Ok Ryun Moon*

Jae Woong Hong*

Health Services Outcome Data: A Survey of Data and Research Findings on the Provision of Health Services in Korea**

I. Summary

1. Mortality Data

This survey reviews 58 mortality studies published after 1945 in Korea. The indexes of mortality used in this study are the crude death rate, infant mortality rate, age and sex specific death rate, expectation of life at birth, and maternal mortality rate, etc., The mortality data were classified in these three categories; registered data, estimates, and sample survey data. The data were derived from population census, death registration, and sample surveys. The completeness of death registration and sample size are the major factors in determining the reliability of the data. Although the range of data is broad, representative figures of each item are provided as follows.

1) It is obvious that all of the death rates were slowly declining. But sizeable differences were found among the registered data, estimates, and sample survey data. Generally, the rates for all categories derived from the estimated data are highest.

2) The recent estimates of the crude death rate are approximately 10 per thousand population. However, the crude death rates surveyed in urban areas (primarily in Seoul) are around 5 per thousand population, and those in the rural areas are 7 to 8 per thousand.

3) The sample surveys show that infant mortality rates in recent years are approximately 30 to 35 per 1,000 livebirths in urban areas. In the rural areas, a wide range of

* School of Public Health, Seoul National University

** This investigation was supported from USAID Fund for Health Planning Research, Grant No. 489-11-590-708-3. We would like to express our sincere gratitude to Dr. James R. Brady, Chief of USAID-Korea Office of Health Planning, Dr. Shin Il Choo, Planning Officer in the Ministry of Health & Social Affairs, and Dr. Hyung Jong Park, Former Dean of the School of Public Health, SNU, who appreciated the necessity of this investigation and enabled us to conduct it. Ms. Brenda Doe read the manuscript and provided invaluable comments. Our thanks to Miss Tae Seon Jeon, Jung Sook Lee, and Myung Sook Kim, whose devotions were indispensable for carryingout this study.

This study is an initial attempt to collect and examine the existing data on the provision of health services in Korea. It should be emphasized that the ultimate purpose of this study can not be achieved if we stop at this point in time. Therefore, we will do our best to continue this project indefinitely, and periodically update the findings.

Certainly, we are sorry for them whose research findings fail to be appeared here. Please let us know about them, then, they will be supplemented next time.

The authors are solely responsible for any misinterpretations and errors in the study.

40 to 60 per 1,000 livebirths was found in the sample surveys.

4) The age specific death rates abruptly decline after the infant period, and continued at a lower level until the early forties. The increment of age specific death rate is gradual during the forties and fifties, but is quite abrupt after age sixty. The male has a higher death rate than female in all ages, especially in older ages. The difference is 1 to 2 per thousand on the average.

5) Accordingly, the life expectancy at birth was gradually increased. Recently, the life expectancy was determined as over 60 years for both sexes. The life table based on the 1966 census shows a life expectancy of 61.9 years for both sexes, with 59.7 years for the male and 64.1 years for the female.

6) All of the data on maternal mortality were based on the records of several general hospitals. Because tremendous variations exist among the studies, the findings cannot be generalized.

2. Morbidity Data

Fifty-three studies were examined in terms of the following morbidity and other factors; age, sex, age and sex, cause-specific prevalence rates and age, area specific incidence rates, annual number of sicknesses per capita, days activity restricted, and the ten leading causes of morbidity.

The results are as follows.

1) Teenagers and the productive age group, 20-40, show lower morbidity rates. The distribution of age specific prevalence rate is a U-shaped curve.

2) The mean value of prevalence rate per 1,000 people is around 160. The female has a higher prevalence rate than the male by 15 to 20.

3) The prevalence rate of urban people seems to be higher than that of rural residents, but more information is required to verify this result.

4) The average number of annual sicknesses per person is 1.9 to 2.0.

5) It can be accurately stated that the average number of days of activity restriction per person per month is 0.5, and that of activity restriction per patient is 3.4.

6) The prevalence and incidence rates surveyed on the first day of study were remarkably lower than those surveyed on the last day of the study. This may have resulted because the respondents are better prepared to answer by the end of the study.

7) The prevalence rate of chronic diseases is much higher than the incidence rate of acute diseases, which indicates the existence of a large number of chronic conditions.

8) Seasonal variations are noted in the ten leading causes of morbidity. Diseases of the digestive system are the leading cause in the summer, and diseases of the respiratory tracts in the winter.

9) The Goverment statistics indicate that the incidence rates of acute communicable diseases are rapidly decreasing, except for typhoid fever. The statistics reveal the increment of infectious tuberculosis despite the reduction of non-infectious tuberculosis.

3. Utilization Data

Eighty three references were investigated to determine the characteristics of the

medical care utilization pattern in Korea. The results are as follows:

1) Males use more health services than females, except for visits to pharmacists.

2) Rural residents tend to use health centers and herb doctors more frequently than urban people who use physician visits and hospitalization most frequently. The number of hospitalization increased significantly from 2.8 per 1,000 population in 1963 to 6.2 in 1974 in the rural areas.

3) Drugstores are the primary source of care for more than fifty per cent of all Koreans. Pharmacists are more frequently visited by the urban dwellers than the rural. More information is required to determine the trend of drugstore use over time.

4) Dentists are rarely consulted. The total number of dentist visits is equivalent to only one fiftieth of that of physician visits. This is evidence of the need for increased dental care in Korea.

5) The need for medical care is not met for more than half of the total reported episodes of illness.

6) The older the patients, the more likely they are to use all kinds of health services if those less than five years old are excluded.

7) The data from the national census on medical institutions suggest that the average length of inpatient stay was reduced from 16.7 days in 1966 to 12.4 days in 1973.

8) The level of education is positively correlated to hospitalization, physician and dentist visits, and is negatively correlated to herb doctors and herb druggist visits.

9) Both the educational level of mothers and geographical conditions affects the selection of place of delivery. Almost 90% of deliveries occur at home in the rural areas.

10) The following data are representative figures of the different medical care utilization patterns per 1,000 population per month.

Type of Medical Care	Rural		Urban	
	Average	Range	Average	Range
Physician Visit	22.7	5.7—47.2	30.2	20.5—47.1
Hospitalization	2.7	0.7—6.2	9.0	1.6—15.2
Health Center	10.2 11.9*	0.8—47.7 2.4*—47.7*	2.6	0.7—5.8
Pharmacist Visit	38.6 44.4*	0.9—71.0 21.6*—71.0*	50.5 61.7*	5.4—73.3 18.6*—73.3*
Dentist Visit	0.4	0.2—0.6	0.6	0.1—1.1
Herb Doctor Visit	7.4 8.8*	0.3—13.5 3.6*—13.5*	5.5	2.2—8.3
Herb Druggist Visit	6.5	3.5—9.7	8.7	4.2—16.9

* Adjusted by excluding those figures which fall beyond the one tenth of maximum figure.

4. Expenditures Data

A. Estimates of Gross National Health Expenditures.

Data are scarce in the estimates of gross national health expenditures. The following

data were mostly prepared by the Finance Subcommittee of the Health Sector Task Force for the Fourth 5-year Development Plan, ROK.

1) The total amount of national health expenditures was 191.2 billion won in 1974, which was three times the 64.7 billion won spent in 1970.

2) The national health expenditures as a percentage of the GNP increased from 2.5% in 1970 to 2.8% in 1974.

3) Health and medical care expenditures per capita increased from 2,000 won in 1970 to 5,700 won in 1974. The Social Security Subcommittee of the Health Sector Task Force used 5,611 won as the baseline figure for average per capita medical care expenditure in 1973.

4) In 1974, the public sector consumed 11%, or 21 billion won, of the total national health expenditures. The private sector consumed 89%, or 170.2 billion won. The sources of health expenditures are increasingly private.

5) In 1970, 48.2% of public expenditures came from the central government, and the remaining 51.8% came from the local governments. In 1974, the proportion of expenditures from the local goverments increased to 54.7%. The public sources are increasingly local government.

6) The local government's average per capita expenditures on health and medical care amounted to 386 won in 1973. Kangwon Province spent the most, 590 won per capita; and Chollanam Province spent the least 274 won per capita.

7) The proportion of out of pocket expenditures on health and medical care increased from 2.3% of total private expenditures in 1970 to 3.5% in 1974.

8) It is predicted that if the proportion of national health expenditures to GNP remain at 2.8%, the gross national health expenditures will increase from 250 billion won in 1975 to 662 billion won in 1981.

9) It is predicted that if the rate of national health expenditures to GNP increases annually by 0.1% to 3.5% in 1981, the gross national health expenditures will increase from 259 billion won in 1975 to 828 billion won in 1981.

10) It is predicted that the private consumption expenditures on health and medical care will increase from 213 billion won in 1975 to 583.3 billion won in 1981, if the income elasticity of private consumption expenditures remains at 1,036.

B. Review of the Existing Literature.

Thirty-six references were reviewed in order to identify some current features of medical care expenditures. These were itemized into by type of medical care, sex, monthly income, area, occupation, and classification of diseases and injuries. The results are summarized as follows.

1) In 1959, the per capita annual expenses for outpatient care was 77 won in rural areas. By 1972, it had increased to 912 won on a nationwide basis.

2) In-patient expenses per treated case vary according to area. In 1973, the highest expenditure was 69,102 won in urban areas, and the lowest was 10,313 won in rural areas.

3) In 1973, the expenses for drug store visits per treated case ranged from 765 won in rural areas to 1,261 won in urban areas. It was equivalent to one third to a half of outpatient expenses in terms of per patient and per treated case.

4) It cost an average of 1,000 won to receive medical care at the health centers in 1973. The amount was almost equal to the expenditures for drug store utilization, and two thirds of the amount for outpatient expenses.

5) Visits to herb drug stores cost twice as much as visits to the private clinics. A considerable amount of money was spent on folk therapies and superstitious remedies, although the number of users was not large.

6) On the average, the male spent slightly more than the female in terms of per patient and per treated case expenditures. However, more information is required to determine if the male or female spent more in terms of per capita expenditures.

7) The statistics for the total medical care expenses per year were only 6 to 7 times the per month expenditures. The difference may occur due to lapses of memory on the part of survey respondents. Thus, caution should be used when annual expenditure figures are quoted.

8) Monthly health and medical care expenses consist of 4% of the total monthly household income. The urban family spent more than the rural in terms of proportion of household income. Health plan subscribers spent more on medical care than non-members.

9) The medical care expenditures increased proportionally to age.

10) It is nearly impossible to identify any significant expenditure difference in terms of occupation, due to the various occupational classification systems used. Standardization is urgently needed.

11) The medical care expenditures by classification of diseases and injuries differ remarkably among studies. It should be kept in mind that this information at its best estimates is too crude to be used in planning for and administering health services.

Ⅱ. Analysis of Data

1. Mortality Data

A. Basis Data Tables

1. Registered and Estimated Crude Death Rate
2. Crude Death Rate (per 1,000 Population) Based on Sample Surveys by Area
3. Infant Mortality Rate per 1,000 Live-births Based on Sample Surveys by Area
4. Registered and Estimated Infant Mortality Rate per 1,000 Live births
5. Age and Specific Mortality Rate per 1,000 Population
6. Expectation of Life at Birth
7. Maternal Mortality Rate per 10,000 Livebirths
8. Major Cause Specific Death Rates per 100,000 Population
9. Major Causes of Infant Deaths

Table 1-1. Registered and Estimated Crude Death Rate(I)

Year	Sources	Population in 1000s	Crude Death Rate/1,000 Population	
			Registered	Estimated
1946	E. P. B. 1)	19,396	11.9	
1947	E. P. B.	19,886	9.0	
1946~1950	Choe, E. H. 2)			15.8
1952	Byun, S. M. et al 3)		2.3	
1953	E. P. B.	21,546	3.5	
	Byun, S. M. et al		3.6	
1954	E. P. B.	21,913	5.2	
	Byun, S. M. et al		5.3	
1955	E. P. B.	21,502	4.1	
	Byun, S. M. et al		4.2	
1951~1955	Choe, E. H.			14.3
1956	E. P. B.	22,307	4.8	
	Byun, S. M. et al		5.1	
1957	E P. B.	22,949	4.9	
	Byun, S. M. et al		5.5	
1958	E. P. B.	23,611	5.8	
	Byun, S. M. et al		6.4	
	Kim, I. S. et al 4)			12.3
1959	E. P. B.	24,291	6.0	
	Byun, S. M. et al		7.9	
	Kim, I. S. et al			12.3
1960	E. P. B.	24,389	5.2	
	Byun, S. M. et al		9.0	
	Kim, I. S. et al			12.2
	E. P. B. 5)			8.3
	E. P. B. 57)			13.0
1955~1960	Kim, M. M. 6)			15.8
1956~1960	Choe, E. H.			12.8

Table 1-1. Registered and Esitmated Crude Death Rate(Ⅱ)

Year	Sources	Population in 1000s	Crude Death Rate/1,000 Population	
			Registered	Estimated
1961	E. P. B. 1)	25,700	10.3	
	Byun, S. M. et al		10.2	
	Kim, I. S. et al			12.1
	E. P. B. 5)			9.5
	E. P. B. 57)			13.0
1962	E. P. B. 1)	26,432	7.5	
	Byun, S. M. et al		7.5	
	Kim, I. S. et al			12.3
1963	E. P. B. 1)	27,084	4.8	
	Byun, S. M. et al		4.8	
	Kim, I. S. et al			12.0
	E. P. B. 57)			12.0
1964	E. P. B. 1)	27,958	4.2	
	Byun, S. M. et al		4.2	
	Kim, I. S. et al			12.0
	E. P. B. 57)			11.0
1965	E. P. B. 1)	28,670	4.4	
	Byun, S. M. et al		5.3	
	Kim, I. S. et al			11.9
	Koh, K. S. 7)			9.0
1966	E. P. B. 1)	29,086	4.2	
	Byun, S. M. et al		4.2	
	Kim, I. S. et al			11.9
	Park, Y. S. 8)			8.4
	E. P. B. 57)			10.0
1967	E. P. B. 1)		4.7	
	Kim, I. S. et al			11.9
	E. P. B. 57)			9.1
1968	E. P. B. 57)			8.9
1969	E. P. B. 57)			8.6
1970	E. P. B. 57)			8.5
1965~1970	Kwon, O. H. et al 44)			9.0

Table 1-2. Crude Death Rate(Per 1,000 population) Based on Sample Surveys by Area(I)

Year	Researchers or Institution	Sample Size	Findings by Sample Area		
			Urban	Rural	Both
1952	Lee, Y.C. et al 9)	9,212		16.3	
1953	Lee, Y.C. et al	9,360		16.9	
1954~1955	Lee, Y.C. et al	Unknown		8.2	
1956	Lee, Y.C. et al	10,495		8.2	
1957	Lee, Y.C. et al	10,811		9.8	
1958	Lee, Y.C. et al	10,416		8.1	
	Won, M.S. 12)*	200,839	8.1		
1959	Lee, Y.C. et al	10,711		9.0	
	Won, M.S.*	206,747	7.6		
1960	Lee, Y.C. et al	11,026		9.1	
	Won, M.S.*	166,765	5.8		
1961	Lee, Y.C. et al	10,143		5.0	
	Kim, K.S. 10)	6,788		7.7	
	Kim, K.S. 11)	2,637		8.0	
	Lee, S.J. et al 13)	35,519		7.4	
	Won, M.S.*	172,053	5.8		
1962	Lee, Y.C. et al	10,402		6.2	
	Kim, K.S. 10)	7,006		8.6	
	Kim, K.S. 11)	2,707		8.1	
	Lee, S.J. et al	39,591		6.9	
	Won, M.S.*	191,490	4.0		
	Kwon, E.H. et al 14)	86,622	7.1		
	Kim, K.S. 15)*	268,806	4.1		
1963	Lee, Y.C. et al	10,706		5.6	
	Kim, K.S. 10)	7,240		7.3	
	Kim, K.S. 11)	2,774		6.9	
	Lee, S.J. et al	37,761		7.7	
	Cha, M.H. 16)	9,661		8.3	
	Park, H.J. et al 17)	37,750		10.6	

Table 1-2. Crude Death Rate (per 1,000 Population) Based on Sample Surveys by Area (Ⅱ)

Year	Researchers or Institution	Sample Size	Findings by Sample Area		
			Urban	Rural	Both
1963	Kwon, E.H. et al	8,331	9.2		
	Bang, K.M.[18]*	3,254,630	4.6		
1964	Lee, Y.C. et al	10,978		5.6	
	Kim, K.S.[10]	7,479		7.8	
	Kim, K.S.[11]	2,838		7.1	
	Lee, S.J. et al	38,810		9.4	
	Kwon, E.H. et al	91,664	7.1		
	Bang, K.M.*	3,424,385	4.3		
	E.P.B.[5]	1,000 : 1			8.5
1965	Lee, Y.C. et al	11,081		6.4	
	Kim, K.S.[10]	7,662		9.5	
	Kim, K.S.[11]	2,902		7.6	
	Lee, S.J. et al	39,714		7.6	
	Bang, K.M.*	3,470,880	5.1		
1966	Lee, Y.C. et al	11,071		7.4	
	Bang, K.M.*	3,805,261	4.3		
	Kwon, E.H. et al[19]	47,811	5.5		
	Yang, J.M. et al[20]	14,891	7.2		
1967	Lee, Y.C. et al	10,425		5.9	
	Lew, D.J.[21]	74,710		8.0	
	Kwon, E.H. et al[19]	47,811	5.7		
	Suh, H.W.[22]*	3,969,218	4.4		
	E.P.B.[43]	1,000 : 1			8.1
1968	Lee, Y.C. et al	10,581		7.4	
1969	Park, Y.W. et al[23]	6,414	4.8		
	Kang, J.K. et al[24]*	1,800,792			4.5
	Lee, K.N.[25]	14,472		8.2	
1970	Park, Y.W. et al	6,552	5.2		
	Yeh, M.H. et al[26]	14,153		6.9	

* Based on death registration

Table 1-3. Infant Mortality Rate per 1,000 Live-Births Based on Sample Surveys by Area (I)

Year	Researchers or Institution	No. of Births	Findings by Study Area		
			Urban	Rural	Both
1943	Yun, D. J. et al [27]	19		263.2	
1944	Yun, D. J. et al	24		166.7	
	Yun, D. J. [28]	230		160.9	
1945	Yun, D. J. et al	25		200.0	
	Yun, D. J.	201		258.7	
1946	Yun, D. J. et al	36		111.1	
	Yun, D. J.	327		143.7	
1947	Yun, D. J. et al	36		166.7	
	Yun, D. J.	280		125.0	
1943~1947	Yun, D. J. et al	140		171.4	
1948	Yun, D. J. et al	23		304.3	
	Yun, D. J.	302		168.9	
1944~1948	Yun, D. J.	1,340		165.8	
1949	Yun, D. J. et al	30		300.0	
	Yun, D. J.	338		85.8	
1950	Yun, D. J. et al	38		131.6	
	Yun, D. J.	331		87.6	
1951	Yun, D. J. et al	34		88.2	
	Yun, D. J.	285		119.3	
1952	Yun, D. J. et al	34		58.8	
	Yun, D. J.	346		92.5	
1948~1952	Yun, D. J. et al	159		163.5	
1953	Yun, D. J.	256		105.5	
1949~1950	Yun, D. J.	1,556		97.0	
1956	Yun, D. J [29]	355		59.2	
1957	Yun, D. J. [29]	470		63.8	
1952~1957	Huh, J. [30]	Unknown		125.0	
1958	Yun, D. J. [29]	337		59.3	
	Won, M. S. [12]	4,405	58.8		
1959	Yun, D. J. [29]	432		67.1	
	Won, M. S.	7,189	24.2		
	Kim, J. S. [31]	58		86.2	
	Kim, M. H. [32]	Unknown		58.0	
1954~1959	Park, H. J. [33]	14,325		82.9	
1960	Yun, D. J. [29]	394		68.5	
	Won, M. S.	6,436	12.9		
1956~1960	Yun, D. J. [28]	1,988		63.9	
1961	Won, M. S.	4,878	13.5		
	Lee, Y. C. et al [9]	314		25.5	
	Kim, K. S. [10]	275		36.4	
	Kim, K. S. [11]	89		89.9	
	Lee, S. J. et al [13]	1,289		66.7	

Table 1-3. Infant Mortality Rate per 1,000 Live-Births Based on Sample Surveys by Area (Ⅱ)

Year	Researchers or Institution	No. of Births	Findings by Study Area		
			Urban	Rural	Both
1957~1961	Lee, Y.C. et al			85.7	
1962	Won, M.S.	1,366	52.7		
	Lee, Y.C. et al	326		30.7	
	Kim, K.S.10)	273		51.3	
	Kim, K.S.11)	94		53.2	
	Lee, S.J. et al	1,372		61.2	
	Kwon, E.H. et al 14)	3,324	35.5		
	Kwon, E.H. et al 34)	5,174	108.4		
1958~1962	Won, M.S.	24,274	26.9		
1963	Lee, Y.C. et al	407		12.3	
	Kim, K.S.10)	308		35.7	
	Kim, K.S.11)	81		74.1	
	Lee, S.J. et al	1,508		55.7	
	Kwon, E.H. et al 14)	3,600	30.8		
	Cha, M.H.16)	366		49.2	
	Park, H.J.17)	1,375		67.6	
1964	Lee, Y.C. et al	259		42.5	
	Kim, K.S.10)	281		46.3	
	Kim, K.S.11)	87		34.5	
	Lee, S.J. et al	1,317		60.7	
	Kwon, E.H. et al 14)	2,531	42.3		
	Kim, Y.S. et al 35)	166	84.3		
1962~1964	Kwon, E.H. et al 14)	9,455	35.5		
1965	Lee, Y.C. et al	258		15.5	
	Kim, K.S.10)	216		60.2	
	Kim, K.S.11)	83		48.2	
	Lee, S.J. et al	1,159		53.5	
	Yum, Y.T.36)	538		66.9	
	Shin, S.W.37)	263		133.1	
	Oh, Y.I.38)	261		76.6	
1961~1965	Lee, Y.C. et al	1,564		24.3	
	Kim, K.S.10)	1,353		45.1	
	Kim, K.S.11)	434		59.9	
	Lee, S.J. et al	6,645		59.6	
1966	Lee, Y.C. et al	226		26.5	
1967	Lee, Y.C. et al	227		39.6	
	Yang, J.M. et al 20)	306	35.9		
	Huh, I.M. et al 39)	5,952		63.3	
1966~1967	Kwon, E.H. et al 19)	2,854	32.2		
1968	Lee, Y.C. et al	223		49.3	
1966~1968	Lee, Y.C. et al	676		38.5	
1970	Lee, S.K. et al 40)	2,083		42.2	

Table 1-4. Registered and Estimated Infant Mortality Rate per 1,000 Livebirths

Year	Sources	Infant Mortality Rate	
		Registered	Estimated
1946	MOHSA 54)	77.5	
1947	MOHSA	48.9	
1948	MOHSA	70.9	
1949	MOHSA	85.7	
1950	MOHSA	87.6	
1951	MOHSA	121.4	
1952	MOHSA	92.5	
1953	MOHSA	106.8	
1955	Kim, Y 41)		134.0
1956	MOHSA	78.3	
1957	MOHSA	54.2	
	MOHSA 55)		82.9
1960	Kim, Y		121.0
1961	MOHSA 54)	7.6	
1962	MOHSA 54)	9.7	
1663	MOHSA 54)	12.1	
1964	MOHSA 54)	7.1	
1967	MOHSA 55)		58.2
1972	MOHSA		50.0
1973	MOHSA		45.0
1974	MOHSA		41.0
1975	MOHSA		38.0

Table 1-5. Age and Sex Specific Mortality Rate/1,000 Population (I)

Year	Researchers or Institution	Study Area	Sample/Pop. Size	Sex	Age Specific Mortality Rate								
					0	1—4	5—9	10—14	15—19	20—24	25—29	30—34	35—39
1955	Kim, Y. 42)	Whole country	—	Both	—		—	—	—	—	—	—	—
				M.	39.4		6.3	2.3	3.2	4.8	4.9	6.0	7.1
				F.	36.3		6.4	2.4	3.5	5.0	5.0	5.7	6.3
1958	Won, M. S. 12)	Seoul	200,839	Both	23.3		3.3	2.4	1.3	2.7	3.8	5.3	
1959	Won, M. S.	Seoul	206,747	Both	19.9		3.5	1.4	1.2	2.1	4.6	5.4	
1960	Won, M. S.	Seoul	166,765	Both	11.2		1.3	2.0	2.0	3.4	3.0	3.1	
	Kim, I. S. et al 4)	Whole country	—	M.	102.0	10.6	2.7	2.0	3.1	4.3	4.7	5.3	6.5
				F.	96.3	12.5	3.1	2.4	3.4	4.4	5.1	5.8	6.6
	E. P. B. 5)	Whole country	—	Both	5.7	4.9	4.8	4.6	4.6	3.9	4.0	4.7	5.4
				M.	5.9	4.3	4.2	4.6	4.8	3.8	4.2	5.1	6.1
				F.	5 4	5.3	5.5	4.5	4.3	4.0	3.9	5.3	4.7
1955~1960	Kim, M. M. 6)	Whole country	—	Both	107.9	10.9	2.4	2.0	2.9	4.0	4.8	6.6	8.8
				M.	118.1	11.6	2.2	2.0	2.8	3.8	5.1	6.8	9.1
				F.	97.8	10.2	2.7	2.0	3.0	4.1	4.5	6.4	8.6
1961	E. P. B.	Whole country	—	Both	6.4	6.0	5.5	5.2	5.4	4.3	4.6	5.2	6.2
				M.	6.5	5.9	4.8	5.0	5.5	4.1	4.6	5.9	7.2
				F.	6.2	6.0	6.4	5.3	5.2	4.5	4.6	4.6	5.3
	Won, M. S.	Seoul	172,053	Both	9.0		1.1	1.2	1.0	2.2	3.1	3.3	
1962	Won, M. S.	Seoul	191,490	Both	9.0		1.1	0.5	1.0	1.4	2.6	1.8	
	Kim, K. S. 15)	Urban	268,806	Both	3.5		1.1	1.2	1.9	3.3	3.6	3.6	3.6
1958~1962	Won, M. S.	Seoul	937,894	Both	14.9		2.2	1.5	1.3	2.3	3.4	3.8	
1963	Cha, M. H. 16)	Rural	9,661	Both	18.5		3.9	—	2.1	—	—	3.4	2.1

Table 1-5. Age and Sex Specific Mortality Rate/1,000 Population (Ⅱ)

Year	Researchers or Institution	Study Area	Sex	Age Specific Mortality Rate										Average
				40—44	45—49	50—54	55—59	60—64	65—69	70—74	75—79	80—84	85—89	90+	
1955	Kim, Y.[42]	Whole country	Both	—	—	—	—	—	—						
			M.	9.6	14.3	19.1	24.8	34.3	47.3	65.2					
			F.	6.9	8.1	9.2	13.0	19.1	29.0	47.2					
1958	Won, M.S.[12]	Seoul	Both	9.8		22.5		37.8							8.1
1959	Won, M.S.	Seoul	Both	9.4		20.5		36.5							7.6
1960	Won, M.S.	Seoul	Both	7.6		12.7		45.0							5.8
	Kim, I.S. et a l[14]	Whole country	M.	8.3	11.0	15.3	21.6	31.7	36.6	70.2	107.1	182.6	296.9		
			F.	7.5	9.0	12.4	16.9	25.7	38.4	60.8	95.1	167.2	287.4		
	E.P.B..[5]	Whole country	Both	7.2	9.8	14.4	18.1	27.7	38.1	62.2	175.4	483.4			8.3
			M.	8.5	12.5	19.1	25.0	39.4	54.0	83.6	220.2	590.1			9.1
			F.	5.9	7.2	9.8	12.0	18.3	26.5	69.9	148.9	430.4			7.6
1955～1960	Kim, M.M.[6]	Whole country	Both	11.5	15.0	19.2	26.6	37.7	55.5						15.8
			M.	12.1	16.0	21.2	29.9	41.7	60.1						
			F.	11.1	14.0	17.2	23.2	33.6	50.8						
1961	E.P.B.	Whole country	Both	8.0	11.1	16.0	20.5	32.7	41.6	73.1	96.9	210.5	583.0		9.5
			M.	9.6	14.3	21.5	28.8	47.3	61.0	103.4	130.0	280.4	768.0		10.5
			F.	6.3	8.1	10.7	13.1	20.8	27.4	52.6	75.3	169.3	490.9		8.5
	Won, M.S.	Seoul	Both	9.1		15.6		48.9							5.8
1962	Won, M.S.	Seoul	Both	4.3		9.0		30.7							4.0
	Kim, K.S.[15]	Urban	Both	5.5	4.5	10.2	10.3	21.1							4.1
1958～1962	Won, M.S.	Seoul	Both	8.0		15.9		38.7							6.3
1963	Cha, M.H.[16]	Rural	Both	6.8	13.0	12.2	3.6	45.9							8.3

Table 1-5. Age and Sex Specific Mortality Rate/1,000 Population (Ⅲ)

Year	Researchers or Institution	Study Area	Sample/Pop. Size	Sex	Age Specific Motality Rate								
					0	1—4	5—9	10—14	15—19	20—24	25—29	30—34	35—39
1962~1963	Park, H. J. et al 17)	Rural	37,750	Both	67.6	7.0	2.5		1.6		3.2		3.6
				M.					1.6		3.6		4.2
				F.					1.6		2.7		3.1
1964	E. P. B. 5)	Whole country	1 : 1,000	Both	45.6	7.6	2.2	1.2	1.5	3.1	2.0	3.5	5.3
				M.	40.4	6.6	2.1	—	2.9	3.5	2.9	3.8	6.9
				F.	51.8	8.7	2.3	2.5	—	2.6	1.0	3.3	3.8
1966	E. P. B. 43)	Whole country	29,086,000	Both	3.5		1.8	1.0	2.0	2.2	2.0	2.3	2.8
				M.	3.6		2.0	1.2	2.6	2.6	2.1	2.7	3.5
				F.	3.4		1.7	0.9	1.3	1.9	1.8	1.9	2.3
	Park, Y. S. 8)	Whole country	—	Both	59.3	5.1	1.6	1.2	1.9	4.2	3.5	3.8	4.9
				M.	66.1	5.3	1.6	1.2	2.0	4.3	3.4	4.0	5.4
				F.	55.0	4.8	1.4	1.1	1.7	4.0	3.5	3.7	4.4
1967	Kwon, E. H. et al 19)	Seoul	47,811	Both	11.2		1.0	0.8	0.7	1.4	1.1	2.2	3.0
	Suh, H. W. 22)	Seoul	552,644	Both			1.0	0.8	1.4				
				M.			1.1	0.9	1.7				
				F.			0.9	0.7	1.2				
1969	Lee, K. N. 25)	Rural	14,472	Both	10.2		3.0		2.2		3.7		4.8
				M.	10.3		3.3		2.1		4.5		5.2
				F.	10.1		2.6		2.3		3.4		4.4
1965~1970	Kwon, O. H. et al 44)	Whole country	31,435,252	Both	59.3	5.1	1.5	2.3	12.1	6.9	10.3	2.4	2.3
				M.	66.1	5.3	1.6	2.6	12.2	8.2	11.4	2.3	2.3
				F.	52.0	4.8	1.4	2.0	11.9	5.5	9.3	2.4	2.3

Table 1-5. Age and Sex Specific Mortality Rate/1,000 Population (Ⅳ)

Year	Researchers or Institution	Study Area	Sex	Age Specific Mortality Rate										Average
				40—44	45—49	50—54	55—59	60—64	65—69	70—74	75—79	80—84	85—89	90+	
1962~1963	Park, H. J. et al 17)	Rural	Both	7.3		14.2		48.2		103.6		394.2		333.3	
			M.	7.4		18.5		51.1		139.3		558.8		—	
			F.	7.3		10.1		45.4		79.7		314.3		333.3	
1964	E. P. B. 5)	Whole country	Both	3.5	9.3	15.8	21.8	29.5	33.3	56.1	89.8	234.4		285.7	8.5
			M.	2.8	9.5	20.3	34.5	44.5	56.3	88.5	160.7	250.0		111.1	9.1
			F.	3.2	9.1	11.6	10.0	16.9	19.2	36.8	54.1	229.2		368.4	8.0
1965	E. P. B. 43)	Whole coulntry	Both	3.6	5.3	7.4	10.2	13.7	20.2	26.6	46.3	70.3		318.2	4.2
			M.	4.6	7.2	10.1	14.1	19.8	28.8	38.2	60.2	89.9		377.7	4.9
			F.	2.7	3.4	4.7	6.3	8.4	13.4	18.5	37.1	58.5		284.9	3.5
	Park, Y. S. 8)	Whole country	Both	6.8	9.4	13.6	18.0	25.7	38.9	54.8	88.3	158.8		421.0	8.4
			M.	7.9	12.0	17.6	24.4	35.9	54.3	75.5	113.4	200.2		509.3	9.3
			F.	5.7	6.8	9.8	12.3	17.6	27.8	41.4	74.0	136.7		380.7	7.5
1967	Kwon, E.H. et al19)	Seoul	Both	5.8	9.1	18.3	28.2	36.9	39.4			97.9			
	Suh, H. W. 22)	Seoul	Both												
			M.												
			F.												
1969	Lee, K. N. 25)	Rural	Both	7.7		14.8			48.4						8.2
			M.	7.5		16.5			48.2						8.1
			F.	8.0		13.0			48.6						8.3
1965~1970	Kwon, O.H. et al 44)	Whole country	Both	6.2	3.5	10.3	17.7	20.6	35.6	48.8	68.3	152.8			9.0
			M.	7.4	4.3	13.0	18.9	30.0	51.1	70.8	96.2	207.8			9.9
			F.	5.2	2.8	7.6	16.5	12.8	24.6	35.2	53.4	128.5			8.1

Table 1-6. Expectation of Life at Birth

Year	Researchers or Institution	Study Area	Sample/Pop. Size	Sex		
				Both	Male	Female
1955~1960	E. P. B. 5)	—	—	52.6	51.1	53.7
1960	Lee, P. M. 45)	—	—	—	—	58.1
1961	E. P. B. 56)	—	—	57.5	54.9	61.0
1963	Park, H. J. et al 18)	Rural	37,750	—	57.6	60.9
1965	Koh, K. S. 7)	—	—	1/58.3 2/60.7 3/63.6	56.5 58.8 61.2	60.0 62.5 65.0
1966	E. P. B. 57)	—	—	61.9	59.7	64.1
	Park, Y. S. 8)	—	—	—	58.7	64.5
	Lim, K. H. et al 46)	—	—	—	57.2	64.1
1970	E. P. B. 58)	—	—	—	63.0	67.0
1965~1970	Kwon, O. H. et al 44)	—	—	—	57.2	64.0

1/Applied Model Life Table, West, Level 17 Mortality
2/Applied Model Life Table, West, Level 18 Mortality
3/Applied Model Life Table, West, Level 19 Mortality

Table 1-7. Maternal Mortality Rate/10,000 Live Births (I)

Year	Researchers or Institution	Study Area	No. of Live Births	Findings
1958	Lee, C. H. 47)	Hospital	3,693	151
1959	Lee, C. H.	Hospital	4,756	113
	Kim, Y. W. et al 48)	Hospital	321	62.3
1960	Lee, C. H.	Hospital	5,682	91
	Kim, Y. W. et al	Hospital	410	73.2
1961	Lee, C. H.	Hospital	7,650	78
	Kim, Y. W. et al	Hospital	501	99.8
	Chun, C. H. et al 49)	Hospital	2,050	29
1962	Lee, C. H.	Hospital	11,276	108
	Kim, Y. W. et al	Hospital	455	109.9
	Chun, C. H. et al	Hospital	1,703	24
	Kim, Y. S. 50)	Hospital	457	21.9
1958~1962	Lee, C. H.	Hospital	33,007	104*
1963	Kim, Y. W. et al	Hospital	696	86.2
	Chun, C. H. et al	Hospital	1,939	10
	Kim, Y. S.	Hospital	975	—
1964	Kim, Y. W. et al	Hospital	580	69.0
	Chun, C. H. et al	Hospital	1,725	—
	Kim. Y. S.	Hospital	1,016	51.3
1965	Kim, Y. W. et al	Hospital	691	72.3
	Chun, C. H. et al	Hospital	1,774	28.2
	Kim, Y. S.	Hospital	959	41.7
	Lee, C. S. 51)	Hospital	300	166.7
1966	Kim, Y. W. et al	Hospital	843	225.6
	Chun, C. H. et al	Hospital	1,099	9
	Kim, Y. S.	Hospital	873	57.3
	Whang, S. K. et al 52)	Hospital	1,924	41.6
	Lee, C. S.	Hospital	309	258.9
1961~1966	Chun, C. H. et al	Hospital	10,290	29.2*

Table 1-7. Maternal Mortality Rate/10,000 Live Births (Ⅱ)

Year	Researchers or Institution	Study Area	No. of Live Births	Findings
1957	Kim, Y.W. et al	Hospital	1,141	140.2
	Kim, Y.S.	Hospital	896	30.5
	Whang, S.K. et al	Hospital	2,033	29.5
	Lee, C.S.	Hospital	377	238.7
	Hong, S.B.53)	Hospital	10,464	9.1
1968	Kim, Y.W. et al	Hospital	235	127.7
	Kim, Y.S.	Hospital	832	24.0
	Whang. S.K. et al	Hospital	1,955	46.0
	Lee, C.S.	Hospital	450	177.8
1959~1968	Kim, Y.W. et al	Hospital	5,873	115.7*
1962~1968	Kim, Y.S.	Hospital	6,008	33.3*
1969	Whang, S.K. et al	Hospital	2,017	39.7
	Lee, C.S.	Hospital	489	327.2
1970	Whang, S.K. et al	Hospital	1,938	36.1
	Lee, C.S.	Hospital	517	174.1
1965~1970	Lee, C.S.	Hospital	2,442	225.2*
1971	Whang, S.K. et al	Hospital	1,683	77.2
1966~1971	Whang, S.K. et al	Hospital	11,550	44.2*

* Average during the period

Table 1-8. Major Cause Specific Death Rates per 100,000 Population

Cause of death	Kim, I.S. et al 4) (1958~1959 nationwide)	Won, M.S.12) (1958~1962 Seoul)	Kim, K.S.15) (1962 Daejon city)	Kim, I.S.4) (1966~1967 nationwide)	Kwon, E H.19) (1967 Seoul)
Vascular lesions affecting central nervous system	19.6 (5)	81.0 (1)	35.0 (2)	26.1 (3)	58 (1)
Tuberculosis	39.5 (2)	79.0 (2)	56.0 (1)	35.8 (2)	42 (4)
Pneumonia and bronchitis	73.8 (1)	60.6 (3)	16.0 (6)	43.8 (1)	25 (8)
Heart diseases	8.5 (6)	55.2 (4)	29.0 (3)	11.7 (7)	24 (9)
Gastroenteritis	31.0 (3)	52.9 (5)	10.0 (8)	14.2 (5)	34 (6)
Peculiar diseases to early infancy	—	46.5 (6)	—	—	—
Accident	8.2 (7)	41.5 (7)	26.0*(4)	12.8 (6)	—
Motor vehicle	—	—	—	—	27 (7)
Others than vehicle	—	—	—	—	56 (2)
Malignant neoplasm	25.8 (4)	33.6 (8)	19.6 (5)	25.8 (4)	40 (5)
Senility	—	24.1 (9)	—	—	46 (3)
Suicide	—	22.3(10)	—	—	—
Nephritis and nephrosis	—	—	—	—	20(10)
Hepatic diseases	—	—	10.8 (7)	—	—
Dyspepsia	—	—	8.5 (9)	—	—
Malnutrition	—	—	8.1(10)	—	—

Number in parenthesis are rank

* Includes suicide

Table 1-9. Major Causes of Infant Deaths

Rank	Yun, D. J. 28) (1942~1953, Rural)	Park, H. J. 33) (1954~1959, Rural)	Won, M. S. 12) (1959~1962, Urban)	Cha, M. H. 16) (1963, Rural)	Kwon, E H. et al 19) (1966~1967, Urban)
1	Prematurity	Convulsion	Pneumonia	Infections of the newborn	Gastroenteritis
2	Convulsion	Gastroenteritis	Gastroenteritis	Birth injuries	Other diseases peculiar to early infancy
3	Gastroenteritis	Pneumonia	Tetanus	Other diseases peculiar to early infancy	Pneumonia
4	Erysipelas	Bronchitis	Malnutrition	Pneumonia	Infections of newborn
5	Measles	Measles	Immaturity	Influenza	Birth injuries
6	Smallpox	Malnutrition	Meningitis	All other diseases (Malnutrition)	Measles
7	Pneumonia	Pertussis	Heart diseases	Gastroenteritis	Bronchitis
8	Bronchitis	Accident	Jaundice	Congenital malformation	Influenza
9	Malnutrition	Meningitis	Tuberculosis	—	Other infective and parasitic diseases
10	Pertussis	Others	Poliomyelitis	—	Accident

B. Major Findings and Discussion

Table 1—1 shows the estimates of the crude death rates compared with registered crude death rates obtained from death registration or population census data, from 1946 to 1970. The differences between registered and estimated crude death rates for the same periods are very large, which means the death registration is incomplete. The higher registered death rate in 1961 was due to a national registration compaign publisized by the revolutionary government.

The estimates of the crude death rates from 1956-1960, are 15.8 per thousand by Kim[6], and 12.8 per 1,000 by Choe's estimate[2]. The crude death rates for recent years has been estimated by several researchers. Kim and his colleague[4] estimated the highest crude death rate in 1967 at 11.9 per thousand, while the Economic Planning Board's estimates was 9.1 and 8.5 per thousand in 1967 and 1970. Two other estimates report 9.0 per thousand in 1965[7] and 9.0 for 1965-1970[44].

Table 1—2 shows the data on crude death rate obtained from sample surveys which used the interview technique. Some of these data were based on death registration[12, 15, 18, 22, 24] which have lower rates. Most of the sample surveys have small samples and lack an adequate sampling design. Thus, the variations of findings are so wide that a definite trend cannot be explored. However, these data do show a declining trend in the crude death rates and a difference between the urban and rural population. Recent studies reveal the crude death rates in urban areas (all in Seoul except one study[15]) range from 5 to 6 per thousand and those in rural areas range from 7 to 8 per thousand. These rates

are lower than the nationwide estimates by demographic analysis reported in Table 1—1.

According to the above two tables, it is generally assumed that the crude death rate is declining continuously, and might even be currently less than 10 per thousand. The major causes for this declining trend are thought to be the social stabilization after Korean War, and the advances in public health programs and medical care.

The infant mortality rate is regarded as a sensitive health index in developing countries. But reliable data on infant mortality rates are not available from vital registration in many areas, because of incomplete registration. Therefore, various attempts have been made to estimate the infant mortality rate.

Table 1—3 shows the infant mortality rates obtained from sample surveys carried out since 1943 in various areas of Korea. Many annual rates are based on small samples. Until the early 1950s, Yun's reports[27, 28, 29] are the only source of data on infant mortality rates. His findings are 165.8, 97.0, and 63.9 per thousand livebirths in a rural area, from 1944-1948, 1949-1953, and 1956-1960, respectively. According to the surveys made by Huh[30] and Park[33] in rural areas, the infant mortality rates were 125.0 and 82.9 per 1,000 livebirths for the period of 1952-1957 and 1954-1959, respectively. In Seoul, Won[12] reported the rate at 58.8 per 1,000 livebirths in 1958. Thereafter, infant mortality rates surveyed by several researchers are reported as decreasing annually in all areas. Kwon's[34] high rate of 108.4 in 1962 is an exception based on the urban slum area. The recent data on infant mortality rates are assumed to be approximately 35 per 1,000 livebirths in Seoul and approximately 50 per 1,000 livebirths in rural areas.

Table 1—4 shows the registered infant mortality rates which are unreliable, especially in the early 1960's. Kim's estimates[41] from census data analysis in 1955 and 1960 are 134.0 and 121.0 per thousand livebirths. Although the Ministry of Health and Social Attairs published several estimates of infant mortality rates, the basis and applied techniques of the estimates are not clear. According to their data, the infant mortality rate in 1975 was 38.0 per thousand livebirths.

Table 1—5 shows the age and sex specific death rates from 1955 to 1970. To estimate the age and sex specific death rates, registration data, sample surveys, or demographic analysis of census data were used. Use of demographic analysis has accelerated since model life tables and, particularly, model stable populations, have become avaliable.

Kim[42] made an estimate of age and sex specific death rates based on the 1955 census. Won[12] made a series of age specific death rates for the period 1958 to 1962, which were based on the analysis of death registration in Seoul. A decline in the death rates, especially among infants and children, is seen in the series of age specific death rates. The Economic Planning Board calculated age and sex specific death rates based on the vital registration in the year of 1960[5], 1961[5] and 1966[43]. The other two reports by Kim[15] and Suh[22] were also based on death registration data. These registration data show much lower figures of death rates, especially among younger ages, than the other estimates or survey data. This is due to the gross under-registration of vital events.

Kim et al[4] and Kim[6] made different estimates of age and sex specific death rates

for the year of 1960 and 1955-1960, respectively, by applying model demographic techniques on the 1960 census data. Park[8] also applied this technique on the 1966 census data. According to these data, the decline in the death rates is noticeable in all ages. But Kwon et al's[44] estimates of death rates for the age of 15 to 29 are extraordinarily high, because of an unreasonably estimated number of deaths. The differences between these estimates and the above mentioned registered data are tremendous among infant and children. It may be due to more incomplete vital registration for children than for adults.

The age and sex specific death rates were obtained from sample surveys made by Cha[16], Park et al[17] and Lee[25] in rural areas, and by Kwon et al[19] in Seoul. The Economic Planning Board[5] also published the age and sex specific death rates based on a sample survey taken in 1964, comparing the registration data in 1960 and 1961. The death rates surveyed in Seoul by Kwon et al[19] are lower among young ages. Because the age groupings used in the above surveys are different, direct comparisons of the findings is not possible.

It is shown that the age specific death rates abruptly decline after the infant period, and continued at a lower level until the early forties, at which point the rates gradually begin to increase. By age 60, the rate sharply increase. By sex, the male has a higher death rate than the female in all ages, but especially in the older ages.

Table 1—6 shows the life expectancy at birth, all computed from census data, except one study by Park et al[17]. The Economic Planning Board's abridged life table[5] was bawed on the 1955 and 1960 censuses. According to this, the average life expectancy at birth was 52.6 years for both sexes, with 51.1 years for the male and 53.7 years for the female. This life expectancy increased to 59.7 for the male, and 64.1 years for the female, with an average of 61.9 years for both sexes by 1966.[57] By 1970, it was 63 years for the male and 67 years for the female.[58] It took less than 15 years for the life expectancy to be increased more than 12 years, which is quite a remarkable improvement in the health status. Several other researchers[7, 8, 44, 45] estimated the life expectancy by applying various mortality levels of the model life table on the census data. Park and his colleagues[17] estimated the life expectancy of rural population by a sample survey.

Table 1—7 shows the maternal mortality rates per ten thousand livebirths surveyed from 1958 to 1971 in Korea. Because all of these data were based on the records of several general hospitals, and the percentage of hospital deliveries in Korea was quite low, the findings cannot be generalized to the total population. The tremendous variations in the findings were due to the different capabilities of hospitals and characteristics of patients.

Table 1—8 shows the cause specific death rates per 100,000 population by the leading causes of death. Three[4, 12, 15] of the four studies were based on death registration data. Kwon's study[19] was a sample survey in Seoul. As may be seen in Kim and his colleague's[4] results, the changes in trends from 1958-1959, and 1966-1967 are quite noticeable. The major decreases occurred in infectious causes, such as pneumonia, bronchitis, and gast-

roenteritis. At the same time, the death rates from accidents and cerebrovascular diseases increased. But yet, the infectious diseases continue to be the primary cause of death. According to Kwon's study in Seoul, accidents are the primary cause of death.

Table 1-9 shows major canses of infant deaths. Most of the causes listed are preventable.

Bibliography

1. Economic Planning Board: *Korea Statistical Yearbook*, 1965.
2. Choe, Ehn Hyun: Current Status and Problems of Vital Statistics in Korea. *Publication Series, No. 1. The Population Studies Center*, College of Liberal Arts and Sciences, SNU, 1969.
3. Byun, Shi Min et al: Plans and Programs for Improvement of Vital Statistics, *Journal of Population Studies*, No. 5, pp. 3-35, 1967.
4. Kim, Il Soon and Dong Woo Lee: Recent Mortality Trends in Korea, *The Korean Journal of Preventive Medicine*, Vol. 2, No. 1, pp. 61-76, 1969
5. Economic Planning Board: Abridged Life Table of Korea, *Data on Population Statistics*, No. 23, 1965.
6. Kim, Mun Mo: The Outline of Population Trends for the Republic of Korea, 1945-1964, *Journal of Population Studies*, Initial Issue, 1965.
7. Koh, Kap Suk: Application of Quasi-stable Population Theory to the Measurement of Recent Mortality Level for Korea, *Journal of Population Studies*, Vol. 4, pp. 77-82, 1967.
8. Park, Young Soo: A Study on Age Specific Death Rate and Life Expectancy in Korea, *The Korean Journal of Public Health*, Vol. 7, No. 1, pp. 345-350, 1970.
9. Lee, Young Choon, Kyoung Sik Kim and Duk Jin Yun: Studies on Birth, Death and Cause of Death of the Inhabitants of Korean Rural, Mountainous and Island Areas, Partl. A Survey of the Inhabitants of Kaejong Rural Health Demonstration Area, *Journal of Rural Health*, Vol. 3, No. 1, pp. 75-91, 1969.
10. Kim, Kyoung Sik: Studies on Birth, Death and Cause of Death of the Inhabitants of Korean Rural, Mountainous and Island Area, Part II. A Survey of the Inhabitants of Mountainous Area, *Journal of Rural Health*, Vol. 3, No. 1, pp. 93-105, 1969.
11. Kim Kyoung Sik: Studies on Birth, Death and Cause of Death of the Inhabitants of Korean Rural, Mountainous and Island Area, Part III. A Survey of the Inhabitants of Ko Kun San Islands, *Journal of Rural Health*, Vol. 3, No. 1, pp. 107-118, 1969.
12. Won, Myong Soo: Study on the Status of Death in Urban Area, *The Journal of Korean Medical Association*, Vol. 6, No. 4, pp. 67-88, 1963.
13. Lee, Sang Jai, Moo Hee Oh and Kyung Za Kim: Studies on Birth, Death and the Cause of Death in Nam Won Village Town, Cholla-Namdo, *The Korean Medical Journal*, Vol. 13, No. 1, pp. 75-86, 1958.
14. Kwon, E Hyock, Tae Ryong Kim, Ung Ring Ko, Hyung Jong Park and Do Suo Koo: The Birth and Deaths Rates Studies in an Urban Area, *The Korean Journal of Public Health*, Vol. 2, No. 1, pp. 157-163, 1965.
15. Kim, Kwang Sup: Study on the Status of Death in Urban Area, *Monograph*, School of Public Health, SNU, 1963.
16. Cha, Mong Ho: Study on Birth, Death and Cause of Death in Rural Area, *The Report of National Institute of Health*, No. 1, 1964.
17. Park, Hyung Jong, Ung Ring Ko and Sung Hi Lee: A Study on Age Specific Death Rate and

Expectation of Life in Korean Rural Area, *Seoul University Journal*, Vol. 15, pp. 47-58, 1964.
18. Bang, Ki Moon: A Study on Tuberculosis Mortality Rate in Seoul, 1966, *The Journal of the Korean Academy of Tuberculosis*, No. XXIX, pp. 9-15, 1967.
19. Kwon, E Hyock, Tae Ryong Kim, Hyung Jong Park, Do Suo Koo, Yong Wook Lee and Soon Young Park: On Pattern of Birth and Death in Seoul City, *The Korean Journal of Preventive Medicine*, Vol. 1, No. 1, pp. 9-24, 1968.
20. Yang, Jae Mo and Myung Ho Kim: A Basic Health Survey of the Yonsei Communicy Health Service Area, Seoul, *The Korean Journal of Preventive Medicine*, Vol. 1, No. 1, pp. 25-36, 1968.
21. Lew, Dong Joon: An Epidemiological Survey of Cancer Deaths at Ka Pyong Country. Kyung Ki Province in 1967, *The Journal of Korean Medical Association*, Vol. 12, No. 2, pp. 41-45, 1969.
22. Suh, Hae Won: Study on the Status of Deaths among the Population of 5-19 Years of Age in Urban Area, *The Korean Journal of Public Health*, Vol. 5, No. 2, pp. 224-232, 1968.
23. Park, Yang Won, Pyong Kap Lee, Soon Young Park and Soo Ja Koh: A Study on Status of Birth and Death in an Urban Area, *The Korean Journal of Preventive Medicine*, Vol. 4, No. 1, pp. 19-30, 1971.
24. Kang, Jin Koo, In Dal Kim and Jong Huh: Epidemiological Study on Cancer Incidence in Some Population in Korea, *The Korean Journal of Public Health*, Vol. 8, No. 2, pp. 219-231, 1971.
25. Lee, Kyung Nam: A Study on Mortality Status of Korean Rural Population; *The Korean Journal of Public Health*, Vol. 7, No. 2, pp. 648-652, 1970.
26. Yeh, Min Hae and Sung Kwan Lee: A Study on Maternity Aids Utilization in the Maternal and Child Health and Family Planning, *The Korean Journal of Preventive Medicine*, Vol. 5, No. 1, pp. 57-96, 1972.
27. Yun, Duk Jin and Jae Hee Lee: A Socio-medical and Anthropological Study of the Inhabitants of an Island, *Journal of Rural Health*, Vol. 3, No. 1, pp. 209-225, 1969.
28. Yun, Duk Jin: Infant and Child Mortality in a Korean Rural Area, *Monograph*, Graduate School of Yonsei University, 1968.
29. Yun, Duk Jin: Infant Mortality and the Cause of Death in Korean Children, *Journal of Korean Medical Association*, Vol. 8, No. 4, pp. 283-289, 1965.
30. Huh, Jong: Social and Biological Factors Influencing Child Mortality in Rural Area, *Monograph* Graduate School of Seoul National University, 1959.
31. Kim, Choo Sung: A Study on Maternal and Child Health in Che-Joo Island,, *Seoul University Journal*, Vol. 9, pp. 134-151, 1959.
32. National Institute of Health: Maternal and Child Health, *Monograph*, 1968.
33. Park, Hyung Jong: A Study on Infant Deaths in Korean Rural Area, *The Seoul Journal of Medicine*, Vol. 3, No. 4, pp. 42, 1962.
34. Kwon, E Hyock, Hyung Jong Park, Shi Baik Lee, Bong Ja Yoon and Tang Woo Park: Socio-medical Survey on Indigent People, *Seoul University Journal*, Vol. 12, Series C, pp. 1-29, 1962.
35. Kim, Young Sang and Pil Woo Lee: Study on Birth, Death and Cause of Death in an Urban Area, *New Medical Journal*, Vol. 11, No. 7, pp. 53-61, 1968.
36. Yum, Yong Tae: A Survey on Medical Care in Delivery and Infant Deaths in the Rural Area, *Monograph*, School of Public Health, SNU, 1965.
37. Shin, Suck Woo: A Survey on Family Planning in the Island Areas in Chulla-Nam Do, *Mono-*

graph, School of Public Health, SNU, 1956.

38. Oh, Young Il: A Survey of the Climacteric Women in a Rural Area, *Monograph*, School of Public Health, SNU, 1965.
39. Huh, In Moo and Sung Kwan Lee: A Study on Sociomedical Relationships Concerning the Status of Maternal and Child Health and Family Planning in Rural Area of Korea, *Kyungpook University Medical Journal*, Vol. 12, No. 1, pp. 83-113, 1971.
40. Lee, Sung Kwan, Doo Hie Kim, Hie Kyo Kim, Soon Ho Hong, Min Hae Yeh, Jong Hak Jung, Jae Hyun Shin, Jae Suck Park and Tae Kyu Shin: A Status of Maternal and Child Health in a Rural Area, *Kyungpook University Medical Journal*, Vol. 13, No. 2, 1972.
41. Kim, Yun: Projections of Korean Population, *Statistical Monthly Report*, Vol. 3, No. 1, Ministry of Home Affairs, 1951.
42. Kim, Yun: A Study on Korean Population in the Future, *Statistical Information*, Bureau of Statistics, Ministry of Home Affairs, 1952.
43. Economic Planning Board: *Vital Statistics*, 1956.
44. Kwon, Ohk Hyun and Young Hwan Lee: A Study on Age-Specific Death Rate and Life Expectancy in Recent Korea, *The Korean Journal of Public Health*, Vol. 12, No. 1, pp. 51-55, 1975.
45. Lee, Pyung Moo: The Trend of Korean Fertility and Mortality from 1925 to 1965, *Journal of Population Studies*, No. 4, pp. 97-111, 1957.
46. Lim, Kon Hon, Young Hwan Lee and Ung Ring Ko: A Study on Correlation between Some Selected Age-specific Death Rates and Life Expectancies Based on West Model Life Table, *The Korean Journal of Public Health*, Vol. 10, No. 2, pp. 287-291, 1973.
47. Lee, Chai Hy: A Statistical Study on Maternal Health at Hospitals in Korea, *Report of National Institute of Health*, Vol. 1, No. 1, pp. 231-238, 1964.
48. Kim, Yong Woo, Kae Yong Lee, Chan Ho Song and Young Ho Yang: A Clinical Study on Maternal Deaths and Perinatal Deaths at the Severance Hospital, *Korean Journal of Obstetrics and Gynecology*, Vol. 11, No. 10, pp. 25-38, 1968.
49. Chun, Chun Hae, Soon Bae Rhee, Chung Rae Ann and Min Ho Cho: Maternal Mortality (1961-1968. 9), *Korean Journal of Obstetrics and Gynecology*, Vol. 10, No. 10, pp. 21-30, 1967.
50. Kim, Yong Sung: Statistical Study of the Maternal Mortality and the Perinatal Mortality, *Korean Journal of Obstetrics and Gynecology*, Vol. 12, No. 5, pp. 17-26, 1969.
51. Lee, Choon Shik: Clinical Study of the Maternal Mortality, *Korean Journal of Obstetrics and Gynecology*, Vol. 15, No. 5, 1972.
52. Whang, Soon Kyung and Sang Eui Whang: Clinical Study on Maternal Death, *Korean Journal of Obstetrics and Gynecology*, Vol. 15, No. 10, 1972.
53. Hong, Sung Bong: Studies on Female Deaths in the Reproductive Ages in Seoul (I)-Based on a Review of Cause of Death in Eleven Principal Hospitals, *Korean Journal of Obstetrics and Gynecology* Vol. 12, No. 2, pp. 3-8, 1969.
54. Ministry of Health and Social Affairs: *Yearbook of Public Health and Social Statistics*, 1955-1965.
55. Ministry of Health and Social Affairs: Longterm Plan of Maternal and Child Health Services, *Monograph*, 1975.
56. Economic Planning Board: *Korea Statistical Yearbook*, 1969.
57. Economic Planning Board: *Korea Statistical Yearbook*, 1970.
58. Economic Planning Board: *Korea Statistical Yearbook*, 1973.

2. Morbidity Data

A. Basic Data Tables

1. Age Specific Prevalence Rate/1,000 Population/Month
2. Sex Specific Prevalence Rate/1,000 Population/Month
3. Age & Sex Specific Prevalence Rate/1,000 Population/Month
4. Area Specific Period and Point Prevalence Rate/1,000 Population/Month
5. Number of Sicknesses Per Capita Per Year
6. Age Specific Incidence Rate/1,000 Population/Month
7. Area Specific Incidence Rate/1,000 Population/Month
8. Days Activity Restricted Due to Sickness/Month
9. Cause Specific Morbidity/1,000 Population/Month
10. Selected Communicable Diseases; Number of Cases and Incidence Rates, Selected 1959—1974
11. Ten Leading Causes of General Morbidity

Table 2-1. Age Specific Prevalence Rate/1,000 Population/Month

Study Period	Researchers	Age														
		0—4	5—9	10—14	15—19	20—24	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60—64	65—69	Average
Sep. 1963(1 yr)	Han, M.R. 22)	205	178	151	150	159	168	164	194	227	186	211	265	191	388	187
Sep. 1964(1 yr)	Jun. B.H. 23)	216	153	94	86	82	87	115	150	128	150	111	168	163	210	127
Oct. 1965(25 days)	Yoon. Y.S. 25)	148			59		46		61		81		91		163	91

		0—4	5—9	10—19	20—29	30—39	40—49	50—59	60—69	60+~70+	Average
Aug. 1963 (1 mo)	Lee, Y.C. 30)	211.7	103.8	74.7	97.9	199.2	240.4	247.2		255.4	152.6
Jan. 1969 (1 mo)	Shin, G.H. 3)	240.8	81.6	65.2	81.2	160.9	183.3	183.8	184.4	162.4	126.1
Jan. 1969 (1 mo)	Lee, S.K. 5)	145.8	87.6	157.5	149.8	247.8	329.3	308.9	240.7	148.9	189.9
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 18)	192.5	89.3	90.4	120.7	178.8	238.1	243.1		202.9	148.0
July 1970 (2 mos)	Kim, I.D. Moon, O.R. 9)	171.5		132.3	124.9	155.8	154	154.0	236.5		154.2

		0—5	6—10	11—19	20—34	35—49	50—59	60+	Average
Nov. 1970	Johnson, K.G. Sibley, J.R. 28)	440	250	260	320	470	470	520	360

		0—4	5—9	10—19	20—29	30—39	40—49	50—59	60+~70+	Average
Mar. 1973 (18 mos)	Kang, J.Y. 14)		216.4	58.3	231.4	300.9	192.0	156.5	73.3	170.0
Oct. 1974 (2 mos)	Meng, K.H. 10)		265	172	189	203	245	335	231	
Nov. 1974 (1 mo)	Huh, J. Moon, O.R. 29)	200.5	105.4	69.8	103.4	171.0	229.1	288.9	270.3	149.8

Table 2-2. Sex Specific Prevalence Rate/1,000 Population/Month

Period of Study	Researchers	Study Area	Sample Size	Both	Male	Female
May 1962 (1 mo)	Park, H. J. Huh, J. 26)	Seoul	P: 1,208	510.0		
July 1962 (1 mo)	Kwon, E H. Part, H. J. et al. 45)	Seoul	H: 1,235 P: 6,321	30.2		
Jan. 1963 (17 days)	Kwon, E H. 42)	Seoul	P: 388	430.4		
Jan. 1963 (20 days)	Kwon, E H. 42)	Seoul	P: 144	986.1	1,087.0	966.9
Sep. 1963 (1 yr)	Han, M.R. 22)	Rural	H: 2,979 P: 19,197	187.1	185.2	189.0
Sep. 1963 (1 yr)	Kim, I. D. Huh, J. 24)	Rural	P: 20,000	188.1	190.0	186.1
Jan. 1964 (1 yr)	Jang, I. U. Kim, M.H. 32)	Rural	H: 216 P: 1,245	78.9		
Sep. 1964 (1 yr)	Jun, B.H. 23)	Seoul	H: 1,680 P: 10,028	127.0	122.6	131.2
Sep. 1964 (1 yr)	In, C.Y. 1)	Seoul	H: 1,700 P: 10,100	127.0	122.6	129.9
Nov. 1965 (1 mo)	Social Socurity Commission 31)	Seoul	H: 1,000 P: 5,306	*242.0 **206.2	205.6 177.7	279.3 235.4
Oct. 1967 (3 wks)	Yang, J.M. Kim, M.H. 27)	Seoul	H: 3,684 P: 21,851	46.3		
Aug. 1968 (1 mo)	Chun, W.S. 2)	Seoul	H: 429 P: 1,802	176.5	166.7	186.3
Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 30)	Rural	H: 2,716 P: 15,383	152.6	151.9	153.3
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 18)	Rural	H: 2,626 P: 14,472	148.0	145.7	150.4
Jan. 1969 (1 mo)	Shin, G.H.3)	Rural	H: 1,024 P: 5,679	200.2	161.1	242.5
Jan. 1969 (1 mo)	Lee, S.K. 5)	Rural	H: 410 P: 2,248	189.9	171.2	208.3
July 1969 (2 mos)	Kim, I.D. Moon, O.R. 9)	Whole Country	H: 6,303 P: 37,801	154.2	156.6	151.8
June 1971 (1 mo)	Kim, I.S. Kim, K.S. 33)	Seoul	P: 1,851	***175.6	***164.2	**187.7
Aug. 1972 (1 mo)	Huh, J. Park, Y.S. 19)	Whole Country	H: 3,033 P: 15,402	260.6	225.6	295.6
Sep. 1972 (1 mo)	Kang, H.Y. 49)	Rural	P: 1,494	623.8		
Apr. 1973 (8 mos)	Lee, S. 16)	Rural	H: 20,894 P:122,175	221		
Aug. 1973 (1 mo)	Lee, C.O. Park, Y.S. 7)	Rural	H: 2,700 P: 14,655	115,0	106.0	124.7
Aug. 1973 (1 mo)	Cho, D.B. Park, Y.S. 6)	Urban	H: 1,700 P: 7,896	200.2	161.1	242.5
Aug. 1973 (1 mo)	Huh, J. Park, Y.S. 20)	Whole Country	H: 5,985 P: 30,525	165.6	141.6	188.7
Apr. 1974	Kim, H.K. 47)	Rural	P: 736	235	185	295
June 1974(1 mo)	Oh, H.Y, Youn, B.B. Kim, K.S. 35)	Seoul	P: 3,222	164.2	127.2	247.5
Oct. 1974 (1 mo)	〃	Seoul	P: 1,290	342.6	239.8	443.3
Oct. 1974 (1 mo)	Meng, K.H.10)	Rural & Urban	P: 2,058		234.3	228.9
Nov. 1974 (1 mo)	Huh, J. Moon, O.R. 29)	Rural	H: 9,830 P: 1,793	149.8	134.4	165.6
July 1975 (1 mo)	Jang, Y.T. 37)	Rural	H: 766 P: 4,065	197.8		
	Kim, K.Y. 39)	Rural	P: 750	735.2		

*Per case **Per person ***Prevalence rates of chronic diseases
P: People H: Household

Table 2-3. Age & Sex Specific Prevalence Rate/1,000 Population/Month

Period of Study	Researchers	Sex	Age									
			0—4	5—9	10—19	20—29	30—39	40—49	50—59	60—69	60+~70+	Average
Sep. 1963 (1 yr)	Han, M. R. 22)	B	205.1	178.3	150.3	168.1	194.5	186.8	265.0	388.2		187.1
		M	199.4	188.0	157.1	156.1	225.8	161.8	252.6	279.4		185.2
		F	210.2	166.8	142.3	182.6	172.8	212.3	278.0	471.8		189.0
			Under 9	10—19	20—29	30—39	40—49	50—59	Over 60			
Nov. 1965 (1 mo)	Social Security Commission 31)	B	76.5	32.4	25.6	39.8	33.7	22.2	11.7			242.0
		M	78.2	33.5	13.8	22.0	29.8	19.4	8.9			205.6
		F	74.8	31.3	37.8	58.0	37.8	25.2	14.5			279.3
Aug. 1968 (1 mo)	Lee, Y. C. Kim, K. S. 30)	B	211.7	103.8	74.7	97.9	199.2	240.4	247.2		255.4	152.6
		M	226.6	117.1	75.8	85.2	197.5	211.1	238.3		312.1	151.9
		F	195.9	89.2	74.3	111.2	200.9	266.9	255.5		212.6	153.3
Jan. 1969 (1 mo)	Shin, G. H. 3)	B	240.8	81.6	65.2	81.2	160.9	183.3	183.8	184.4	162.4	126.1
		M	258.9	99.1	61.2	83.1	169.7	167.2	140.2	140.5	148.9	124.6
		F	205.0	64.6	69.6	79.2	154.3	198.7	226.6	227.6	171.4	127.6
Jan. 1969 (1 mo)	Lee, S. K. 5)	B	145.8	87.6	157.5	149.8	247.8	322.3	308.9	240.7	148.9	189.9
		M	138.6	90.4	147.5	122.3	225.2	262.6	298.2	222.2	133.3	171.2
		F	153.8	84.4	167.2	175.6	268.9	374.1	324.7	259.2	156.3	208.3
Jan. 1969 (1 mo)	Lee, Y. C. Kim, K. S. 18)	B	192.5	89.3	90.4	120.7	178.8	238.1	243.1		202.9	148.0
		M	211.9	96.6	90.0	111.1	189.3	213.1	220.0		208.7	145.7
		F	170.8	81.4	60.9	130.2	170.0	260.3	264.4		198.1	150.4
June 1971 (1 mo)	Kim, I. S. Kim, K. S. 33)	B	60.0	76.2		213.9	309.5	345.9	339.6		414.6	175.6
		M	60.9	82.2		253.5	238.1	314.3	317.1		611.1	164.2
		F	59.0	69.2		192.3	381.0	370.4	146.7		260.9	187.7
			Below 20	20—29		30—39	40—49	50—59	Over 60		Unknown	Average
June 1974 (1 mo)	Oh, H. Y. Youn, B. B. Kim, K. S. 35)	B	105.3	196.3		180.5	122.5	41.7	117.6		285.7	164.2
		M	143	130		146	107	72	77		200	127.2
		F		261		259	194	171	250		500	247.5
Oct. 1974 (1 mo)	Oh, H. Y. Youn, B. B. Kim, K. S. 35)	B		362.9		356.0	299.2	220.0	750.0			342.6
		M		164		288	241	176	500			240
		F		498		421	396	313	1,000			443

B: Both M: Male F: Female

Table 2-4. Area Specific Period and Point Prevalence Rate/1,000 Population/Month

Period of Study	Researchers	Study Area	Sample Size	Sex	Area			
					Seoul	Taejon	Taegu	Rural
Sep. 1967 (3 mos)	Kwon, E H. et al 36)	Seoul	P: 12,000	B	190.5	223.6	161.2	190.3
				M	175.9	248.1	192.4	175.4
				F	203.0	185.2	115.6	214.7

					Mountainous	Semi-Plain	Plain	Coastal	Island	Average
Aug. 1968 (1 mo)	Lee, Y.C.	Rural	H: 2,716	B	185.5	115.3	166.9	159.4	112.6	152.6
	Kim, K.S. 30)		P: 15,383		*102.5	*56.3	*82.5	*22.0	*18.9	*66.0
Jan. 1969 (1 mo)	Lee, Y.C.	Rural	H: 2,626	B	149.8	169.2	126.1	189.9	93.2	148.0
	Kim, K.K. 8)		P: 14,472		*103.7	*62.8	*41.4	*73.0	*68.8	*62.6

					Rural	Fishery	Urban	Average
July 1969 (2 mos)	Kim, I.D.	Whole	H: 6,303	B	170.3	120.8	121.6	154.2
	Moon, O.R. 9)	Country	P: 37,801					

					Metropolitan	Medium Cities	Small Cities	Rural & Fishery	Average
Aug. 1972 (1 mo)	Huh, J.	Whole	H: 3,033	B	333.9	200.9	339.6	240.1	260.6
	Park, Y.S. 19)	Country	P: 15,402		*49.8	*51.3	*111.1	*61.0	*59.8
Aug. 1973 (1 mo)	Huh, J.	Whole	H: 5,985	B	200.2	239.4	203.5	115.0	165.6
	Park, Y.S. 19)	Country	P: 30,525	M	161.1	198.6	195.7	106.0	141.6
				F	242.5	284.7	210.1	124.7	188.7
				B	*35.6	*93.6	*62.5	*46.3	*52.4

*Point prevalence rate

Table 2-5. Number of Sicknesses Per Capita Per Year

Year of Study	Researcher	Study Area	Sample Size	Both	Male	Female
May 1962 (1 mo)	Park, H. J. Huh, J. 26)	Seoul	P: 1,208	6.12		
Sep. 1963 (1 yr)	Han, M. R. 22)	Rural	H: 2,979 P: 19,197	2.25	2.28	2.22
Sep. 1963 (2 yrs)	Kim, I. D.	Rural	P: 20,000	2.26	2.28	2.23
	Huh, J. 24)	Seoul	P: 10,000	1.52	1.47	1.57
Sep. 1964 (1 yr)	In, C. Y. 1)	Seoul	H: 1,700 P: 10,100	1.52	1.47	1.56
Nov. 1965 (1 mo)	Social Security Commission 31)	Seoul	H: 1,000 P: 5,306	2.90		
Oct. 1967 (1 mo)	Yang, J. M. Kim, M. H. 27)	Rural	H: 3,684 P: 21,851	0.56		
Aug. 1968 (1 mo)	Lee, Y. C. Kim, K. S. 30)	Rural	H: 2,716 P: 15,383	1.83	1.82	1.84
Aug. 1968 (1 mo)	Chun, W. S. 2)	Seoul	H: 429 P: 1,802	2.12	2.00	2.24
Jan. 1969 (1 mo)	Lee, Y. C. Kim, K. S. 18)	Rural	H: 2,626 P: 14,472	1.78	1.75	1.80
Jan. 1969 (1 mo)	Shin, G. H. 3)	Rural	H: 1,024 P: 5,679	1.51	1.50	1.53
July 1969 (2 mos)	Kim, I. D. Moon, O. R. 9)	Urban Rural	H: 6,303 P: 37,801	1.85	1.88	1.82
Mar. 1971 (6 mos)	Kim, K. K. 4)	Seoul	P: 1,539			0.8
Aug. 1972 (1 mo)	Huh, J. Park, Y. S. 20)	Whole Country	H: 3,033 P: 15,402	3.13	2.71	3.13
		Metropolitan		4.01	3.92	4.10
		Medium-size Cities		2.41	2.41	2.41
		Small-size Cities		4.08	3.63	4.54
		Rural & Fishery		2.88	2.22	3.5
July 1973 (40 days)	Lee, S. K. Kim, D. H. 12)	Rural	H: 1,090 P: 6,151	2.35	2.46	2.24
Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 19)	Whole Country	H: 5,985 P: 30,525	1.99	1.70	2.26
		Metropolitan		2.40	1.93	2.91
		Medium-size Cities		2.87	2.38	3.42
		Small-size Cities		2.44	2.35	2.52
		Rural & Fishery		1,38	1.27	1.50
Aug. 1973 (1 mo)	Lee, C. O. Park, Y. S. 7)	Rural	H: 2,700 P: 14,655	1.38	1.27	1.50
Aug. 1973 (1 mo)	Cho, D. B. Park, Y. S. 6)	Urban	H: 1,700 P: 7,896	2.40	1.93	2.91
Oct. 1974 (1 mo)	Meng, K. H. 10)	Medium-size Cities & Rural	P: 2,058		2.81	2.75
Nov. 1974 (1 mo)	Huh, J. Moon, O. R. 29)	Rural	H: 1,793 P: 9,830	1.80	1.61	1.99

Table 2-6. Age Specific Incidence Rate/1,000 Population/Month

Period of Study	Researchers	Study Area	Sample Size	Age										
				0	1—4	5—9	10—14	15—19	20—29	30—39	40—49	50—59	60+	Average
Nov. 1965 (1 mo)	Social Security Commission 31)	Seoul	H: 1,000 P: 5,306											*168.5 **158.9
Aug. 1968 (1 mo)	Chun, W. S. 2)	Seoul	H: 429 P: 1,802											127.0
Jan. 1969 (1 mo)	Shin, G. H. 3)	Rural	H: 1,024 P: 5,679											***84.7 ****41.4
July 1973 (40 days)	Lee, S. K. Kim, D. H. 12)	Rural	H: 1,090 P: 6,151	148	358	161	95	139	130	170	257	280	358	196

Period of Study	Researchers	Study Area	Sample Size	0—9	10—19	20—29	30—39	49—49	50—59	60 or more	Unknown	Average
June 1971 (1 mo)	Kim, I. S. Kim, K. S. 33)	Seoul	P: 1,851	87.5	44.2	99.5	92.6	108.1	75.5	97.6	333.3	*****82.7

*: per 1,000 cases
**: per 1,000 persons
***: incidence rate at the end of the study
****: incidence rate at the beginning of the study
*****: incidence of acute diseases

Table 2-7. Area Specific Incidence Rate/1,000 Population/Month

Period of Study	Researchers	Study Area	Sample Size	Area					
				Mountainous	Semi-Plain	Plain	Coastal	Island	Average
Aug. 1968 (1 mo)	Lee, Y. C. Kim, K. S. 30)	Rural	H: 2,716 P: 15,383	83.0	58.9	84.4	137.4	92.6	86.5
Jan. 1969 (1 mo)	Lee, Y. C. Kim, K. S. 18)	Rural	H: 2,626 P: 14,472	46.0	106.3	84.7	117.0	24.0	85.0

Period of Study	Researchers	Seoul	Kwangju	Rural
Sep. 1969 (45 days)	Choi, C. K. 17)	177	214	93

Period of Study	Researchers	Study Area	Sample Size	Metropolitan	Medium-size Cities	Small-size Cites	Rural & Fishery	Average
Aug. 1972(1 mo)	Huh, J. Park, Y. S. 19)	Whole Country	H: 3,033 P: 15,402	284.1	149.6	228.5	179.1	200.8
Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 20)	Whole Country	H: 5,985 P: 30,525	164.6	145.9	141.0	68.8	113.2

Table 2-8. Days Activity Restricted Due to Sickness/Month

Period of Study	Researchers	Study Area	Sample Size	Per Patient			Per Person		
				Both	Male	Female	Both	Male	Female
Sep, 1963 (1 yr)	Han, M. R. 22)	Rural	H: 2,979 P: 19,197	23.64	24.16	23.08	4.45	4.63	4.27
Oct. 1963 (2 mos)	Han, M. R. Kim, S. H. 21)	Rural	H: 180 P: 1,250	20.0					
Sep. 1963 (1 yr)	Kim, I. D. Huh, J. 24)	Rural	H: 3,000 P: 20,000					4.6	4.3
Sep. 1964 (1 yr)	〃	eoul	H: 1,700 P: 10,000					2.0	2.1
Sep. 1964 (1 yr)	In, C. Y. 1)	Seoul	H: 1,700 P: 10,100	5.5	5.5	5.4	2.1	2.0	2.1
Jan. 1969 (1 mo)	Lee, Y. C. Kim, K. S. 18)	Rural	H: 2,626 P: 14,472	6.7	7.5	6.1	0.32	0.32	0.32
July 1959 (2 mos)	Kim, I. D. 9) Moon, O. R.	Whole Country	H: 6,303 P: 37,801				3.5	3.5	3.5
Mar. 1971 (6 mos)	Kim, K. K. 4)	Seoul	P: 1,539	1.9		1.9	0.7		0.7
June 1971 Sep. 1971 (2 mos)	Yu, S. H. Yang, J. M. 34)	Seoul		4.2					
Nov. 1971 (7 days)	Yu, S. H. 8) Johnson, K. G.	Rural Hachung lloon	H: 200 P: 1,539	7.2 9.6			1.9 2.9		
July 1973 (40 days)	Lee, S. K. Kim, D. H. 12)	Rural	P: 1,438	3.7	3.1	4.3	1.3	1.2	1.4
June 1974 (1 mo)	Oh, H. Y. Youn, B. B. 35)	Seoul	P: 3,222				3.6	3.9	3.2
Oct. 1974 (1 mo)	Oh, H. Y. Youn, B. B. 35)		P: 1,290				3.6	2.7	4.1
Nov. 1974 (1 mo)	Huh, J. Mooh, O. R. 29)	Rural	H: 1,793 P: 9,873	3.38	3.54	3.24	0.50	0.48	0.54

Table 2-9. Cause Specific Morbidity/1,000 Population/Month(I)

Period of Study	Researchers	Study Area	Sex	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Sep. 1963 (1 yr)	Han, M. R. 22)	Rural	B	33.5	0.9	4.5	3.2	1.3	16.0	3.8	45.4	38.7	3.1	1.2	14.7	8.1	0.5	0.1	5.1	7.9	188.4
			M	35.3	0.8	5.4	2.9	2.0	17.7	3.2	45.6	38.0	3.1	—	13.2	8.0	0.5	0.1	3.7	9.9	189.6
			F	31.6	1.0	4.4	3.5	0.6	14.2	4.4	46.1	39.4	3.1	2.5	16.2	8.2	0.4	0.0	6.6	5.8	188.1
Sep. 1963 (2 yrs)	Kim, I. D. Huh, J. 24)	Whole Rural	B	33.4	0.9	4.9	3.2	1.3	15.9	3.8	45.6	38.5	3.1	1.2	14.7	8.1	0.5	0.1	5.1	7.8	188.1
		Seoul	B	6.1	0.2	1.2	1.0	0.5	7.8	3.1	70.0	21.1	1.9	2.3	4.3	1.8	0.1	0.1	2.9	3.4	127.0
Oct. 1963 (2 mos)	Han, M. R. Kim, S. H. 21)	Rural	B	10.8		1.6	1.6	0.8	6.8	1.6	19.6	18.8	0.4	6	6.4	4.4				1.2	124.0
Jan. 1964 (1 yr)	Jang, I. U Kim, M. H. 32)	Rural	B	1.5		2.3		0.8	13.9	0.4	5.2	35.0	1.7		2.1					1.4	78.9
Sep. 1964 (1 yr)	In, C. Y. 1) Jun, B. H. 23)	Seoul	B	6.1	0.2	1.2	1.0	0.5	7.8	3.1	70.0	21.1	1.9	2.3	4.3	1.8	0.1	0.1	2.9	3.4	127.0
			M	7.9	0.3	1.1	0.3	0.2	7.4	2.6	68.3	20.5	0.8	—	0.0	1.9	—	0.1	2.0	4.0	122.6
			F	4.5	0.1	1.2	1.5	0.7	8.3	3.5	70.7	21.6	2.8	4.4	3.4	1.7	0.1	0.0	3.8	2.8	131.2
Nov. 1965 (1 mo)	Social Security Commission 36)	Seoul	B	7.0	1.1	2.3	2.6	0.4	19.2	15.5	94.2	40.7	5.7	1.7	8.3	2.5			29.8	11.1	242.0
			M	7.4	0.4	1.9	0.4		14.9	11.9	89.8	30.2	1.9		8.2	0.4			26.1	12.3	205.6
			F	6.5	1.9	2.7	5.0	0.8	23.7	19.1	98.8	51.5	9.5	3.4	8.4	4.6			33.6	9.9	279.3
			B	+6.6	1.1	1.9	2.5	0.4	17.7	14.3	84.6	36.8	5.7	1.7	7.9	2.5			26.6	10.6	220.7
			M	+7.4	0.4	1.5	0.4		13.8	11.2	80.1	27.2	1.9		7.8	0.4			22.0	11.5	185.5
			F	+5.7	1.9	2.3	4.6	0.8	21.7	17.6	89.3	46.5	9.5	3.4	8.0	4.6			31.3	9.5	256.8

			Influenza	Diphtheria	Measles	Mumps	Pneumonia	Typhoid fever
Jan. 1967 (1 mo)	Kwon, E H. et al 38)	Urban	0.15	0.01	1.05	0.06	0.08	0.03

	Dysentery	Food Poisoning	Polio	Whooping Cough	Encephalitis	Total
	0.03	0.05	0.02	0.11		1.61

			Respiratory	Digestive	Derma. & Uro.	E. N. T.	Gyne.	T. B.	Trauma	Others
Nov. 1967 (20 days)	Yang, J. M. Kim, M. H. 27)	Seoul B	12.7	8.4	2.5	2.1	5.0	2.4	11.2	46.3

Table 2-9. Cause Specific Morbidity/1,000 Population/Month(Ⅱ)

Period of Study	Researchers	Study Area	Sex	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 30)	Rural	B	21.7	0.5	1.4	3.2	3.0	15.9	1.9	21.1	63.3	2.3	3.8	5.1	3.6	0.3	0.2	0.9	4.4	152.6
			M	25.0	0.5	1.2	1.4	2.1	14.6	1.5	23.2	63.5	2.3	0.3	5.3	3.5	0.3	0.3	0.8	6.3	152.0
			F	18.5	0.5	1.7	4.9	3.9	17.3	2.2	18.9	63.2	2.2	7.3	5.0	3.7	0.3	0.1	1.0	2.5	153.3
Aug. 1968 (1 mo)	Chun, W.S. 2)	Seoul	B	13.8		2.7	3.8	1.6	23.3	3.8	27.7	59.3	3.3	6.1	13.3	6.1		0.5		10.5	176.5
			*B	10.5		1.6	1.6	1.1	14.9	1.1	22.1	42.1	1.6	4.4	12.7	2.7		0.5		9.4	127.0
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 18)	Rural	B	10.5	0.0	1.5	0.0	1.8	14.4	4.8	60.9	33.5	2.6	0.9	4.8	2.9			6.1	3.3	148.0
			M	13.8		1.0	0.1	1.4	12.3	5.5	61.9	32.1	2.0		5.5	2.2			4.1	4.8	145.7
			F	7.2	0.1	2.1		2.2	16.5	4.0	60.0	34.9	4.3	1.8	4.0	3.6			8.0	1.7	150.4
Jan. 1969 (1 mo)	Lee, S.K. 5)	Rural	B	9.8		0.9		0.4	7.6	2.7	74.7	66.7	0.9	0.4	1.3	8.9			10.2	5.3	189.9
			M	12.6		0.9			6.3	2.7	73.5	53.8	0.9		0.9	6.3			6.3	7.2	171.2
			F	7.1		0.9		0.9	8.8	2.6	75.9	79.4	0.9	0.9	1.8	11.5			14.1	3.5	208.3
Jan. 1969 (1 mo)	Shin, G.H. 3)	Rural	B	5.8	0.2	0.4	0.2	1.9	7.9	5.6	61.6	29.6	3.5	3.2	3.2	1.2			2.5	2.5	126.1
July 1969 (2 mos)	Kim, I.D. Moon, O.R. 9)	Whole Country	B	22.4	0.7	3.6	2.2	1.3	14.2	3.1	34.4	41.7	2.2	1.7	10.8	6.3	0.3	0.2	3.7	6.0	154.2
Sep. 1969 (45 days)	Choi, C.K. 17)	Seoul	B	7	0	1	2		24	14	87	44	5	1	11	1			35	16	248
			**B	4	0	1	2		14	8	17	20	4	1	5	1	0		11	4	92
		Kwangju	B	11		13	8		29	11	111	88	16	10	33	8	3		68	11	391
			**B	9		1	14		20	11	47	36	12		25	8	3		30	8	227
		Rural	B	14		1		2	28	7	36	32	7		26	4			35	16	208
			**B	13		1		1	17	6	7	24	4		11	4			16	6	110

				Resp. & E.N.T.	G.I.T. Paras.	Head-ache	Ortho-pedic	Sensory	Derma.	Cardio-vas.	Dysen. Typhoid	T.B.	F.U.O.	Gyne. & V.D.	Total
Nov. 1970 (1 mo)	Johnson, K. Sibley, J. 28)	Rural	B	100.0	60.0	54.0	43.0	40.0	32.0	19.0	19.0	6.0	3.0	3.0	405.0
			M	116.0	59.0	32.0	36.0	34.0	40.0	15.0	27.0	8.0	4.0	0.0	401.0
			F	84.0	60.0	74.0	50.0	46.0	24.0	22.0	10.0	4.0	2.0	0.6	404.0
Mar. 1971 (6 mos)	Kim, K.K. 4)	Seoul	B	4.6	0.4	6.3		5.4	0.2	22.3	12.4	0.7	3.0	5.6	2.6	63.5

Table 2-9. Cause Specific Morbidity/1,000 Population/Month(Ⅲ)

Period of Study	Researchers	Study Area	Sex	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
June 1971 (1 mo)	Kim, I.S. Kim, K.S. 33)	Seoul		Tuberculosis		Respiratory		Digestive			Skin	Neurological			Circulatory		Urogenital		Proctological		
				7.6		18.4		41.6			6.5	45.9			7.0		3.8		4.9		
				Dental		Nutritional		Cause Unknown				Above two diagnoses									Total
	//			1.1		17.8		2.7				18.4									175.6
May 1971 Aug. 1971 (2 mos)	Yu, S.H. Yang, J.M. 34)	Seoul		1		4	5	6	7	8	9	10	12	13	16	17	Above 2		Unknown		Total
			1)	17.1			2.1	8.5	2.1	76.9	25.6	2.1	12.8	2.1	27.8	19.2	6.4		29.9		232.9
			2)			2.5		12.6	2.5	125.7	80.7		20.1		55.6	12.6	12.6				316.6
			3)	2.9				14.5	8.7	66.9	40.7	2.9	8.7	2.9	17.4	11.6	8.7		75.6		261.6
			4)	3.3				19.8		69.3	66.0		13.2		6.6		19.8		33.0		231.0
Mar. 1973 (1 yr)	Kang, J.Y. 14)	Seoul	B	3.3		1.1	13.3	7.8		28.9	28.9	86.7	86.7	5.6	11.1	12.2			36.7	2.2	325.6
Aug. 1973 (40 days)	Lee, S.K. 12)	Rural	B			44.0	61.0		7.0	33.0			14.0	3.0	3.0		7.0	11.0		26.0	210.0
			M			42.0	72.9		7.0	17.0			13.9	3.1	6.0		7.0	13.0		31.9	213.3
			F			46.0	50.1		6.9	50.1		1.0	14.0	3.1	1.0		6.9	10.0		20.9	209.4
June 1974 (1 mo)	Park, W.K. 15)	Rural	B				1.0			4.8		108.6	27.2		3.9	3.9				4.8	150.3
			M				1.87			7.4		101.1	24.2		5.6					9.3	149.8
			F							2.0		116.6	32.1		2.0						150.9
June 1974 (1 mo)	Oh, H.Y. Youn, B.B. 35)	Seoul	B	0.6		0.9	0.3	0.9		1.2	3.1	32.0	11.5	1.9	2.2	0.9	3.1		16.8	1.2	81.3
			M	0.9		0.9				0.4	3.6	26.0	9.9	1.8		0.9	2.7		15.2	0.4	66.3
			F			1.0	1.0	3.0		3.0	2.0	45.5	15.2	2.0	7.1	1.0	4.0		20.2	3.0	115.2
Oct. 1974 (1 mo)	Oh, H.Y. Youn, B.B. 35)	Seoul	B	0.8			2.3	3.1		1.6	18.6	6.2	160.5	63.6	4.7	3.9	9.3	7.8		18.6	2.3	342.6
			M	1.6			1.6			1.6	11.0	4.7	106.6	58.0			7.8	6.3		17.2	3.1	239.8
			F				3.1	6.1		1.5	26.1	7.7	213.2	69.0	9.2	7.7	10.7	9.2		19.9	1.5	443.3

Oct. 1974	Meng, K.H. 10)			Digestive	Respiratory	Cardiovas.	Gyneco.	Accident	Neuro.	Derma.	E.N.T. & Opth.	Others	Total
		Small City & Rural	B	65.2	71.9	24.3	19.9	10.6	9.2	17.1	6.7	6.3	231.3
1972	EWU	Seoul	F	5.1	1.2	0.1	0.0	3.1	0.5	15.0	9.9	21	5.6	0.4	0.0	3.1	0.0	46.2
1973	Health		F	5.4	3.4	0.5	0.1	6.0	0.7	14.0	10.6	0.1	0.0	8.3	0.8	2.7		52.6
1974	Center 11)		F	1.8	0.7	0.2	0.0	2.8	0.2	9.4	6.2	1.4		3.6	0.4	1.5		28.3
Nov. 1974 (1 mo)	Huh, J. Moon, O.R. 29)	Rural	B	2.4	3.3	1.2	1.4	9.4	4.3	61.)	25.7	2.4	3.9	4.9	6.3	23.0	6.5	158.0
			M	1.6	3.6	0.6	1.8	9.2	2.2	67.9	24.3	2.2		4.8	5.0	10.9	8.0	143.7
			F	3.3	2.9	1.9	1.0	9.5	6.4	56.2	27.2	2.7	7.8	4.9	7.6	34.8	4.9	172.6

*Morbidity in person
*Sickness absenteeism
*Incidence rate/1,000 population/month
**Point prevalence rate/1,000 population/month

1) Prevalence rate of the students in May
2) Prevalence rate of the students in August
3) Prevalence rate of the faculty in May
4) Prevalence rate of the faculty in August

Table 2-10. Selected Communicable Disease Pattern, Number of Cases and Incidence Rates, Selected 1950—1974, ROK

Selected Disease and Indicator	Year						
	1950	1955	1960	1965	1970	1972	1974
Cholera							
Cases					206		
Incidence Rate 1)					0.7		
Dysentery							
Cases	322	319	47	355	927	215	72
Incidence Rate 1)		1.5	0.2	1.2	3.0	0.7	0.2
Typhoid							
Cases	8,810	353	2,798	3,760	4,211	2,030	656
Incidence Rate 1)		1.6	11.2	13.1	14.5	6.2	2.0
Paratyphoid Fever							
Cases	140	38	77	22	42	9	
Incidence Rate 1)		0.2	0.3	0.1	0.1	0.0	
Small Pox							
Cases	2,845	2	3				
Incidence Rate 1)		0	0				
Diphtheria							
Cases	1,255	339	828	1,079	567	556	263
Incidence Rate 1)		1.6	3.3	3.8	1.9	1.7	0.8
Meningococal Meningitis							
Cases	155	23	22	24	17		2
Incidence Rate 1)		0.1	0.1	0.1	0.1		0.0
Japanese Encephalitis							
Cases	98	2,506	1,248	752	27	73	126
Morbidity Rate 1)		9.4	5.0	2.6	0.1	0.2	0.4
Tuberculosis							
Total				71,152	171,464	149,650	176,880
Infectious					80,438	81,321	77,075
Non infectious					91,026	68,329	51,637

1) Morbidity rate in per 100,000 population.

Source: ROKG/MHSA, Yearbook of Public Health and Social Statisties, 1974.

Table 2-11. Ten Leading Causes of General Morbidity (I)

Morbid Conditions	Kwon, E H. 45)		Kwon, E H. 42)		Huh, J. 29)		Lee, B. M. 46)	
	Order	%	Order	%	Order	%	Order	%
Diseases of the digestive system	1	22.5	4	8.4			2	13.9
Diseases of the skin	2	16.2			7	3.2	10	3.7
Tuberculosis of respiratory tract	3	12.0	6	7.8	6	4.4	1	14.7
Neurological & sensory system	4	9.9	1	20.4				
Diseases of women	5	5.8			8	2.5		
Diseases of respiratory system	6	4.2					6	5.3
Diseases of heart & circulatory system	7	3.7			4	4.6		
Malnutrition	8	3.1						
Whooping cough	9	3.1						
Pleurisy	10	3.1						
Asthma			2	12.0			9	3.9
Mental disorders			3	8.4	10	1.5		
Diseases of ear			5	7.8				
Visual abnormality			7	7.2				
CNS paralysis			8	7.2				
Epilepsy			9	3.0				
Diseases of eyes			10	3.0				
Infectious & parasitic diseases					9	1.5		
Arthritis								
Symptoms and ill defined conditions					2	17.1	3	6.7
Infections of skin & subcutaneous tissue							4	6.5
Diseases of nervous system & sense organs							5	5.6
Diseases of musculo-skeletal system							7	4.6
Acute respiratory infections					1	23.8	8	4.4
Other diseases of digestive system					3	15.3		
Laceration & open wound					5	4.5		

Table 2-11. Ten Leading Causes of General Morbidity (Ⅱ)

Morbid Conditions	M. H. & S. A. [40]		Johnson [28]		Kim, J. S. [43]		M. H. & S. A. [41]		Kang, H. Y. [49]		Yoo, K. W. [48]		Kim, Y. J. [44]		Kim, H. Y. [47]	
	Order	%	Order	%	Order	%	Order	%	Other	%	Other	%	Other	%	Other	%
Neurological and sensory disorders					1	15.5										
Anemia					2	9.6										
Gastritis & duodenitis	9	2.3			3	8.9	8	2.2			9	0.5	4	3.9		
Nutritional deficiency					4	7.0										
Bronchitis, emphysema, asthma					5	6.4					4	7.9	6	3.5	4	9.2
Hypertensive heart disease			5	4.0	6	5.2			4	3.7						
Hypertension without ECG change			5	4.0	7	4.3			4	3.7						
Other d. of genito-urinary system	6	4.1			8	4.2	6	2.8	6	0.6						
Other d. of circulatory system			5	4.0	9	3.9			4	3.7						
Diseases of skin	3	5.8	6	3.2	10	3.7	3	3.5	5	3.5			5	3.8		
Appendicitis	1	8.3					1	6.4					7	3.1		
Peptic ulcer and complication													10	2.6		
Laceration & open wound	8	2.3	4	4.3			2	4.2								
Pelvic inflammatory diseases			3	5.4												
Other diseases of digestive system	4	5.7	2	6.0			4	3.4	2	31.9	3	9.2	9	2.3	3	9.8
Cirrhosis of liver	10	2.1														
Accidents including fracture & burns							5	2.9			8	1.5			9	1.8
Tuberculosis of respiratory system	7	3.5	10	0.6			7	2.6	1	47.5			1	8.2		
Psychoneurotic disorders							9	2.2								
Adverse effects of chemical substance	5	4.9					10	2.1								
Diarrhea, Dysentey, Typhoid, etc.			8	1.9									8	2.5		
Influenza											1	46.4			2	25.0
Headache, malaise			1	10.0							2	16.4	2	6.0	1	34.7
Toothache											9	0.5			10	1.2
Eye diseases			9	1.9					3	12.8	6	1.8			6	3.5
E. N. T. diseases			9	1.9					3	12.8	4	7.9			4	9.2
Symptoms & ill-defined conditions	2	6.1	7	2.6												

B. Major Findings and Discussion

Table 2—1 shows the monthly prevalence rate by age. It does not show any significant annual changes for the last 10 years. The prevalence rate in the 0-4 age group is 200 per 1,000 population, and drops to 100 in the teen-age group. But the rate then begins to increase for those over age twenty. Most of the studies indicate that the prevalence rate increases proportionally with age except Lee's[5] and Lee's[18]. The latter two studies determine the highest prevalence rate to be at age forty and fifty. In the case of Kang's study[14], a contradictory finding stems from the small number of the aged people in the study sample. Generally, teenagers and the labor force age group 20-40, show lower morbidity rates.

Table 2—2 shows the monthly prevalence rate by sex. The prevalence rate of women is found to be higher than that of men, except in Kim's[9, 24] and Meng's[10] studies. Kwon's study can be excluded as it deals with a specific population residing in rehabilitation centers and old people's homes.[42] Oh's study found the prevalence rate of female teachers working at junior and senior high schools to be twice as high as that of male teachers.[35] The average prevalence rate, according to our best estimate, is around 160 per 1,000; and the prevalence rate of the female seems to be higher by 15 to 20 per 1,000 if the extreme figures such as Kim's 735.2[39] and Kang's 623.3[49] are excluded.

Table 2—3 shows the monthly age and sex specific prevalence rate. The male and female prevalence pattern by age is very similar. Kim's study[33] on the prevalence rate of chronic diseases shows that the female has a higher overall prevalence rate, but the prevalence rate of the male aged over sixty is more than twice that of the female in the same age group.

Table 2—4 shows the area specific point and period prevalence rate per 1,000 population per month. Areas are usually classified in three ways; 1) mountainous, semi-mountainous, plain, coastal, and island, 2) urban and rural, or 3) metropolitan, medium cities, small cities, and rural & fishery. It is very difficult to adjust the various area classification systems used. Standardization of the classification system is urgently needed. Incidentally, all studies agree that the point prevalence rate is approximately 60 in rural areas. According to Lee's studies[18, 30], period prevalence rates in coastal areas are much higher than those in islands, but sufficient explanations for this difference are not offered. Huh reported that the period prevalence rate in the rural areas decreased from 240.1 in 1972 to 115.0 in the following year, and the overall average decreased from 260.6 to 165.6 during that same time, but no explanation was offered. We assume that the sizeable difference originated mostly from errors in sampling designs and the interviewing process rather than an actual decrease. Therefore, more information is required to determine if the prevalence rate in the rural or urban areas is higher, although the data in Table 2—4 suggest that the prevalence rate is slightly higher in urban areas.

Table 2—5 shows the annual number of sichnesses per capita. The highest number is 6.12 according to Park's study in 1962, in which school children and pupils were surveyed.[26]

The lowest number is 0.56 according to Yang's study conducted in Yonhee-dong in 1967.[27] Excluding these two extremes, the other studies show an average number of sicknesses per person per year as 1.9 or 2.0.

Table 2—6 shows the age specific incidence rate per 1,000 population per month. It is noteworthy that the incidence rate reported at the end of a study is twice as high as that reported on the first day of the study.[3] The Social Security Commission reported that there was a difference of 10 per 1,000 population in morbidity rate between in terms of per spell of illness and of per patient.[31] Kim shows that the incidence rate of acute conditions is 82.7, while the prevalence rate of chronic conditions is 175.6.[33] (See table 2—6 and 2—2) The finding indicates the existence of a large volume of chronic conditions. The definition of acute conditions and chronic are not certainly stated in most of studies.

Table 2—7 shows the area specific incidence rate per 1,000 population per month. The results are similar to those in table 4, in that the incidence rate on the islands was very low in 1969[18], and was also very low in rural and fishery areas in 1973.[20]

Table 2—8 shows the number of days activity restricted due to sickness per month. The findings show a wide variance owing to the lack of concensus of definition of the terms used. Han's 4.5 restricted days per person and 23.6 per patient are the highest.[22] Lee's 0.3 per person is the lowest.[18] Huh defined the activity restricted day as more than a half-day of rest in bed away from ones normal activity due to sickness and reported 0.5 day per person and 3.4 days per patient.[29]

Table 2—9 shows the cause specific morbidity rate per 1,000 population per month. Most of the interview surveys used the International Classification of Diseases and Injuries by W. H. O., although several surveys used a different classification system. Of these studies, Kwon dealt with the incidence of acute communicable diseases in the urban slum population,[33] and Oh analyzed the causes of teachers absenteeism due to illness.[35]

Table 2—10 shows the government statistics on the number of cases and incidence rates for selected communicable diseases. The incidence rates for selected communicable diseases has tended to decline. Typhoid fever shows the highest incidence rate of 2.0 per 100,000 population among them. Although the number of not-infectious tuberculosis cases has decreased, the number of infectious tuberculosis cases has remained stationary.

Table 2—11 shows the ten leading causes of general morbidity. There is no uniformity in the classification system used. Generally speaking, diseases of the digestive system and respiratory system were more frequently reported in the interview surveys. The former is particularly high in the summer, the latter in the winter. Diseases of the skin, ear, nose, and throat are also quite prevalent. Symptoms and ill defined conditions are the second most often reported problems in some study.[40] This ambiquity is inevitable in an interview survey. Kim conducted a health examination study and reported somewhat different results as might be expected.[43] Neurological and sensory disorders were most frequently reported, and then anemia, gastritis and duodenitis, nutritional deficiency, and bronchitis, emphysema, asthma, were reported in descending order. Kim[47] and Yoo[48] used school children as study samples. Kim[44] analyzed the medical records of

the Koje Project.

Out of 53 studies, 19 were surveyed in urban areas, 24 in rural and fishery areas, and 10 in both areas. Sixty per cent of all the surveys were conducted with general community people, while the remainder were based on specific populations, such as teachers, students, employees, etc. Age grouping varied according to the researchers. For example, those less than 19 years old were grouped as 0-9, 10-19 or 0-5, 6-10, 11-19. The aged were grouped as over age 55, over 60, or over 70. The study period ranged from one day to two years. Fifty per cent, or 26 surveys, were conducted within one month. Twenty per cent, or 11 surveys, were conducted for more than one year. In the meantime, the sample size ranged from 180 to 2,000 households, or from 144 to 120,000 people. Approxmately 40% of the studies used a sample size of 1,500-3,000 households or 1,000-10,000 people. As for sampling methods, simple random sampling, cluster sampling, and multi-stage stratified sampling technique were utilized. However, few studies discussed their sampling errors.

There are three kinds of health surveys; health interview survey, health examination survey, and medical record search. Most of the studies reviewed here relied on the interview technique. Lee[12] and Kim[43] used the physical & laboratory examination approach. Four studies conducted by the Ministry of Health and Social Affairs[40, 41], Kim[44], and Lee[46] dealt with clinical records. In the case of interview surveys, the length of the recall period affects the accuracy of the data. It was found that most studies did home visiting on a weekly basis, which seems to be quite adequate. One study conducted by the Social Security Commission used the personal diary approach as an instrument in obtaining morbidity information of household members. But it does not indicate who among the household members wrote the health diary.

Yu, et al presents another term, "incapacitation", which is similar to the concept of morbid conditions[8]. Any condition which reduced an interviewee's normal activities was defined as incapacitation. Restricted activity, bed disability, absence from school, and not playing are included. Their results seem to be very high (7 2-9.6 days of incapacitation per patient, and 1.9-2.9 days of incapacitation per person) compared to Huh, et al's study on activity restriction (2.4 days of activity restriction per patient, and 0.5 day of activity restriction per person), which defines activity restriction as a half day rest in bed away from ones normal daily activities. Researchers often fail to distinguish acute conditions from chronic conditions. Criteria should be standardized and operationalized to define acute and chronic conditions. Also, data on both prevalence and incidence rates are needed.

Bibliography

1. In, Chu Yong: A Social-medical Study on Morbidity of Urban Population in Korea, *KJPH*, Vol. 2, No. 1, 1965.
2. Chun, Wan Soo: A Socio-medical Survey on Sickness and Utilization of Medical Care Among the Remote Urban Population. *KJPH*. Vol. 7, No. 1, 1969.

3. Shin, Geum Ho:A Survey on Sickness Prevalence in Rural (Plain Area) Population, *KJPH*, Vol. 9, No. 1, 1972.
4. Kim, Kyung Kyun: A Survey on sickness and Utilization of Medical Care of Working Girls in Pharmaceutical Companies, *KJPH*, Vol. 9, No. 1, 1972.
5. Lee, Soon Kwon: A Survey on Sickness and Medical Cost in Korean Coastal Area, *KJPH*, Vol. 9, No. 1, 1972.
6. Cho, Dong Bok, Young Soo Park, Jong Huh: A Survey on Medical Expenditure in Urban Population, *KJPH*, Vol. 10, No. 2, 1973.
7. Lee, Chul Ok, Young Soo Park, Jong Huh: A Survey on Medical Care Expenditure in Rural Area, *KJPH*, Vol. 11, No. 1, 1974.
8. Yu, Seung Hum, Kit G. Johnson: Health Care and Days of Disability Survey, Koje Island, Korea, *KJPM*, Vol. 5, No. 1, 1972.
9. Kim, In Dal, Ok Ryun Moon, Tack Namgoong: Socio-medical Study on Sickness in Korea, *KJPH*, Vol. 7, No. 2, 1970.
10. Meng, K. H. : Sickness & Medical Care in Medium-size Cities and Rural Population, *KMA Newspaper*, No. 834, May 15, 1975.
11. Ewha Womans University Helath Center: Student Health Status (1972—1974), *University Health Annual*, Vol. 3, 1975.
12. Lee, Sung Kwan, Doo Hie Kim. Jong Hak Jung, Keuk Soo Chung, Sang Bin Park, Chung Hun Choy, Sun Ho Hong, Jin Hoon Rāk: A Study Concerning Health Needs in Rural Korea, *KJPM*, Vol. 7, No. 1, 1974.
13. Paik, Young Hum: A Study on Physical Growth & Morbidity of the Children under Christian Children's Fund Inc. Programme, *KJPM*, Vol. 7, No. 1, 1974.
14. Kang, Ji Yong: A Study on the Health Care of Ewha Womans University Staff, Faculty & Families, *KJPM*, Vol. 7, No. 1, 1974.
15. Park, Won Kihl:Health Status of Primary School Children in a Part of Remote Area, *KJPM*, Vol. 7, No. 1, 1974.
16. Soon Lee:Studies on Rural Type Pilot Medical Insurance, *NIH Annual Report*, Vol. 10, 1973.
17. Choi Chong Kun:A Study of Medical Care Supply and Demand System, *KJPH*, Vol. 7, No. 1, 1970.
18. Lee, Young Choon, Kyoung Sik Kim, Jong Huh, Jung Kun Kim, Young Soo Park: Studies on Sickness and Utilization of Medical Care in Korean Rural Areas, *Rural Hygiene*, Vol. 4, No. 1, 1972.
19. Huh, Jong, Y. S. Park, K. N. Lee: A Study on Medical Care Expenditure, *a Separate Volume*, 1972.
20. Huh, Jong, Young Soo Park: A Study on Medical Care Expenditure, *a Separate Volume*, 1973.
21. Han, Myung Ryul, Sun Hwa Kim, Jong Huh: A Survey on the Folk Medicine in Farm Area of Korea, *Journal of SNU Medical College*, Vol. 5, No. 3, 1964.
22. Han, Myung Ryul: A Socio-medical Study on Morbidity in Rural (Farm) Population, *Journal of SNU Medical College*, Vol. 5, No. 4, 1964.
23. Jun, Byung Hoon: Analytical Report on Medical Care Among Urban Population, *Journal of SNU Medical College*, Vol. 6, No. 3, 1965.
24. Kim, In Dal, Jong Huh: Socio-medical Studies on Sickness and Medical Care in Korea, *SNU Faculty Papers*, Vol. 17, 1966.
25. Yoon, Yung Shup: Socio-medical Studies on Health Status in Rural Population, *a Separate*

Volume, 1965.

26. Park, Hyung Jong, Jong Huh, Kun Yong Song: A Study on Sickness Prevalence and Utilization of Medical Facilities Among School Population in Seoul, *The Korean Central Journal of Medicine*, Vol. 3, No. 5, 1962.
27. Yang, Jae Mo, Mo, Myung Ho Kim: A Basic Health Survey of the Yonsei Community Health Service Area, Seoul, *KJPM*, Vol. 1.
28. Kit G. Johnson, John R. Sibley, Chang Nam Kim and Il Soon Kim: Koje Island Illness and Health Care Pattern, *Yonsei Medical Journal*, Vol, 11, No. 2, 1970.
29. Huh, Jong, Ok Ryun Moon: A Study of Demand and Need for Medical Care in Rural Areas in Korea, *a Separate Volume*, 1975.
30. Lee, Yong Choon, Kyoung Sik Kim, Jong Huh, Jong Kun Kim, Nam Hi Kang: Studies on Sickness and Utilization of Medical Care in Korean Rural Areas, *Rural Hygiene*, Vol. 3, No. 1, 1969.
31. Social Security Commission, M.H. & S.A.: *National Health Survey*, 1965.
32. Jang, I.Y., M.H. Kim, I.S.Kim: Health Survey in the Rural None Doctor Area, *The New Medical Journal*, Vol. 9, No. 4, 1966.
33. I.S.Kim, K.S. Kim, I.K. Park: Illness and Heatlh Care Patterns of Yonhee Community Health Service Area. *The New Medical Journal*, Vol. 16, No. 4, 1973.
34. Yu, Seung Hum, Jae Mo Yang: A Study on the Health Care of Yonsei Students, Staff and Faculty, *The New Medical Journal*, Vol. 15, No. 5, 1972.
35. Oh, Hee Yong, Bang Bu Youn, Ki Soon Kim: A Study on Illness and Health Care Patterns of Seoul City Primary, Middle and High School Teachers, *The New Medical Journal* Vol. 18, No. 4, 1975.
36. Kwon, E H., Tae Ryong Kim, Chul Hwan Cha, Hyung Jong Park, Soon Young Park, Yong Wook Lee, Bong Ja Yun: A Study on health administration status and measures to improve physical conditions of primary, middle and high schools and university students, *a Separate Volume*, Student Health Service, Seoul National Univertity, July, 1968.
37. Jang, Y.T.: A Study on Sickness and Utilization of Medical Care in Kyunggido Rural Area, *The Korean J. of Public Health*, Vol. 12, No. 2, 1976.
38. Kwon, E H., T.R. Kim, C.H. Cha, D.R. Yun, U.R.Ko, H.J.Park: A Study in Urban Slum Population, *a Separate Volume*, College of Medicine and School of Public Health, Seoul National University, July, 1967.
39. Kim, K.Y.: A Study on Morbidity in Rural Population, *The Korean Journal of Preventive Medicine*, Vol. 8, No. 1, pp. 116, 1975.
40. M.H.S.A.: One day Hospital Census & Injuries, *a Separate Volume*, Aug. 1, 1966,
41. M.H.S.A.: One day Hospital Census on Diseases & Injuries, *a Separate Volume*, Oct. 1, 1973.
42. Kwon, E H.: Socio-medical Surveys on Surveys on Some Specific Communities, *Seoul University Journal*, Vol. 12, Dec. 1972.
43. Kim, J.S.: Health Survey on Korean Rural Adults, *to be published*, Aug., 1973.
44. Kim, Yong Joon: A Study on Medical Care Utilization of Private Clinic in Korean Rural Area, *Korean Journal of Preventive Medicine*, Vol. 8, No. 1, Oct., 1975.
45. Kwon, E H., H.J. Park, S.P. Lee, B.H. Yun, D.U. Park; Socio-medical Survey on Indigent People, *Seoul University Journal*, Vol. 12, Dec., 1962.
46. Lee, B.M., S.H. Yoo, I.S.Kim: A Medical Care Utilization Study of a Private Medical Clinic in Rural Korea, *Korean Journal of Preventive Medicine*, Vol. 8, No. 1, Oct., pp. 71-81, 1975.

47. Kim, H. K. : A Study on Sickness Prevalence of School Children, *Chonnam Medical Journal*, Vol. 12, No. 1, Jan., pp. 75-78, 1975.
48. Yoo, Kyong Woon: An Observation on Sickness and Study of School Children, *Chonnam Medical Journal*, Vol. 11, No. 2, April, pp. 399-403, 1974.
49. Kang, H. Y., Y. S. Choi, M. H. Kim: A Survey on School Children's Health in a Specific Section Around Taegu, *The New Medical Journal*, Vol. 16, No. 1, pp. 135-138, 1973.
50. Oh, Hee Yong: Socio-medical Study of Physically Handicapped School Children in Seoul, *The New Medical Journal*, Vol. 18, No. 7, pp. 907-920, 1975.
51. M. H. S. A. : A Report on the Physically Handicapped, *a Separate Volume*, May 1, 1966.
52. Kim, M. H. : Health Administrative Approach Toward Promoting and Improving of Rural Health Care. Evaluation Study of Ichon Rural Health Nursing Service: *The New Medical Journal*, Vol. 17, No. 5, pp. 633-655, 1974.
53. M. H. S. A. : Yearbook of Public Health and Social Statistics, *a Separate Volume*, 1974.

3. Utilization Data

A. Basic Data Tables

1. Sex Specific Medical Care Utilization by Area/1,000 Population/Month
2. Sex Specific Medical Care Utilization by Area/1,000 Specific Population/Month
3. Disease Specific Medical Care Utilization/1,000 Cause Specific Population/Month
4. Age and Sex Specific Medical Care Utilization by Type of Medical Care/1,000 Population/Month
5. Average Length of Inpatient Stay
6. Percentage of Cases Treated (Treated Rate)
7. Education Specific Medical Care Utilization/1,000 Population/Month
8. Place of Delivery by Education

Table 3-1. Sex Specific Medical Care Utilization by Area/1,000 Population/Month (I)

Area	Year Surveyed	Researchers	Sample Size	Sex	Type of Medical Care							
					Private Clinic	Hospital-ization	Health Center	Pharmacy	Home Visit	Dentist Visit	Herb Doctor	Herb Drugstore
Rural	Jan. 1963 (25 days)	Cha, M. H. 70)	9,961	B		2.8		0.9			0.3	
	Sep. 1963 (1 yr)	Kim, S. H. 59)	19,197	B	20.0	1.4	8.8	51.8	0.2	0.4	9.8	
	Sep. 1963 (1 yr)	Kim, I. D. Huh, J. 80)	20,000	B	19.2	1.3	49.7	34.0	0.2	0.4	9.4	
	Oct. 1963 (2 mos)	Han, M. Y. Kim, S. H. 57)	1,250	B		5.6	5.6	21.6				4.0
	July 1965 (10 days)	Jang, I. U. Kim, M. H. 19)	1,245	B	13.7			26.9				9.7
	Oct. 1965 (25 days)	Yun, Y. S. 28)	2,378	B	11.6	1.8	8.8	46.3			13.3	
	Sep. 1967 (3 mos)	Kwon, E H. Kim, T. R. 38)	12,000	B	5.7	1.5		5.9			1.2	
				M	5.0	1.7		5.1			1.4	
				F	6.4	1.3		6.9			0.9	
	Aug. 1968 (1 mo)	Lee, Y. C. Kim, K. S. 14)	14,472	B	12.0	1.2	7.0	59.4		0.2	3.6	5.5
				M	13.2	1.6	9.0	62.0		0.1	6.0	6.8
				F	12.6	0.7	4.8	56.8		0.3	4.8	6.1
	Jan. 1969 (1 mo)	Yoo, I. H. Huh, J. 10)	5,679	B	26.6	0.7	6.9	46.0		0.2	5.0	3.5
				M	24.2		4.2	49.8		0.2	7.4	2.1
				F	29.0	0.7	9.5	40.0			2.5	4.9
	Apr. 1973 (8 mos)	Lee, S. 15)	7,200	B	11.1		2.4	41.7			9.3	
	July 1973 (5 mos)	Lee, S. K. Kim, D. H. 17)	1,500	B	14.1	2.6	0.8	29.8			4.5	
				M	10.5	3.3	0.3	29.0			1.7	
				F	8.0	2.8	0.3	30.5			2.1	
	Aug. 1973 (1 mo)	Lee, C. O. Park, Y. S. 12)	14,655	B	46.1	5.1	5.7	52.2		0.6	9.6	8.0
	Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 79)	30,525	B	47.2	5.1	5.7	52.3	7.0	0.6	9.6	8.0
	Nov. 1974 (1 mo)	Huh, J. Moon, O. R. 56)	9,830	B	24.5	6.2	11.3	71.0		0.4	13.5	
				M	27.3	7.0	13.3	66.5				
				F	21.6	5.4	9.3	75.6				

Table 3-1. Sex Specific Medical Care Utilization by Area/1,000 Population/Month (Ⅱ)

Area	Year Surveyed	Researchers	Sample Size	Sex	Type of Medical Care							
					Private Clinic	Hospital-ization	Health Center	Pharmacy	Home Visit	Dentist Visit	Herb Doctor	Herb Drugstore
Urban	Nov. 1963 (1 yr)	Whang, C. H. 22)	143,070	B			5.8					
	Sep. 1964 (1 yr)	Jun, B. H. 58)	10,028	B	31.3	1.6	0.7	71.3	1.6	1.1	6.4	
	Sep. 1967 (3 mos)	Kwon, E H. Kim, T. R. 38)	12,000	B	22.1	10.3		30.2			4.2	
				M	20.4	11.4		22.9			4.1	
				F	24.3	10.3		39.4			4.4	
	Aug. 1968 (1 mo)	Chun, W. S. 35)	1,802	B		16.6	2.2	73.3			8.9	
				M		15.6	3.3	73.2			6.6	
				F		17.7	1.1	73.3			12.8	
	June 1971 (1 yr)	Kim, I. S. Kim, K. S. 18)	1,851	B	20.5		2.1	5.4			2.2	
	Aug. 1973 (1 mo)	Cho, D. B. Park, Y. S. 8)	7,896	B	47.1	15.2	0.8	71.8			4.9	4.9
Whole Country	Sep. 1963 (2 yrs)	Huh, J. Kim, I. D. 93)	29,225	B	11.9	0.7	3.0	29.2	0.3	0.3	4.3	
	Apr. 1972 (1 mo)	Song, S. O. 5)	2,597	B			5.3					
				M			5.5					
				F			5.0					
	Aug. 1973 (1 yr)	Song, D. O. 11)	1,009	B	9.2	3.4	2.0	18.6	0.7	0.1	4.6	4.2
	Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 79)	30,525	B	68.4	17.6	1.1	136.0	24.2	0.9	8.3	16.9

Table 3-2. Sex Specific Medical Care Utilization by Area/1,000 Specific Population/Month (I)

Population Surveyed	Year Surveyed	Researchers	Area	Sample Size	Sex	Type of Medical Care							
						Private Clinic	Hospltal-ization	Health Center	Phar-macy	Home Visit	Dentist Visit	Herb Doctor	Herb Drugstore
Blind Men	Jan. 1962 (86 days)	Kwon, E H. Lee, M. H. 61)	Seoul Gyeong-Gi	449	B	21.0			351.2	44.3		33.4	
Students & Teachers	May 1962 (1 mo)	Park, H. J. Huh, J. 60)	Seoul	1,241	B	130.5			99.9	130.5		32.2	
The Miners	Sep. 1963 (45 days)	Nam, C. H. 20)	Gang-Weon et al	2,360	M	24.3	12.2	5.4	41.8				29.1
Indigent Laborers	June 1964 (2 mos)	Park, S. Y. 27)	Seoul	725	B	25.5	65.5	33.1	59.3			13.1	
Indigent Women	June 1964 (2 mos)	Yun, L. Z. 21)	Seoul	715	F	155.9	15.4	20.3	116.8			9.8	
Farm Laborers	Aug. 1967 (2 mos)	Lee, K. H. 23)	Rural	802	M	27.4	38.7	28.7	109.7		13.7	61.1	
Scavengers	Aug. 1964 (70 days)	Kim, H. D. 25)	Seoul	1,632	M	50.2		14.5	119.4			75.2	
Drivers	Aug. 1964 (3 mos)	Kang, R. S. 65)	Seoul	667	M	127.0	62.0		81.0				24.5
University Students	1964 1965 1966 1967 1968	Shim, U. T. 64)	Jeon Nam	2,881	B		26.6 26.9 11.6 14.9 11.2	32.9 36.4 13.8 15.2 17.3					
Old Age	Apr. 1965 (1 yr)	Seo, K. H. 40)	Seoul Gyeong-Gi	1,497	B	16.5	0.7	1.7	39.7	1.0	0.5	15.3	
Well-babies	Apr. 1965 (8 days)	Lee, Y. U. 44)	Seoul	530	B	132.1	139.6	383.0					
Old Age	Sep. 1965 (16 days)	Han, C. H. 29)	Seoul Incheon	723	B M F	124.7 149.4 109.5			176.3 153.2 190.5				123.9 129.9 120.3
Old Age	Aug. 1966 (2 mos)	Lim, J. K. 31)	Jeon Buk (rural)	600	B M F	66.2 78.6 53.7			75.0 75.5 74.5				215.8 221.7 209.2

Table 3-2. Sex Specific Medical Care Utilization by Area/1,000 Specific Population/Month (Ⅱ)

Population Surveyed	Year Surveyed	Researchers	Area	Sample Size	Sex	Type of Medical Care							
						Private Clinic	Hospital-ization	Health Center	Phar-macy	Home Visit	Dentist Visit	Herb Doctor	Herb Drugstore
Middle, High & University Students	Sep. 1967 (3 mos)	Kwon, E H. Kim, T. R. 38)	Metropolitan & Rural	12,000	B	9.3	3.9		12.0			1.8	
					M	8.5	4.4		9.3			1.8	
					F	10.2	3.4		15.4			1.8	
House Wives	Sep. 1967 (55 days)	Kim, Y. B. 33)	Gyeong Nam	404	F	37.8		28.3	234.9			129.6	
Technical Laborers	Sep. 1967 (2 mos)	Ha, M. H. 34)	Seoul	636	B	97.5	82.3		164.4			20.6	
Employees at Phar. Co.	Mar. 1971 (6 mos)	Kim, K. K. 9)	Seoul	1,539	F	63.7		2.6	188.4		2.6	14.9	

Table 3-3. Diseases Specific Medical Care Utilization/1,000 Cause Specific Population/Month

Diseases	Year Studied	Researchers	Area	Sample Size	Sex	Type of Medical Care							
						Private Clinic	Hospital-ization	Health Center	Phar-macy	Home Visit	Dentist Visit	Herb Doctor	Herb Drugstore
	July 1963 (3 mos)	Lee, S. B. 39)	Choong Nam (rural)	1,243	B	77.7		171.8		21.6			35.8
	Nov. 1963 (1 yr)	Whang, C. W. 22)	Busan (urban)	10,274	B			3.6					
Tuberculosis	Oct. 1964 (25 days)	Hann, K. S. 26)	Seoul	1,310	B	252.0	252.0	29.1					
	Sep. 1965 (1 mo)	Kim, D. K. 30)	Seoul	463	B	110.2	101.5	667.4	43.2	60.5		8.6	
					M	115.3	112.2	648.0	43.6			6.2	
					F	98.6	77.5	711.3	42.3			14.1	
	Sep. 1966 (2 mos)	Yu, K. J. 32)	Gang-Weon (Weonju)	228	B	309.2	57.0	59.2	68.0			26.3	
Venereal Diseases	Oct. 1964 (15 days)	Lee, T. A. 24)	Choong Nam (rural)	600	B	323.3	3.3	8.3	6.7				
					M	153.3	6.7	13.3	13.3				
					F	493.3		3.3					
Typhoid Fever	July 1966 (1 mo)	Han, D. S. 16)	Choong Nam (Dae Jun)	53	B	103.8	160.4		169.8			9.4	18.9
Mental Disorders	Sep. 1972 (10 days)	Nam, K. H. 7)	Gyeong Buk (rural)	6,846	B		194.4		83.3			250.0	250.0

Table 3-4. Age and Sex Specific Medical Care Utilization by Type of Medical Care/1,000 Population/Month (I)

Type of Medical Care	Year Surveyed	Researchers	Area	Sample Size	Sex	Age 0—4	5—9	10—19	20—29	30—39	40—49	50—59	60—	Average
	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.14)	Whole Rural	14,472	B	31.4	12.3	5.1	9.0	13.1	16.2	18.5	7.2	12.6
					M	38.8	14.7	3.1	6.7	10.4	13.4	14.7	4.6	
					F	23.2	9.6	7.4	18.0	15.4	18.6	22.3	9.3	
Out-patient Clinic	July 1973 (5 mos)	Lee, S.K. Kim, D.H.17)	Rural	1,500	B	36.1	11.2	5.8	7.8	8.9	6.7	14.1	37.2	12.8
					M	37.6	18.3	7.7	7.8	12.0	7.4	7.8	30.5	
					F	28.2	4.5	3.7	7.8	5.9	7.8	6.1	41.4	
	Nov. 1974 (1 mo)	Huh, J. Moon, O.R.56)	Whole Rural	9,830	B	24.5		6.0	18.9	31.6	40.7	46.5	49.7	24.5
	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.14)	Whole Rural	14,472	B	1.4		1.1	1.1	3.0	2.1	0.9		1.2
					M	2.6		2.0	2.2	2.6	2.9			
					F				—	3.3	1.3	1.9		
Hospitaliza-tion	July 1973 (5 mos)	Lee, S.K. Kim, D.H.17)	Rural	1,500	B			1.2		1.5	3.4	8.0	9.9	2.1
					M			1.1		3.0	7.4	11.8	15.2	
					F			1.2				4.1	3.8	
	Nov. 1974 (1 mo)	Huh, J. Moon, O.R.56)	Whole Rural	9,830	B		2.7	3.4	4.4	8.1	13.2	16.1	9.7	6.2
Out-patient Clinic & Hos-pitalization	Aug. 1968 (1 mo)	Chun, W.S.35)	Seoul	1,802	B	36.0	7.1	11.5	11.1	12.3	31.6	40.0		16.6
					M	18.7	7.7	11.0	6.2	16.8	46.5	27.8		
					F	52.2	6.7	11.9	15.1	6.8	13.9	51.3		
	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.14)	Whole Rural	14,472	B	4.8	0.8	2.4	5.6	14.9	14.0	17.6	8.2	6.9
					M	6.4	0.8	2.5	5.6	22.1	20.8	23.8	11.4	
					F	2.8	0.9	2.3	5.6	8.8	8.0	11.2	5.6	
Health Center	Aug. 1968 (1 mo)	Chun, W.S. Huh, J.35)	Seoul	1,802	B					6.1	12.7			2.2
					M					5.6	23.3			
					F					6.8				
	Apr. 1972 (1 mo)	Song, S.D.5)	Dae Gu and 3 Guns	2,597	B		3.3	3.0	12.5	12.3	9.2		8.4	7.0
	July, 1973 (5 mos)	Lee, S.K. Kim, D.H.17)	Rural	1,500	B									3.5
					M							2.8		2.8
					F	1.4							2.8	4.2
	Nov. 1974 (1 mo)	Huh, J. Moon, O.R.56)	Whole Rural	9,830	B		11.6	4.5	6.6	14.6	27.5	25.7	4.1	11.3

Table 3-4. Age and Sex Specific Medical Care Utilization by Type of Medical Care/1,000 Population/Month (Ⅱ)

Type of Medical Care	Year Surveyed	Researcher	Area	Sample Size	Sex	Age 0—4	5—9	10—19	20—29	30—39	40—49	50—59	60—	Average
Pharmacy	Aug. 1968	Lee, Y.C. Kim, K.S.[14]	Rural	14,472	B	102.4	46.5	40.7	46.0	63.8	82.2	67.5	72.1	59.4
					M	108.5	52.3	44.2	42.6	79.6	76.0	66.0	68.8	
					F	95.5	40.3	36.9	49.4	50.4	87.6	68.9	74.8	
	Aug. 1968 (1 mo)	Chun, W.S. Huh, J.[35]	Seoul	1,802	B	121.6	64.3	57.3	52.8	76.7	88.6	106.7	31.3	73.3
					M	102.8	76.9	55.2	30.9	78.2	127.9	138.9		
					F	139.1	53.3	59.5	70.7	74.8	41.7	76.9	76.9	
	July 1973 (5 mos)	Lee, S.K. Kim, D.H.[17]	Rural	1,500	B	49.9	16.7	12.8	4.4	11.9	20.1	26.1	86.8	29.8
					M	47.0	10.4	16.5	5.9	6.0	29.6	19.6	66.0	
					F	35.4	24.0	8.6	2.6	17.6	12.2	32.9	82.7	
	Nov. 1974 (1 mo)	Huh, J. Moon, O.R.[56]	Rural	9,830	B	94.1		36.2	53.2	59.2	103.9	112.4	100.7	71.0
Dental Clinic	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.[14]	Rural	14,472	B					1.2		0.9		0.2
					M					1.2		1.8		
					F					2.2				
Herb Doctor	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.[14]	Rural	14,472	B	2.7	0.4	1.6	2.2	6.0	11.2	14.8	12.4	4.8
					M	2.5		2.0	3.3	2.6	1.4	11.0	18.3	
					F	2.8	0.9	1.1	1.1	8.8	19.9	18.6	7.5	
	Aug. 1968 (1 mo)	Chun, W.S.[35]	Seoul	1,802	B	27.0	3.6			24.5	38.0	13.3		
					M	18.7				16.8	34.9			12.8
					F	34.8	6.7			34.0	41.7	25.6		

Table 3-5. Average Length of Inpatient Stay

Study Year	Researchers	Area	Sample Size	Hospital Days
1959 (5 yrs)	Lee, D. J.	Seoul	B : 1,001 M : 619 F : 382	B : 4.6 M : 4.8 F : 4.6
Oct. 1965 (25 days)	Yun, Y. S. 28)	Choong Nam (Rural)	B : 2,378 M : 1,339 F : 1,139	B : 9.7
July 1966 (1 mo)	Han, D. S. 16)	Choong Nam (Dae Jun)	B : 53	B : 16.0*
Aug. 1966 (1 day)	M. H. & S. A. 78)	Whole Country		B : 16.7**
Jan. 1967 (1 yr)	Kim, B. W. 74)	Rural	B : 1,695	B : 10.4
May 1971 (2 mos)	Yu, S. H. Yang, J. M. 68)	Seoul	B : 1,513	B : 7.4
July 1973 (5 mos)	Lee, S. K. Kim, D. H. 17)	Kyung Buk (Rural)	B : 1,500	B : 12.0
Oct. 1973 (1 day)	M. H. & S. A. 77)	Whole Country		B : 12.4**
Jan. 1975 (1 Yr)	Moon, O. R. 84)	Rural (Moonkyung) (Okgu) (Choonseong) Urban (Busan) (Major Cities)	B : 3,840 B : 9,311 B : 7,344 B : 19,482 B : 4,891	B : 10.8 B : 8.0 B : 7.9 B : 7.7 B : 11.0

* Hospital days of the patients with typhoid fever

** Data from the one day National Hospital Census

Table 3-6. Percentage of Cases Treated (Treated Rate)

Study Period	Researchers	Area	Sample Size	Both	Male	Female
Oct. 1965 (25 days)	Yun, Y. S. 28)	Choong Nam (Rural)	2,378	86.9		
Jan. 1969 (1 mo)	Lee, Y. C. Kim, K. S. 14)	Whole Rural	14,472	72 2** 60.2	75.1**	69.4**
Jan. 1969 (1 mo)	Yoo, I. H. 10)	Whole Rural	5,679	78.1	79.4	76.7
Nov. 1971 (7 days)	Yu, S. H. Johnson, K. 81)	Rural (Hachung) (Illoon)	1,114	 62.0 61.0		
Aug. 1972 (1 mo)	Huh, J. Park, Y. S. 13)	Seoul Daegu Inchon	15,402	 70.5 76.9**	 74.3**	 78.9**
Sep. 1972 (10 days)	Nam, K. H. 7)	Kyung Buk (Rural)	6,846	50.0*		
July 1973 (5 mos)	Lee, S. K. Kim, D. H. 17)	Rural	1,500	73.0	76.4	69.6
Aug. 1973 (1 mo)	Cho, D. B. Park, Y. S. 8)	Seoul Busan Daegu	7,896	74.8	73.2	75.9
Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 80)	Daegu	30,525	74.5 78.5**	 80.7**	 76.7**
May 1974 (2 mos)	Oh, H. Y. Yun, B. B. 76)	Seoul	3,222	78.3***	90.0***	66.5***
Nov. 1974 (1 mo)	Huh, J. Moon, O. R. 56)	Whole Rural	9,830	59.9		

* Pertains to those suffering from mental disorders

** Includes folk therapies & superstitious remedies

*** Registered tuberculosis cases in Seoul

Table. 3-7. Education Specific Medical Care Utilization/1,000 Population/Month

Type of Medical Care	Study Year	Researchers	Area	Sample Size	No Education	Can Read Korean	Primary School	Middle School	High School	College or University	Average
Private Clinic	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	27.1	4.7	9.0	7.7	8.3	16.7	12.6
Hospital & Clinic	July 1970 (10 day)	Lee, S.H. 4)	Seoul	1,203	15.2	15.9	12.3	13.3	12.8	12.4	13.1
Hospitalization	May 1968 (4 mos)	Kim, Y.S. 2)	Seoul	854		53.2	38.5	59.0	65,4	134.1	55.6
	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	0.6	0.7	1.6	0.8	2.1		1.2
Health Center	May 1968 (4 mos)	Kim, Y.S. 2)	Seoul	854		10.6*	40.8*	26.7*	20.4*	44.0*	304*
	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	8.8	12.4	6.5	7.7	8.3		6.9
Pharmacy	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	54.3	71.1	48.4	68.2	72.3	75.0	59.4
	July 1970 (3 yrs)	Lee, S.H. 4)	Seoul	1,203	6.1	5.8	0.6	10.6	11.4	9.3	10.4
Home Visit	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	0.6	2.0	0.1				0.3
Dental Clinic	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472			0.1		2.1	8.3	0.2
Herb Doctor	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	13.9	10.4	3.5	2.3			4.8
	July 1979 (10 days)	Lee, S.H. 4)	Seoul	1,203	3.0	2.9	1.8	2.2	1.2	2.7	1.9
Herb Drug Store	Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 14)	Rural	14,472	12.0	14.3	5.8	3.8	2.1	8.3	6.1
	July 1970 (10 days)	Lee, S.H. 4)	Seoul	1,203	0.9		0.5	0.4	0.2	0.2	0.2

Table 3-8. Place of Delivery by Education (I)

Area	Year Surveyed	Investigators	Sample Size	Hospital or Clinic				Midwives' Office				Home			
				Sub-total	Primary School & below	Middle & High School	College or University	Sub-total	Primary School & below	Middle & High School	College or University	Sub-total	Primary School & below	Middle & High School	College or University
Rural	July 1959 (15 days)	Kim, C. S. 67)	595									96.9			
	Jan. 1963 (25 days)	Cha, M. H. 70)	9,961	1.1				12.0				86.9			
	Mar. 1965 (52 days)	Kang, O. B. 66)	2,340		0.1	0.0						99.9	99.9	99.9	
	July 1966 (1 mo)	Jung, H. C. 46)	1,424	2.6	1.5	10.3	50.0					96.8	88.4	76.1	50.0
	July 1966 (2 mos)	Oh, Y. M. 50)	892	1.6	0.7	5.0	33.3	4.3	1.0	19.5		94.2	98.3	75.5	66.7
	Sep. 1966 (80 days)	Chung, Y. I. 45)	2,139	0.1								95.6			
	Dec. 1967 (1 yr)	Kim, J. I. 53)	499	1.6								98.4			
	Sep. 1968 (1 mo)	Koo, K. W. 3)	480	2.4				5.4				90.0			
	Apr. 1970 (20 mos)	Yeh, M. H. Lee, S. K. 34)	4,147	3.4				0.8				95.8			
Both	Feb. 1966 (15 mos)	Yang, J. M. Bang, S. 51)	1,897	0.5								99.5			
Urban	Nov. 1961 (20 days)	Jyoo, Y. H. 41)	300	18.3								81.7			
	Jan. 1964 (4 yrs)	Oh, M. H. 62)	3,413		33.0	48.5	94.1		0.7	1.5			66.3	50.0	5.9
	Mar. 1965 (8 mos)	Kwon, E. H. Kim, T. R. 49)	92,605	13.9				1.7				84.4			
	Jan. 1966 (1 yr)	Woo, J. O. 42)	400	33.8				6.5				51.5			
	Jan. 1966 (3 yrs)	Song, S. W. Robinson, C. 25)	2,151	23.6								76.4			

Table 3-8. Place of Delivery by Education (Ⅱ)

Area	Year Surveyed	Investigators	Sample Size	Hospital or Clinic				Midwives' Office				Home			
				Sub-total	Primary School & below	Middle & High School	College or University	Sub-total	Primary School & below	Middle & High School	College or University	Sub-total	Primary School & below	Middle & High School	College or University
	1967 (1 mo)	Sohn, K. C. 48)	110	10.9								89.1			
	Oct. 1967 (2 mos)	Yane, J. M. Kim, M. H. 69)	21,857	23.6								76.4			
	Jan. 1968 (1 yr)	Cho, W. S. 37)	806	48.2	48.0	49.8	2.2					51.8	60.8	38.2	1.0
	May 1968 (4 mos)	Kim. Y. S. 2)	854	41.1	21.1	52.8	80.5					58.9	67.4	47.2	19.5
	June 1968 (4 mos)	Kwon, E H. Kim, T. R. 71)	3,171	30.5	20.2	47.8	79.4	2.9	3.2	3.5	1.5	58.3	76.5	48.8	19.1
Urban	June 1968 (52 days)	Hong, J. W. 47)	500	34.4				3.0				62.6			
	July 1968 (4 mos)	Kang, K. W. Kim, I. D. 72)	3,171	30.7	20.1	47.8	79.4	3.1	3.5	3.5	1.5	57.0	76.4	48.8	19.1
	Sep. 1969 (15 days)	Lee, C. K. 43)	250	86.8	77.7	88.0	88.8					13.2	22.9	12.1	11.2
	Nov. 1970 (35 days)	Yu. S. H. Chung, Y. S. 73)	305	48.0	13.3	57.9	94.5	48.0	13.3	57.9	94.5	51.2	92.9	41.3	5.5
	Apr. 1971 (2 mos)	Lee, P. K. Park, S. Y. 63)	945	26.2	50.9	70.0	92.4	1.1	0.9	4.7	1.3	10.7	48.1	25.6	6.3
	Apr. 1971 (2 mos)	Park, Y. W. Lee, P. K. 75)	6,552	68.7	38.3	71.3	93.7	2.8	2.5	3.7	1.3	28.5	59.3	24.4	5.1
	Apr. 1972 (2 mos)	Park, Y. W. Lee, P. K. 82)	893	26.9	15.2	50.0	100.0	9.0	13.0			64.2	71.7	50.0	
	May 1972 (21 days)	Kang, H. S. 36)	510	41.4	20.1	51.9	85.4	8.2	6.8	10.3	4.2	50.4	73.1	37.9	10.4
	July 1972 (2 mos)	Cho, H. S. 55)	593	64.6				3.9				31.5			
	July 1972 (50 days)	Kim, D. S. 6)	200	16.5				9.0				20.5			
	Dec. 1974 (3 mos)	Kim, J. W. Lee, S. K. 83)	500	12.9				0.5				82.7			

B. Major Findings and Discussion

Utilization of health services is a variable that can be somewhat more accurately measured compared to morbidity and expenditures, and is also the most relevant variable for those concerned with the organization of health services. Much of the data presently available that describes health service utilization behavior results primarily from interview surveys regarding the sickness status, and to a lesser extent from clinical record reviews. Therefore, it is a byproduct in the sense that both the interview surveys and clinical record reviews are primarily conducted for the purpose of determining the health status of people served. A positive aspect of the utilization data is that people are more likely to remember where and how often they have received health services, than how often they have been ill and how much they spent. However, most studies solely utilized the socio-demographical approach. Utilization of health services were only examined in terms of age, sex, education, occupation, and socio-economic status, etc.. Other approaches, deemed essential, to explore the health care utilization question were not tried; such as the socio-cultural, socio-psychological, organizational, and social systems approach. In this study, health and medical care utilization were classified in terms of physician visits, hospitalization, dentist visits, pharmacist visits, home visiting by physicians, herb doctor visits, and herb drugstore visits. Folk therapies and superstitious remedies are excluded from the analysis. Midwife visits are also included in Table 3-8.

Table 3-1 shows the monthly sex specific medical care utilization by area per 1,000 population. From previous studies, females are known to generally use less health services than males with the exception of pharmacist visits. This survey again demonstrates that result; females use more drugstores than males, while males use more inpatient care facilities, physician offices visits, and health centers. Exceptions to this finding are Kwon's[38] and Yoo's[10] study in physician visits, Lee's[14] and Yoo's[10] study in pharmacist visits, and Yoo's[10] study in health center utilization. Kwon's study did not use the general population as the sample, but dealt instead with primary, middle, high school, and university students. Yoo's study, with a sample of rural residents in plain areas, has doubtful and possibly incorrect results.

Few studies have examined the influence of the geographical variable on the utilization of health services. This survey reports a few primitive findings concerning this variable. The reason we call them primitive is that utilization differences are examined only in terms of urban and rural categories among the numerous conditions, such as distance, travel time, means of transportation, etc.. It was found that health centers and herb doctors are more predominant sources of care in the rural areas, while private clinics and hospitals are more predominant in the urban areas. This difference is most conspicuous in hospitalization; urban residents use much more hospitalization services than rural people. This is probably due to 1) the scarcity of inpatient facilities in the rural areas (most of hospitalization services are offered via private clinics in the rural Korea), and 2) the inability to pay for the cost of hospitalization by the majority of

rural residents. However, it is notable that the number of hospitalizations has significantly increased in the rural areas during the last twelve years, from 2.8 per 1,000 population in 1963 to 6.2 in 1974. Also, physician visits have gradually increased in the rural areas during the same period of time.

Pharmacist visits are the undisputed leading source of medical care utilization in the urban areas as well as the rural. It can be accurately stated that at least fifty per cent of the Korean people use drugstores as their main source of medical care. This survey suggests that pharmacists are more frequently consulted by the urban residents than the rural, but the frequency difference is not very large. It is difficult to predict whether or not this trend of drugstore utilization is increasing over time. More information is required to determine the answer.

Dentists are rarely consulted compared to physician visits. The maximum number of dentist visits is 1.1 per 1,000 population per month. The urban dwellers use slightly more dental services than the rural. There is no precise way of knowing why it is so low. (Actually, 91.6% of dentists are working in the urban areas) Another way of emphasing the under-utilization of dentists is to compare it to physician visits, which is equivalent to only one fiftieth of physician visits. The total number of dentists was only one fifth of that of physicians in 1975. This seems to suggest a sizeable magnitude of dental care problems in Korea. U.S. statistics show that the ratio between dentist visits in 1971 and physician visits in 1969 was 1 to 2.7.*

With the exception of Huh's 1973 study[79], patients' home visits by physicians has not played a significant role in the provision of medical care. Huh's finding is doubtful (24.2 per 1,000 population in 1973) because it indicates that a physician makes a home visit for every fourth patient, which is not true of most private practitioners in Korea. However, this survey indicates that the roles of herb doctors and herb druggists are quite important in the provision of health services. According to the survey, the rural residents use more herb doctors than the urban people, while the urban residents use more herb drugstores than the rural.

If unmet need for health care is defined as health services desired by the client but not received, the magnitude of the unmet need can be measured by subtracting the actual services utilization from the total amount of individual perceived illness. It is possible to calculate the magnitude by using Part 2 (morbidity data) and Part 3 (utilization data). However, the range of the magnitude is so broad, from 12% to 83%, it is impossible to determine a representative figure. It becomes more complicated if those of the uncured among the treated are also included. Thus, it is better to quote the finding of one of the most recent studies conducted by Huh and Moon[56] as an example. They estimated that 40% of the people were not treated at all in the rural areas. It became 53% if those uncured were included, and 51% if those who regarded themselves as not requiring medical care were excluded. In brief, it can be stated that the need for medical care is not met for more than half of the total reported episodes of illness in the rural areas.

* USDHEW, PHS, Data from the National Health Survey, Physician Visits (Series 10, Number 75) and Current Estimates from the Health Interview Survey (Series 10, Number 79), DHEW Publication No. (NSM) 72-1064 & 73-1550.

Table 3-2 shows the monthly sex specific medical care utilization by area per 1,000 specific population, such as the blind, students, indigent laborers, street cleaners, taxi drivers, etc.. The number of utilization studies dealing with various specific populations has recently declined. In other words, more attention seems to be currently placed on medical care utilization of the general population, which is more meaningful. The range of the data in Table 3-2 is much broader than that in Table 3-1. Shim found the lowest utilization rates among university students, 28.5 per 1,000 students in 1968.[64] Han found the highest utilization rate in the elderly urban residents, 424.2 per 1,000 elderly population in 1965.[29] The aged use herb drugstores as their main source of care, and is most conspicuous in the rural areas.[31] Many studies failed to distinguish physician visits from hospitalization.

Table 3-3 shows the monthly disease specific medical care utilization per 1,000 cause specific population. The highest utilizers were tuberculosis cases. They use health centers as a primary source of care, but many use private clinics and hospitals. Han indicated that both private clinics and hospitals were the main source of tuberculosis care among gevernment employees in Seoul.[26] Yu also indicated that the majority of the moderately advanced and far advanced tuberculosis cases were treated at private clinics.[32] Most of the patients with venereal diseases were shown to receive medical care at private clinics.[24] In the case of mental disorders, herb doctors and herb druggists were found to be the major source of care.[7]

Table 3-4 shows the monthly age and sex medical care utilization by type of medical care per 1,000 population. Those less than five years old and the aged were found to be the highest utilizers in all kinds of medical care utilization. This survey indicates that the older the patients are, the more likely they are to use all kinds of health services, if those less than five years old are excluded.

Table 3-5 shows the data on the average length of inpatient stay. The Ministry of Health and Social Affairs conducted two studies on this topic, one in 1966 and the other in 1973. Almost seventy per cent of medical institutions nationwide were involved in the studies. The data from the national census suggests that the average length of inpatient stay was reduced from 16.7 days in 1966 to 12.4 days in 1973. Kim reviewed university hospital records at the departments of internal medicine and surgery, and determined the average length of stay to be 10.4 days in 1967.[74] Yu studied medical care problems of the Yonsei University faculty and students, and found the average length of stay to be 7.4 days in 1971.[68] Lee's study on health care needs in the rural areas indicated it was 12 days in 1973.[17] Moon presented recent figures on average length of stay from the experience of health insurance projects. It ranges from 7.7 days to 11.0 days[84]. The average length of stay is closely related to the total cost of inpatient care, the most expensive item. More information is needed to determine the trends in the average length of stay.

Table 3-6 shows the percentage of cases treated. More than 60% of the total cases receive some kind of health care. It increases to approximately 70% if folk therapies and superstitious remedies are included. Only fifty per cent of patients with mental disorders receive some kind of health care, which is the lowest treated rate. Generally,

the treated rate of males is higher than that of females.

Table 3-7 shows the monthly education specific medical care utilization per 1,000 population. It is generally known that the level of education is highly correlated with health service utilization, particularly to physican and dentist visits and hospitalization. The results of this survey concurrs with that of Kim's[2] and Lee's[14] which indicate the level of education is positively correlated to hospitalization, physician visits, and dentist visits. Lee's[14] and Lee's[4] studies indicate the level of education is negatively correlated to herb doctor and herb druggist visits. In other words, the more educated the people, the less likely they are to use herb doctors and herb druggists.

Table 3-8 shows the percentage of place of delivery by education. The place of delivery is classified in three categories; 1) hospital or clinic, 2) midwives' office, and 3) home. It was found that the effect of the educational level of mothers on the place of delivery was substantial. The more educated the mothers, the more likely they were to use hospitals, clinics, or midwives. The geographical conditions do affect the choice of place of delivery. For examples, in the rural areas, the highest figure for hospital or clinic delivery was 3.4% in 1970,[54] and the lowest figure for home delivery was 86.9% in 1963.[70] In the urban areas, the highest figure for hospital or clinic delivery was 86.8% in Seoul in 1969,[43] and that for midwifery was 48.0% in Yonhi apartment dwellers in 1970.[73] Home delivery ranged from 13.2% to 82.7% in the urban areas.

Bibliography

1. Yoon, Yong Kil: A Study on Knowledge and Utilization of Health Centre among Urban Residents, *KJPH*, Vol. 6, No. 2, pp. 305-312, 1969.
2. Kim, Young Sook: A Study on Maternal and Child Health in an Urban Area, *KJPH*, Vol. 6, No. 1, pp. 88-100, 1969.
3. Koo, Koon Whe: A Study on Knowledge, Attitude and Practice in Retation to Pregnancy and Delivery among Rural Women, *KJPH*. Vol. 5, No. 2, pp. 169-180, 1968.
4. Lee, Soo Ho: A Study on the Utilization Status of Oriental Medicine by Some Urban Citizens, *KJPH*, Vol. 8, No. 1, pp. 1-13, 1971.
5. Song, Sun Dae: A Survey on the Health Center Utilization by the Residents, *KJPH*, Vol. 9, No. 2, pp. 272-280, 1972.
6. Kim, Duk Sung: A Study of Some Apartments Residents to Develop Health Educational Approaches, *KJPH*, Vol. 9, No. 2, pp. 390-398, 1972.
7. Nam, Kwang Hyun: The Prevalence of Mental Disorders in a Rural Area, Korea, *KJPH*, Vol. 10, No. 1, pp. 33-38, 1973.
8. Cho, Dong Bok, Young Soo Park, Jong Huh: A Survey on Medical Expenditure in Urban Population, *KJPH*, Vol. 10, No. 2, pp. 304-311, 1973.
9. Kim, Kyung Kyun: A Socio-medical Study on Sickness and Utilization of Medical Care of Working Girls in Pharmaceutical Companies, *KJPH*, Vol. 9, No. 1, pp. 57-64, 1972.
10. Yoo, Ik Hyun: A Study on Medical Expenses of Rural Residents in Plain Areas of Korea, *KJPH*, Vol. 9, No. 1, pp. 81-87, 1972.
11. Song, Dal Ok: A Study on Utilization of Folk Medicine in Rural Area, *KJPH*, Vol. 11, No. 1, pp. 25-37, 1974.

12. Lee, Chul Ok, Young Soo Park, Jong Huh: A Survey on Medical Care Expenditure in Rural Area, *KJPH*, Vol. 11, No. 1, pp. 154-161, 1974.
13. Huh, Jong, Young Soo Park, Kyung Nam Lee: A Study on Medical Care Expenditure, *a Separate Volume*, 1972.
14. Lee, Young Choon, Kyoung Sik Kim, Jong Huh, Jong Kun Kim, Young Soo Park: Studies on Sickness and Utilization of Medical Care in Korean Rural Areas, *Journal of Rural Health*, Vol. 4, No. 1, pp. 1-45, 1972.
15. Lee, Soon: Studies on Rural Type Pilot Medical Insurance, *The Report of National Institute of Health*, Vol. 10, pp. 321-332, 1973.
16. Han, Dal Sun: On Typhoid Situation in the Urban Area, *JKMA*, Vol. 13, No. 9, pp. 743, 1970.
17. Lee, Sung Kwan, Doo Hie Kim, Jong Hak Jung, Keuk Soo Chung, Sang Bin Park, Chung Hun Choy, Sun Ho Hong, Jin Hoon Rah: A Study Concerning Health Needs in Rural Korea, *KJPM*, Vol. 7, No. 1, pp. 29-94, 1974.
18. Kim Ill Soon, Ki Soon Kim, Tae Kun Park: Illness and Health Care Patterns of Yonhee Community Health Service Area, *The New Medical Journal*, Vol. 16, No. 4, pp. 85, 1973.
19. Kang, Hoe Yang: A Study on the Hot Spring Therapy, *a Separate Volume*, Dissertation Collections in the School of Publth, SNU, 1963.
20. Nam, Chul Hyun: Socio-medical Survey on the Miners, *a Separate Volume*, 1963.
21. Yun, Lin Zae: Socio-medical Survey on the Indigent Women, *a Separate Volume*, 1964.
22. Whang, Chang Whan: A Study on the Utilization of Health Center in Urban Area, *a Separate Volume*, 1964.
23. Lee, Kyu Han: Socio-medical Survey on Some People of the Specific Communities, *a Separate Volume*, 1964.
24. Lee, Tae Am: A Socio-medical Survey on Some People of the Specific Communities, *a Separate Volume*, 1964.
25. Kim, Hyun Dong: A Socio-medical Survey on the Scavengers, *a Separate Volume*, 1964.
26. Hann, Kyan Sup: A Socio-medical Survey on Tuberculosis Cases among Government Employees in Seoul, *a Separate Volume*, 1964.
27. Park, Soon Young: A Socio-medical Survey on the Indigent Laborers, *a Separate Volume*, 1964.
28. Yoon, Yung Shup: A Socio-medical Studies on Health Status in Rural Population, *a Separate Volume*, 1965.
29. Han, Choong Hyon: A Socio-medical Survey on the Aged Persons in Urban Area, *a Separate Volume*, 1965.
30. Kim, Dae Kyu: A Socio-medical Survey on Pulmonary Tuberculosis Patients Discontinued Chemotherapy, *a Separate Volume*, 1966.
31. Lim, Jong Kwon: A Socio-medical Survey on the Aged Persons in Rural Korea, *a Separate Volume*, 1966.
32. Yu, Kong Ju: A Socio-medical Survey on Moderately and Far Advanced Pulmonary Tuberculosis Patients, *KJPH*, Vol. 4, No. 1, pp. 9-19, 1967.
33. Kim, Weon Vock: A Socio-medical Study on Food Taboos of Women in the Rural Area, *a Separate Volume*, 1967.
34. Ha, Myung Ho: A Socio-medical Survey on Technical Laborers in Industry, *a Separate Volume*,

1968.

35. Chun, Wan Soo: A Socio-medical Survey on Sickness and Utilization of Medical Care among the Remote Urban Population, *KJPH*, Vol. 1, No. 1, pp. 359-366, 1969.
36. Kang, Hyun Sook: Study on Knowledge, Attitude and Behavior of Women toward Child Health and Tetanus Neonatorum in Urban Area, *KJPH*, Vol. 9, No. 2, pp. 399-407, 1972.
37. Cho, Wha Sim: A Survey of Health Status of Mothers and Children in an Urban Area, *KJPH*, Vol. 8, No. 1, 1971.
38. Kwon, E Hyock, Tae Ryong Kim, Chul Hwan Cha, Hyung Jong Park, Soon Young Park, Yong Wook Lee, Bong Ja Yun: A Study on Health Administration Status and Measures to Improve Physical Conditions of Primary, Middle and High Schools and University Students, *a Separate Volume*, 1968.
39. Lee, Shi Back: An Ecological Survey on the Tuberculosis Patients in the Rural Area (Choong Nam Province), *a Separate Volume*, 1963.
40. Seo, Kyong Hwan: A Gerontological Study on Longevity, *KJPH*, Vol. 3, No. 2, pp. 61-78, 1966.
41. Jyoo, Yeong Hy: Field Survey on the Perinatal Care, *a Separate Volume*, 1962.
42. Woo, Jung Ok: The Research on the Actual Condition about Antepartum Care, *KJPH*, Vol. 5, No. 2, pp. 122-128, 1968.
43. Lee, Chul Koo: A Study about K.A.P. of Mothers in Seoul with Regard to Infant and Child Health, *KJPH*, Vol. 7, No. 1, pp. 367-377, 1970.
44. Lee, Young Uk: A Socio-medical Study on Well-babies, *KJPH*, Vol. 2, No. 1, pp. 83-93, 1965.
45. Chung, Young Ill: A Survey on Maternal Health in Rural Areas of Korea, *a Separate Volume*, 1966.
46. Jung, Hui Chae: A Survey on the Status of Maternal Health in Rural Area of Kyunggi-Province, *a Separate Volume*, 1966.
47. Hong, Jae Woong: A Survey on Immunization of Infants, *KJPH*, Vol. 5, No. 2, pp. 213-223, 1968.
48. Sohn. Kyung Choon: A Study on Child Health, *a Separate Volume*, 1967.
49. Kwon, E H., T.R. Kim, U.R. Ko, H.J. Park, D.S. Koo: A Study on the Birth and Death Rates in Urban Korea, *KJPH*, Vol. 2, No. 1, pp. 157-163, 1965.
50. Oh, Yong Min: A Survey on Deliveries among Rural Women, *KJPH*, Vol. 3, No. 2, pp. 109-124, 1966.
51. Yang, Jae Mo, Sook Bang, Lin Bae Shon, G.W. Choy, D.U. Lee: A Study on the Strategies of Korean Family Planning Programs and Accurate Demographic Statististics, 1969, March.
52. Robinson, Courtland, Sang Whan Song: An Experimental Study of a Home Delivery Service Operation in a Medical Center, *a Separate Volume*, Yonsei Medical College, 1969.
53. Kim, Jae Iick: An Experimental Study on the Effectiveness of Charged IUD Insertion to Korean Rural Wives, *Yonsei Medical Journal*, Yonsei Medical College, Vol. 2, No. 2, 1969.
54. Yeh, Min Hae, Sung Kwan Lee: A Study on Maternity Aids Utilization in the Maternal and Child Health and Family Planning, *KJPM*, Vol. 5, No. 1, pp. 57-95, 1972.
55. Cho, Hi Sook: A Study on the Relationships of Breast Feeding, Postpartum Amenorrhea and Contraceptive Practice in an Urban Area, *KJPH*, Vol. 9, No. 2, pp. 425-440, 1972.
56. Huh, Jong, Ok Ryun Moon: A Study of Demand and Need for Medical Care in Rural Areas in

Korea, *a Separate Volume*, 1975.

57. Huh, Jong, Myung Ryul Han, Sun Hwa Kim: A Survey on the Folk Medicine in Farm Area of Korea, *The Seoul Journal of Medicine*, Vol. 5, No. 3, September, 1964.
58. Jun, Byung Hoon: Analytical Report on Medical Care Among Urban Population (Special City of Seoul) *The Seoul Journal of Medical*, Vol. 6, No. 13, September, 1965.
59. Kim, Soon Ha: Socio-medical Care in Rural Population, *The Seoul Journal of Medicine*, Vol. 6, No. 2, June, 1975.
60. Park, Hyung Jong, Jong Huh, Kun Yong Song: A Study on Sickness Prevalence and Utilization of Medical Facilities Among School Population in Seoul, *The Korean Choong Ang Medical Journal*, Department of Preventive Medicine and Public Health, School of Medicine, Seoul National University, Seoul, Korea, Vol. 13, No. 5, November, 1962.
61. Kwon, E Hyock, Myung Hwa Lee, Shi Back Lee, Bong Ja Yoon: A Socio-medical Study on the Blind, *a Separate Volume*, School of Public Health, Seoul National University, 1963.
62. Oh, Moo Hee: A Study on the Maternal Health in Urban Area, *Woo Sok Medical Journal*, Department of Hygiene and Preventive Medicine, Woo Sok University, Medical College. Seoul, Korea, Vol. 5, No. 2, pp. 247-256, 1968.
63. Lee, Pyong Kap, Soon Young Park: A Study on Status of Maternal and Child Health in an Urban Area, *a Separate Volume*, Kyung Hee University School of Medicine.
64. Shim, Un Taik: A Study on College Students' Utilization of School Health Service Facility, *Chonnam Medical Journal*, Vol. 7, No. 3, July, 1970.
65. Kang, Rin Seo: A Socio-medical Survey on Micro-bus Drivers in Seoul, *a Separate Volume*, School of Public Health, Seoul National University.
66. Kang, O Bong: A Statistical Study on Child Births in Rural Areas of Korea, *Soo Do Medical Journal*, Department of Obstetrics & Gynecology, Soo Do Medical College, Seoul, Korea, Vol. 3, No. 2, pp. 251-270, 1966.
67. Kim, Chong Sup: Study on Fertility of Seoul Inhabitants, *a Separate Volume*, Department of Hygiene and Preventive Medicine, College of Medicine. Seoul National University.
68. Yu, S.H., J.M. Yang: A Study on Medical Care Problems of Yonsei University Faculty and the Students, *The New Medical Journal*, Vol. 15, No. 5, 1972.
69. Yang, J.M., M.H. Kim: A Basic Health Survey of the Yonsei Community Health Service Area, Seoul, *KJPM*, Vol. 1, No. 1, 1968.
70. Cha, M.H.: A Study on Births, Deaths and Causes of Death in the Rural Area, *The Report of National Institute of Health*, pp. 188-213, 1964.
71. Kwon, E H., T.R. Kim, H.J. Park, K.W. Kang, J.W. Hong, S.Y. Park, Y.W. Lee, B.J. Yoon: A Study on Status of Maternal and Child Health in an Urban Area, *Journal of Population Studies*, Vol. 9, No. 6, pp. 5-85, 1969.
72. Kang, K.W.: A Study on Prenatal Care and Delivery Environments, *Journal of Population Studies*, Vol. 10, pp. 128-131, 1970.
73. Yu, S.H., Y.S. Chung, H.J. Lee, K.J. Kim: A Study on Maternal and Child Health Status of Apartment Dwellers in Yonhi Dong, *KJPM*, Vol. 4, No. 1, pp. 77-88, 1971.
74. Kim, B.W.: A Survey on University Hospital Records Patients Admitted at the Department of Internal Medicine and of Surgery, *Chunnam Medical Journal*, Vol. 2, No. 9, 1968.
75. Park, Y.W., B.G. Lee, S.Y. Park, S.J. Ko: A Survey on Births and Deaths in Urban Area (Hwegi Dong), *KJPM*, Vol. 4, No. 1, pp. 19-30, 1971.
76. Oh, H.Y.: A KAP Study on the Tuberculosis among Registered Tuberculosis Cases in School.

The New Medical Journal, Vol. 17, No. 5, pp. 667, 1974.

77. Ministry of Health and Social Affairs, *Statistical Report on Morbidity and Injuries*, 1972.
78. Ministry of Health and Social Affairs, *Statistical Report on Morbidity and Injuries*, 1966.
79. Huh, Jong, Y. S. Park: A Study on Medical Care Expenditure, *a Separate Volume*, 1973.
80. Kim, I. D., J. Huh: Socio-medical Studies on Sickness and Medical Care in Korea, *SNU Faculty Papers*, Vol. 17, 1966.
81. Kim, In Dal, Ok Ryun Moon, Tack Namgoong: Socio-medical Study on Sickness in Korea, *KJPH*, Vol. 7, No. 2, pp. 167-188, 1970.
82. Park, Yang Won, Pyong Kap Lee, Soon Young Park, Hyong Suk Kim, Jae Myung Kim: A Study on the Physical Growth and Health Status of the Freshmen in a Private University, *KJPM*, Vol. 5, No. 1, pp. 125-132, 1972.
83. Kim, Jung Wan: Survey on Fertility Rate and Family Planning in Sub-urban Area, Taegu, *The Korean Journal of Preventive Medicine*, Vol. 8, No. 1, 1975.
84. Moon, Ok Ryun: Health Insurance Research (1)—Financial Experience of Voluntary Health Insurance Demonstration Projects in Korea, *Journal of the Korean Hospital Association*, Vol. 5, No. 6, 1976

4. Expenditure Data

A. Basic Data Tables

1. Estimates of Private Health Expenditures, 1960-1974
2. Estimates of Annual Urban and Rural Household Expenditures for Health and Medical Care, 1963-1973
3. Medical Care Expenditure by Type of Medical Care
4. Medical Care Expenditure by Sex/Month
5. Medical Expenses per Case by Monthly Income Status
6. Medical Care Expenditure by Occupation
7. Medical Care Expenditure by Area/Person/Month
8. Medical Care Expenditure by Age/Month
9. Medical Care Expenditure by International Classification of Diseases & Injuries
10. Household Medical Care Expenditures/Month: Direct vs Indirect Expenses
11. The Composition of Indirect Medical Care Expenditures in Percentage
12. Estimates of Gross National Health Expenditure, 1970-1974
13. Estimates of Local Government Health Expenditures (Ⅰ), 1973
14. Estimates of Local Government Health Expenditures (Ⅱ), 1967-1970.
15. Predicting Gross National Health Expenditures, 1975-1981

Table4-1. Estimates of Private Health Expenditures, (1960~1974)

(Unit: Million Won)

Year	Private Consumption Expenditures for Health & Medical care (A)	Total Amount of Private Consumption Expenditures (B)	(A)/(B) %
1960	4,754	207,260	2.3
1961	5,661	245,440	2.3
1962	7,582	293,790	2.6
1963	12,664	403,310	3.1
1964	14,085	586,310	2.4
1965	18,280	668,800	2.7
1966	24,379	805,180	3.0
1967	31,560	985,970	3.2
1968	42,447	1,204,440	3.5
1969	47,549	1,493,650	3.2
1970	53,275	1,884,250	2.8
1971	64,907	2,337,320	2.8
1972	89,571	2,844.450	3.1
1973	111.142	3,365,740	3.3
1974	168,140	4.734,330	3.6

Source: Bank of Korea. National Income Statistics Yearbook, 1975.

Table 4-2. Estimates of Annual Urban and Rural Household Expenditures for Health and Medical Care, (1963-1973)

(Unit: Won)

Year	Urban Household Expenditures*			Rural Household Expenditures**		
	Total	Health and Medical Care	%	Total	Health and Medical Care	%
1963	84,960	2,280	2.7	110,989	1,893	1.7
1964	103,440	2,160	2.1	140,066	2,645	1.9
1965	117,360	1,320	1.1	141,561	2,962	2.1
1966	162,720	2,040	1.3	153,916	3,666	2.4
1967	247,440	4,080	1.7	175,991	4,499	2.6
1968	278,280	8,040	2.9	197,826	5,153	2.6
1969	312,840	9,480	8.0	233,990	5,697	2.4
1970	359,400	11,040	3.1	279,094	6,966	2.5
1971	419,640	10,920	2.6	326,223	7,721	2.4
1972	426,720	12,240	2.6	411,098	8,830	2.1
1973	497,880	13.080	2.6	460,328	11,581	2.5

Source: * Economic Planning Board. Annual Report on the Income and Expenditure Survey. 1973-4
** Ministry of Agriculture, Report on the Results of Farm Household Economy Survey, 1974.

Table 4-3. Medical Care Expenditure by Type of Medical Care

(Unit: Won)

Year of Study	Researchers	*	Study Area	Sample Size	Out-Patient	Hospitalization	Dental Clinic	Home Visit	Pharmacy	Health Center	Herb Med.	Herb Drug Store	Folk Med.	Superstition	Others	Average
Nov. 1959 (3 mos)	Huh, J.	A	Rural	P: 13,643	77				73		70					
Sep. 1963 (1 yr)	Kim, S.H. 16)	B	Rural	H: 2,979 P: 19,197	414	3,731	305	1,818	131	7	269		31			141
Sep. 1963 (2 yrs)	Kim, I.D. Huh, J. 18)	B	Whole Country	P: 30,000	603	8,487	1,486	1,044	204	9	587		39			274
Jan. 1964 (11 yrs)	Lee, B.M. Yu, S.H. 27)	B	Rural	P: 2,542												
1964					986											
1966					1,197											
1968					1,114											
1970					1,760											
1972					2,049											
1974					2,555											
July 1970 (10 days)	Lee, S.H. 7)	B	Seoul	H: 1,281	1,530				990		1,410	750				4,680
Mar. 1971 (6 mos)	Kim, K.K. 1)	B	Seoul	P: 1,539	6,205		2,113		789	100	4,400				1,950	2,092
		A			790		98		298		130				202	1,248
Aug. 1972 (1 mo)	Huh, J. Park, Y.S. 14)	A C	Whole Country	H: 3,033 P: 15,402	912 1,519	936 39,810	84 1,942	84 1,242	816 469	72 668	192 2,808	156 1,420			312 1,526	3,552 1,202
Jan. 1973 (1 yr)	Kim, Y.J. 28)	B	Rural	P: 3,621	780											
Mar. 1973 (1 yr)	Kang, J.Y. 9)	A	Seoul	P: 9,000	6,528	6,444			516		1,908				744	16,140
		C			4,352	69, 02			1,261		10,175				9,520	7,116
July 1973 (40 days)	Lee, S.K. Kim, D.H 8)	C	Rural	P: 1,500	3,398	10,313			720		2,226					2,438
Aug. 1973 (1 mo)	Lee, C.O. Park, Y.S. 5)	C	Rural	H: 2,700 P: 14,655	1,443	3,178	472	1,685	765	1,097	1,083	2,345	483	1,250	2,333	1,589
Aug. 1973 (1 mo)	Huh, J. Park, Y.S. 15)	B	Whole County	H: 5,985 P: 30,525	1,690	5,210	1,328	2,038	1,073	1,012	1,803	3,498	1,327	4,191	4,166	1,879

* A: Medical care expenditure/person/year
B: Medical care expenditure/patient
C: Medical care expenditure/treated case

Table 4-4. Medical Care Expenditure by Sex/Month(I)

(Unit : Won)

Year of Study	Researchers	Study Area	Sample Size	Both			Male			Female		
				Per Case	Treated Case	Capita (or Household)	Per Case	Treated Case	Capita	Per Case	Treated Case	Capita
Sep. 1963 (1 yr)	Kim, S.H.16)	Rural	H : 2,979 P : 19,197	141 1,692*		26						
Sep. 1964 (1 yr)	Jun, B.H.17)	Seoul	H : 1,680 P : 10,028	685		87						
Nov. 1965 (1 mo)	Social Security Commission23)	Seoul	H : 1,000 P : 5,306	571	584	108	241	534	90	330	634	126
1966 (1 mo)	Social Security Commission 29)	Whole Seoul Urban Rural	P : 6,864		711 732 494 788							
Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S.22)	Rural						516	56		741	79
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S.13)	Rural			802	86		725	79		883	92
Jan. 1969 (1 mo)	Yoo, I.H.2)	Rural	H : 1,024 P : 5,679		884	89		850	84		937	92
1971	M.H.S.A.30)	Whole			2,747	432 2,160*						
1971 (1 mo)	Yu, S.H. Yang, J.M.24)	Seoul			6,426	1,380						
Mar. 1972 (1 yr)	Kang, J.Y.9)	Seoul	P : 900		7,116	1,345 6,185*						
Aug. 1972 (1 mo)	Huh, J. Park, Y.S.14)	Metropolitan M. cities S. cities Rural & Fishery	H : 3,033 P : 15,402	1,645 1,354 908 803	1,892 1,764 1,320 1,112	549 272 308 193	1,665 1,325 1,086 904	1,900 1,840 1,498 1,381	530 264 338 167	1,627 1,381 759 739	1,884 1,702 1,155 967	569 264 279 219
Jan, 1973 (1 yr)	Kim, Y.J.28)	Rural	P : 3,621		780			814			746	
Apr. 1973 (8 mos)	Lee, S.11)	Rural	H : 20,894 P : 122,175		3,356	526 3,235*						

Table 4-4. Medical Care Expenditure by Sex/Month (Ⅱ)

(Unit: Won)

Year of Study	Researchers	Study Area	Sample Size	Both			Male			Female		
				Per Case	Treated Case	Capita	Per Case	Treated Case	Capita	Per Case	Treated Case	Capita
July 1973 (40 days)	Lee, S.K. Kim, D.H.[8]	Rural	P : 1,438	809 1,256*	1,103 2,436*	171 1,256*	1,084	1,420 2,600*	230 1,410*	533	767 2,255*	112 1,100*
Aug. 1973 (1 mo)	Lee, C.O. Park, Y.S.[5]	Whole Rural	H : 2,700 P : 14,655	1,315	1,546	151	1,331	1,487	141	1,299	1,604	162
Aug. 1973 (1 mo)	Cho, D.B. Park, Y.S.[4]	Urban	H : 1,700 P : 7,896	1,983	2,637	397	2,155	3,935	347	1,860	2,443	451
Aug. 1973 (1 mo)	Huh, J. Park, Y.S.[15]	Whole	H : 5,985 P : 30,525	1,404	1,379	271	1,469	1,905	245	1,851	1,361	307
June 1974 (1 mo)	Park, W.K.[10]	Rural	P : 1,031	235	298	36	209	352	45	149	200	23
Nov. 1974 (1 mo)	Huh, J. Moon, O.R.[21]	Rural	H : 1,793 P : 9,830	2,756	4,361	413	3,156	4,570	424	2,424	4,155	401

* Annual Medical Care Expenditures

Table 4-5. Medical Expenses Per Case by Monthly Income Status

(Unit: Won)

Year of Study	Researchers	Study Area	Sample Size	Income							
				0	1—5,000	5,000—10,000	10,000—20,000	20,000—50,000	50,000—100,000	100,000+	Average
Sep. 1964 (1 yr)	Jun, B.H.	Seoul	H : 1,680 P : 10,028	902	344	459	949	916	1,660	1,629	685

					Metro-politan	Medium-cities	Small-cities	Rural & Fishery	Average
Aug. 1972 (1 mo)	Huh, J. Park, Y.S.[14]	Whole Country	H : 3,033 P : 15,402	(1) Average Family Income/Month	52,770	43,130	33,830	28,830	37,610
				(2) Monthly Medical Expenditure/Household	2,582	1,415	1,387	1,027	1,502
				(3) Per cent of (2) to (1)	4.9	3.3	4.1	3.5	4.0

Table 4-7. Medical Care Expenditure by Area/Person/Month

(Unit: Won)

Year of Study	Researchers	Study Area	Sample Size	Metropolitan	Medium Cities	Small Cities	Rural & Fishery	Whole area
Sep. 1963 (1 yr)	Kim, S.H. 16)	Rural	H : 3,000			(1,044)	(316)	
Nov. 1965 (1 mo)	Social Security Commission23)	Seoul	H : 1,000 P : 5,306	108				
1966	Social Security Commission29)	Whole Country	P : 6,864	148 (789)		110 (681)	84 (488)	136 (752)
1971 (1 mo)	Yu, S.H. Yang, J.M. 24)	Seoul		1,380				
Aug. 1972 (1 mo)	Huh, J. Park, Y.S. 14)	Whole Country	H : 3,033 P : 15,402	2,582*	1,415*	1,387*	1,022*	1,502*
Mar. 1973 (1 yr)	Kang, J.Y. 9)	Seoul	P : 900	1,345 6,185*				
Apr. 1973 (8 mos)	Lee, S. 11)	Rural	H : 20,894 P : 12,175				3,235* 526	
July 1973 (5 mos)	Lee, S.K. Kim, D.H. 8)	Rural	P : 1,438				171	
Aug. 1973 (1 mo)	Huh, J. Park, Y.S. 15)	Whole Country	H : 5,985 P : 30,525	1,905* 410	1,683* 361	1,333* 236	955* 176	1,383* 271

* Medical care expenditure/household/month

( ) Medical care expenditure/person/year

Table 4-6. Medical Care Expenditure by Occupation (I)

(Unit: Won)

Year of Study	Researchers	Study Area	*	Jobless	Professional & Technical	Administrative Worker	Clerical Worker	Sales, Retail, (Peddler)	Farmers, (Fishermen)	Miners, Quarryman, etc.	Transport & Communication	Craftsman, Production Worker	Service Worker	Not Classified	Student & (Unknown)	Average
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 22)	Rural	A	81			211	133 (218)	135 (88)			56		51	25 (402)	86
			C	654			1,458	958 (1,480)	975 (896)			847		537		802
Jan. 1969 (1 mo)	Yoo, I.H. 2)	Rural	A	80			44	76	135 (138)			146		34	(24)	89
			C	516			563	879	1,133 (550)			1,950		400	(461)	884

Table 4-6. Medical Care Expenditure by Occupation (Ⅱ)

(Unit: Won)

Year of Study	Researchers	Study Area	*	Jobless	Professional & Technical	Administrative Worker	Clerical Worker	Sales, Retail, (Peddler)	Farmers, (Fishermen)	Miners, Quarryman, etc.	Transport & Communication	Craftsman, Production Worker	Service Worker	Not Classified	Student & (Unknown)	Average
Jan. 1969 (1 mo)	Lee, S.K.[31]	Rural	C	513	267			1,298	1,794 (362)					156	(126)	465
Aug. 1972 (1 mo)	Huh, J. Park, Y.S.[14]	Metropolitan	A	572	1,124	966	757	575	1,950		169	525	523	4,133		640
			B	1,396	2,960	2,231	1,003	1,971	5,200		843	1,485	1,457	12,400		1,649
			C	1,747	3,619	2,454	2,175	2,415	5,200		1,180	1,740	1,684	12,400		2,004
		Medium Cities	A	222	737	500	584	427	541		544	283	458			330
			B	1,128	1,719	1,500	1,595	1,413	1,282		1,450	891	1,186			1,310
			C	1,359	2,579	1,962	1,844	1,871	1,873		2,175	1,089	1,535			1,610
		Small Cities	A	327	743	971	594	471	321			519	538			391
			B	636	1,300	3,400	1,960	1,238	1,151			1,246	4,266			995
			C	1,502	2,600	6,800	2,800	1,485	1,276			1,780	1,433			1,629
		Rural & Fishery	A	170	630	2,267	406	539	188	600		187	1,025		300	210
			B	604	2,467	5,440	1,339	1,580	909	1,000		772	2,460		1,275	815
			C	812	2,691	6,800	1,861	1,746	1,044	1,500		1,006	2,460		2,550	1,038
Aug. 1973	Huh, J. Park, Y.S.[15]	Metropolitan	A	437	232	836	523	308	1,198	2,156	597	468	490	906	1,042	410
			C	2,643	2,848	2,785	3,403	2,848	6,388	2,516	2,324	4,216	3,145	6,638	3,125	2,741
			B	1,993	2,170	1,950	2,299	2,170	3,833	2,097	1,901	3,513	2,200	2,982	2,500	2,049
		Medium Cities	A	472	176	824	238	741	750		772	253	263			361
			B	1,623	1,000	1,614	854	2,361	2,000		2,833	774	1,083			1,508
			C	1,875	1,335	1,614	1,319	2,656	2,000		2,833	1,083	1,083			1,735
		Small Cities	A	181	625	392	820	331	244	4,041	187	125	226			236
			B	937	2,000	1,841	1,444	1,813	1,012	667	750	833	1,766			1,158
			C	1,696	3,333	2,630	2,527	2,803	2,361	4,041	750	2,500	1,766			2,018
		Rural & Fishery	A	131	316	378	105	281	247	89	48	200	134	455	300	176
			B	1,263	2,383	1,766	1,077	2,205	1,638	667	278	1,672	1,002	2,277	1,500	1,328
			C	1,566	2,383	1,892	1,257	2,388	1,993	1,333	417	1,801	1,173	3,383	1,500	1,589
Aug. 1973 (1 mo)	Lee, C.O. Park, Y.[5]	Rural	C	1,527	2,006	1,894	1,258	2,390	1,978	1,333	417	1,693		3,420	1,500	2,637
Aug. 1973 (1 mo)	Cho, D.B. Park, Y.S.[4]	Urban	C	2,568	2,762	2,787	3,292	2,407	6,373	2,518	2,326	4,218		6,643	2,472	2,637

* A: Medidal care expenditures/person
B: Medical care expenditures/case
C: Medical care expenditures/treated case

Table 4-8. Medical Care Expenditure by Age/Month(Ⅰ)

(Unit : Won)

Year of Study	Researchers	Sample Size	Study Area	*	0	1—4	5—9	10—19	20—29	30—39	40—49	50—59	60—69	60+ or 70+	Average
Sep. 1964 (1 yr)	Kim, S.H.16)	H : 2,979 P : 19,197	Rural	A		113	88	181	211	203	245	116	101	46	
Sep. 1964 (1 yr)	Jun, B.H.17)	H : 1,680 P : 10,028	Seoul	A		385	328	277	780	1,234	1,207	1,318	571	222	
Oct. 1965 (25 days)	Yoon, Y.S.20)	P : 400	Rural	A		591		292	1,795	1,729	2,311	2,133		2,752	1,021
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S.13)	H : 2,626 P : 14,472	Rural	C		624	500	453	674	1,051	1,053	1,027			803
				D		94	33	28	58	129	174	174	163		85
Jan. 1969 (1 mo)	Yoo, I.H.2)	H : 1,024 P : 5,679	Rural	C		436	398	526	761	1,211	1,489	1,262		1,489	884
				D		83	29	25	40	153	204	184		214	89
Jan. 1969 (1 mo)	Lee, S.K.31)	H : 410 P : 2,248	Rural	C		152	178	203	231	464	851	909	461	675	465
July 1973 (5 mos)	Lee, S.K. Kim, D.H.8)	P : 1,500	Rural	C		659		1,313	520	692	1,500	1,433		1,492	1,109
				A		561		857	371	509	1,055	1,075		971	809
				D		132		97	48	90	271	302		347	171
Aug. 1973 (1 mo)	Lee, C.O. Park, Y.S.5)	H : 2,700 P : 14,655	Rural	C	2,250	978	2,145	1,546	1,510	1,778	1,131	1,067	590		1,545
Aug. 1973 (1 mo)	Cho, D.B. Park, Y.S.4)	H : 1,700 P : 7,896	Urban	C	1,500	4,118	2,389	1,495	2,308	2,184	2,588	2,269	3,404		2,637
Nov. 1974 (1 mo)	Huh, J Moon, O.K.21)	H : 1,793 P : 9,830	Rural	A	1,661	1,104	1,460	2,091	2,723	3,555	3,583	3,548	3,539	3,010	2,756
				B	1,576	1,002	1,391	1,964	2,723	3,425	3,359	3,344	3,368	2,899	2,614
				C	1,920	1,365	2,152	3,224	4,158	6,357	5,842	5,913	6,960	5,870	4,361
				D	466	221	154	146	282	608	821	1,025	910	883	413

Table 4-8. Medical Care Expenditure by Age/Month(Ⅱ)

(Unit: Won)

Year of Study	Researchers	Sample Size	Study Area	*	0	1—4	5—9	10—19	20—29	30—39	40—49	50—59	60—69	60+ or 70+	Average
Aug. 1972 (1 mo)	Huh, J. Park, Y. S. 14)	H : 3,033 P : 15,420	Metropolitan	A			1,979	1,267	1,650	1,613	1,640	1,103		1,690	1,645
			Medium-city	A			1,491	1,075	1,351	1,344	1,536	1,304		1,300	1,354
			Small-city	A			802	805	852	1,182	652	1,499		1,041	908
			Rural, Fishery	A			986	626	703	555	945	818		1,254	803
			Metropolitan	C			2,125	1,454	1,989	1,887	1,760	1,363		3,300	1,892
			Medium-city	C			1,624	1,349	1,819	2,128	2,081	1,825		2,189	1,774
			Small-city	C			1,046	1,117	1,215	1,733	1,082	2,690		1,784	1,320
			Rural, Fishery	C			1,213	971	984	776	1,184	1,168		1,917	1,112
			Metropolitan	E			465	305	364	287	343	261		568	361
			Medium-city	E			220	212	193	190	213	169		167	200
			Small-city	E			113	148	128	152	95	157		96	128
			Rural, Fishery	E			179	106	146	127	159	97		126	133
			Metropolitan	D			601	231	543	607	880	701		900	549
			Medium-city	D			257	156	260	303	345	537		562	272
			Small-city	D			306	149	298	369	332	690		446	308
			Rural, Fishery	D			163	112	202	168	280	285		499	193
Aug. 1973 (1 mo)	Huh, J. Park, Y. S. 15)	H : 5,985 P : 30,525	Metropolitan	D	43	140	173	197	467	547	569	960	1,100	420	410
			Medium-city	D	812	205	107	119	636	634	284	280	1,333	5,000	361
			Small-city	D		120	71	113	201	383	445	455	447	340	236
			Rural, Fishery	D	113	114	59	88	100	237	340	218	344	254	176

* A : Medical care expenditure/patient
B : Medical care expenditure/episode of illness
C : Medical care expenditure/treated case
D : Medical care expenditure/person
E : Medical care expenditure/treated day

Table 4-9. Medical Care Expenditure by International Classification of Diseases & Injuries

(Unit: Won)

Study Year	Researchers	Study Area	*	1	2	3	4	5	6	7	8	9
Sep. 1963 (1 yr)	Kim, S.H. 16)	Rural	B	142	1,470	105	230	117	130	292	98	158
Sep. 1963 (2 yrs)	Kim, I.D. Huh. J. 18)	Whole Country	B	321	1,811	314	520	758	213	647	164	617
Sep. 1964 (1 yr)	Jun, B.H. 17)	Seoul	B	2,019	4,004	2,287	3,021	3,949	553	1,721	237	886
Nov. 1965 (1 mo)	Social Security Commission23)	Seoul	B	490	2,042	1,210	225		884	578	336	771
			E	432	2,042	1,210	193		779	499	307	668
Aug. 1968 (1 mo)	Lee, Y.C. Kim, K.S. 22)	Rural	C	479	2,450	568	686	1,285	613	759	639	478
			A									
			D	47	5	2	5	18	32	5	58	114
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 13)	Rural	C	885	7,500	1,418	7,500	1,403	1,020	1,995	638	621
			A									
Jan. 1969 (1 mo)	Yoo, I.H. 2)	Rural	C B	1,795	7,500	2,500	7,500	921	1,260	1,196	479	825
			M	1,882			7,500	917	132	1,142	422	847
			F	1,486	7,500	2,500		925	1,233	1,240	534	803
			A M									
			F									
Jan. 1969 (1 mo)	Lee, S.K. 31)	Rural	C B	378		2,500		750	900	7,117	162	316
			M	417					550	10,050	175	302
			F	263		2,500		750	1,250	1,250	144	326
Aug. 1972 (1 mo)	Huh, J. Park, Y.S. 14)	Metropolitan	B	744	2,333	1,250	3,272	500	2,686	3,684	1,228	1,124
		Medium-city	B	1,162		9,000	7,600	1,560	1,372	1,852	1,410	1,089
		Small-city	B	550		2,700	650		1,456	2,559	430	362
		Rural	B	319	2,000	3,250	275	15,000	409	3,603	543	864
		Metropolitan	C	787	3,500	1,250	4,530	500	2,793	4,700	1,570	1,210
		Medium-city	C	1,483		9,000	9,120	3,000	1,627	2,105	1,903	1,452
		Small-city	C	707		2,700	813		2,046	3,346	686	530
		Rural	C	370	2,000	3,250	330	1,500	796	4,451	737	810
		Whole Area	A									
Aug. 1973 (1 mo)	Cho, D.B. Park, Y.S. 4)	Urban	C	4,662	5,949	3,304	8,333	2,537	2,718	3,970	1,616	1,989
Aug. 1973 (1 mo)	Huh, J. Park, Y.S. 15)	Whole Area	B	2,574	4,733	2,133	4,166	1,469	1,127	2,672	907	1,398
		Metropolitan	B	4,662	4,250	2,796	8,333	1,575	1,458	3,473	1,311	1,488
		Medium-city	B	2,455	8,333	2,916		639	1,377	2,333	612	871
		Small-city	B	1,767	8,332	1,508		466	762	1,644	886	1,336
		Rural	B	1,679	916	1,419	4,166	2,416	1,003	2,431	816	1,449
		Whole Area	C	2,829	5,916	2,673	5,209	2,635	1,862	3,521	1,067	1,782
		Metroplitan	C	4,662	5,949	3,304	8,833	2,537	2,718	3,970	1,616	1,989
		Medium-city	C	2,455	8,333	2,916		958	1,463	2,333	739	1,038
		Small-city	C	3,437	8,333	2,513		1,555	1,715	3,403	1,300	2,004
		Rural	C	1,767	917	1,723	4,166	4,027	1,367	2,972	910	1,755
Nov. 1974 (1 mo)	Huh, J. Moon, O.R. 21)	Rural	B	2,541	7,500	2,995	8,538	5,471	4,973	8,687	1,427	3,631
			E	2,329	7,500	2,902	8,538	5,471	4,865	8,687	1,329	3,301
			C	3,494	12,000	5,462	11,383	10,943	9,134	12,162	2,019	4,884
			A									

* A: Medical expenses/person/month
B: Medical expenses/patient/month
C: Medical expenses/treated/case
D: Medical expenses/household
E: Medical expenses/episode of illness

Table 4-9

(Unit: Won)

Study Year	Researchers	Study Area	*	10	11	12	13	14	15	16	17	Average
Sep. 1963 (1 yr)	Kim, S.H. 16)	Rural	B	326	310	60	199	100	183	33	270	141
Sep. 1963 (2 yrs)	Kim, I.D. Huh, J. 18)	Whole Country	B	1,830	658	127	235	92	183	77	726	284
Sep. 1964 (1 yr)	Jun. B.H. 17)	Seoul	B	4,006	1,100	61.9	545			333	2,076	685
Nov. 1965 (1 mo)	Social Security Commission23)	Seoul	B	2,295	999	534	1,668			1,285	585	653
			E	2,295	999	500	1,668			1,082	552	584
Aug. 1968 (1 mo)	Lee. Y.C. Kim, K.S. 22)	Rural	C	2,124	2,039	253	947	1,150	350	2,660	611	625
			A									67
			D	20	25	6	15	0	0	0	14	383
Jan. 1969 (1 mo)	Lee, Y.C. Kim, K.S. 13)	Rural	C	3,657	1,567	387	2,225			630	690	802
			A									85
Jan. 1969 (1 mo)	Yoo, I.H. 2)	Rural	C B	2,735	2,567	516	6,667			281	1,389	
			M	1,500		383	5,000			350	1,550	850
			F	3,205	2,567	613	7,500			258	100	937
			A M									84
			F									92
Jan. 1969 (1 mo)	Lee S.K. 31)	Rural	C B	10,375		57	967			266	500	465
			M	20,000		350	350			163	380	570
			F	750		225	1,172			311	800	361
Aug. 1972 (1 mo)	Huh, J. Park, Y.S. 14)	Metropolitan	B	4,786	5,044	517	2,260			411	1,650	1,645
		Medium-city	B	1,500	360	1,065	1,875			762	1,975	1,345
		Small-city	B	700		2,385	8,600			317	240	908
		Rural	B	2,355	2,908	196	1,698			483	3,787	803
		Metropolitan	C	5,850	6,053	886	4,520			1,300	1,650	1,892
		Medium-city	C	2,250	900	1,750	3,850			3,000	2,370	1,764
		Smal-city	C	1,167		3,875	14,333			475	400	1,320
		Rural	C	3,315	4,725	346	3,476			1,516	5,742	1,112
		Whole Area	A									285
Aug. 1973 (1 mo)	Cho, D.B. Rark, Y.S. 4)	Urban	C		4,369	1,023	2,492		3,722	2,018	3,750	2,637
Aug. 1973 (1 mo)	Huh, J. Park, Y.S. 15)	Whole Area	B	2,934	2,568	954	2,231		2,083	698	1,740	1,589
		Metropolitan	B	2,260	3,329	862	2,492	3,190	3,190	757	2,678	2,049
		Medium-city	B	4,882	2,547	2,097					5,416	1,508
		Small-city	B	2,092		722	2,111		292	896	454	1,158
		Rural	B	3,258	1,904	960	2,038		1,250	578	1,500	1,328
		Whole Area	C	3,029	2,996	1,120	2,619		2,651	1,667	2,013	1,879
		Metropolitan	C	2,260	4,369	1,023	2,492		3,722	2,018	3,750	2,741
		Medium-city	C	4,883	2,547	2,516					5,416	1,735
		Small-city	C	2,354		903	3,166		583	2,694	500	2,018
		Rural	C	3,258	2,004	1,070	2,650		1,562	667	1,500	1,589
Nov. 1974 (1 mo)	Huh, J. Moon, O.R. 21)	Rural	B	5,025	3,682	3,026	3,825		250	1,509	4,013	2,756
			E	5,025	3,586	2,774	3,702		250	1,496	4,048	2,614
			C	7,538	7,569	3,599	7,650		750	4,332	5,633	4,361
			A									413

* A: Medical expenses/person/month
B: Medical expenses/patient/month
C: Medical expenses/treated case
D: Medical expenses/household
E: Medical expenses/episode of illness

Table 4-10. Household Medical Care Expenditures/Month: Direct vs Indirect Expenses.

(Unit: Won)

Area	1972, 14)			1973, 15)			1974, 21)		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Metropolitan	2,291	291	2,582	1,400	505	1,905	—	—	—
M. Cities	1,300	115	1,415	1,425	258	1,683	—	—	—
S. Cities	1,294	93	1,387	1,032	301	1,333	—	—	—
Rural	930	92	1,022	707	248	955	1,817	453	2,270
Average(%)	1,357 (90.3)	145 (9.7)	1,502 (100.0)	1,055 (76.3)	328 (23.7)	1,383 (100.0)	1,817 (80.0)	453 (20.07)	2,270 (100.0)

Table 4-11. The Composition of Indirect Medical Care Expenditures in Percentage

Area	1 9 7 2			1 9 7 3		
	A	B	C	A	B	C
Metropolitan	34.5	58.7	6.8	38.4	37.7	23.9
M. Cities	28.8	57.5	13.7	34.7	41.1	24.2
S. Cities	32.7	39.4	27.9	22.7	45.2	32.1
Rural	35.7	16.5	47.8	38.7	26.9	34.4
Average	34.0	44.1	21.9	36.5	35.2	28.3

A: Expenses for purchasing materials and supplies
B: Nursing expenses
C: Transportation fees

Table 4-12. Estimates of Gross National Health Expenditures, (1970—1974)

(Unit: Million Won)

Items	1970(%)	1971(%)	1972(%)	1973(%)	1974(%)
Public Expenditures ①	10.77 (16.6)	12.78 (16.2)	15.96 (15.0)	17.69 (13.6)	20.98 (11.0)
Ministry of Health & Social Affairs	2.35 (3.6)	2.90 (3.7)	3.35 (3.2)	3.55 (2.7)	4.30 (2.3)
Other Ministries & Public Hospitals	2.67 (4.1)	3.10 (3.9)	4.18 (3.9)	4.49 (3.4)	5.20 (2.7)
Local Government ②	5.75 (8.9)	6.78 (8.6)	8.43 (7.9)	9.65 (7.4)	11.48 (6.0)
Private Expenditures	53.97 (83.4)	65.93 (83.8)	90.75 (85.0)	112.67 (86.4)	170.18 (89.0)
Private Consumption Expenditures	53.28 (82.3)	64.91 (82.5)	89.57 (83.9)	111.14 (85.2)	168.14 (87.9)
Voluntary Health Agencies ③	0.69 (1.1)	1.02 (1.3)	1.18 (1.1)	1.53 (1.2)	2.04 (1.1)
Total Expenditures	64.74 (100.0)	78.71 (100.0)	106.71 (100·0)	130.36 (100.0)	191.16 (100.0)
Total Expenditures/GNP(%)	2.50	2.50	2.76	2.64	2.82
Per Capita Health Expenditures (Won)	2,060	2,473	3,298	3,962	5,713

① Net total
② Excludes subsidies from geneal accounts which are allocated for operating the public hospitals.
③ Includes the Korean National Tuberculosis Association, Korean Family Planning Association, Korean Institute of Family Planing, and Korean Parasitic Diseases Eradication Campaign.

Source: 1) Economic Planning Board, Annual Balance Sheets, 1971-5.
2) Ministry of Interior, Financial Abstract of Local Government, 1970-4.
3) Economic Planning Board, Monthly Statistics of Korea, 1971-5.
4) Personal communication with the staff of the voluntary health agencies.

Table 4-13. Estimates of Local Government Health Expenditures(1), 1973.

Province	Health Expenditures	%	Population	%	Per Capita Expenditures
Seoul	1,954,000,000	15.3	6,290,000	18.9	308
Busan	1,048,000,000	8.2	2,072,000	6.2	506
Gyunggi	1,255,000,000	9.8	3,670,000	11.0	342
Gangweon	1,094,000,000	8.5	1,852,000	5.6	590
Choongbug	812,000,000	6.3	1,519,000	4.6	535
Choongnam	1,087,000,000	8.5	2,923,000	8.8	372
Jeonbug	1,061,000,000	8.3	2,453,000	7.4	433
Jeonnam	1,121,000,000	8.7	4,099,000	12.3	274
Gyungbuk	1,782,000,000	13.9	4,781,000	14.4	373
Gyungnam	1,391,000,000	10.9	3,202,000	9.6	434
Jeju	202,000,000	1.6	390,000	1.2	517
Total	12,807,000,000	100.0	33,251,000	100.0	386

Source: ① Ministry of Interior, Financial Abstract of Local Government, 1974.
② Annual Statistical Reports of Provinces, 1974.

Table 4-14. Estimates of Local Government Health Expenditures(Ⅱ), 1967—1970.

(Unit: 1,000Won)

	Total Budget in General Accounts(A)				Health Expenditures(B)				(B)/(A) %			
	1967	1968	1969	1970	1967	1968	1969	1970	1967	1968	1969	1970
Total	59,926,612	48,044,196	902,031,511	22,963,038	2,751,098	3,654,284	4,528,704	6,557,775	4.5	6.9	5.0	5.1
Seoul	9,743,612	12,996,055	18,865,221	23,632,658	528,878	699,572	1,002,254	1,434,411	5.4	5.4	5.3	6.1
Busan	2,776,161	3,483,929	4,750,956	7,181,684	193,225	214,253	340,394	337,934	7.0	6.1	7.2	4.7
Province	23,170,055	10,405,148	22,222,429	32,660,349	792,805	895,652	1,101,952	1,917,194	3.4	8.6	5.0	5.9
Cities	7,212,321	6,149,270	14,973,711	18,126,844	318,348	321,710	497,432	568,271	4.4	5.2	3.3	3.2
Guns	17,024,453	15,009,794	29,390,834	41,361,503	917,842	162,097	1,586,672	2,299,965	5.4	7.8	5.4	5.6

Sourdes: Ministry of Interior, Financial Abstract of Local Goverment, 1968-1971.
This table is cited from Park, H. J. et al's A Comprehensive Study for Improvement of Rural Health in Korea, 1971, page 210.

Table 4-15. Predicting Gross National Health Expenditures, 1975~1981

(Unit: 100Millon Won)

	1974	1975	1976	1977	1978	1979	1980	1981
Hypothesis A								
E/GNP ratio	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
E	1,912	2,496	3,100	3,717	4,295	4,963	5,733	6,623
Hypothesis B								
E/GNP ratio	2.8	2.9	3.1	3.1	3.2	3.3	3.4	3.5
E	1,912	2,585	3,322	4,115	4,908	5,850	6,962	8,278
E P	1,681	2,129	2,664	3,213	3,730	4,331	5,026	5,833
Ep/PCE ratio	3.5	3.5	3.6	3.8	3.9	4.0	4.1	4.2

E: Gross National Health Expenditures
EP: Private Consumption Expenditures for Health and Medical Care
PCE: Gross Private Consumption Expenditures
Source: Data presented at the Finance Subcommittee of Health Sector Task Force for the Fourth 5-Year Economic Development Plan.

B. Major Findings and Discussion

Table 4—1 shows private consumption expenditures on health and medical care by year. According to the Bank of Korea, out of pocket expenditures on health and medical care increased by 0.1% annually, from 2.3% in 1960 to 3.3% in 1973. It reached 3.6% in 1974. Huh's study[14] in 1972 reported 4.0% as the rate of medical care expenditures to monthly household income (see table 4—5). This seems to be a more realistic finding as this study concentrated on only medical care expenditures for its study objective, while other studies conducted by the Economic Planning Board and the Bank of Korea included other factors.

Table 4—2 shows the estimates of annual urban and rural household expenditures for health and medical care. Medical care expenditures for the urban family exceed those of the rural family. In 1973, urban households spent 2.6% of their income on health care, while rural households spent 2.5%. These are markedly under-estimated if it is compared to the finding of table 4—1(3.3%). This results partially from a mistake in the household expenditures survey of the Economic Planning Board, in which a certain income group, defined as those with a monthly income of 200,000 won or more were excluded in the urban areas.

It is interesting to see the difference among the estimates done by the Economic Planning Board, Ministry of Agriculture, and the Bank of Korea (see table 4—1 & 4—2). Table 4—1 shows the Bank of Korea data, 111.1 billion won in 1973. Table 4—2 shows medical care expenditures by area, 13,080 won per urban household and 11,581 won per rural household. If these are multiplied by the respective number of households, then the total private health expenditures result in 76.9 billion won, which is under-estimated by 30% compared with the Bank of Korea's study data. Caution should be used in the interpretation of household medical expense data.

Table 4—3 shows medical care expenditures by type of care. The outpatient expenses per person increased from 77 won in rural areas in 1959, to 912 won[14] nationwide in 1972.

Kang's study[9] reports an average of 544 won per month, and 6,528 won per year. This study is not appropriate for comparison because it dealt only with the faculty of Yonsei University who could be regarded as middle and upper class in Korea. A noteable difference is reported between the study of Koje Island[28] and that of Gangwha Christ King Clinic[27]. In 1973, the former reports 780 won per outpatient, and the latter 2,555 won. Other studies show the following results in 1973: Huh's 1,690 won[15], Kang's 4,352 won[9], Lee's 3,398 won[8], and Lee's 1,443 won[5].

Inpatient expenses per treated case vary greatly according to study area. Kang presents 69,102 won[9] in urban areas, Lee[8] and Lee[5] present 10,313 won and 3,178 won in rural areas respectively. Kim[1] fails to distinguish between inpatient and outpatient expenses.

In 1973, the cost for drug store visits per treated case ranged from 720 won[8] and 765 won[5] in rural areas, to 1,261 won in urban areas. It was equivalent to one third to a half of outpatient expenses in terms of per patient and per treated case. It cost 1,000 won to receive medical care at the health centers.[5, 15] This was almost equal to the expenses for drug store utilization, and two thirds of outpatient expenses. Visits to herb drug-store cost twice more than those to private clinics.[15] A substantial amount of money was spent for folk therapies and superstitious remedies, although the number of users was not large. This suggests the necessity to develop some adequate measures to induce the users of folk therapy to utilize modern medical care.

Table 4—4 shows medical care expenditures by sex. The male spent a little more than the female in terms of per patient expenditures except in the study by the Social Security Commission[23] and by Huh[15]. The male also spent a little more than the female in terms of per treated case expenditures except in the study by Social Security Commission[23], by Yu[2], and by Lee[5]. However, more information is required before it is possible to conclude that the female spent more than the male in terms of per capita expenditures, because studies are equally divided concerning this information. The female obviously spent more than the male if the expenses connected with normal pregnancy and delivery are included.

Medical care expenditures per patient per year are only one and half times as much as those per patient per month.[8] This implies that annual medical care expenditures per patient are under-estimated if it is assumed that a patient gets sick twice a year. Furthermore, medical care expenditures per person per year are only six to seven times as much as those reported per person per month[8, 29] instead of twelve times as much. Lee ascribes the differences to the loss of memory concerning medical care utilization and expenditures.[8] Some researchers fail to recognize that data on expenditures for medical care generally involve a time element, -what was paid out for medical care in a week, a month, a year, or in the course of an illness, during a hospital stay, or throughout a period of rehabilitation.* Thus, careful consideration must be used when annual expenditure figures are quoted.

Table 4—5 shows medical care expenditures by monthly income. According to Jun's study

* USDHEW, PHS, United States Statistics on Medical Economics, 1954, p. 42.

in 1964, medical care expenditures increased proportionally to the income.[17] According to Huh's study in 1972, four percent of the total monthly household income was spent for health and medical care, and the urban family spent a higher proportion of their income for medical care than the rural.

Table 4—6 shows medical care expenditures by occupation. Because researchers used different job classification systems, minor adjustments were necessary for regrouping. It is nearly impossible to identify any significant expenditure differences in terms of occupation.

Table 4—7 shows medical care expenditures by area. Metropolitan people generally spent more than any others. In metropolitan areas, it cost 2,582 won per household per month[14], and 1,905 won per person per month[15]. Health plan members in a rural area (Okgu) spent more on medical care than non-members. According to Lee[11], it cost 3,235 won per enrolled household per month, and 526 won per enrolled member per month, which were higher than the expenditures in other rural areas. City-dwellers utually spent more than rural-dwellers in all age group, and people in medium size cities spent more than those in small cities.

Table 4—8 shows medical care expenditures by age. It increases proportionally with age in terms of cost per patient, per episode of illness, per treated case, per person, and per treated day. For example, those in their fifties spent 42% more for health and medical care per treated case than those in their twenties[21]. This implicitly indicates that the older ages are more likely to suffer from major serious illnesses. Lee offers the same explanation for the finding that the aged are hospitalized more frequently than the young.[8] The age group under 10 spent the least for medical care except for Cho's[16] and Huh's[14] study in 1972 which reported different findings.

Table 4—9 shows medical care expenditures by the International Classification of Diseases and Injuries. The findings are so varied that interpretation is quite difficult. For instance, diseases of the circulatory system were the leading cause of medical care expenditures in Huh's study in 1974.[21] His other studies reported accidents as the leading expenditure cause in 1972[14], and diseases of blood and blood-forming organs were the leading expenditure cause in 1973[15]. Lee indicated diseases of the genito-urinary system as a leading item[8]. Such results might be excused despite its variability if it is understood that the diagnoses were obtained from interviews with respondents. It should be mentioned that the value of such information is doubtful in planning for health services.

Table 4—10 shows the composition of household medical care expenditures. Generally, medical care expenditures consist of direct payment and indirect expenses. The former refers to physician fees, fees for laboratory examinations, inpatient expenses, and the cost of drugs. The latter refers to the expenditures for material and supply purchasing, nursing services, and transportation. Three studies reveal that the rate between direct payment and indirect expenses is 80 per cent to 20 per cent.

Table 4—11 shows the composition of indirect medical care expenditures in percentages. Nursing care is 40 per cent of the total indirect expenses, purchasing material and supplies 35 per cent, and the remaing one fourth for transportation.

Table 4—12 shows the estimates of gross national health expenditures. The total amount of national health expenditures was 191.2 billion won in 1974, which was three times the expenditures of 1970. The national health expenitures consisted of 21 billion won by the public sector (11%), and of 170 billion won by the private sector (89%). The proportion of the Ministry of Health and Social Affairs' expenditures to the gross national health expenditures decreased from 3.6% in 1970 to 2.3% in 1974. These figures show that the Korean health care system is heavily dependent upon the private sector in the financial structure. In 1970, 48.2% of the public expenditures came from the central government, and the remaining 51.8%, came from the local government. In 1974, the proportion of the provision from local governments increased to 54.7%. In other words, the public sources are increasingly local. The percentage of national health expenditures to the GNP climbed from 2.5% in 1970 to 2.8% in 1974. Health and medical care expenditures per capita increased from 2,060 won in 1970 to 5,713 won in 1974. The percentage of private consumption expenditures for medical care compared to gross national health expenditures increased from 82.3% in 1970 to 87.9% in 1974.

Table 4—13 shows health expenditures by province. It shows a wide range of local health expenditures per capita among the provinces. Kangwon Province spent the most, 590 won per capita; and Chollanam Province spent the least, 274 won per capita. The local government's average per capita health expenditures amounted to 386 won in 1973.

Table 4—14 shows the estimates of local government's health expenditures. It is a little more than 5.0% of the total general accounts of the local governments. Seoul, Busan and the guns spend a much higher proportion of their resources on health and medical care than any other cities.

Table 4—15 shows the prediction of gross national health expenditures, 1975-1981. These figures were provided by the Finance Subcommittee of the Health Sector Task Force for the Fourth 5-Year Economic Development Plan, ROK. They assumed that national health expenditure was solely a function of the GNP.

1) It is predicted that if the proportion of national health expenditures to GNP remain at 2.8%, the gross national health expenditures will increase from 250 billion won in 1975 to 662 billion won in 1981, the final year of the Fourth 5-Year Development Period.
2) It is predicted that if the rate of national health expenditures to GNP increases annually by 0.1% to 3.5% in 1981, the gross national health expenditures will increase from 259 billion won in 1975 to 828 billion won in 1981.
3) It is predicted that the private consumption expenditures on health and medical care will increase from 213 billion won in 1975 to 583 billion won in 1981, if the income elasticity of private consumption expenditures remains at 1.036.
4) It is predicted that if the local government's per capita health expenditures of four provinces (Kyunggi, Choongnam, Chunnam, Kyungnam) and Seoul which fall below the national average of 386 won increase to 386 won, then, as much as 1.2 billion won in additional funds will be required.

It is unfortunate that data are not available for personal health care expenses by

type of expenditures, such as hospitalization, physician services, dental care, prescribed drugs, X-ray and laboratory examination, and surgical services.

Bibliography

1. Kim, Kyung Kyun: A Survey on Sickness and Utilization of Medical Care of Working Girls in Pharmaceutical Companies, *KJPH*, Vol. 9, No. 1, 1972.
2. Yoo, Ik Hyun: A Study on Medical Expenses of Rural Residents in Plain Areas of Korea, *KJPH*, Vol. 9, No. 1, 1972.
3. Lee, Soon Kwon: A Survey on Sickness and Medical Cost in Korean Coastal Area, *KJPH*, Vol. 9, No. 1, 1972.
4. Cho, Dong Bok, Young Soo Park, Jong Huh: A Survey on Medical Expenditure in Urban Population, *KJPH*, Vol. 10, No. 2, 1973.
5. Lee, Chul Ok, Young Soo Park, Jong Huh: A Survey on Medical Care Expenditure in Rural Area, *KJPH*, Vol. 11, No. 1, 1974.
6. Huh, Jong: Sickness and Medical Care of Rural Population, *JKMA*, Vol. 9, No. 6, 1966.
7. Lee, Soo Ho: A Study on the Utilization Status of Oriental Medicine by Some Urban Citizens, *KJPH*, Vol. 8, No. 1, 1971.
8. Lee, Sung Kwan, Doo Hie Kim, Jong Hak Jung, Keuk Soo Chung, Sang Bin Park, Chung Hun Choy, Sun Ho Hong, Jin Hoon Rak: A Study Concerning Health Needs in Rural Korea, *KJPH*, Vol. 7, No. 1, 1974.
9. Kang, Ji Yong: A Study on the Health Care of Ewha Womans University Staff, Faculty & Families, *KJPM*, Vol. 7, No. 1, 1974.
10. Park, Won Kihl: Health Status of Primary School Children in a Part of Remote Rural Area, *KJPM*, Vol. 7, No. 1, 1974.
11. Soon Lee: Studies on Rural Type Pilot Medical Insurance, *NIH Annual Report*, Vol. 10, 1973.
12. Huh, Hong: Socio-medical Studies on the Medical Care of Farm Households in Korea, *Journal of SNU Medical Report*, Vol. 3, No. 4, 1974.
13. Lee, Young Choon, Kyoung Sik Kim, Jong Huh, Jong Kun Kim, Young Soo Park; Studies on Sickness and Utilization of Medical Care in Korean Rural Areas, *Rural Hygiene*, Vol. 4, No. 1, 1972.
14. Huh, Jong, Y.S. Park, K.N. Lee: A Study on Medical Care Expenditure, *a Separate Volume*, 1972.
15. Huh, Jong, Young Soo Park: A Study on Medical Care Expenditure, *a Separate Volume*, 1973.
16. Kim, Soon Ha: Socio-medical Studies on Medical Care in Rural Population, *Journal of SNU Medical College*, Vol. 6, No. 2, 1965.
17. Jun, Byung Hoon: Analytical Report in Medical Care Among Urban Population, *Journal of SNU Medical College*, Vol. 6, No. 3, 1966.
18. Kim In Dal, Jong Huh: Socio-medical Studies on Sickness and Medical Care in Korea, *SNU Faculty Papers*, Vol. 17, 1966.
19. Huh, Jong: Medical Care in Relation to Public Medical Insurance Consideration of Problems, *JKMA*, Vol. 13, No. 1, 1970.
20. Yoon, Yung Shup: Socio-medical Studies on Health Status in Rural Population, *a Separate Volume*, 1965.

21. Huh, Jong, Ok Ryun Moon: A Study of Demand and Need for Medical Care in Rural Areas in Korea, *a Separate Volume*, 1975.
22. Lee, Young Choon, Kyoung Sik Kim, Jong Huh, Jong Kun Kim, Nam Hi Kang: Studies on Sickness and Utilization of Medical Care in Korean Rural Areas, *Rural Hygiene*, Vol. 3, No. 1, 1969.
23. Social Security Commission, M. H. S. A: *National Health Survey*, 1965.
24. Yu, Seung Hum, Jae Mo Yang: A Study on the Health Care of Yonsei Students, Staff and Faculty, *The New Medical Journal.*, Vol. 15, No. 5, 1972.
25. Oh, Hee Yong, Bang Bu Youn, Ki Soon Kim: A Study on Illness and Health Care Patterns of Seoul City Primary, Middle and High School Teachers, *The New Medical Journal.*, Vol. 18, No. 4, 1975.
26. M. H. S. A.: *The Fourth 5-year Health Planning Report*, Data Presented at the Meeting of Finance Subcommittee, October, 1975.
27. Lee, B. M., S. H. Yu, I. S. Kim: A Medical Care Utilization Study of a Private Medical Clinic in Rural Korea, *Korean Journal of Preventive Medicine*, Vol. 8, No. 1, Oct. pp. 71-81, 1975.
28. Kim, Yong Joon: A Study on Medical Care Utilization of Private Clinic in Korean Rural Area, *Korean Journal of Preventive Medicine*, Vol. 8, No. 1, pp. 89-105, Oct. 1975.
29. Social Security Commision, M. H. S. A.: *National Health Survey*, 1966
30. M. H. S. A.: *National Health Survey*, 1972.
31. Lee, Soon Kwon: A Survey on Sickness and Medical Cost in Korean Coastal Area, *Korean Journal of Public Health*, Vol. 9, No. 1, pp. 97-104, 1972.
32. E. P. B.: *Annual Report on the Family Income and Expenditure Survey*, 1973-1974.
33. E. P. B.: *Monthly Statistics of Korea*, 1971-1975.
34. Ministry of Agriculture: Report *on the Results of Farm Household Economy Survey*, 1974.
35. M. H. S. A.: *Year Book of Public Health and Social Statistics*, 1970-1974.
36. Ministry of Interior: *Financial Abstract of Local Government*, 1968-1974.
37. Bank of Korea; *National Income Statistics Year Book*, 1973-1975

Ⅲ. Implications And Recommendations For Health Planning Activities

Planning health services requires much information on the existing health status of the people to be served. In Korea, such data are available only on a limited basis and are not collated with the goal of utilization by planners and administrators. Health professionals well acknowledge the fact that it is very difficult to measure the level of health status, but it is an indispensable component in planning health services.

Several end-results are frequently used to define the level of people's health status. They are expressed in terms of mortality, morbidity, disability, degree of satisfaction, etc.. More immediate, but not less important, is the data relative to the health service process directly influencing the end results. These are, for example, health service utilization and health care expenditure data. The intent of this study is to collect this information and address some of the practical problems related to health services data.

The quality of data was found to be a big problem in practical use. Thus, the original attempt to provide representative values for each item was not satisfactorily achieved owing to the sizeable differences in the range of data. This is particularly remarkable in morbidity data. The following reasons may explain the differences.

1) The definition of morbid conditions was not operationalized. Few studies specified the operational definition of morbid conditions. Therefore, most data were obtained from the response to a general question, such as "Were any of your family sick recently?"

2) Sample errors might be substantial. Most studies did not seem to pay much attention to sampling design, which is very evident from the fact that few studies discussed the actual sampling errors. There is also no way of knowing if sampling specialists were consulted.

3) The roles and functions of interviewers, mostly selected from among myon health workers, seemed to vary greatly in each study. Interviewers ought to be selected, trained, and supervised in an appropriate way. Otherwise, the study biases would be enormous. It is most desireable to have professional interviewers in order to help eliminate and standardize interviewer errors.

4) Questionnaire errors might be substantial. Few studies, to out surprise, attached the original questionnaires. Thus, it is hardly possible to analyze the survey instrument itself.

5) There is no way of knowing the magnitude of response errors. As it is difficult to meet all the family members, the wife of a household was usually selected for the interview. It is well-known that the use of proxy respondents not only reduced the total amount of illness, utilization and expenditures, but also affected the proportions of the different types of conditions reported.

6) Diagnostic inaccuracy should be considered. This is unavoidable in health interview surveys, as the measurement of perceived illness refers to the interviewee's subjective estimation of his or her health status. Therefore, it is essential to conduct a health examination study and medical record examination in order to compare the results.

7) Minor, but significant, errors occur during calculation and tabulation. For example, there is no uniformity in counting the multi-diagnosis cases. Researchers often fail to distinguish the rates between per person and per spell of illness.

8) The government statistics are markedly under-reported. This problem is openly acknowledged by health professionals. These are but a few of the problems encountered during the study.

It is very difficult to set normal figures if we considered a few of the above constraints. It seems to be very worthwhile, however, to set normal ranges of values for the purpose of planning health services, although much has been written about the fact that such normal ranges are open to debate. After the experience of investigating the existing literature, the authors strongly urge 1) the establishment of national norms on the measurement of diseases, medical care utilization, and expenditures, and 2) the standardization of survey research instruments for morbidity, utilization, and expenditures

study. These things must be done before conducting a national health survey. We believe that several small group conferences or workshops are sufficient for that purpose.

This survey shows that the mortality rates are declining in terms of the crude death rate and infant mortality rate. Life expectancy increased from 52.6 in 1955 to 61.9 in 1966. However, mortality data and life expectancy cannot, in and of themselves, be regarded as health status indicators. In other words, the health status of people may not be proportional to the increasing average life expectancy and the decreasing mortality rate, although the two indicators do indicate a marked improvement of the health status.

Meanwhile, morbidity data fails to show any definite annual trend, except that official statistics indicate most acute communicable diseases are decreasing. Some people argue that the general morbidity rate will increase, owing to the fact that the number of people in the old age group and disadvantaged infants who have survived due to modern medical technology, are greatly increasing. Furthermore, people are more likely to be exposed to hazardous environments. Though the official statistics indicate the incidence rates of acute communicable diseases are rapidly diminishing except for typhoid fever, we believe still that a higher priority in budgetary allocations should be given to the complete eradication of those preventable diseases in order to promote the health status of the country. The validity of giving a higher budgetary priority to eradicating infectious diseases, becomes more apparent when remembering the under-reporting of government statistics. The policy maker must also consider the fact that the prevalence rate of chronic conditions is much higher than the incidence rate of acute diseases. This represents the trend of an increasing aged population. Thus, appropriate preventive and curative measures should be explored to decrease senile degenerative conditions and to minimize their ill effects.

Four aspects of health services utilization must be, at least, considered with respect to health planning activities.

1) Medical care is inaccessible to many people. Some studies suggests that 75 per cent of the rural population are beyond the reach of modern medical services. This is currently an important inequity issue in the health policy area. It is obvious that no health policy will be successful without the development of an effective health care delivery system that can ease the tremendous amount of unmet need for medical care.

2) All studies agree that the drug store is the predominant source of medical care, ranging from 50% to 80%. It is a well-known aspect of health service utilization in Korea, which does not seem easily amenable to any sort of public control for the time being. However, a serious government decision is called for; to either continue to allow pharmacists to fulfill this role but provide better training for the pharmacists, or to distinguish their role from doctors by enforcing strict regulations. Unless appropriate financing mechanisms for physicians' medical care are made available to consumers in an acceptable fashion, it is hardly possible to change this utilization behavior.

3) One study conducted in rural areas reveals that two thirds of inpatient care occur in private clinics. In other words, this denotes that private clinics are operating as small-scale independent units. The advantages of economy of scale and inter-clinic

communication cannot be obtained with the cottage style of providing services. It is particularly difficult to control the quality of care provided at the independent private clinics, and it appears the government has no intention of controlling them immediately.

4) As sources of care, a considerable number of people resort to folk therapies and superstitious remedies. Some measures need be developed to convince them of the benefit of using modern medical care, and to thus minimize such undersirable expenditures.

Very little has been written about the national health expenditures. Total national health expenditures increased from 64.7 billion won in 1970 to 191.2 billion won in 1974, or from 2.5% to 2.8% of the GNP. By the most important reason for the increase in expenditures for personal health care seems to be price increases, and not the greater utilization of services or the introduction of new medical techniques.

The proportion of direct payment among total private consumption expenditures for health and medical care increased from 2.3% in 1970 to 3.5% in 1974. One study showed that monthly medical care expenditures consisted of 4% of the monthly household income in 1972. Visits to the herb drug stores cost twice as much as visits to private clinics. Health and medical care expenditures per capita soared from 2,000 won in 1970 to 5,700 won in 1974. Some people argued that these numbers were markedly under-estimated, owing to the fact that the source of data failed to include the income group, defined as those with a monthly income of 200,000 won or more. However, it is not known how much the figures were affected by excluding this group. Quite incidentally, the Social Security Subcommittee of Health Sector Task Force used 5,611 won in 1975 as the baseline to forecast social insurance expenditures.

One of the most important findings was that 89% of the gross national health expenditures in 1974 came from out of pocket expenditures by the private sector. The public sector spent only 11%. This represents the overwhelming financial dependence on the private sector. The proportion of expenditures from the local government increased to 54.7% in 1974. The role of the central government in providing financial support declined slightly. It is our conviction that the central government must increase its share in national health expenditures in order to assume the key role in restructuring the Korean health services system.

The study also shows the prediction of national health expenditures during the Fouth 5-Year Development Period, with the assumption that national health expenditures are solely the function of the GNP. The maximum estimate is 827.8 billion won in 1981 which is 3.2 times the total expenditures in 1975. National spending policy must be meticulously planned so that the huge amounts of precious resources are rationally allocated.

Planning health services should be based on sound data which are obtained from well-designed scientific research. It is our feeling that the demand for such data is rapidly increasing as the Korean Government tries to reorganize its health service delivery system. Therefore, more attention should be placed on the production, conservation, and retrieval of such data. The followings are a list of information either completely lacking or requiring further elaborations for planning health services in Korea.

1. Mortality Data

1) Infant Mortality Rate: Social Class, Availability of Care, Geographical Area.
2) Neonatal and Post-neonatal Mortality Rate: Social Class, Availablity of Care, Geographical Area.
3) Maternal Mortality Rate: Parity, Availability of Care, Age, Area.
4) Curde Death Rate: Age, Sex, Area, Occupation.
5) Cause Specific Mortality Rate: Age, Sex, Area, Occupation.

2. Morbidity Data

1) Prevalence Rate: Age, Sex, Area, Income, Month, Education, Occupation.
2) Incidence Rate: Age, Sex, Area, Income, Month, Education, Occupation.
3) Disability Rate: Age, Sex, Area, Income, Month, Education, Occupation.
4) Days Activity Restricted: Age, Sex, Area, Income, Acute Conditions, Chronic Conditions.
5) Cause Specific Morbidity Rate: Age, Sex, Area, Income, Occupation.
6) Comparison between Acute and Chronic Conditions.
7) Degree of Notification in Communicable Diseases.

3. Utilization Data

1) Age, Sex, Income, Area, Educaton, and Insured Status Specific Utilization Rate: Physician Visits, Hospitalization, Dental Care, Drugstores, Health Centers, Herb Medicine, and Folk Therapy and superstition.
2) Nature of Utilization: Preventive vs Curative.
3) Prenatal Care: Education of Mothers, Income, Insured Status, Area.
4) Referral Patterns.
5) Average Length of Stay in Hospitalization.

4. Expenditure Data

1) Total Health Expenditures: Public vs Private, Trends, Source of Fund, GNP, Method of Payment.
2) Type of Expenditures: Hospitalization, Physician Visits, Dental Care, Drugs, Research, Construction, Hcspital Daily Service.
3) Medical Care Price Index: Trends, Consumer Price Index.
4) Hospital Cost: Trends, Charges, Size of Hospital.
5) Per Capita Expenditures: Type of Care, Age, Sex, Area.
6) Drug Industry: Trends, Profit, Drug Price.

<抄 錄>

人口의 死亡率, 罹患率, 醫療利用度 및 醫療費支出에 關한 分析

—國家保健企劃을 위한 基礎資料의 考察—

文 玉 綸*·洪 在 雄*

科學的인 方法에 의해서 얻어진 信憑性있는 資料의 획득은 保健事業의 企劃 및 執行過程의 必須要件이 된다. 그러나 정작 쓸만한 價値가 있는 資料는 그렇게 흔하지 않다. 이는 國民保健狀態에 대한 國家水準에서의 調査制度가 體系的으로 導入되어 있지 않은 우리 現實에서 避치 못할 일이다.

따라서 有益한 資料가 稀貴할 뿐아니라, 설사 調査된 자료가 있다 하더라도 일부는 妥當性을 缺如한 것도 있으며, 거의 대부분이 整理되지 않은채 散在해 있어서 接近이 容易하지 않거나, 일부에서는 똑같은 일을 불필요하게 反復해야 하는 경우가 許多하다.

本 調査는 解放後 現在까지의 既存資料를 蒐集하여 保健事業의 企劃 및 執行過程에 基礎資料로 이용할 수 있도록 하기 위하여 既存論文 約 300編을 分析한 후 本文에서와 같은 43個項目으로 分類製表했다.

1. 死亡率 資料

死亡率을 算出하는데 있어 資料의 入手源은 크게 3가지로 나뉜다. 즉 人口動態와 센서스 資料를 利用한 경우와 死亡申告書나 死亡診斷書의 分析과 直接面接에 의한 調査 등이다.

1) 우리나라의 人口 1,000名當 粗死亡率은 年次的 低下趨勢를 보이나, 資料源에 따라 差異가 있다. 人口 센서스 資料에서 算出된 値가 가장 낮으며, 다음은 死亡申告書에 의한 조사이고, 直接面接에 의한 調査結果가 가장 높은 値를 보인다. 그러나 人口 센서스 資料에 生命表의 死亡水準을 적용하여 推定한 粗死亡率은 훨씬 더 높다.

2) 粗死亡率의 地域間 差異는 서울地域이 農村地域보다 대부분 낮으며, 그 差는 대략 人口 1,000名當 2~3 程度로서, 最近에 調査된 資料는 서울에서 人口 1,000名當 5前後였으며 農村地域에서는 7~8 程度였다.

3) 最近의 標本調査에 의한 嬰兒死亡率은 都市 특히 서울地域에서는 出生 1,000名當 30~35 農漁村地域에서는 50 前後였다.

4) 年齡 및 性別 死亡率은 嬰兒期를 지나면 급격히 低下되어 낮은 死亡率을 유지하다가 40代부터 계속적으로 높아진다. 性別로는 어느 年齡層에서나 女子보다 男子의 死亡率이 높으나, 특히 老齡일수록 그 差가 크다. 전체적으로는 人口 1,000名當 1~2의 差가 있다.

5) 平均壽命도 점차 延長되어 최근의 결과는 男子 60歲, 女子 64歲 前後이다.

6) 母性死亡率에 대한 資料는 모두 病院에서 調査된 것으로 一般化가 不可能하며 큰 差異를 보였다.

* 서울大學校 保健大學院

7) 死亡原因別 死亡率의 資料는 過去에 비해 感染症에 의한 死亡率은 줄어들었으나 아직도 높은 상태며 事故死 및 뇌혈관질환에 의한 사망률은 증가경향을 보인다.

2. 罹患率 資料

資料間의 幅이 너무 넓어서 意圖했던 代表値를 얻어내기가 무척 어려웠다. 이에는 다음과 같은 要因이 作用하는 것 같다.

즉 疾病에 대한 客觀的 作業用槪念이 定義되어 있지 않으며, 標本誤差가 상당하고, 地域選定에 대한 기준이 명확치 않아서 調査地域에 따른 差異가 많이 생기고 있다. 또한 現地調査員들의 訓練監督 및 그들의 調査裁量에 대한 基準이 設定되어 있지 않아서 面接人誤差가 생길 여지가 많으며, 診斷 그 자체의 正確性 缺如 및 應答誤差 그리고 設問紙자체의 誤差등을 예로 들 수 있다.

1) 年齡別 有病率은 生產層人口인 10代와 40代 사이에서 낮은 U型 分布를 보인다.

2) 性別 月間 有病率은 女子가 男子보다 약간 더 높다. 대체적으로 인구 1,000名當 160 정도였고 男女間 差異는 15~20 정도였다.

3) 地域別 有病率은 本資料만으로 結論내리기 어려우나, 대체적으로 農村地域의 有病率이 都市보다 약간 낮은 것으로 나타났다.

4) 年間 人口 1人當 罹病回數는 1.9回 내지 2回 정도였고, 月間 活動制限日數는 住民 1人當 0.5일, 患者 1人當 3.4일 정도였다.

5) 調査末日의 有病率이나 發病率은 調査初日의 그것보다 월등히 높았으며, 慢性疾患의 有病率은 急性疾患의 發病率보다 훨씬 높았다.

6) 原因別 有病率은 冬季에는 呼吸器系 疾患이 제일 많았고, 夏季에는 消化器系 疾患이 제일 많았다. 장티브스를 제외한 모든 急性傳染病의 發生率은 급격히 감소하고 있다.

3. 醫療利用度 資料

醫療利用度 關係資料는 罹患率 관계자료나 醫療費支出 關係資料보다 客觀性이 높고, 被面接人이 더욱 잘 기억할 수 있는 項目이어서 保健企劃活動에 많이 사용되고 있다. 그러나 대부분의 硏究資料가 人口學的인 面만 다루고 있어서 醫療利用에 관한 硏究는 극히 初步段階에 머물고 있다.

1) 醫療機關 利用度를 性別로 보면 藥局訪問을 제외한 모든 경우에 男子의 利用頻度가 女子보다 높았다.

2) 保健所와 漢方醫療는 農村住民이, 醫院利用과 入院은 都市住民에서 높다. 그러나 가장 地域差가 현저했던 入院의 경우에도 農村地域에서 人口 1,000名當 1963年에 2.8회였으나, 1974年에 6.2회로 增加하고 있어서, 國民의 醫療利用度가 크게 伸張되었음을 알 수 있다.

3) 모든 조사가 藥局이 韓國人의 50% 이상에서 主된 醫療利用源이 되고 있음을 指摘하고 있다. 이는 都市居住者에서 더욱 현저하다.

4) 齒科醫師 利用度는 醫師利用度의 1/50에 해당하는 低利用率을 보이며, 대개의 調査에서 전체 報告된 自覺症勢 基準의 醫療要求量의 50% 이상이 未充足醫療임을 指摘하고 있다.

5) 年齡이 증가할수록 醫療利用度가 증가했으며, 入院, 醫院 및 齒醫院 利用度와 敎育程度와는 서로 正相關關係에 있고, 漢方醫療 利用度와 敎育程度와는 逆相關關係를 보이고 있다.

6) 患者在院期間은 1966年의 16.7日에서 1973年의 12.4日로 감소하고 있다. 示範醫療保險事

業의 資料에 의하면, 加入者의 平均在院期間은 10日이하로 나타나 있다.

7) 産母의 教育程度와 地理的條件이 分娩場所選定에 미치는 영향은 지대했으며, 農村地域의 경우 90%의 分娩이 아직도 家庭에서 행해지고 있다.

4. 保健醫療費支出 資料

1) 현재 파악이 가능한 우리나라 國民總保健費 推計値는 1974年에 1,912億원으로 1970年의 647億원에 비하여 약 3배가 增加했다. 國民總保健費의 國民總生産에 대한 比率은 1970年의 2.5%에서 1974年의 2.8%로 약간 上昇하고 있다.

2) 住民 1人當 保健醫療費는 1970年에 2,000원이던 것이 1974年에 와서는 5,700원으로 上昇했다.

3) 國民總保健費 중에서 公共費支出은 1974年에 210億원으로 전체의 11%에 불과했으며, 民間部門支出은 1,702億원으로 89%를 占하고 있어서 保健醫療費支出을 構造的으로 볼때 民間部門依存度가 아주 높음을 알 수 있다. 한편 公共保健費의 構成은 1970年에 中央政府가 48.2%, 地方政府가 51.8%이던 것이 1974年에 와서는 中央政府가 45.3%, 地方政府가 54.7%로 變하고 있다.

4) 個人 醫療費의 民間總消費支出에 관한 比率은 1970年의 2.3%에서 1974年의 3.5%로 增加했다.

5) 1974年의 國民總保健費/GNP 比率인 2.8%를 계속 維持한다고 가정하면 總保健費는 1975年의 2,500億원에서 1981年에는 6,620億원으로 할 것이다.

6) 年間 1人當 外來醫療費는 1959年의 農村値인 77원에 비해서 1972年의 全國値는 912원으로 11.8배 增加했다. (이는 不變價格이 아님)

7) 1973年의 治療件當 入院費는 都市地域이 最高 69,102원, 農村地域은 最高 10,313원으로 地域間의 차이가 심하다. 1973年의 藥局利用의 경우, 治療件當 藥값은 農村地域이 765원, 都市地域은 1,261원인데, 患者當 및 治療件當 藥局利用費는 外來患者治療費의 1/2 내지 2/3에 해당한다.

8) 漢藥局 利用에 대한 費用이 外來治療費의 2배 이상되었고, 비록 利用者數는 적지만 民俗療法과 迷信行爲에 의한 것도 상당한 比重을 차지하고 있다.

9) 家計 月平均收入의 약 4%가 保健醫療費였는데 都市家計의 保健醫療費支出 比率이 農村家計보다 더 높았다.