

Healthy City Gangdong-gu

- Profile of Gangdong, a healthy living space -



Gangdong-gu Community Healthy Center

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□. Gangdong-gu: General Introduction

1. Historical background



Figure 1 . Prehistoric settlement (pit dwellings)



Figure 2 . Gangdong-gu in 1964, early 1970s, and early 1980s

Gangdong-gu has always been at the center of Korea's history. People began to settle in Gangdong-gu in the Neolithic Age and earthenware culture evolved in the area. Historic relics and sites of the Three Kingdoms, Goryeo, and Joseon periods are found in Gangdong-gu.

In the Kingdom of Baekje, Gangdong belonged to Hanam and Hanseong areas. Gangdong was reorganized as Gwangju-mok in 938 (the second year of the reign of King Seongjong of the Kingdom of Goryeo). The area was elevated to the status of Gwangju-bu in 1577 (the 10th year of the reign of King Seonjo of the Kingdom of Joseon). By the Gabor Reform (1895), the area was reorganized as Gwangju-gun.

On January 1, 1963, Seoul Metropolitan City was greatly expanded in accordance with "Law on Changes in Administrative Districts of Seoul Metropolitan City (Law Number 1172)." At the time, today's Gangdong-gu area was incorporated into Seongdong-gu, Seoul along with Gucheon-myeon, Jungdae-myeon, Eonju-myeon, and Daewang-myeon of Gwangju-gun, Gyeonggi-do. For the administration of the newly incorporated area, Cheonho and Songpa branch offices were created on the same day in accordance with Seoul Metropolitan City Municipal Ordinance Number 176 (promulgated on December 28, 1962). On July 1, 1973, Songpa Branch Office was closed and Yeongdong Branch Office was newly created in accordance with Seoul Metropolitan City Municipal Ordinance Number 780 (promulgated on June 26, 1973). Seoul Metropolitan City Municipal Ordinance Number 784, which was promulgated on the same day, established Jamsil-dong. Jamsil-dong was covered by Yeongdong Branch Office. On October 1, 1975, Presidential Decree Number 7816 (promulgated on September 23, 1975) separated Gangnam-gu from Seongdong-gu. Because of the continuous economic and population growth of Gangnam-gu, Gangdong-gu was separated from Gangnam-gu on October 1, 1979 by Presidential Decree Number 9630 (promulgated on September 26, 1979). Cheonho Branch Office was elevated to the status of Gangdong-gu Office. The office was in charge of 18 dongs.

Because of continued population growth in Gangdong-gu, Songpa-gu was separated from Gangdong-gu on January 1, 1988 by Presidential Decree Number 12367 (promulgated on December 31, 1978). On May 1, 1988, self-government of the districts of Seoul Metropolitan City began in accordance with Law Number 4004 (promulgated on April 6, 1988). As of 2007, Gangdong-gu office is in charge of 9 legal dongs, 21 administrative dongs, 588 tongs, and 4,946 bans.



Figure 3. Gangdong-gu today

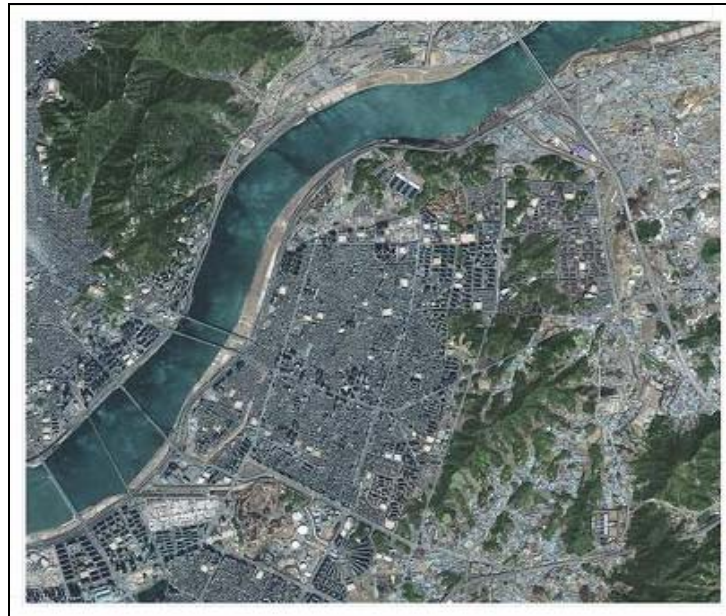





Figure 4. Aerial view of Gangdong-gu

2. Symbols

1) District symbol



Six red triangles () symbolize pit dwellings of the pre-historic era six thousand years ago. Red color expresses the enterprising and dynamic spirit of **Gangdong of the Rising Sun**. There are six triangles (▲) because the pit dwellings date back to 6,000 years ago. Two rivers expressed by two blue curves () refer to Bukhan and Namhan rivers and symbolize taking-off of **Clean Gangdong**, located on the riverbank of Han River. Green mound () expresses the thatched roof Korea's traditional houses and symbolizes peaceful and pastoral **Green Gangdong**. As a whole, the district symbol symbolizes **Gangdong of the Rising Sun, Clean Gangdong, and Green Gangdong**.

2) District flower – plum blossom



Plum blossoms that blossom in the coldest days of snowy winter symbolize the spirit and strength of Gangdong-gu.

3) District bird - skylark



Skylarks are birds that arise early in the morning and symbolize Gangdong of the rising sun.

4) District tree – Korean pine tree



Korean pine trees, which are evergreen trees, are native plants of Gangdong-gu and symbolize the greenness, clean air, and picturesque landscape of Gangdong-gu.

3.

Location and area

Gangdong-gu is located in the southeast of Seoul. Gangdong-gu is separated from Guri City, Gyeonggi-do to the north by Han River. To the west, Gangdong-gu is linked to Gwangjin-gu by Cheonho Bridge. To the east, Gangdong-gu borders Hanam City, Gyeonggi-do. To the south, Gangdong-gu borders Songpa-gu with which it shares Gangdong Bridge for access to the northern part of Seoul.



Figure 5. The location of Gangdong-gu in Seoul.

The area of Gangdong-gu is 24.58 km², which is about 4.1% of the total area of Seoul. Gangdong-gu consists of residential areas (12.48km², 50.77% of total district areas), green zones (11.48 km², 46.71%), and commercial areas (0.62 km², 2.52%).



Figure 6. Dongs of Gangdong-gu

Gangil-dong (2.80 km²) is the largest dong of Gangdon-gu whereas Amsa 4-dong (0.35 km²) is the smallest.

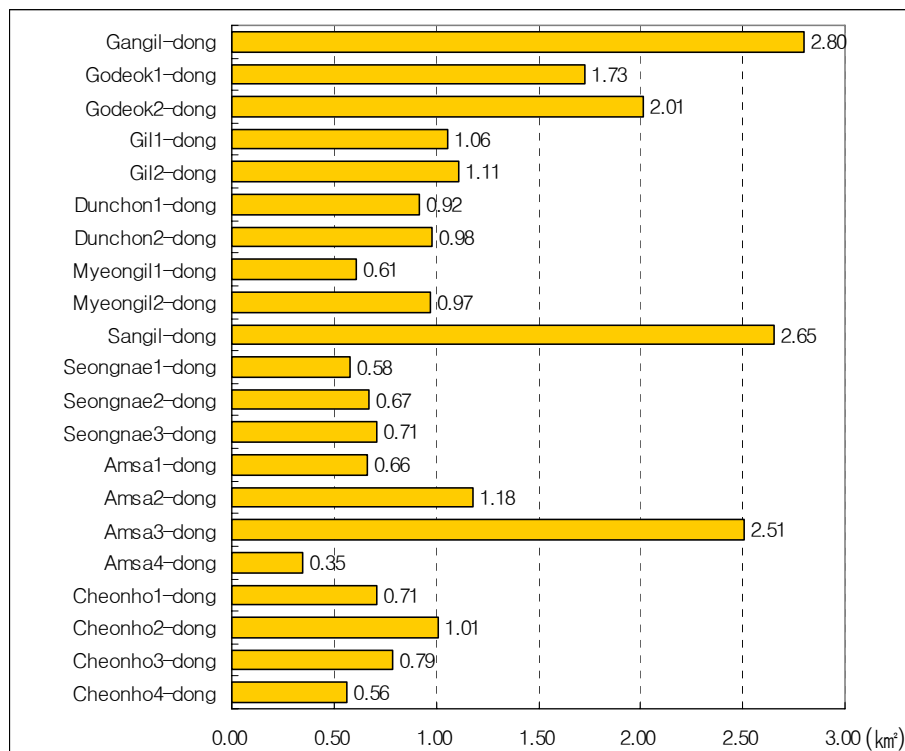


Figure 7. Dongs of Gangdong-gu by area

(Source: Seoul Metropolitan City website, 2007)

4. Population

1) Population survey data

The population of Gangdong-gu in 2007 was 468,998, which amounted to 4.5% of the population of Seoul. There were

235,127 (50%) male and 233,871 (50%) female residents. In the past 15 years, the population of Gangdong-gu has gradually increased.

People aged from 45 to 49 (46,522, 9.9%) formed that largest age group. People aged from 25 to 29 (44,576, 9.5%) formed the second largest age group. People aged from 15 to 19 (7.4%) and those aged from 45 to 49 (9.9%) were more numerous than corresponding age groups of Seoul (15-19, 6.4%; 45-49, 8.8%).

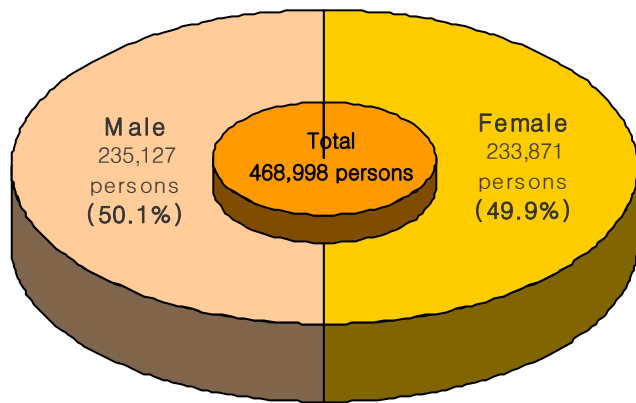


Figure 8. Distribution of population in Gangdong-gu
(Source: Seoul Metropolitan City website, 2007)

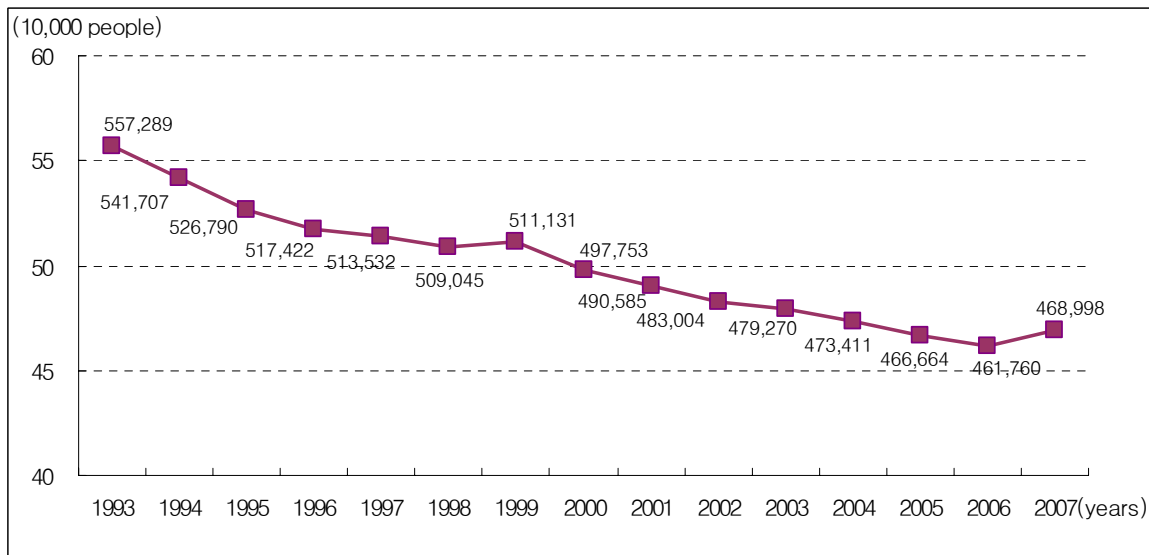


Figure 9. Population trend by year
(Source: Seoul Metropolitan City website, 2007)

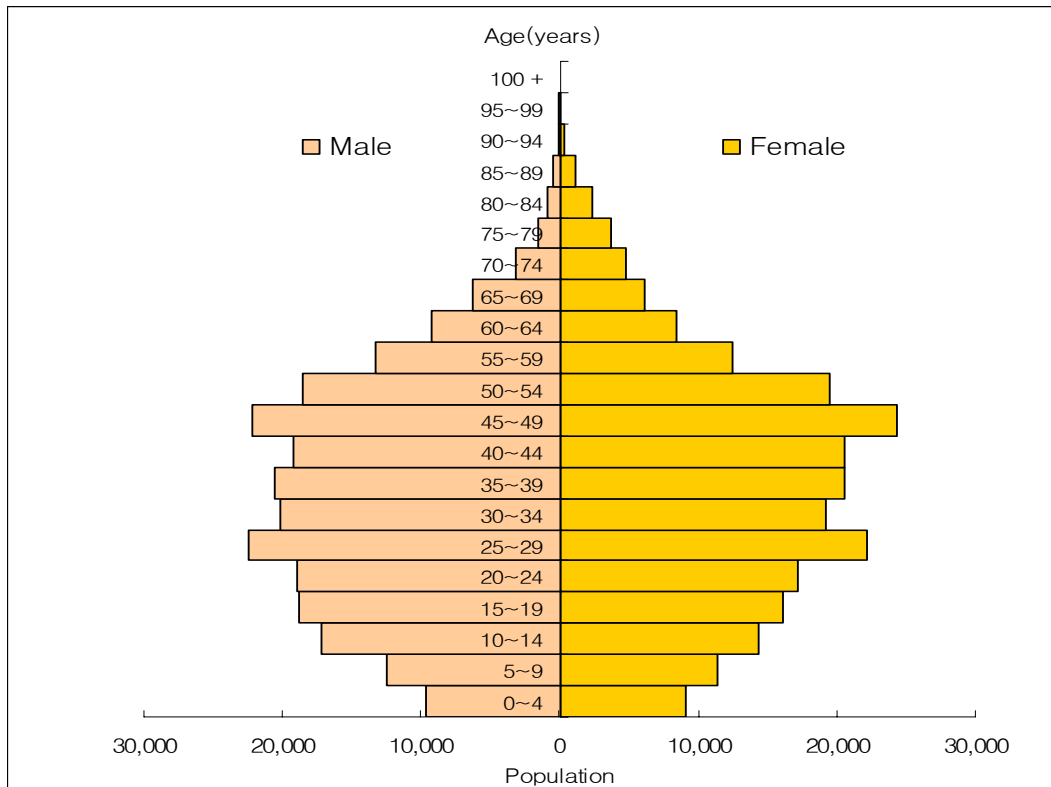


Figure 10. Distribution of population by age groups and gender

(Source: Seoul Metropolitan City website, 2007)

Cheonho 1-dong was the most populous dong in Gangdong-gu with a population of 34,019 (7.3%). The second most populous dong was Sangil-dong with a population of 30,534 (6.5%). The dong marked by the highest population density was Myeongil 1-dong (49,193/km²).

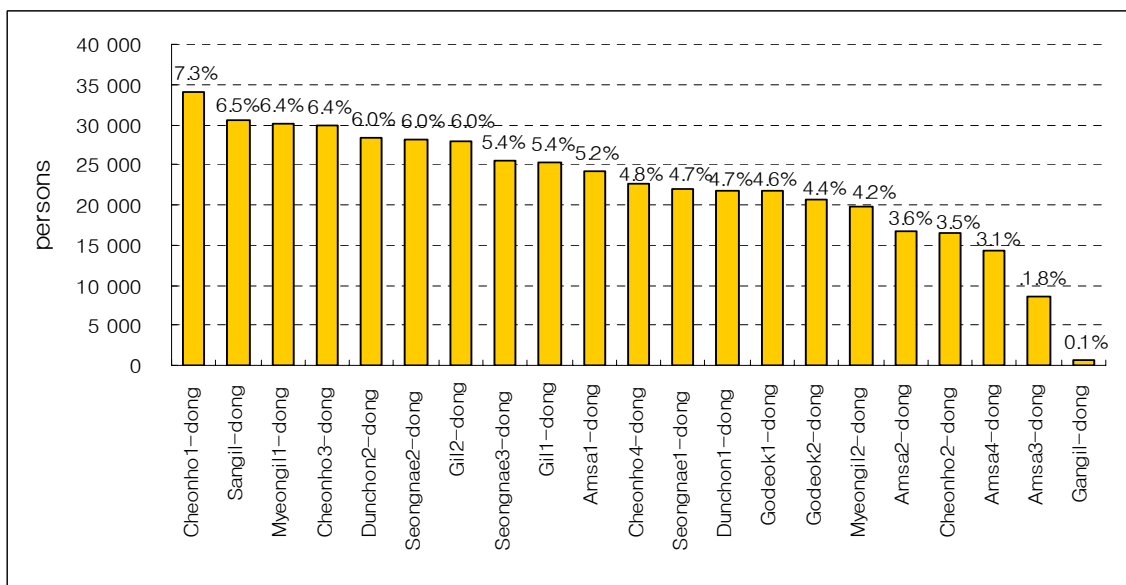


Figure 11. Population by dong

(Source: Seoul Metropolitan City website, 2007)

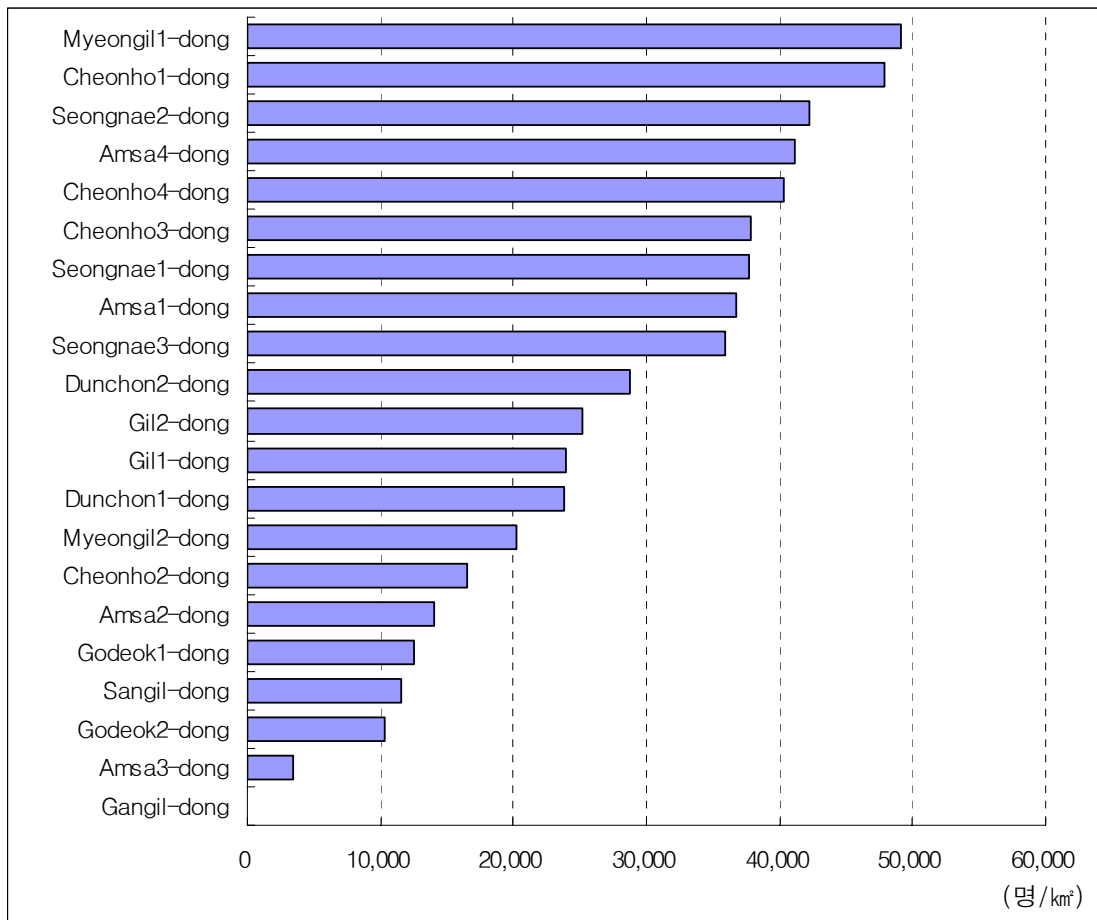


Figure 12. Population density by dong

2) Population trends

Birth has continuously decreased in Gangdong-gu. In particular, sharp decrease was recorded in 2001. There were 3,878 new births in 2006. The number of deaths has been stable. In 2006, there were 1,576 deaths.

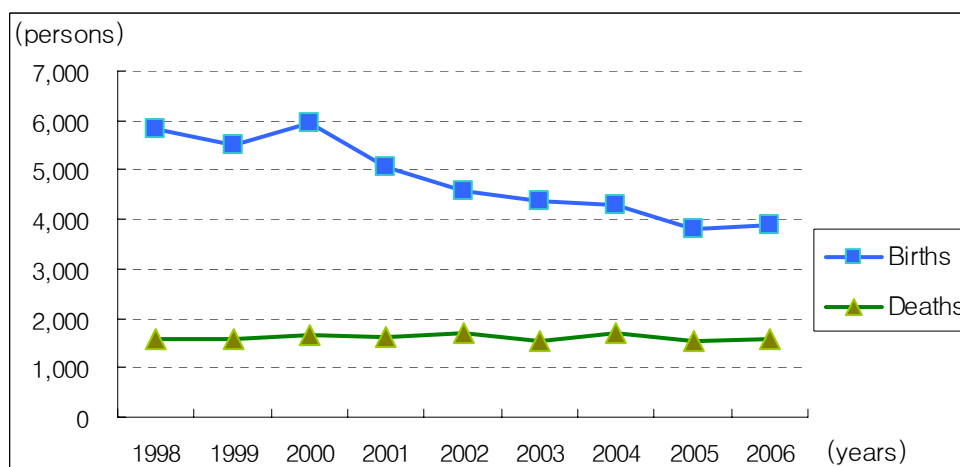
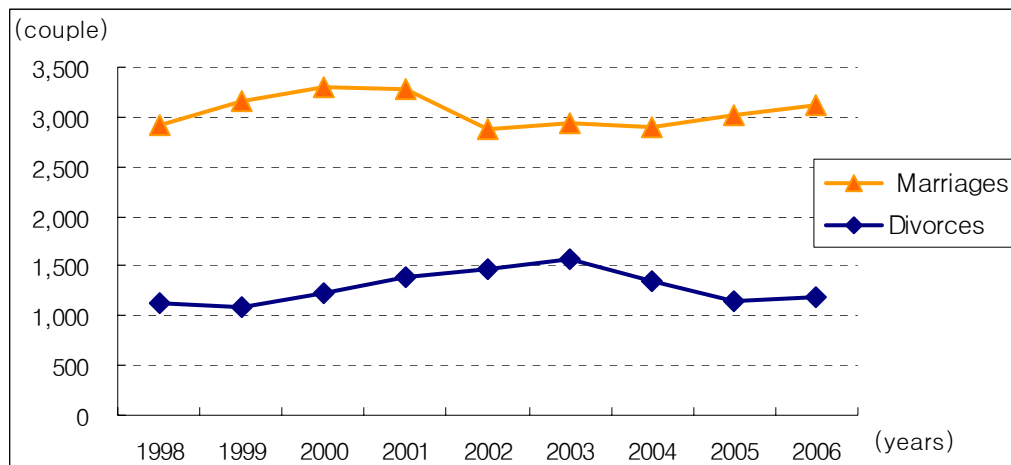


Figure 13. Births and deaths by year (Seoul Metropolitan City)

In 2006, 3,114 couples were married whereas 1,182 couples were divorced. There was a sharp drop in marriage in

2002. Marriage, however, has increased from 2005. Divorce increased from 2003 to 2004; it has decreased since 2004.



**Figure 14. Marriages and divorces by year
(Seoul Metropolitan City)**

In 2006, the total number of move-ins in Gangdong-gu was 95,974; the total number of move-outs was 100,645.

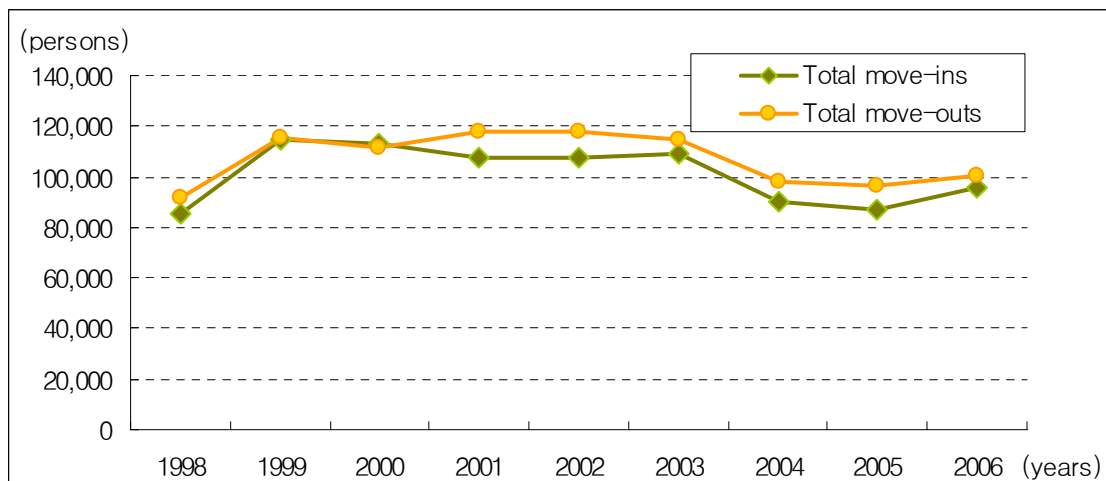


Figure 15. Move-ins and move-outs in Gangdong-gu

5. Administrative data

1) Budget

In 2007, initial budget increased KRW 6.932 billion from the previous year and amounted to KRW 207.207 billion.

General account budget increased KRW 13.289 from 2006 and amounted to KRW 187.209 billion whereas special account budget decreased KRW 6.357 billion and amounted to KRW 19.998.

Table 1 . Total budget size in Gangdong-gu in 2006 and 2007

(Unit: KRW 1 million, %)

Categories	2006		2007		Increase	Increase rate
	Initial budget	Percentage	Initial budget	Percentage		

Total	200,275	100	207,207	100	6,932	3.5
General account	173,920	86.8	187,209	90.3	13,289	7.6
Special account	26,355	13.2	19,998	9.7	△6,357	△24.2

※ Financial self-sufficiency rate: 2005 (53.8%), 2006 (53.1%), 2007 (49.2%)

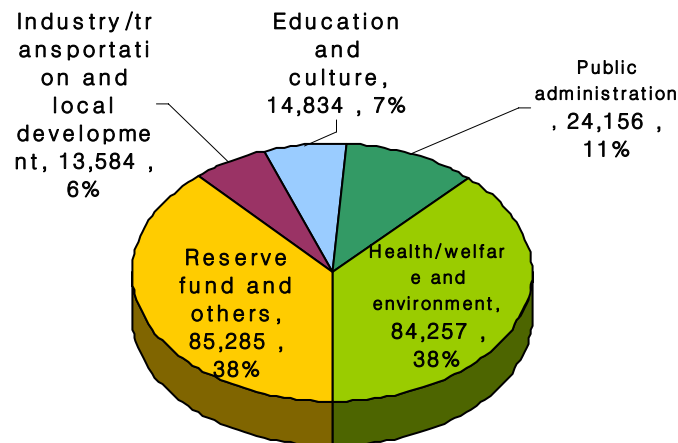


Figure 16. General account annual expenditure
(Unit: KRW 1 million, Source: Gangdong-gu Office website)

3) Administrative structure

The following is the organizational table of Gangdong-gu Office. Health City project is being implemented by Health Enhancement Team, Local Health Department, Public Health Center. As shown in Figure 18, Health City project team will carry out its project with other units in the office as well as the local community, residents, Volunteer Center, and Health City Promotion Committee.

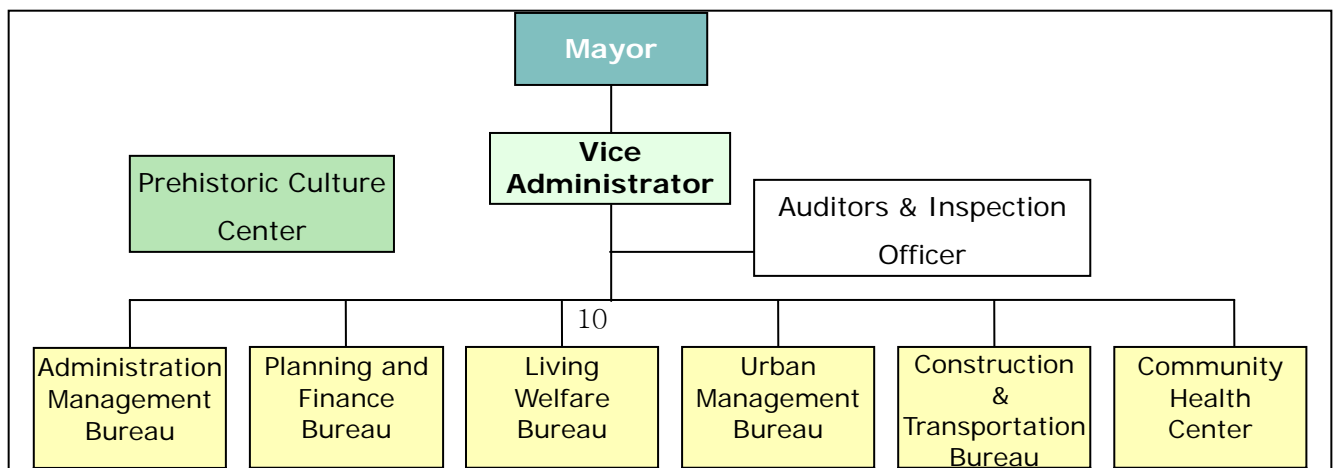


Figure 17. Organization table of Gangdong-gu Office
(Source: Gangdong-gu Office website, 2008)

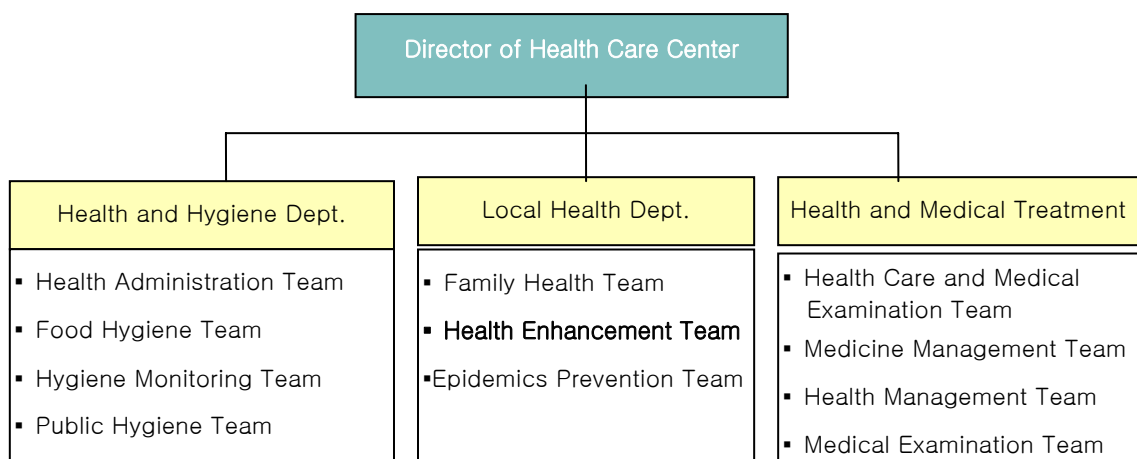


Figure 18 . Organization map of Public Health Center

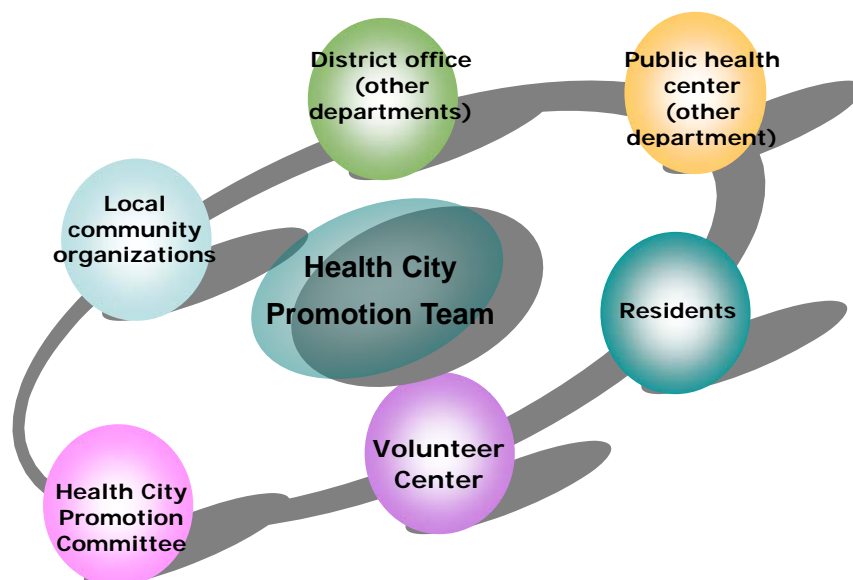


Figure 19. Conceptual Map of Health City Promotion Team (to be implemented)

4) Community Service Center

In Gangdong-gu, there are 19 Community Service Centers. Community Service Centers help solve problems of local communities. The centers provide diverse beneficial cultural and educational programs and operate welfare facilities. The activities of the centers enhance residents' quality of life and help the residents enjoy advanced information environment.

Table 2. Gangdong-gu Community Service Center

Community Service Center	Phone number	Community Service Center	Phone number
Gangil, Godeok 2-dong	442-1032~4	Cheonho 3-dong	489-0780~2
Sangil-dong	442-0413~5	Cheonho 4-dong	489-0794~6
Myeongil 1-dong	3426-0277~9	Seongnae 1-dong	489-0837~9
Myeongil 2-dong	442-0755~7	Seongnae 2-dong	489-0857~9
Godeok 1-dong	442-0915~7	Seongnae 3-dong	489-0845~7
Amsa 1,4-dong	442-1204~6	Gil 1-dong	489-0927~9
Amsa 2-dong	3426-0347~9	Gil 2-dong	489-1340~2
Amsa 3-dong	442-2582~4	Dunchon 1-dong	489-1512~4
Cheonho 1-dong	489-0414~6	Dunchon 2-dong	489-1516~8
Cheonho 2-dong	489-0437~9		

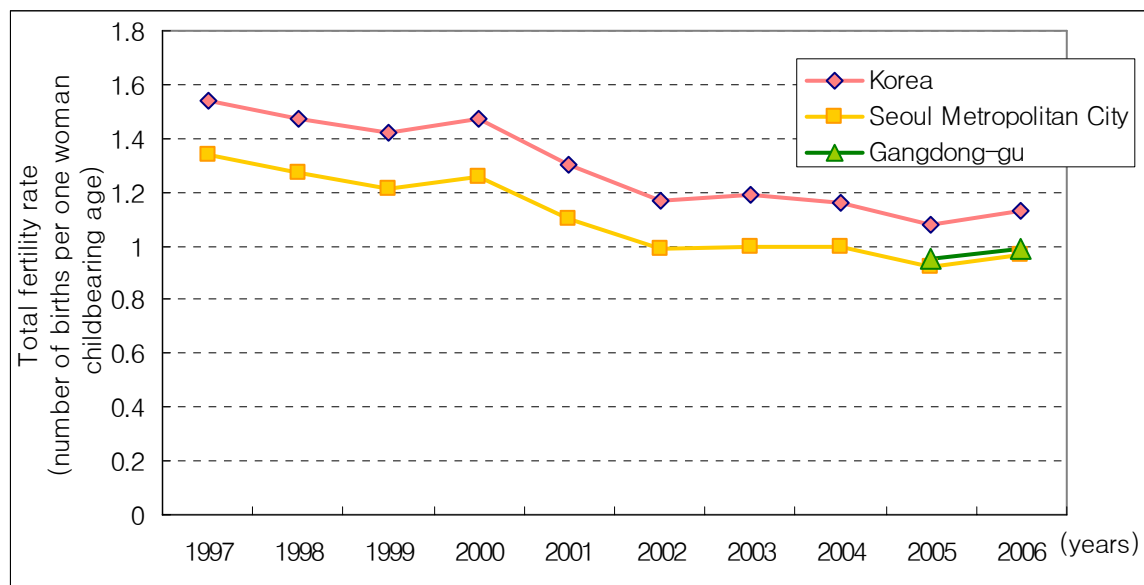
□. Health condition

1. Birth rate

The birth rates is declining in Korea as a whole and Seoul Metropolitan City. In 2006, birth rates in Seoul and Gangdong-gu were lower than the national average. The birth rate in Seoul Metropolitan City was 0.97; it was 0.99 in Gangdong-gu. The birth rate in Korea, which decreased every year, reached the lowest point in 2005: 1.08. For the first time in three years, it began to increase.

The number of live births in Gangdong-gu, which has been declining every year, was 3,853 in 2006: 1,990 males and 1,863 females.

In 2006, women in their early 30s (30-34) gave birth to 189,454 babies, which was 10,700 more than in 2005. Women in their late 30s (35-39) gave 6,600 more births. In Gangdong-gu, every 1,000 women aged 30-34 on average gave birth to 96.2 babies, which is higher than Seoul Metropolitan City's 90.8. In contrast, fertility rate of Gangdong-gu women in their 20s was lower than that of Seoul Metropolitan women as a whole.



* Total fertility rate (TFR): TFR is an index that expresses the average number of live birth infants per one woman during her lifetime. TFR is the total of age-specific fertility rates (ASFRs) and is the most representative index that shows fertility.

* Gangdong-gu data before 2005 are not available.

Figure 20. TFRs of Korea, Seoul Metropolitan City, and Gangdong-gu
(Korea National Statistical Office)

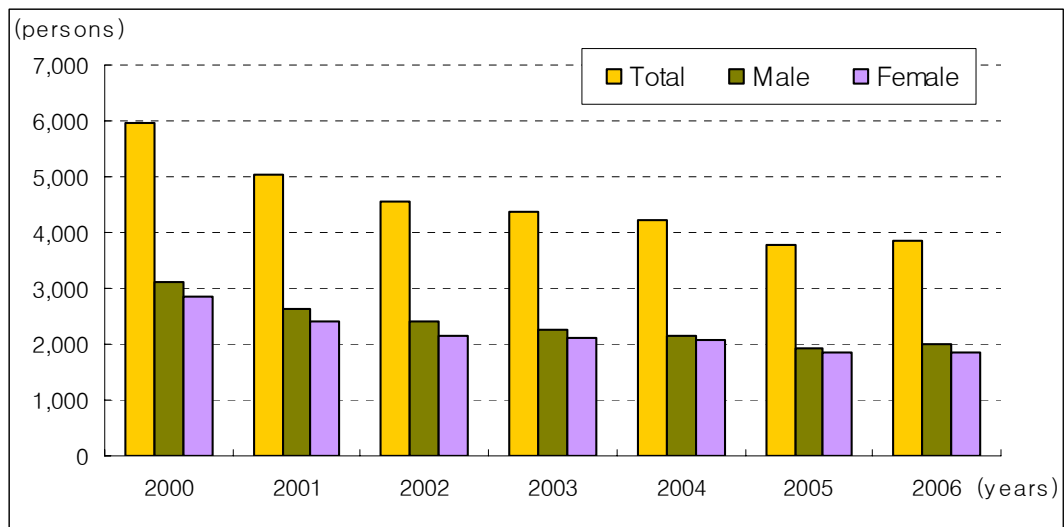


Figure 21. Births in Gangdong-gu

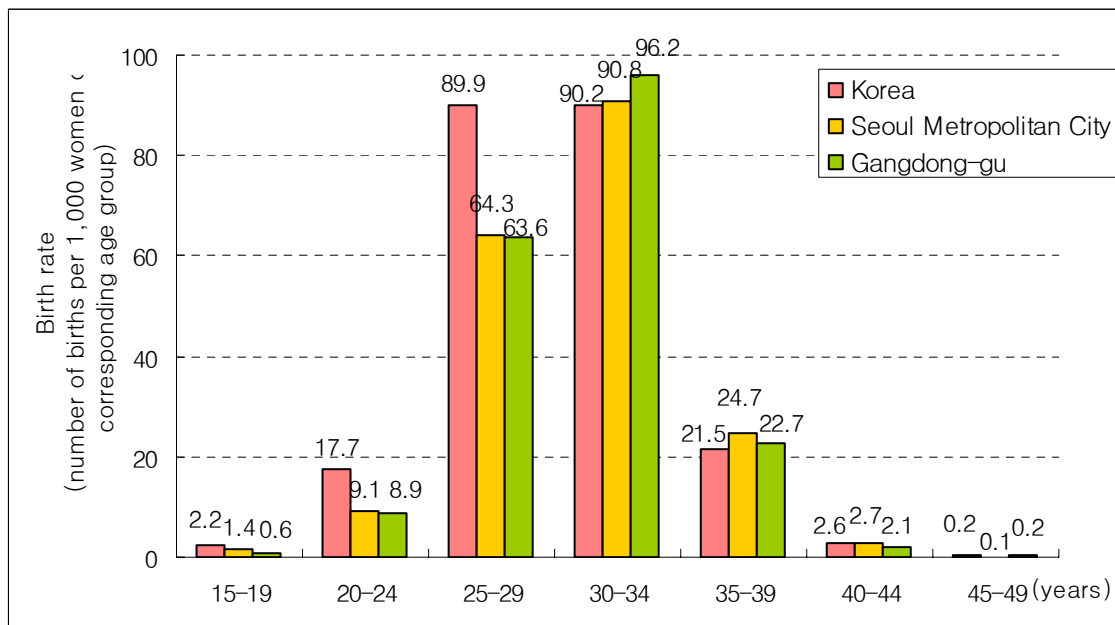


Figure 22, Birth rates of women age groups in Korea, Seoul Metropolitan City, and Gangdong-gu
(National Statistical Office)

2. Mortality

In 2006, there were 1,480 deaths in Gangdong-gu (818 men, 662 women). In Korea as a whole, there were 243,934 deaths. Total number of deaths in Gangdong-gu corresponds to 0.6% of the national total and 3.9% of the total in Seoul Metropolitan City.

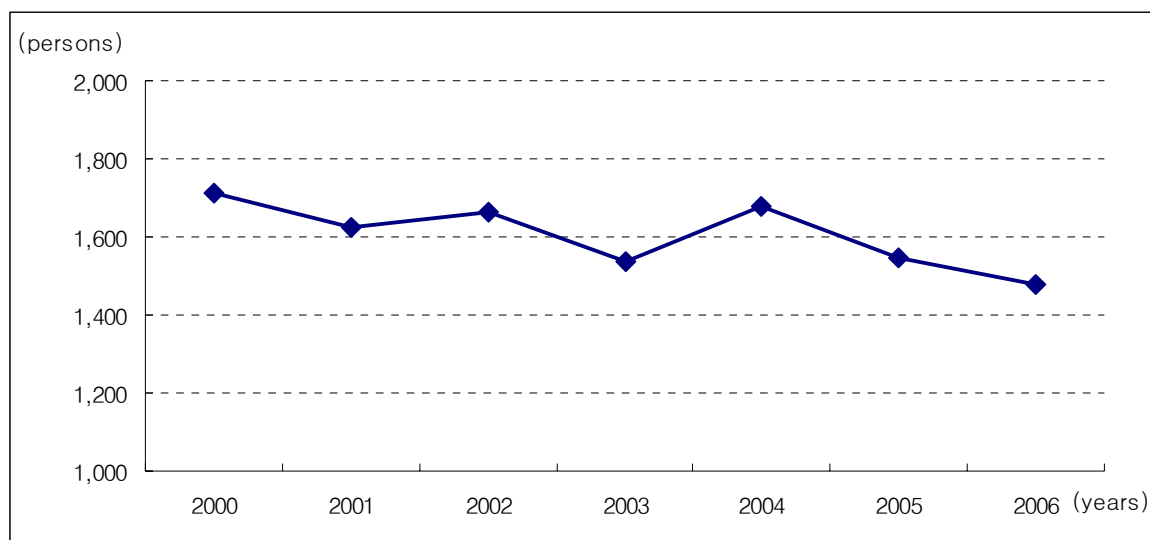
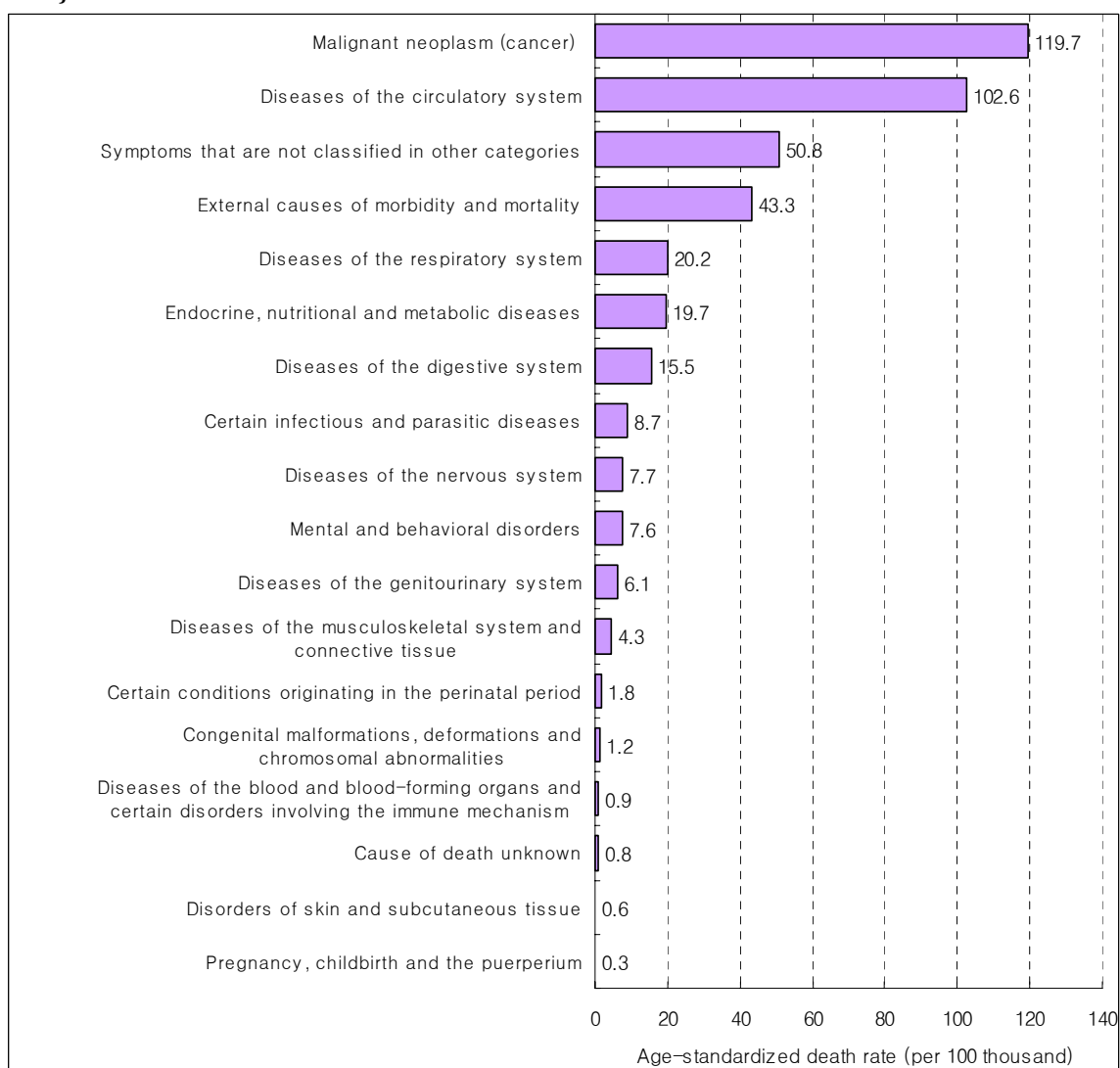


Figure 23. Number of deaths in Gangdong-gu by year

3. Major causes of death



* Age-standardized death rate: Age-standardized death rate refers to mortality that does not take account of the impact of age structure on mortality to compare the level of death among groups with different population structure.

Figure 24. Age-standardized death rate in Seoul Metropolitan City in 2006 by causes of death

The three major causes of death (47.6%) in Korea as well as in Seoul Metropolitan City are malignant neoplasm (cancer), cerebrovascular diseases, and heart diseases. In the case of Seoul Metropolitan City, the share of the three diseases (51%) is higher.

Table 3. Number of deaths, percentage, and mortality by causes of death in Seoul and Korea in 2006

Major causes of death	Number of deaths (person)		Share (%)		Mortality (per 100,000 persons)		Ranking	
	Korea	Seoul	Korea	Seoul	Korea	Seoul	Korea	Seoul
Total	243,934	38,117	100.0	100.0	499.0	375.0		
Malignant neoplasms	65,909	11,174	27.0	29.3	134.8	110.0	1	1
Cerebrovascular diseases	30,036	4,872	12.3	12.8	61.4	47.1	2	2
Heart diseases ¹⁾	20,282	3,376	8.3	8.9	41.5	33.6	3	3
Diabetes mellitus	11,600	1,685	4.8	4.4	23.7	16.6	4	5
Intentional self-harm	10,688	1,742	4.4	4.6	23.0	17.9	5	4
Transport accidents	7,822	805	3.2	2.1	16.0	7.9	6	7
Diseases of liver	7,624	1,112	3.1	2.9	15.6	10.9	7	6
Chronic lower respiratory diseases	7,070	853	2.9	2.2	14.5	8.4	8	8
Hypertensive diseases	4,623	684	1.9	1.8	9.5	6.7	9	9
Pneumonia	4,603	547	1.9	1.4	9.4	5.7	10	10

1) heart diseases = Ischemic heart diseases + other heart diseases

The most important cause of death is transport accident for males aged 0-29, suicide for males in their 30s, and cancer for males in their 40s. The most important cause of death is transport accident for females aged 0-9, suicide for females in their 10s and 20s, and cancer for females older than 30.

Table 4. The most important cause of death by age group in 2006 (Korea)

(Unit: number of persons per 100,000)

Age group	Total		Males		Females	
	Cause of death	Mortality	Cause of death	Mortality	Cause of death	Mortality
0	Perinatal diseases	204.4	Perinatal diseases	221.5	Perinatal diseases	186.0
1-9	Transport accident	4.5	Transport accident	4.8	Transport accident	4.2
10-19	Transport accident	5.3	Transport accident	7.3	Suicide	3.4
20-29	Suicide	13.8	Transport accident	15.7	Suicide	12.4
30-39	Malignant neoplasm (cancer)	18.6	Suicide	21.8	Malignant neoplasm (cancer)	19.7
40-49	Malignant neoplasm (cancer)	65.4	Malignant neoplasm (cancer)	79.9	Malignant neoplasm (cancer)	50.3
50-59	Malignant neoplasm (cancer)	192.2	Malignant neoplasm (cancer)	265.9	Malignant neoplasm (cancer)	118.7
60-69	Malignant neoplasm (cancer)	471.8	Malignant neoplasm (cancer)	725.0	Malignant neoplasm (cancer)	252.6
70세 이상	Malignant neoplasm (cancer)	1,108.8	Malignant neoplasm (cancer)	1,823.3	Malignant neoplasm (cancer)	708.7

(Source: Statistics on Causes of Deaths in 2006, Korea National Statistical Office)

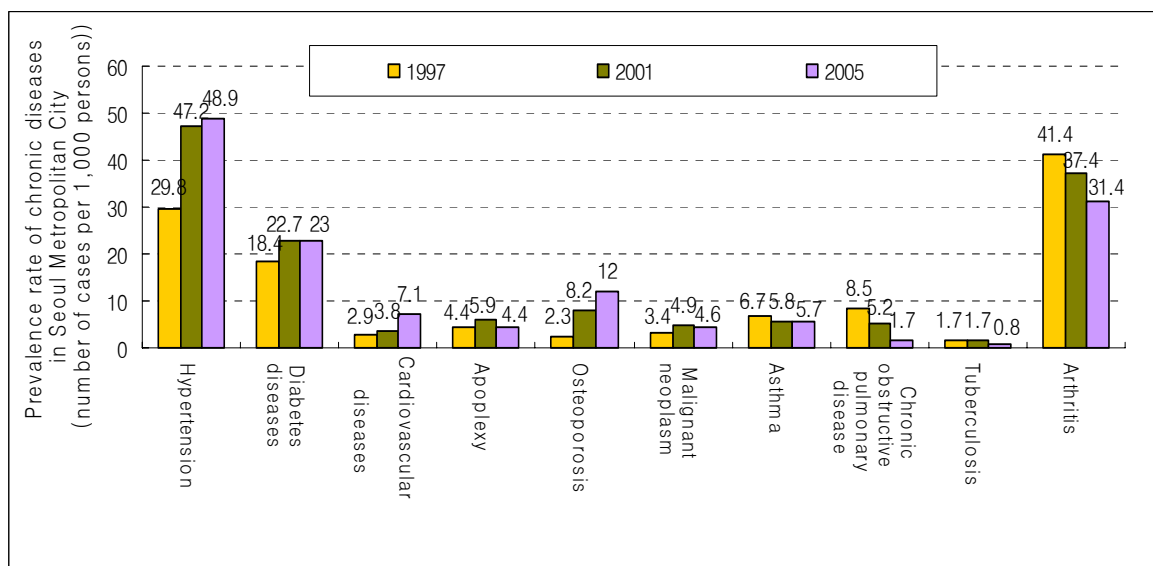
4. Morbidity rate

Table 5. Disease and disease symptoms of residents of Gangdong-gu

Categories	Korea	Gangdong-gu		
		Total	Males	Females

	Number of persons	%	Number of persons	%	Number of persons	%	Number of persons	%
Number of people examined	8,458,093		71,326		38,955		32,371	
Number of people with disease and disease symptoms	495,467	5.86	3,486	4.89	2,288	5.87	1,198	3.70
Tuberculosis and other thoracic disease	7,159	0.08	46	0.06	34	0.09	12	0.04
Hypertension	167,403	1.98	1,183	1.66	886	2.27	297	0.92
Hyperlipidemia	97,664	1.15	692	0.97	438	1.12	254	0.78
Liver diseases	776	1.09	657	1.69	119	0.37	776	1.09
Diabetes diseases	662	0.93	521	1.34	141	0.44	662	0.93
Renal diseases	558	0.78	198	0.51	360	1.11	558	0.78
Anemia	256	0.36	57	0.15	199	0.61	256	0.36

(Source: Analysis of Health Examination Results in 2006, National Health Insurance Corporation)

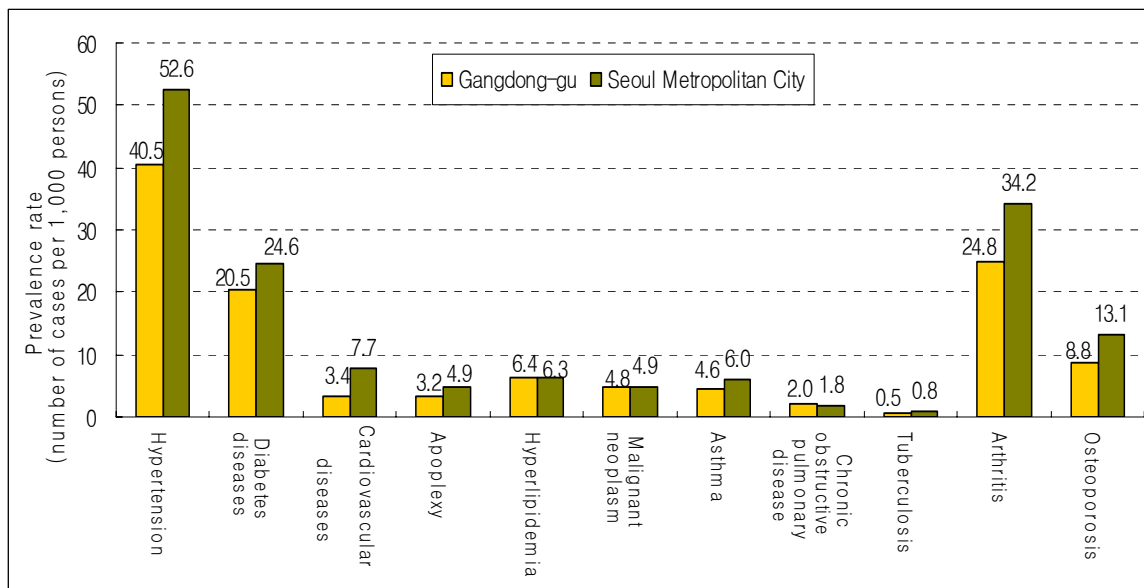


(Source: Health Indices Survey of Residents of Seoul Metropolitan City in 1997, 2001, and 2005)

Figure 25. Trend of prevalence rate of chronic diseases in Seoul Metropolitan City by year

Health Indices Survey of Residents of Seoul Metropolitan City showed that prevalence rates of major chronic diseases including hypertension, diabetes, and cerebrovascular diseases have been increasing. In the case of Seoul Metropolitan

City, the prevalence rate of hypertension topped the list with 48.9 persons. Diabetes (23 persons) was ranked third. Prevalence rates of Gangdong-gu were lower than those of Seoul Metropolitan City.



(Source: Health Indices Survey of Residents of Seoul Metropolitan City, 2005)

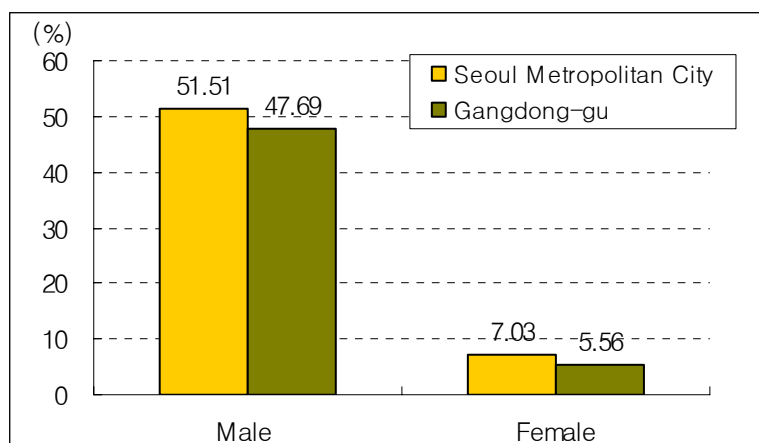
Figure 26. A comparison of prevalence rates of chronic diseases in Seoul Metropolitan City and Gangdong-gu

□. Life habits

1. Smoking

Currently, smoking rate in Gangdong-gu is 25.3%, which is slightly lower than in Seoul Metropolitan City's 25.6%. In Gangdong-gu, 64.29% of men and 6.77% of women experience smoking in their lifetime. Smoking rate of men is 47.69 whereas that of women is 5.56. In comparison with Seoul Metropolitan City, the rate for men is about 4% point lower whereas that for women is 1.5-2% point lower.

People smoking more than one pack of cigarettes per day was 58.8% among men aged 20-64 and 33.3% among women aged older than 65. The percentages were higher than in Seoul Metropolitan City. People smoking more than one pack of cigarettes per day was 46.2% among men aged older than 65 and 30.0% among women aged 20-64. The percentages were lower than in Seoul Metropolitan City.



(Source : Analysis of the Third Seoul Metropolitan City Health Indices Survey, 2005)

Figure 27. Lifetime smoking experience in Seoul Metropolitan City and Gangdong-gu

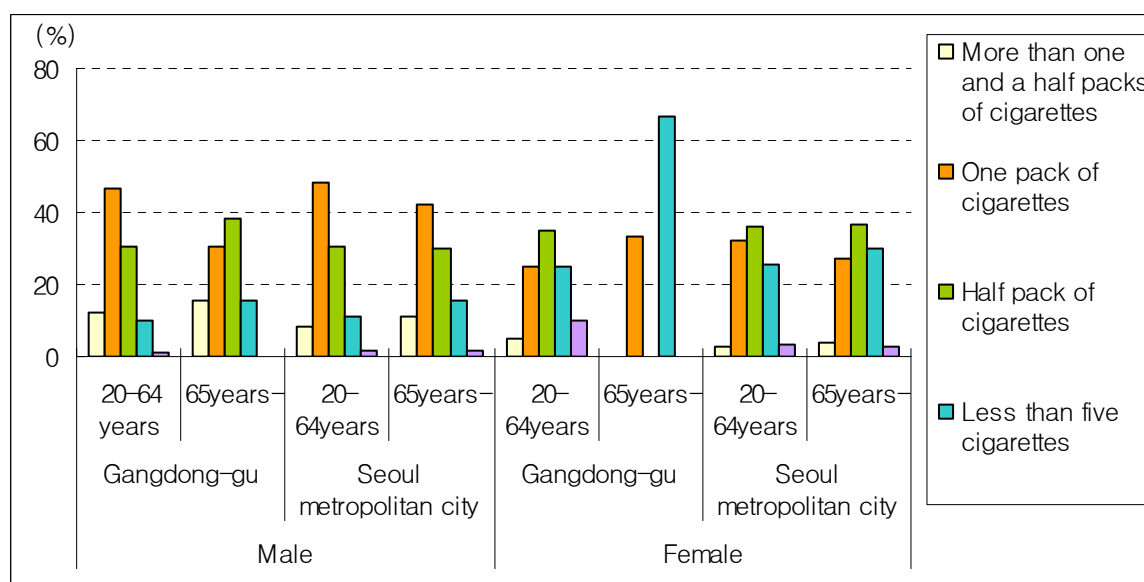


Figure 28. Average amount of current daily smoking
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

2. Drinking

During their lifetime, 91.81% of men and 69.80% of women experienced alcohol beverage drinking. The percentages for both men and women were 2-3% higher than in Seoul Metropolitan City.

About 20% of men aged over 65 drank almost everyday. The percentage was about double the percentage in Seoul Metropolitan City. Other age and gender groups in Gangdong-gu drank less than corresponding groups in Seoul Metropolitan City as a whole.

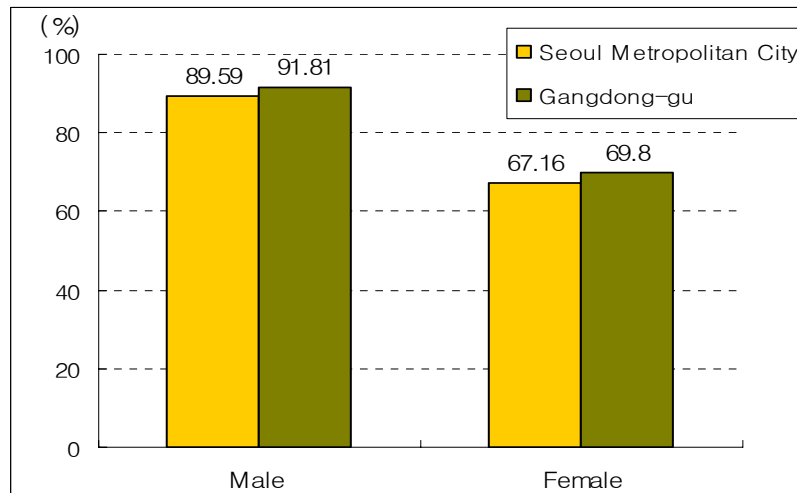


Figure 29. Lifetime drinking experience in Seoul Metropolitan City and Gangdong-gu
(Seoul Metropolitan City Health Indices Survey, 2005)

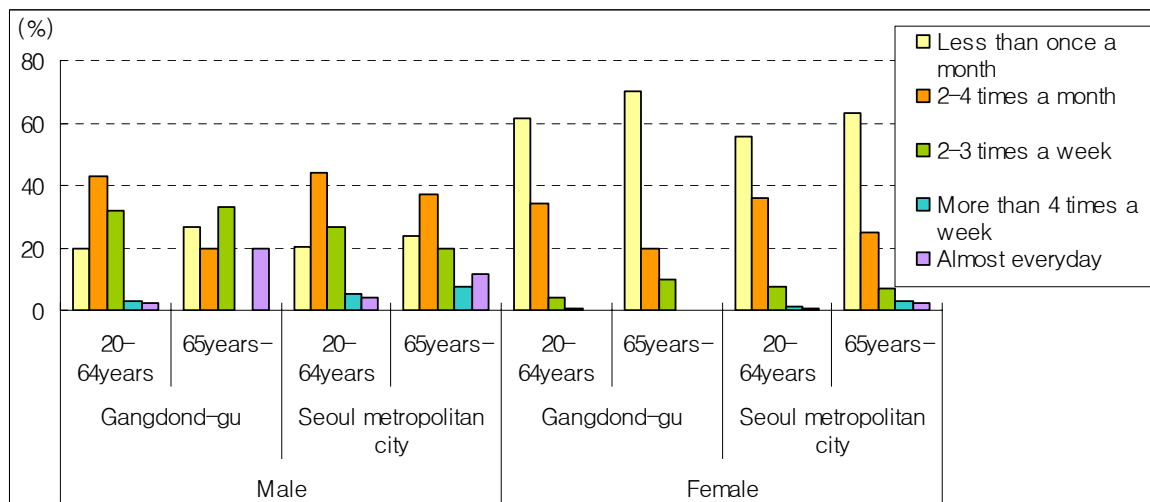


Figure 30. Average number of drinking occasions
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

3. Physical exercise

Physical exercise rate of Gangdong-gu residents is 16.7%, which is higher than that of Seoul Metropolitan City residents as a whole (11.4%). The rate of Gangdong-gu males aged 20-64 who exercise more than once a week was 86.56% whereas that of the corresponding group in Seoul Metropolitan City was 49.91%. The rate of Gangdong-gu females who exercised more than once a week was Gangdong-gu 81.25%. The rate of the same age group in Seoul Metropolitan City was 48.75. Therefore, both male and female residents of Gangdong-gu exercised more than male and female residents of Seoul.

Mountaineering and walking were respectively the first and the second most popular physical exercises for Gangdong-gu male residents aged 20-64. For Seoul Metropolitan City, walking and workout at fitness clubs were ranked first and second. Female residents of Gangdong-gu and Seoul Metropolitan City were mostly engaged in walking and workout at

fitness clubs. Walking was the major form of exercise for male and female residents older than 60.

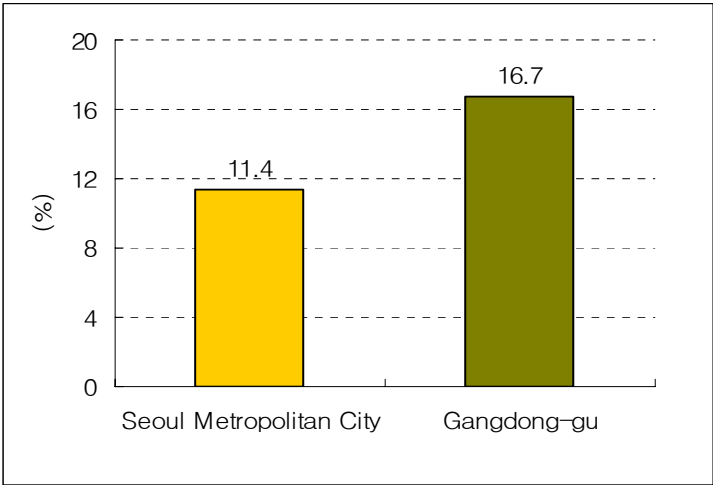


Figure 31. Physical exercise rate

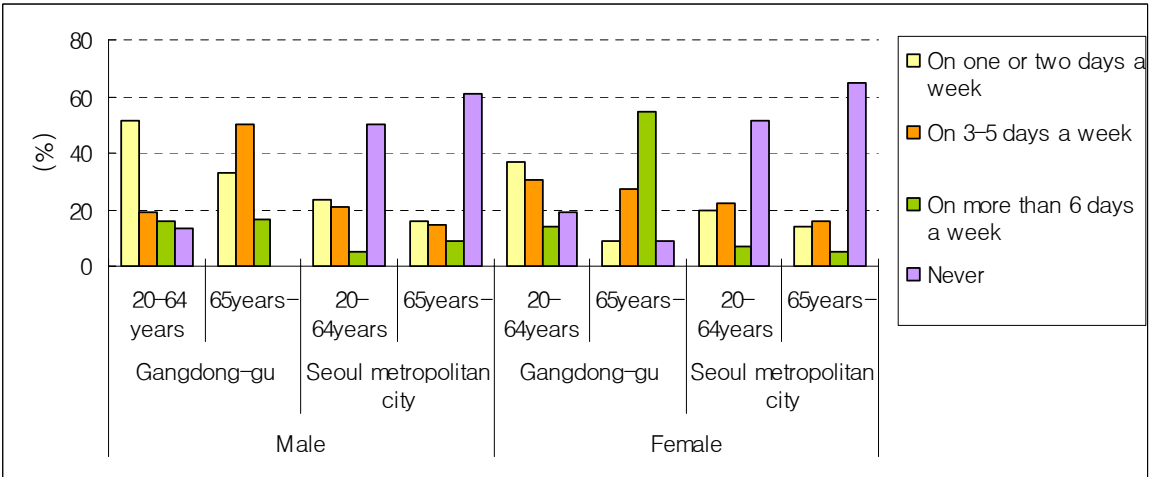


Figure 32. Physical exercise rates in Gangdong-gu and Seoul Metropolitan City
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

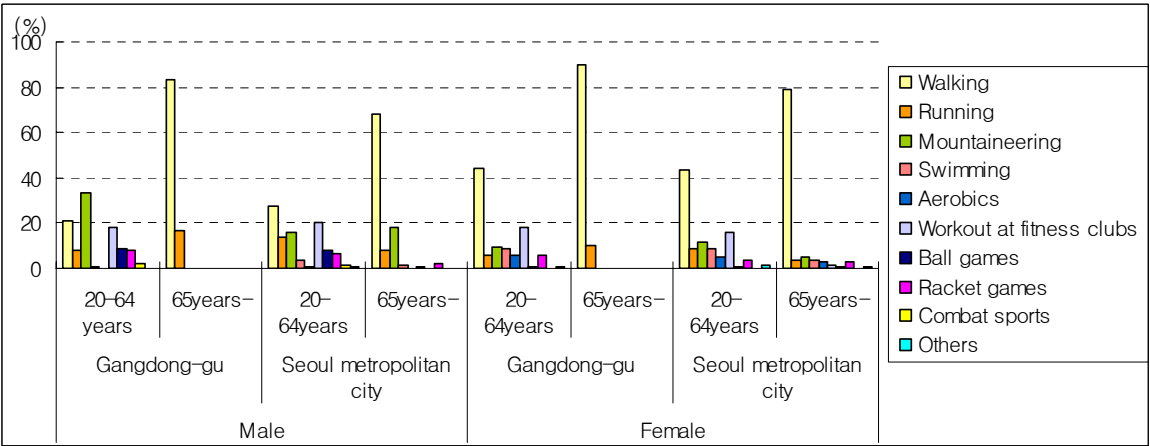
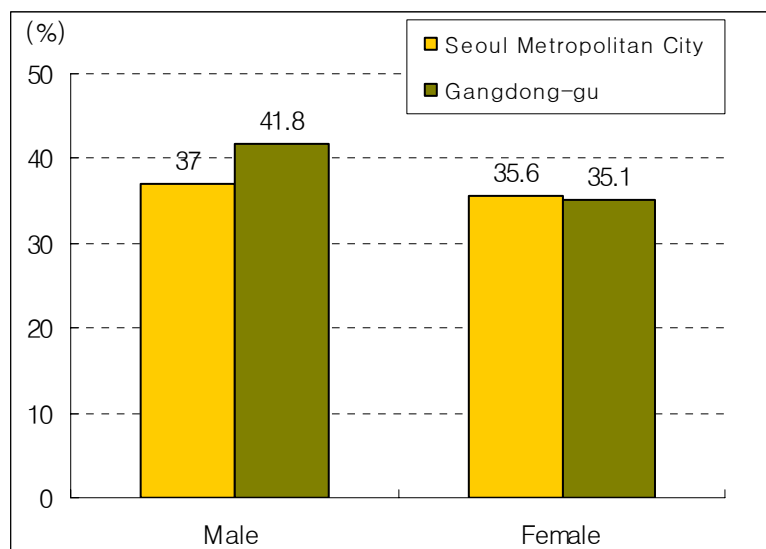


Figure 33. Types of physical exercises
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

4. Diet

Rate of breakfast skipping in Seoul Metropolitan City was 36.2% and 38.1% in Gangdong-gu. The rate for Gangdong-gu males was 41.8%, which was higher than that of Seoul Metropolitan City.

Meat consumption survey showed that 91.5% of Seoul Metropolitan City males aged 20-64 consumed meat more than once a week. The rate for Gangdong-gu males was 92.7%. In Seoul Metropolitan City, 93.6% of females aged 20-64 ate meat more than once a week. The rate for the same age-group females in Gangdong-gu was 91.7%. In general, males mostly consumed meat once a week whereas females did so once every 2-3 days. More than 98% of residents consumed vegetables (excluding *kimchi*): 75.1% of Gangdong-gu residents and 59.9% of Seoul residents ate vegetables every day. Therefore, higher percentage of Gangdong-gu residents consumed vegetables. Majority of residents did not consume fast food.



* Rate of breakfast skipping: percentage of people who ate breakfast on less than two days in the last seven days

Figure 34. Rate of breakfast skipping
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

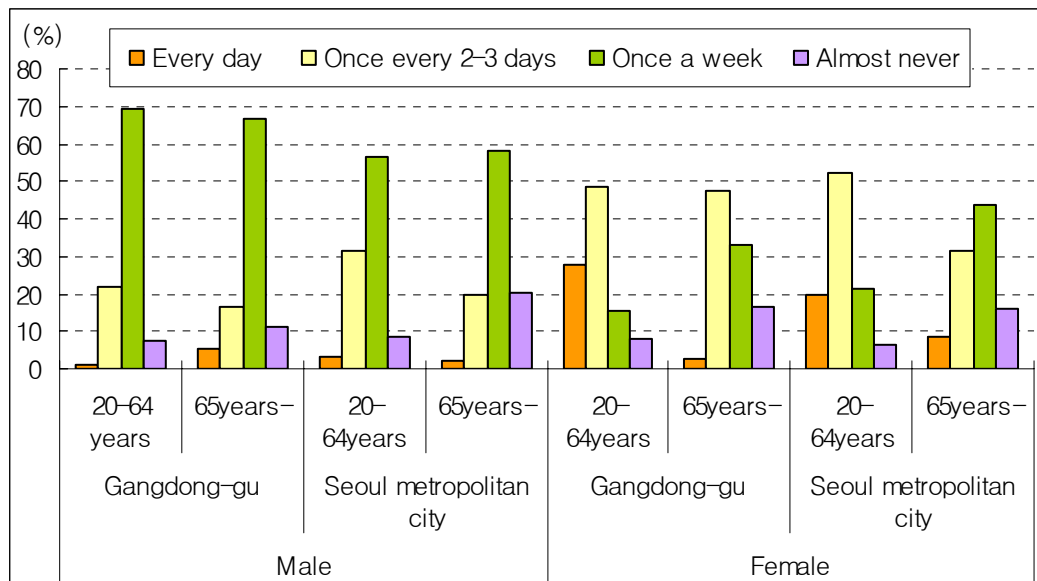


Figure 35. Meat consumption rate
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

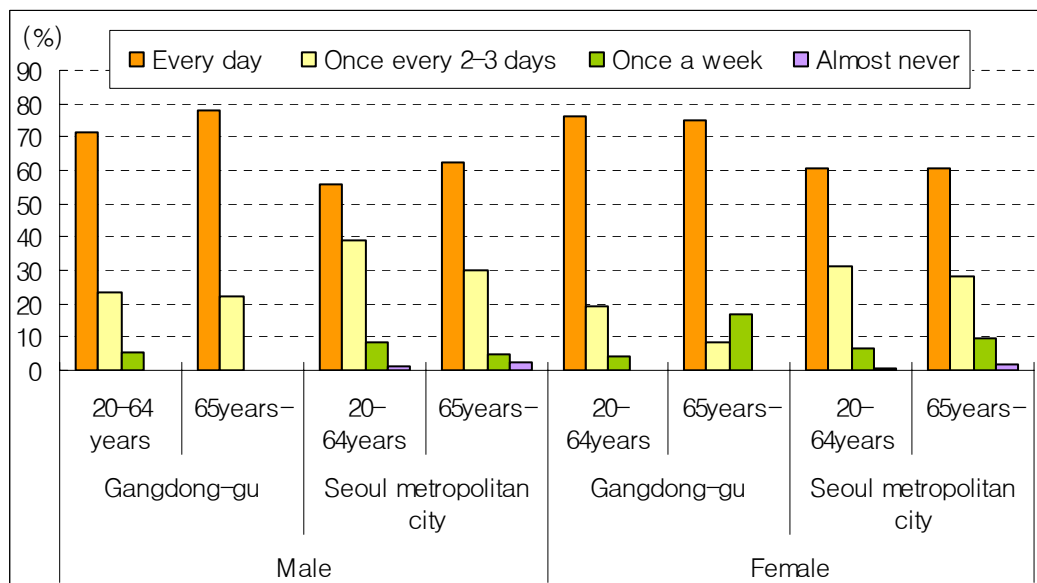


Figure 36. Consumption of vegetables (excluding *kimchi*)
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

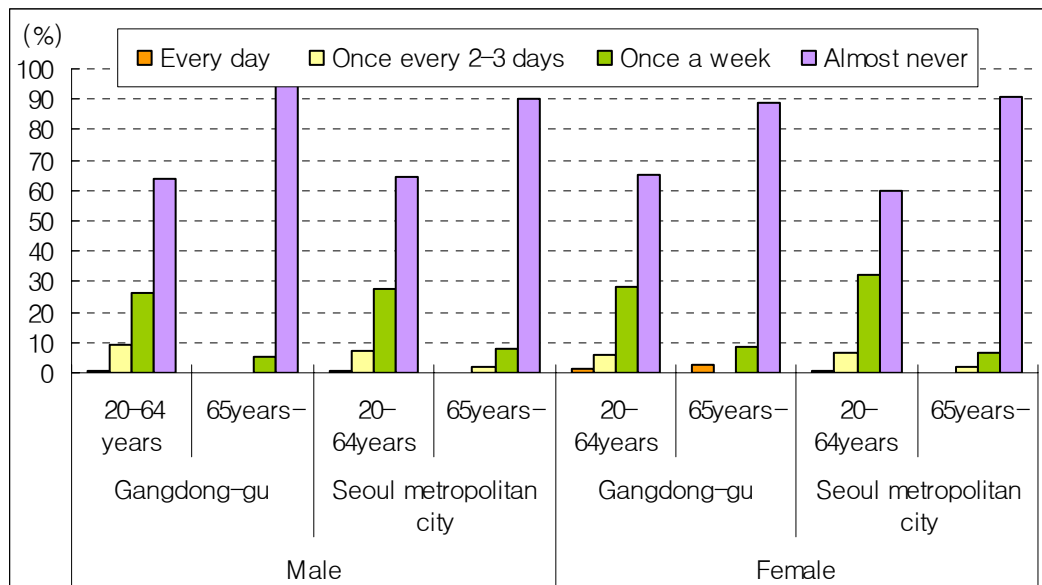


Figure 37. Fast food consumption rate
(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

□. Physical environment

1. Residential environment

Most of Gangdong-gu residents (60%) lived in apartments followed by detached dwellings, apartment units in a private house, and rowhouses.

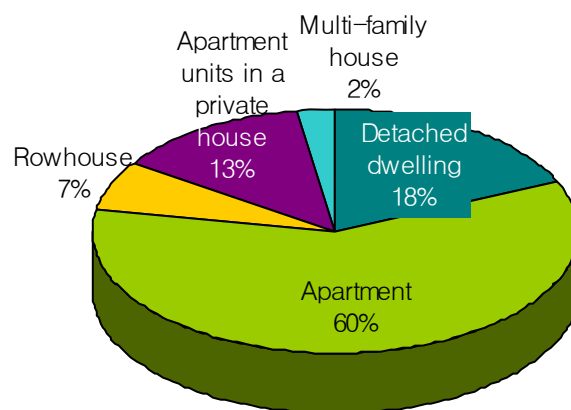
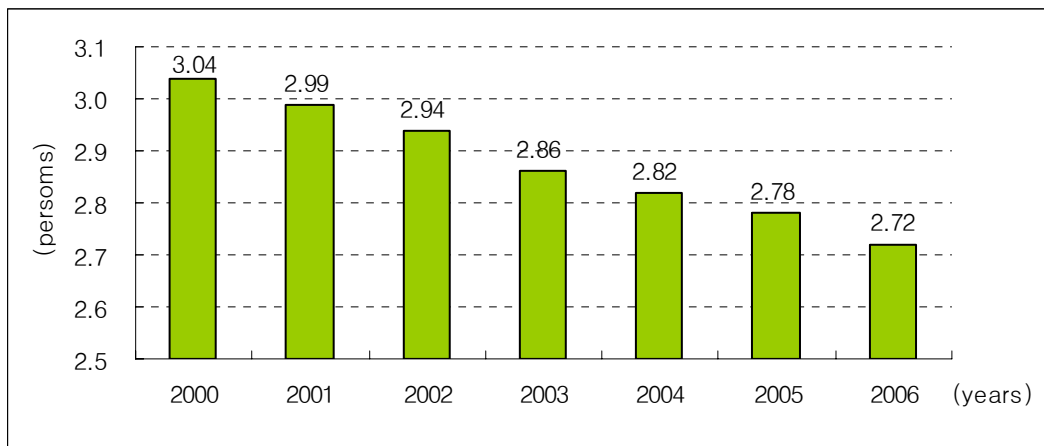


Figure 38. Housing types in Gangdong-gu
(2006 Gangdong-gu Annual Statistical Report)

The number of households has increased whereas population has decreased. In 2000, average number of persons per household was 3.04. The number has tended to decrease; the number was 2.72 in 2006.



**Figure 39. Number of persons per household
(2006 Gangdong-gu Annual Statistical Report)**

2. Socio-economic conditions

1) Education

In Gangdong-gu, there are 94 schools: 39 kindergartens, 24 elementary schools (one school was temporarily closed in 2006), 16 middle schools, 12 high schools, two special schools, and one graduate school.

As for educational environment in Gangdong-gu, number of kindergartens decreased every year from 53 in 2000 to 40 in 2004. In contrast, number of elementary schools increased from 24 in 2000 to 25 in 2004. There was no change in the number of middle and high schools.

As for the number of classes, the number of classes in elementary schools decreased from 44.8 in 2000 to 43.64 in 2004. In the case of middle schools, number of classes decreased from 36.1 in 2000 to 34.7 in 2004.

Table 6. School facilities in Gangdong-gu by year

(Units: 1 school; 1 student)

Catego ries	Kindergartens		Number of elementary schools		Number of middle schools (public and private)		Number of middle schools (private)		General high schools (public and private)		General high schools (private)		Vocational high schools (private)		
	Year	Numbe r of schools	Number of classes	Number of schools	Number of classes	Number of schools	Numbe r of classes	Number of schools	Number of classes	Number of schools	Number of classes	Number of schools	Number of classes	Numbe r of schools	Number of classes
	2000	53	173	24	1,075	10	414	6	156	2	89	7	296	3	127
	2001	52	176	24	1,072	10	411	6	156	2	88	7	289	3	106
	2002	46	166	25	1,090	10	407	6	156	2	108	7	309	3	98
	2003	42	162	25	1,080	10	100	6	156	2	106	7	315	3	99
	2004	40	158	25	1,091	10	399	6	156	2	105	7	318	3	96

Sources: Seoul Metropolitan City Office of Education, Annual Statistical Report of Seoul Metropolitan City 2004. (Gangdong-gu Local Welfare Plan, 2006)

In 2005, the number of schooling target children in Gangdong-gu was 5,752: 404 overage children and 5,378 right school age children. Enrolled students were 5,179 and enrollment rate was 89.5%.

Table 7. Enrollment of students in Gangdong-gu

(Unit: 1 person, %)

Year	Target children			Enrolled children				Enrollment rate
	Total	Right-age children	Overage children	Total	National	Public	Private	
2000	6,860	6,509	351	6,388	-	6,388	-	93.1
2001	7,080	6,696	384	6,375	-	6,375	-	90.0
2002	6,588	6,194	394	5,963	-	5,963	-	90.5
2003	6,240	5,908	332	5,680	-	5,680	-	91.0
2004	5,883	5,442	441	5,335	-	5,335	-	90.6
2005	5,752	5,348	404	5,149	-	5,149	-	89.5

Sources: Seoul Metropolitan City Office of Education, Annual Statistical Report of Seoul Metropolitan City 2005. (Gangdong-gu Local Welfare Plan, 2006)

2) Economic activities

A majority of Gangdong-gu residents are engaged in economic activities as employees (64.7%). The rate is higher than that of Seoul Metropolitan City (61.1%). The share of self-employment is 20.5%, which is 8% point lower than that of Seoul Metropolitan City.

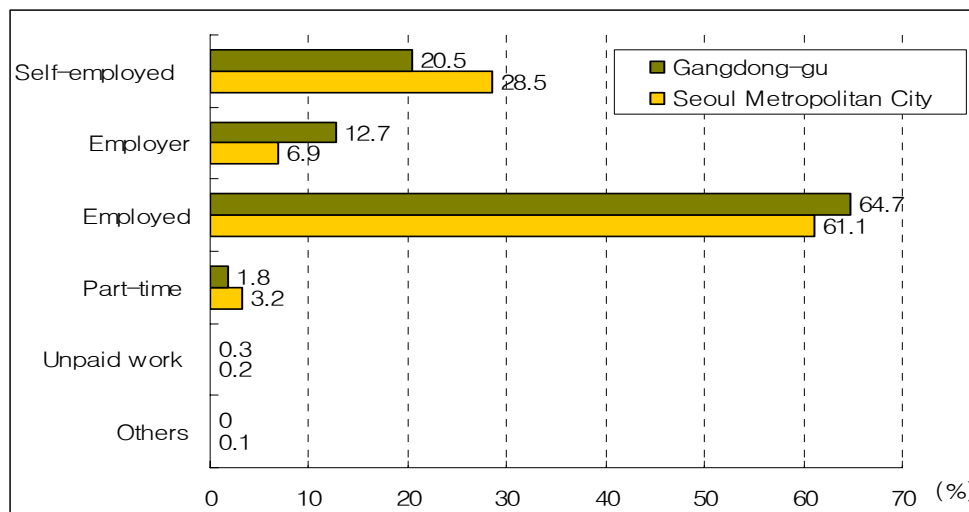


Figure 40. Economic activities by employment types

(Analysis of the Third Seoul Metropolitan City Health Indices Survey)

Residents of Gangdong-gu working in industries numbered 101,977: 19.16% in wholesale and retail, 12.03% in hotels and restaurants, etc.

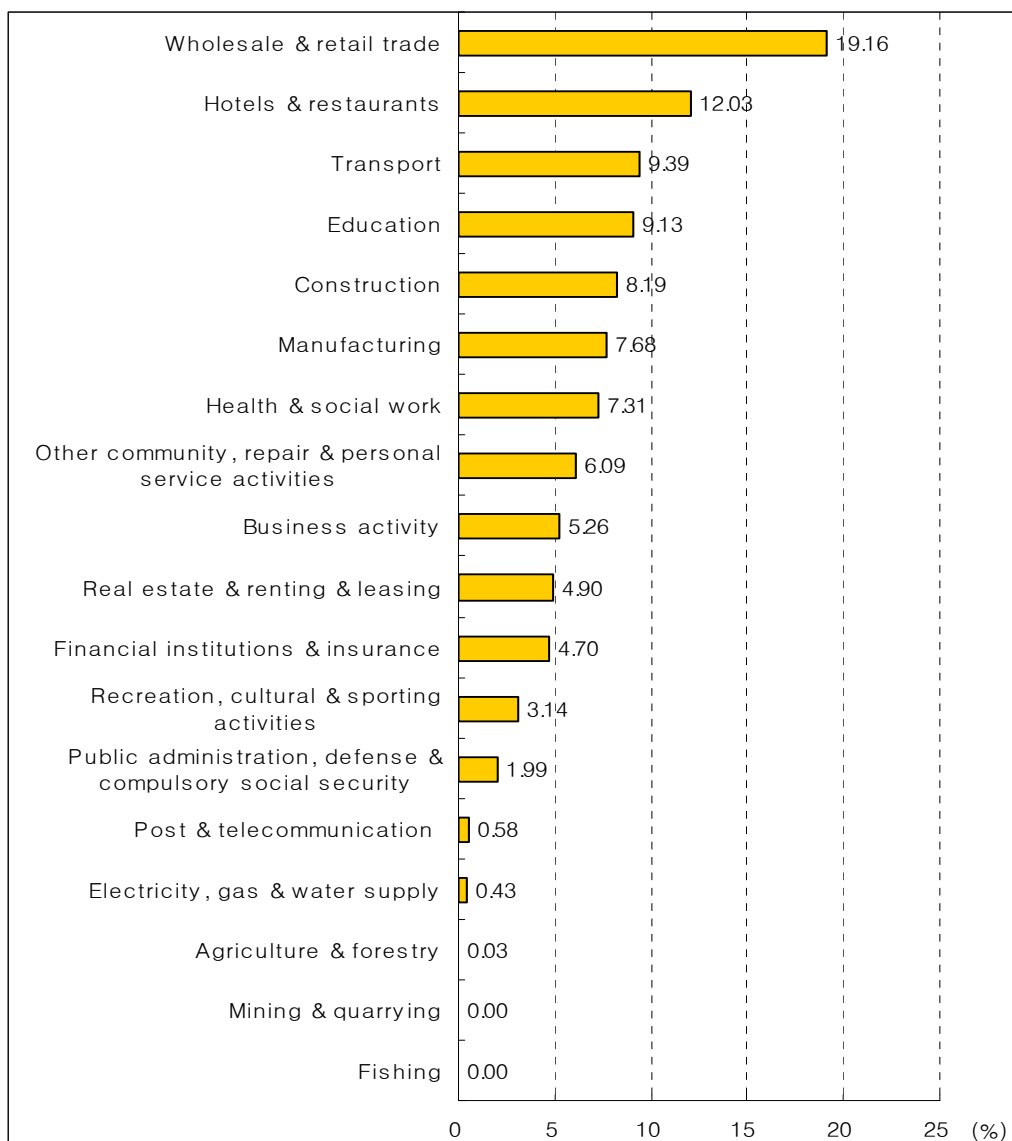
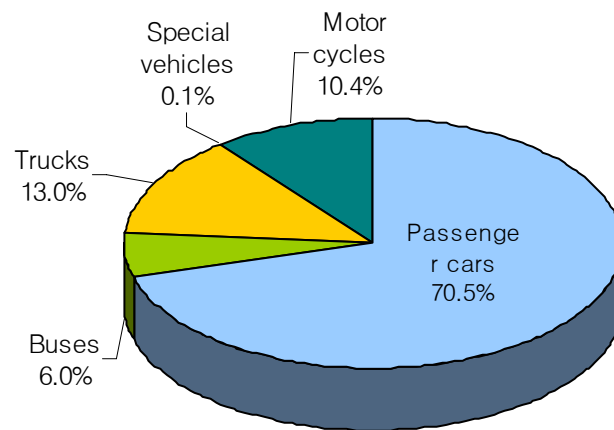


Figure 41. Economic activities of Gangdong-gu residents by industries
(2006 Gangdong-gu Statistics)

3) Transportation

Despite population decrease, motor vehicle registration in Gangdong-gu has increased continuously. Passenger's cars (70.5%) occupy majority of motor vehicles registered in Gangdong-gu.



**Figure 42. Motor vehicles registered in Gangdong-gu
(2006 Gangdong-gu Annual Statistical Report)**

3. Physical environment

1) Air quality in Gangdong-gu

Thanks to continuous implementation of environment policies by Gangdong-gu, air pollution in the district is decreasing. Analysis of air emission sources in Gangdong-gu showed that the largest amount of Sox emission in 2004 stemmed from non-industrial combustion sources. Largest shares of NO_x, CO, PM₁₀, and VOC emissions consisted of on-road pollution sources. This means that on-road pollution sources are the major sources of pollution in Gangdong-gu (2015 Gangdong-gu Environment Preservation Plan, 2007).

A) Changes in sulfur dioxide (SO₂) pollution

A comparison of annual average sulfur dioxide (SO₂) pollution in Gangdong-gu and Seoul Metropolitan City from 1998 to 2005 shows that Gangdong-gu has better satisfied environment standard of Seoul Metropolitan City than the city. In particular, Gangdong-gu has satisfied 0.01 ppm standard, the environmental standard of Seoul Metropolitan City since 1998.

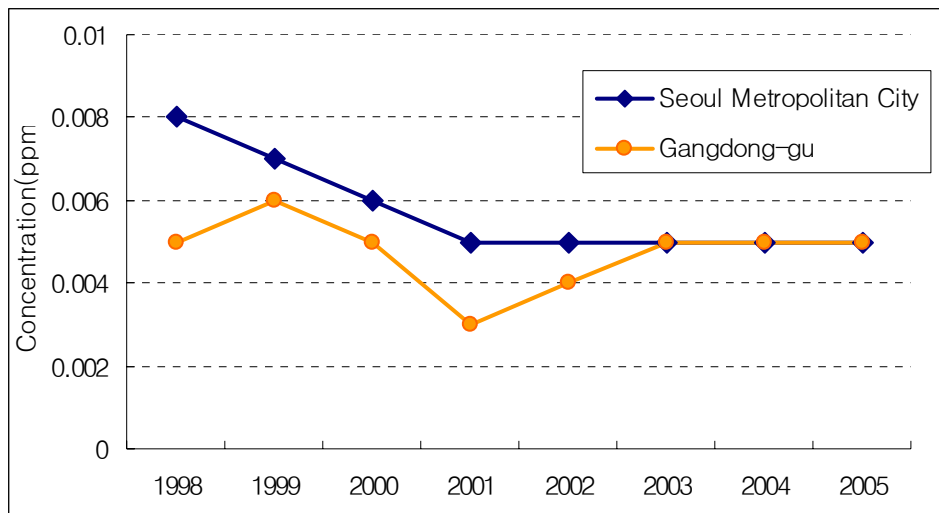


Figure 43. Changes in annual average SO₂ density in Seoul Metropolitan City and Gangdong-gu (2015 Gangdong-gu Environment Preservation Plan, 2007).

B) Changes in nitrogen dioxide (NO₂) pollution

Analysis of changes in annual average emission of Nitrogen dioxide (NO₂) shows that the emission of NO₂ has increased in Seoul Metropolitan City since 1998. However, the environment standard of Seoul Metropolitan City (0.04 ppm) has been satisfied. Gangdong-gu's emission of NO₂ surpassed the standard in 2001. However, the district has generally satisfied the standard afterwards.

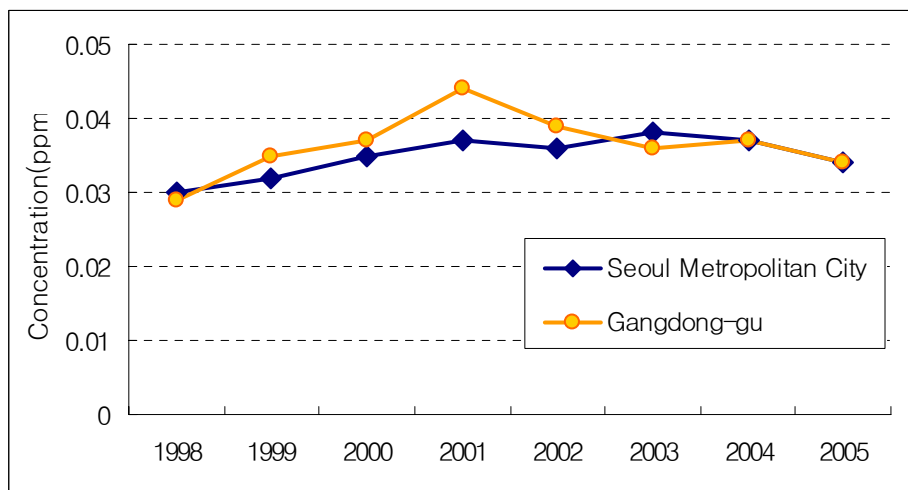


Figure 44. Changes in annual average NO₂ concentration in Seoul Metropolitan City and Gangdong-gu (2015 Gangdong-gu Environment Preservation Plan, 2007).

□ C) Changes in carbon monoxide (CO) pollution

In both Seoul Metropolitan City and Gangdong-gu, the carbon monoxide (CO) pollution level has been declining. Annual average of carbon monoxide (CO) pollution level has decreased thanks to the decline in the use of coal and oil in Seoul Metropolitan Area and increased use of clean energy.

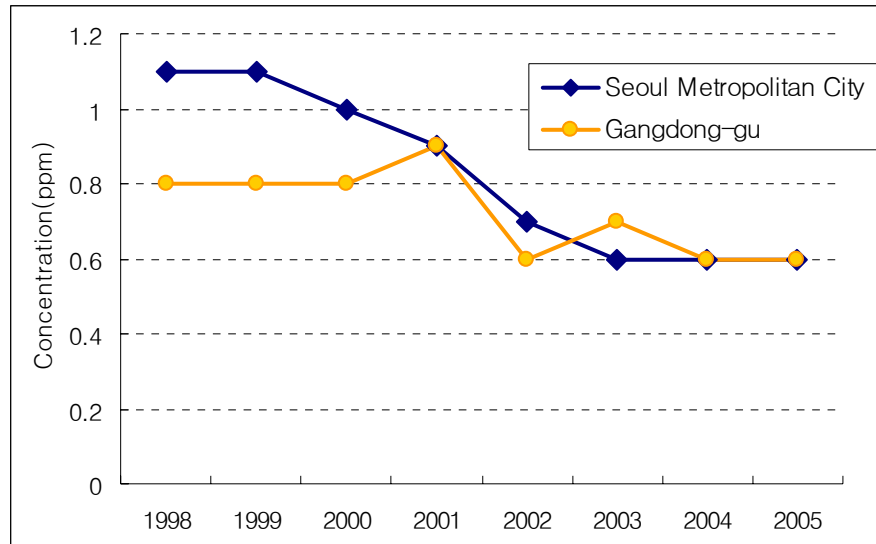


Figure 45. Changes in annual average of CO concentration in Seoul Metropolitan City and Gangdong-gu
(2015 Gangdong-gu Environment Preservation Plan, 2007).

□ D) Changes in ozone (O₃) pollution level

The pattern of changes in Gangdong-gu's annual and monthly average of ozone (O₃) pollution level is almost identical with that in Seoul Metropolitan City. In Gangdong-gu, monthly average ozone (O₃) concentration is highest in May and June and lowest in November and December.

Unlike other pollutants, ozone (O₃) concentration is influenced by sunrays. Therefore, the concentration increases in spring and summer when sunrays are strongest.

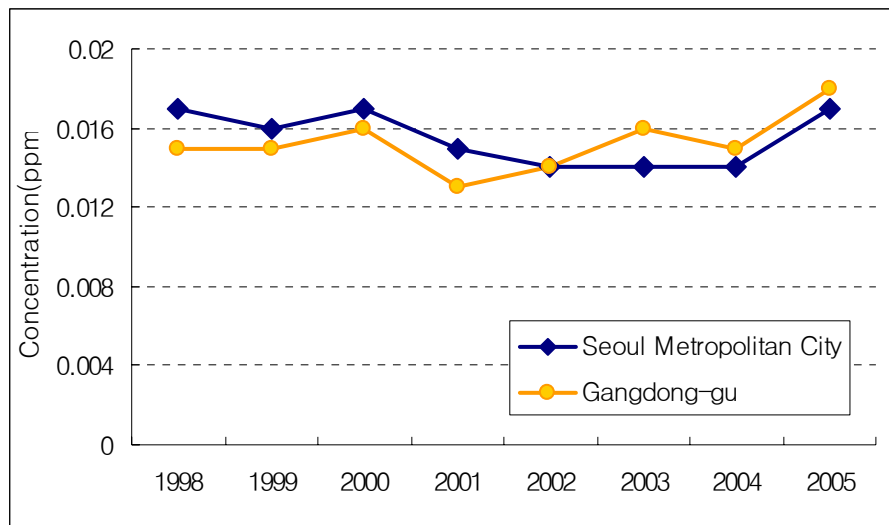


Figure 46. Changes in annual average of O₃ concentration in Seoul Metropolitan City and Gangdong-gu
(2015 Gangdong-gu Environment Preservation Plan, 2007).

□E) Changes in particulate (PM10) pollution level

In Seoul Metropolitan City, measurement of particulate (PM10) concentration began in 1995. The concentration began to increase in 1998. It tended to decrease since 2002. However, it began to re-increase since 2006 (Seoul Metropolitan City $61\mu\text{g}/\text{m}^3$).

In Gangdong-gu, measurement of particulate (PM10) concentration began in 1998. From 1998 to 2001, the concentration in Gangdong-gu was higher than in Seoul Metropolitan City. Since 2002, the concentration in Gangdong-gu was lower than in Seoul Metropolitan City. In 2004 and 2005, the concentration in Gangdong-gu was lower than the particulate concentration standard of Seoul Metropolitan City. In 2006 (Gangdong-gu $62\mu\text{g}/\text{m}^3$), the concentration level surpassed the standard level.

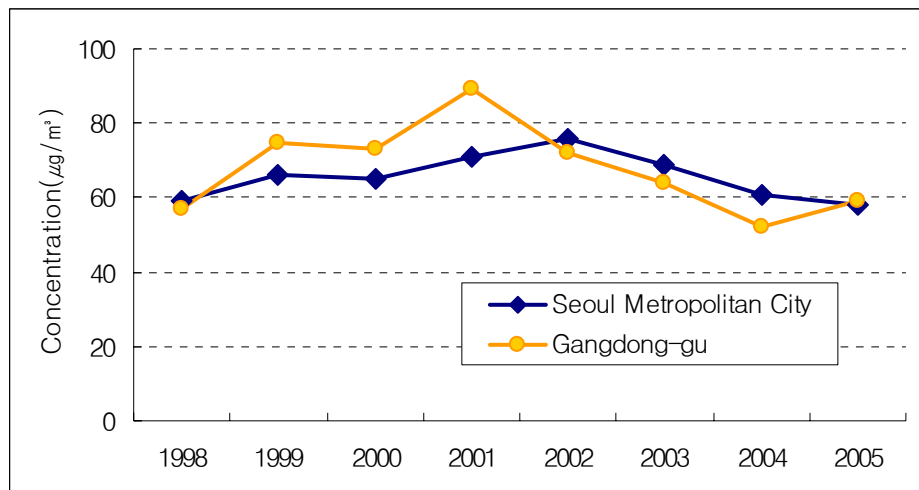


Figure 47. Changes in annual average O₃ concentration level in Seoul Metropolitan City and Gangdong-gu
(2015 Gangdong-gu Environment Preservation Plan, 2007).

2) Water quality in Gangdong-gu

Before 2000, water quality of Godeok-cheon (stream) was level five (BOD 8.6 mg/L) and the water could not be even used as industrial water. By 2007, the water quality improved to 4.83mg/L.

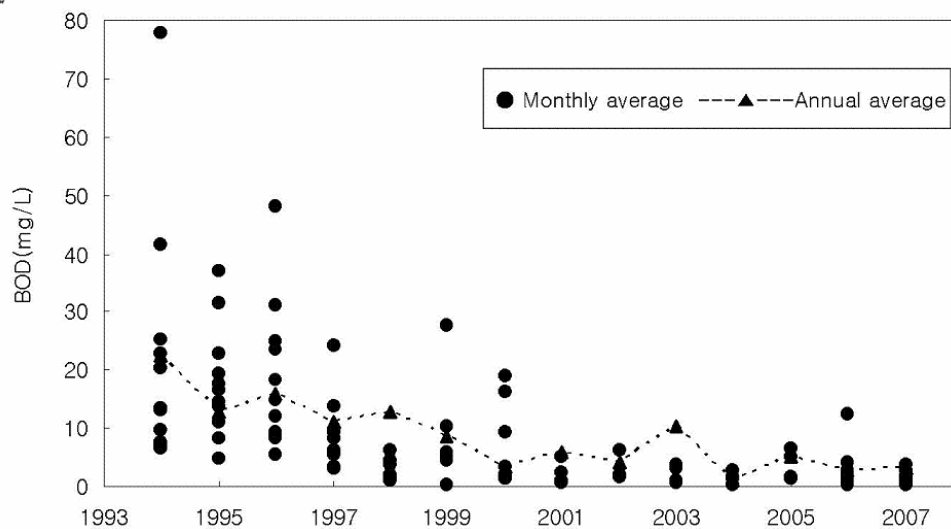


Figure 48. Changes in BOD of Godeok-cheon by year

2) Management of water and sewerage services

As of December 2005, Gangdong-gu is supplied with water from Amsa Purification Plant, which covers 17 dongs (79% of district population) and Gwangam Purification Plant, which covers four dongs (21% of population). Water is supplied either directly from transmission pipes or from Gwangam Distributing Reservoir.

Gangdong Water Supply Office is in charge of water supply and water facilities management. In 2005, the rate of accounted water was on average 90.9%. Every day, Gangdong-gu consumes about 120,000 m^3 of water. Daily water consumption per person is about 263 L ; daily household water consumption is 732 L .

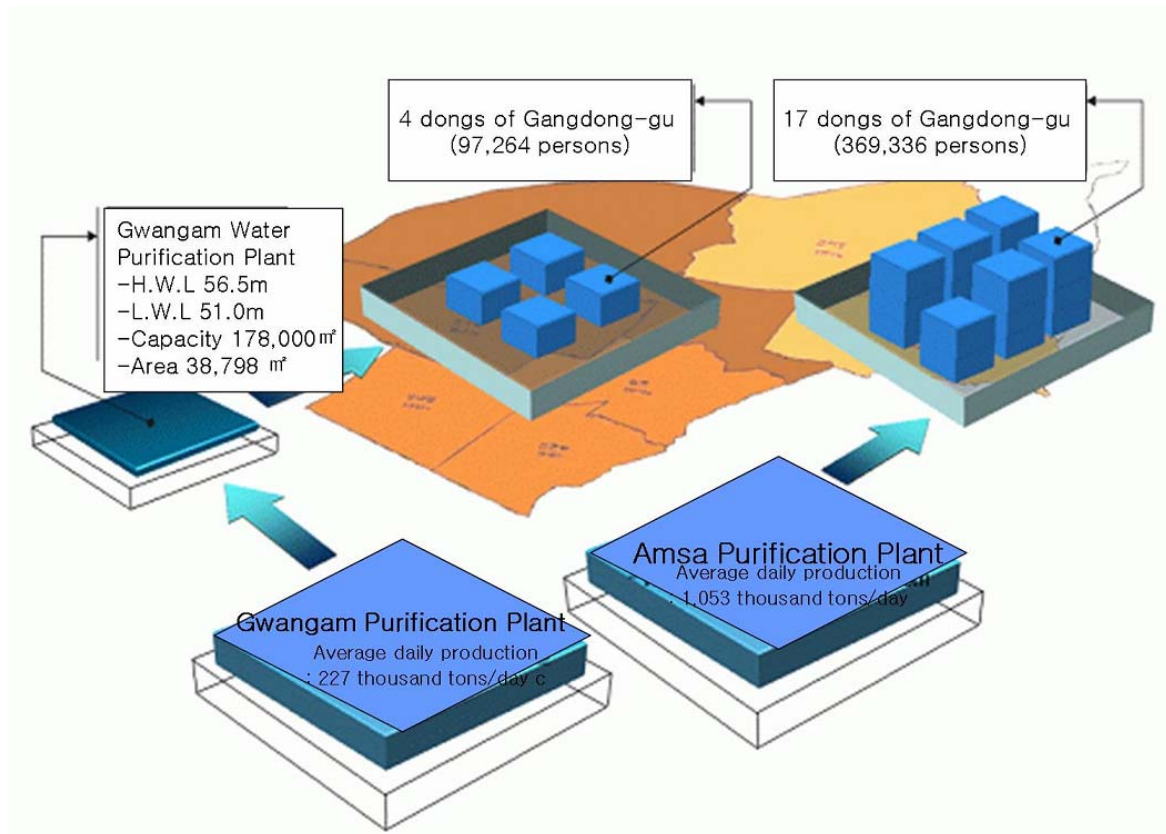


Figure 49 . Water supply system in Gangdong-gu

3) Parks

There are 86 parks (2.87 km^2 , 11.6% of the total area of Gangdong-gu) in Gangdong-gu. Three of the parks are operated by the district office. Most of park areas designated by Gangdong-gu are located in outskirts of the city. Cheonho Neighborhood Park, which is located at the center of the city, is the only substantial-size park located in the city center. There are about 52 small-size children's parks scattered around the city center. The parks, however, occupy only 0.35% of the total area of Gangdong-gu and do not contribute to the securing of green zone at the city center.

In Gangdong-gu, park space per person is 6.22 m^2 and living sphere park area is 2.92 m^2 . This amounts to 39% of park space per person in Seoul Metropolitan City, which is 15.95 m^2 , and 56.3% of living sphere park area in Seoul Metropolitan City, which is 5.19 m^2 .

Table 8. Parks in Gangdong-gu (January 2007)

categories	Park types		Number	Area (㎡)	Facilities		Without facilities	
					Number	Area (㎡)	Number	Area (㎡)
	Total		87	3,708,900.20	69	1,186,191.10	18	2,522,209.10
Parks managed by the city	Sub-total		4	2,031,810.80	1	107,379.80	3	1,924,431.00
	Ilja-san City Nature Park		1	713,416.00		80,683.00	1	632,733.00
	Cheonho Neighborhood Park		1	26,696.80	1	26,696.80		
	Gwangjang Park (including Hang River Citizens' Park)		1	1,181,500.00			1	1,181,500.00
	Amsa History Park		1	110,198.00			1	110,198.00
Parks managed by the district	Urban parks	Sub-total	74	1,391,335.00	60	1,075,556.90	14	315,778.10
		Neighborhood parks	18	1,263,404.50	13	1,004,626.70	5	258,777.80
		Children's parks	53	85,477.20	47	70,930.20	6	14,547.00
		Riverside parks	3	42,453.30	-	-	3	42,453.30
	Other parks	Sub-total	9	285,754.40	8	3,754.40	1	282,000.00
		Park(Amsa)	1	282,000.00	-	-	1	282,000.00
		Village courts	8	3,754.40	8	3,754.40	-	-

Source : "Current Status of Parks," Seoul Metropolitan City, 2007

Distribution of park space among dong is unbalanced. Park space per person in Sangil-dong and Godeok-dong is larger than in other dong. In particular, park space per person in Amsa-dong, Cheonho-dong, Gil-dong, and Dunchon-dong is seriously smaller than in other dong.

Seongnae 2-dong and Dunchon 1-dong are nearly devoid of living sphere green zones such as neighborhood parks and children's parks. "Spatial unbalance" between relatively park-rich and park-poor dong is serious.

Table 9. Distribution of living sphere parks by dong

Categories	Children's parks		Neighborhood parks		Total		Park area per person	
	Number of facilities	Area (㎡)	Number of facilities	Area (㎡)	Number of facilities	Area (㎡)	Population	㎡ / person
Total	53	85,477.2	18	1,263,404.5	72	1,348,881.7	461,760	2.92
Gangil-dong	4	11,250.0	2	135,339.0	6	146,589.0	758	193.39
Sangil-dong	5	11,506.0	2	659,413.6	7	670,919.6	30,807	21.78
Myeongil-dong	8	11,001.1	2	37,242.5	10	48,243.6	49,926	0.97
Godeok-dong	6	10,717.5	9	410,331.2	15	421,048.7	42,686	9.86
Amsa-dong	6	9,820.6	2	11,040.8	8	20,861.4	60,160	0.13
Cheonho-dong	13	15,258.7	-	-	13	15,258.7	99,796	0.35
Seongnae-dong	6	9,717.7	1	8,928.8	7	18,646.5	74,975	0.25
Gil-dong	4	3,979.6	-	-	4	3,979.6	52,507	0.08
Dunchon-dong	1	2,226.0	-	-	1	2,226	50,145	0.04

Source: "Current Status of Parks," Seoul Metropolitan City, 2007, *Population data are those of December 31, 2006

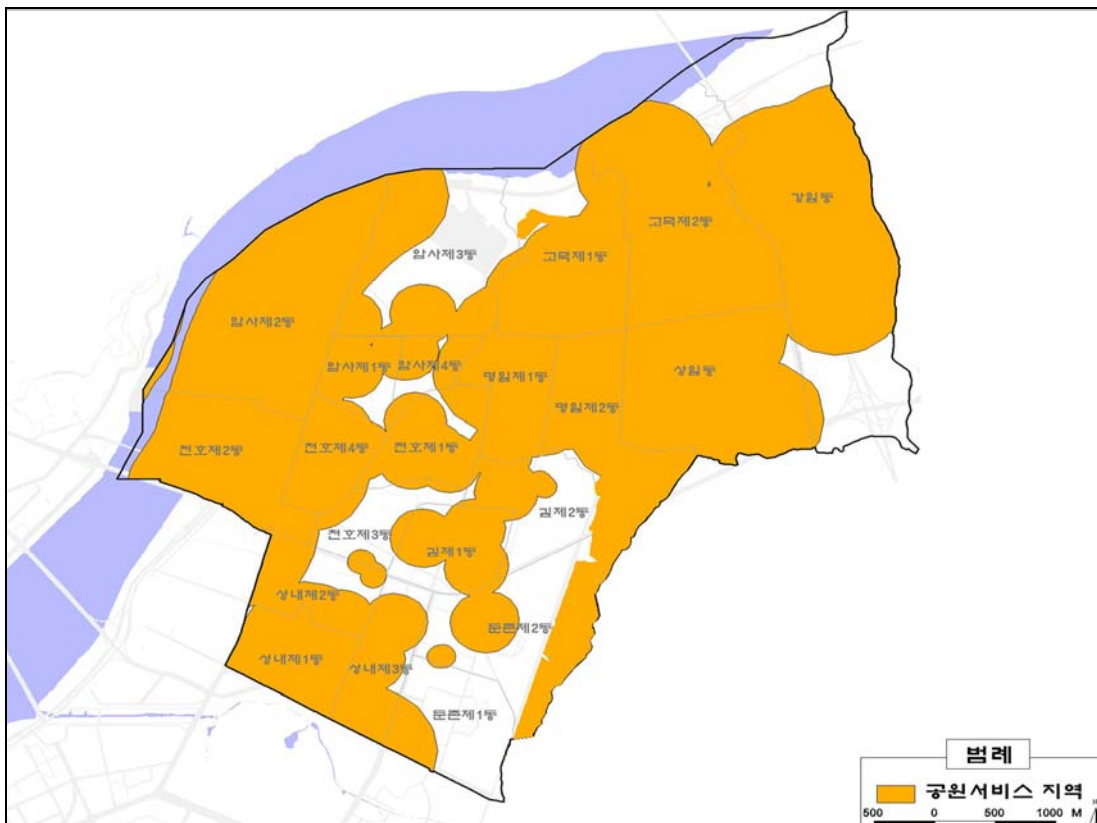


Figure 50. Current status of park areas

□. Health and medical services

1. Current status of health and medical services

1) Number of health insurance subscribers

The distribution of health insurance types in Gangdong-gu was the following: workplace health insurance (44.2%), regional health insurance (47.3%), and health insurance for civil servants and teachers 8.5%.

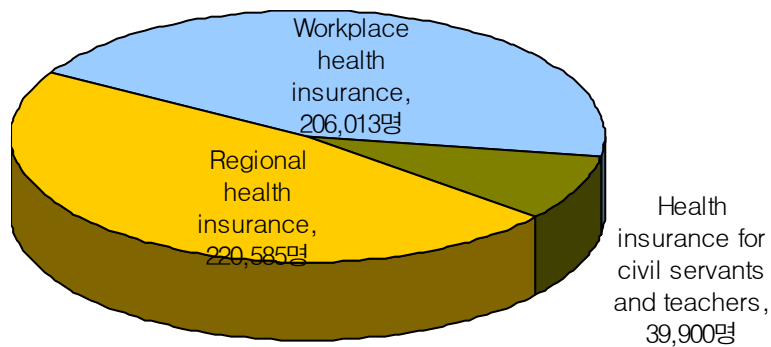


Figure 51. Health insurance subscribers in Gangdong-gu
(National Health Insurance Corporation, 2004)

2) Medical subsidy recipients

In Gangdong-gu, there are 2,448 class I medical subsidy recipients and 2,677 class II medical subsidy recipients.

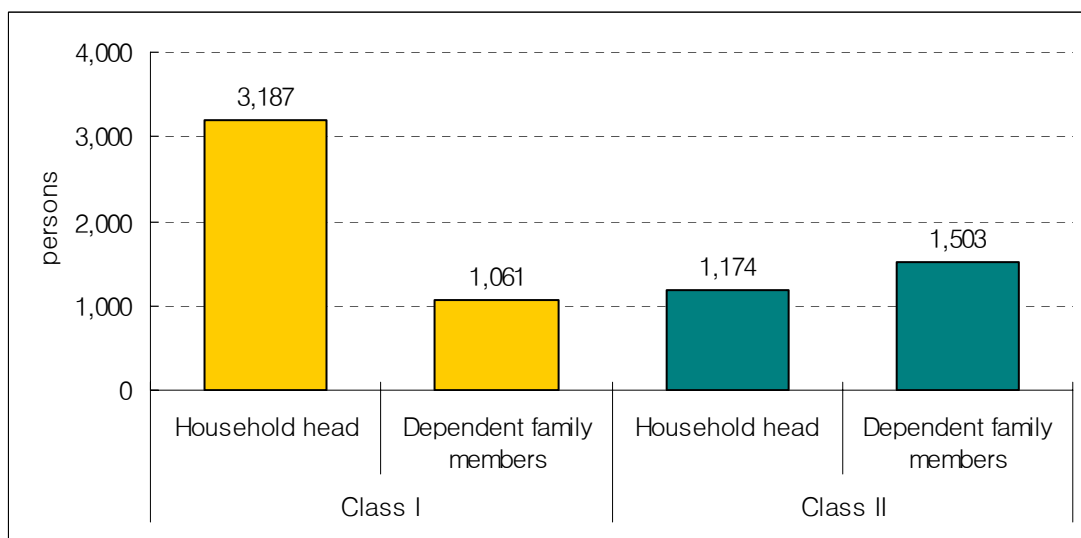


Figure 52. Medical subsidy recipients in Gangdong-gu
(Statistics on Medical Subsidy Recipients, National Health Insurance Corporation, 2006)

3) In-district and outside district medical treatment

For three years from 2003 to 2005, there was no remarkable changes in residents' use of district medical facilities.

Table 10. Percentage of patients using medical facilities in Gangdong-gu

Categories		2003	2004	2005
Use of medical facilities in Gangdong-gu	Inpatients (%)	48.2	48.2	48.9
	Outpatients (%)	72.1	72.5	73.4
Use of medical facilities outside Gangdong-gu	Inpatients (%)	51.8	51.8	51.1
	Outpatients (%)	27.9	27.5	26.6
Total	Inpatients (%)	100.0	100.0	100.0
	Outpatients (%)	100.0	100.0	100.0

2. Public Health Center Services

1) Health services at public health centers of Gangdong-gu

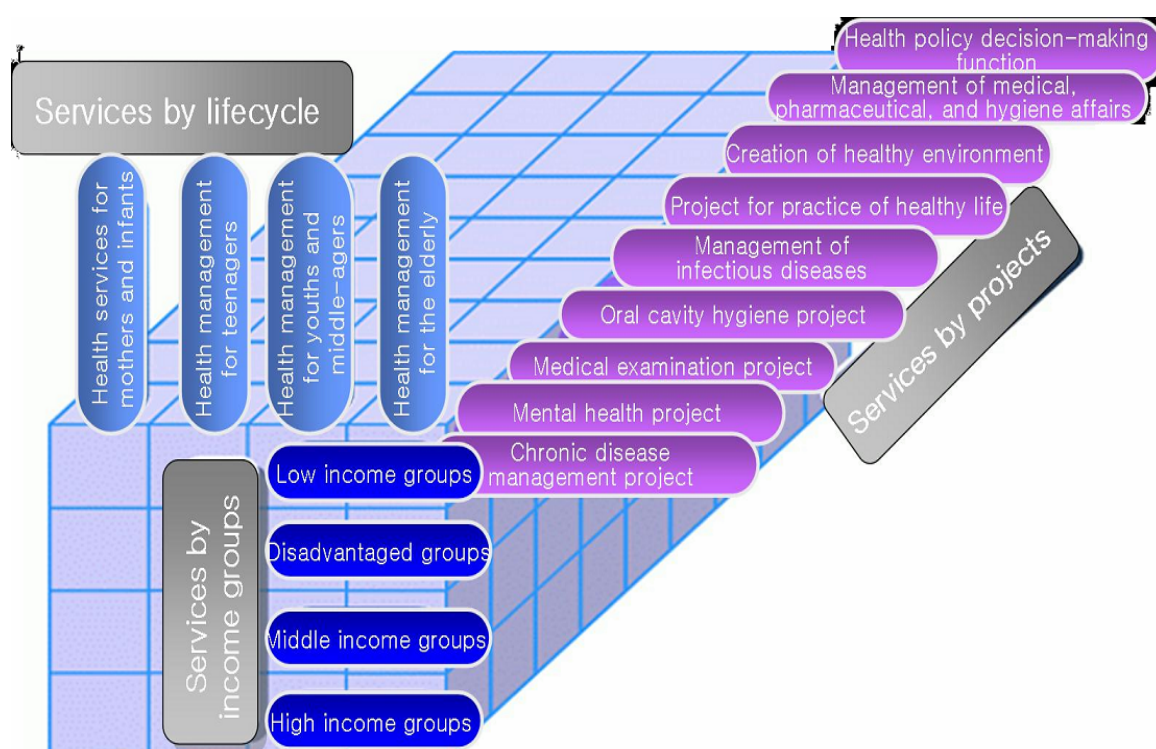


Figure 53. Work scope of public health centers

Categories	Projects
Health and hygiene management	<ul style="list-style-type: none"> – Monitoring and supervision of food hygiene businesses – Monitoring and supervision of public hygiene businesses – Food poisoning prevention projects
Health improvement services	<ul style="list-style-type: none"> – Health management for pregnant women, nursing mothers, and infants – Health improvement of women and children – Vaccination projects – Infectious disease prevention and management – Creation of healthy local community – Chronic disease management
Health and medical services	<ul style="list-style-type: none"> – Medical subsidy provision for disadvantaged groups – Disease prevention and health management – Alzheimer’s disease prevention – Mental health management

1) Percentage of residents who experienced services provided by public health centers

The percentage of Gangdong-gu residents who experienced services provided by public health centers was 27.7%, which was higher than that of Seoul Metropolitan City (25.4%). Major reasons for going to the centers were “low cost”, “short distance from the residence,” and “unique services that are not available in other medical institutions.”

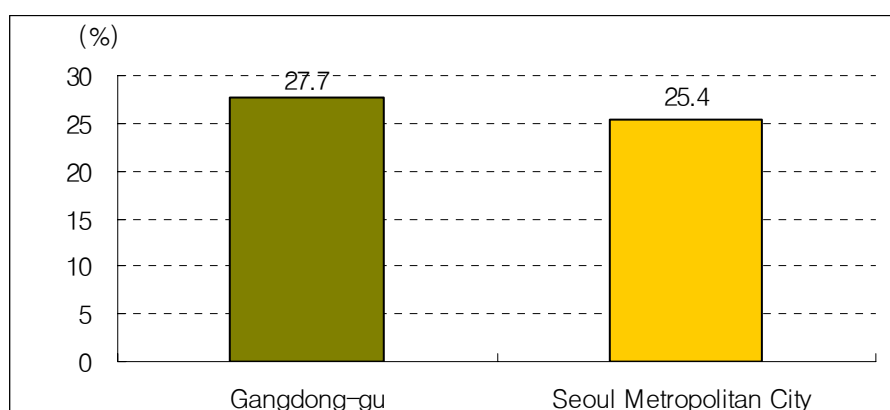


Figure 54. Percentage of residents who experienced health services provided by Gangdong-gu and Seoul Metropolitan City

(Source: Analysis of the Third Seoul Metropolitan City Health Indices Survey)

2) Recognition rate of medical services provided by public health centers

In comparison with residents of Seoul Metropolitan City as a whole, Gangdong-gu residents’ recognition of the availability of medical check-up, general medical examination was significantly low. Those who were informed about the

services cited the services in the order of vaccination, management of infectious diseases, and health education. In the case of Seoul Metropolitan City, frequently cited services were in the order of vaccination, infectious diseases management, and medical check-up.

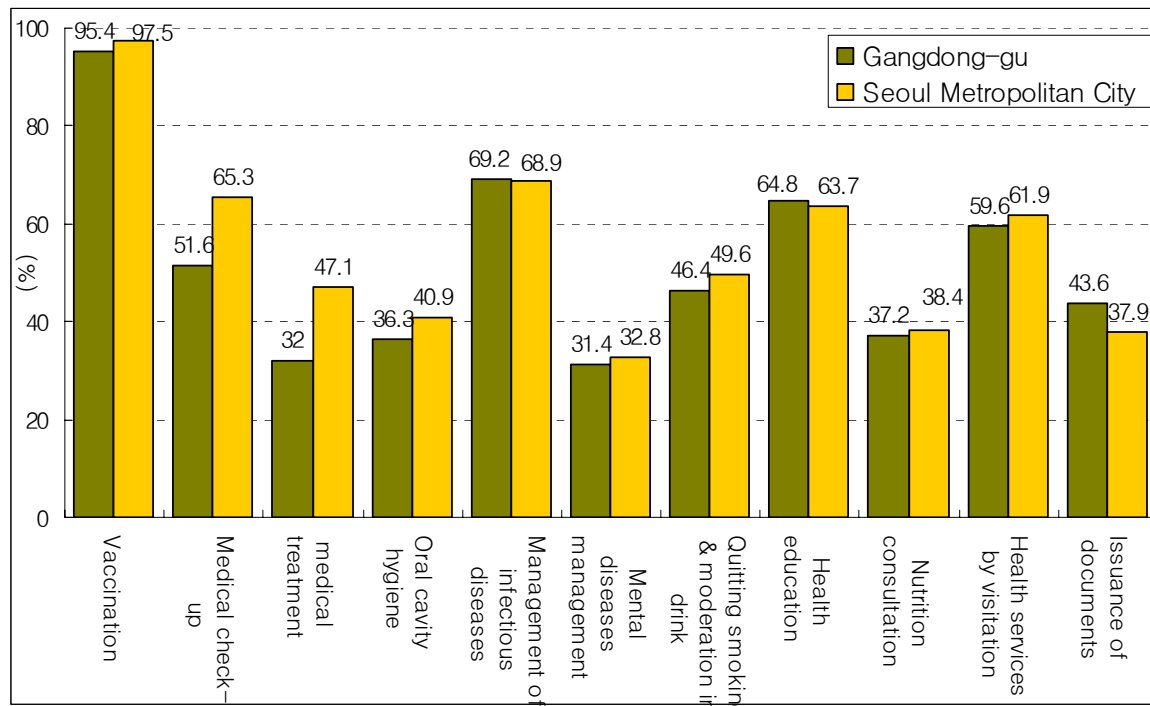


Figure 55. Level of recognition of services provided by health service centers among residents of Gangdong-gu and Seoul Metropolitan City

(Source: Analysis of the Third Seoul Metropolitan City Health Indices Survey; Health and Medical Services Development Plan for Healthy Gangdong, 2007)

3) Satisfaction level of residents who experienced services from public health centers

Satisfaction level of Gangdong-gu residents who used public health center services was 3.8/5 and was higher than the level among Seoul Metropolitan City residents (3.6).

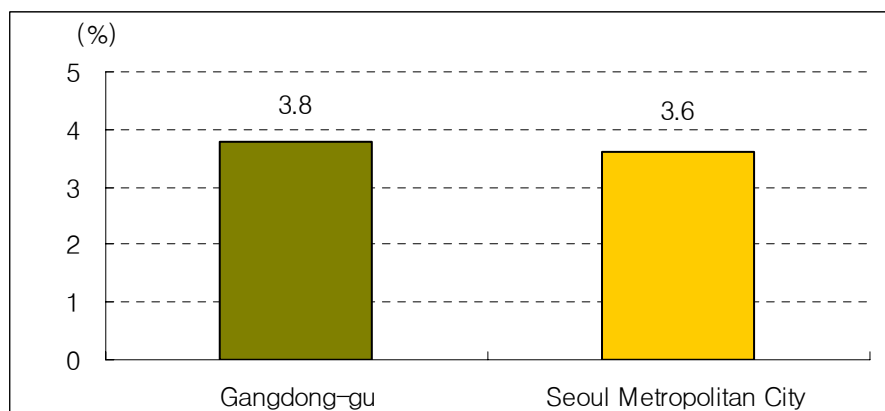


Figure 56. Satisfaction level of Gangdong-gu and Seoul Metropolitan City residents who experienced services provided by public health centers

(Source: Analysis of the Third Seoul Metropolitan City Health Indices Survey)