason to believe that the poor economic conditions of the rural residents will improve any time soon. The prevalence rates of chronic diseases is higher in the rural areas than in the urban areas and more rural residents suffered impairments than urban residents due to farm labor. The rural areas also show poorer conditions than the urban areas in terms of other indicators such as accidents,

addiction, and suicide. As a result, the health care cost that has to be borne by rural residents continues to increase.

In addition, the survey on rural residents' usage of general medical services or emergency medical services shows that rural residents have a stronger desire for medical services than urban residents and their demand for various health promotion services is not negligible, either.

In recent years, however, there have been no policies or projects to strengthen the health care system to properly respond to increasing health care issues in rural communities. It is hard to expect to see many private medical institutions to come to the rural areas because rural communities have less value as a medical market than cities due to small population and relatively poor economic conditions.

Therefore, the public sector represented by health centers will need to take the lead in the effort to enhance accessibility to health care services in rural communities even if there will be limitations in what can be achieved. For such effort, this research deliberated on possible policy measures.

## **1. Setting standards for health care services**

One possible measure would be to set standards to make sure that a certain level of health care services are guaranteed for rural residents. To that end, the scope of improvement that can



be made should be considered by taking into account rural residents' demand and their reality.

The government amended the Act on Improvement of Living Conditions of Farmers and Fishers and Development of Rural Communities (Act on Improvement of Quality of Life) in July, 2010 and introduced the "Service Standards System for Rural Communities" which has been in effect since January, 2011.

"The Service Standards System for Rural Communities" refer to the items of services and the target figures for each item designated by the Presidential Decree among the public services needed for everyday lives of farmers and fishers. The specific items and target figures - in 8 sectors and 31 items - are announced by the Minister of Food, Agriculture, Forestry and Fisheries after consultation with heads of other central administrative offices.<sup>9)</sup>

The Act on Improvement of Quality of Life sets out the standards for medical services in the rural areas that should be reflected in establishing "Basic Plan for Improvement of Quality of Life" and the Act also stipulates that the progress rate against the Service Standards should also be assessed when assessing the results of the Basic Plan implementation. Therefore, the policy initiative to achieve the Service Standard target in rural communities is based on the frame-

---

9) Announcement No. 2011-5 of the Ministry of Food, Agriculture, Forestry and Fisheries; Korea Rural Economic Institute, 2012 Recited

work for improving quality of life.<sup>10)</sup>

Among the Service Standards for rural communities, health care-related items are covered in two different sections - health care and emergency - as described in <Table 1> below.

<Table 5-1> Emergency service related items and details

	Items	Details
Health care	A. Treatment	Doctors in internal medicine, oriental medicine and physical therapy are available in local cities and counties
	B. Round visit	Each village is visited by professional medical staff at least once a month
	C. Purchase of medical supplies	Over-the-counter drugs are available within 20 minutes' driving distance
Emergency	A. Emergency service	When there is an emergency, an ambulance with basic emergency treatment equipment arrives within 20 minutes
	B. Emergency service for remote rural areas	Patient transfer systems are established in remote rural areas using helicopters and ships

Data: Gwang-seon Kim and others, Inspection and assessment of implementation of the 2012 service standards for rural communities. The Korea Rural Economic Institute.

These Service Standards for rural communities can have policy implications in various dimensions such as the central government, local governments, and residents of rural communities. Especially for rural residents, this could mean that they are able to demand the central and local government the items and levels of public services they deserve as citizens based on the

10) The target year for the current service standards is 2014 when the second Basic Plan for Improvement of Quality of Life will be completed.

Service Standards, which are the national minimum standards specifically set by the government.

In order to realize such policy purpose, the government assesses the implementation of the Service Standards on a regular and constant basis and proposes measures for improvement. However, as shown in the table above, the scope of the Service Standards items are very narrow and the Standards themselves are not rigorous enough.

It must have been hard to define the level of the Standards because there are no small regional differences among different rural communities regarding health care services. Though such limitations are understandable, it is undeniable that there is room for improvement in terms of the appropriateness of the Standards.

In order to enhance the quality of health care services in rural communities, the current level should be assessed accurately and to that end, it is very important to set clear assessment indicators. Therefore, there is a need for Health Care Service Standards, which would cover more diverse areas and better reflect the realities of the rural communities to enable more effective assessment of Service Standards.

## **2. Building linkage between health care services**

Service linkage among different sectors are needed to ensure more effective and efficient utilization of scarce health care re-

sources in the rural areas. The service linkage between health and welfare sectors needs to be considered as well as the linkage between public and private sectors.

As vulnerable populations such as the elderly and low-income people are concentrated in the rural areas, the targets for health care services and welfare services are identical. So, if community visit projects are implemented, one-stop services tailored to the residents' needs would be a better approach than providing health care and welfare services separately.

The government intends to rearrange the functions of health centers to place more weight on health promotion. As a result, the focus of health centers is likely to move toward the promotion of healthy lifestyle and prevention of diseases. This could mean that linkage with hospitals will become very important in health care services for rural communities. Rural residents should be able to regularly access key departments such as internal medicine, surgery, ob/gyn, and pediatrics and also departments such as ophthalmology and urology that deal with diseases prevalent among the elderly even if it would mean a longer cycle of rounds.

### **3. Participation of residents**

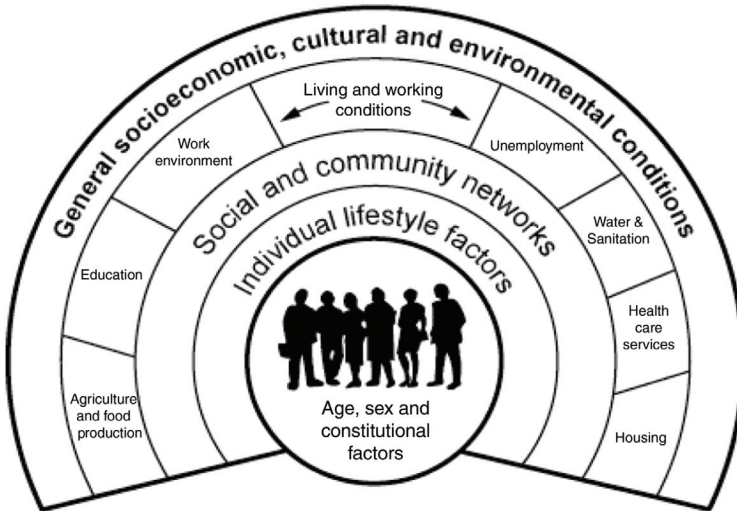
The health care issues in the rural areas are not showing any sign of quick improvement but the existing health care frame-

work - both the public and private sectors - is not responding to the issues properly. This implies that the local communities themselves need to step up to address the issues through internal mobilization of resources if needed. Active participation of local communities is desired especially in development of software for specific health care programs though the hardware will be provided by public and private medical institutions.

Community participation health care issues is not a new concept. Since the Geneva conference in 1978 titled "Development of Health Care and Community Participation: For New Wave of Health Care," the WHO has constantly stressed the importance of community participation in development of health care and medical treatment.

The individual lifestyle factors, social and community networks, living and working conditions, and general socio-economic, cultural, and environmental conditions are closely connected and local communities can play a role as a buffer against the direct impact that such socioeconomic environment could have on people's health.

[Picture 5-1] Factors that affect health



source: Dahlgren and Whitehead(1991)

However, though residents in the local communities have been organized and mobilized for health care or health promotion projects, they have never been granted the right to choose the health care services they would like to participate in (Jong-han Lim, 2000).

The WHO advised in its World Health Report (2000) that health care policies for rural communities should expand their focus from helping doctorless villages to linkage with the central hospital in each region and improvement of the quality of medical staff. The report also said that authorities need to look at both the issue of resources and budget and the issue of co-operation between residents and relevant departments at the

same time.

What is most important in the community participation strategy aimed at accessibility improvement of health care services is to define a community participation model. There can be a basic model that could help residents to take care of their own health. In other words, the existing community nurses can be utilized to identify residents' health management patterns and help them to better take care of their health.

Community nurses are capable of implementing health promotion initiatives effectively as they have more detailed information on residents' health than any other and are easy to be accessed by residents.

〈Table 5-2〉 History of the community nursing system

Time	Details
1976	· Launching of Korea Institute for Health Development
1977~1980	· Village Health Project
1980.10	· Long-term Plan for Health Care Administration: Established plan to deploy community nurses to areas with poor health care conditions
1980.12	· Act on Health Service for Rural Areas
1981.01	· Health clinics began to be established
1981.03	· Deployment and training of community nurses
1981.06	· Enforcement Decree of the Act on Health Service for Rural Areas
1981.08	· Health Clinic Management Committee
1981.09	· Enforcement Regulations for the Act on Health Service for Rural Areas
1981.10	· Supply of medical equipment and supplies to health clinics/local representatives became members of the Management Committee
1983.02	· Construction of new buildings for health clinics
1984.01	· Regulation on Health Clinic Management and Operation
1984	· One scooter and one projector deployed to each health clinic
1991.12	· Community nurses granted the position of special public officers (grade 6, 7)
2003.12. 29	· Act on Health and Welfare Promotion of Rural Residents
2011. 8	· A new position for health care work created in local government offices

Data: 2011 Economic Development Experience Moduling Project, Health Center Led Health Care Improvement Project for Rural Areas (p23), the Ministry of Health and Welfare, Korea Foundation for International Health Care, 2012 (p70). Recited

〈Table 5-3〉 Facilities and staff of health clinic

(Unit: Number of clinics, Number of persons)

Year	Health clinics	Community nurses
1981	259	259
1984	1,310	1,163
1985	1,640	1,533
1990	2,038	2,034



Year	Health clinics	Community nurses
1995	2,039	2,039
2000	1,906	1,839
2005	1,905	1,876
2010	1,906	1,877

Data: Korea Human Resource Development Institute for Health and Welfare, Primary health care by community nurses, 2011.

<Table 5-4> Medical treatment and health care tasks of community nurses

Medical treatment	Health care tasks
<ul style="list-style-type: none"> <li>① Examine patients to identify their conditions</li> <li>② Transfer of patients</li> <li>③ Treat common injury and give first aid to patients who need emergency treatment</li> <li>④ Apply aid to prevent deterioration of conditions</li> <li>⑤ Guide patients with chronic diseases for continuous care</li> <li>⑥ Help in normal childbirth and insert contraceptive devices for family planning</li> <li>⑦ Innoculation</li> <li>⑧ Inject drugs for above treatments</li> </ul>	<ul style="list-style-type: none"> <li>① Sanitation and nutrition improvement</li> <li>② Disease prevention</li> <li>③ Maternal and child health care including family planning</li> <li>④ Training on people responsible for health of residents</li> <li>⑤ Health care promotion</li> </ul>

So far, community nurses have focused on disease prevention and did not have good understanding of other areas. Therefore, specific work manual and programs need to be developed for more systematic health care for rural residents. In addition, there needs to be a system that can link the county-level medical organizations and neighboring private medical institutions.



## References

- Hye-jung Kang. Conference on Empowerment of Female Farmers and Support Measures, Korea Rural Economic Institute (2007). The city portal of the Ministry of Land, Transport and Infrastructure, <http://www.city.go.kr/jsp/cmsView/index.jsp>
- Tae-wan Kim and others. Establishment of the assessment system to ensure adequate implementation of the Second Basic Plan for Health and Welfare in the Rural Communities (2011). Information package for the Nation Agriculture Forum (2012).
- Su-jin Lee. Occupational Impairments and Diseases of Farmers, Report published by the Ministry of Food, Agriculture, Forestry and Fisheries (2012).
- Gyeong-hwan Choi. Measures to Improve Health Care Service System in Rural Communities, Korea Rural Economic Institute, 2008.
- Baek-ju Na. The Qualities and Conditions of Medical Services of Local Hospitals in Rural Areas. Report published by the Ministry of Food, Agriculture, Forestry and Fisheries (2012).
- Baek-ju Na. Research on Performance Assessment of the Medical Service Improvement Project for Farming and Fishing Communities(2010).
- The Ministry of Health and Welfare. 『2010 Health and Welfare Statistics Report』, 57th edition, 2012.
- Samsung Economic Research Institute. Increasingly Diverse Composition of Rural Population. SERI Economic Focus, 374th edition, 2012.
- Je-hyeon Suh, Su-jin Lee, Jeong-hun Ha, Deok-geun Kwon, Jeong-ho

- Kim, Jae-hyuk Lee, Baek-ju Na, Yun-hwa Kang. A Study on Emergency Medical Treatment Experience and Capabilities of Public Health Doctors in Island Areas. *Journal of Agricultural Medicine and Community Health*, 36(1), p 36-46, 2011.
- Hyeong-cheol Shin, Ji-young Kang, Ung-seob Park, Sang-a Kim. Research on Health Conditions and Status of Medical Service Usage of Women in Farming Communities. *Journal of Agricultural Medicine and Community Health*, 34th edition, 2009.
- Young-ho Oh and others. 『2011 Survey on Health Care Resources』, The Ministry of Health and Welfare, 2011.
- Mi-ae Lee, Research on ADL Determinant Factors of Korea's Elderly Population, Social Welfare Department of Hansei University, 2010.
- Jong-han Lim. Current Status and Prospects of Medical Cooperative Movement, *Welfare Trend*, 2000.
- Statistics Korea. Wensite of『Korea Statistical Information Service(kosis)』
- Statistics Korea. 『Social Survey Report』, each year.
- Gyeong-hwan Choi, Measures to Improve Health Care Service System in Rural Areas, 2008.
- Korea Rural Economic Institute. Impact Study on Rural Communities(Internal document), 2012.
- The Korea Institute for Health and Social Affairs. Korea Welfare Panel, each year.
- Seong-hyeok Hwang. Deepening Imbalance in Supply and Demand of Medical Services in Rural Areas and its Implications, Nonghyup Economic Research Institute, 2012.