

# **1989 KIHASA RESEARCH ABSTRACT**

**1990**

**KOREA INSTITUTE FOR HEALTH AND SOCIAL AFFAIRS**

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## FOREWORD

This publication has been translated and prepared for our international colleagues who are interested in research activities of the Korea Institute for Health and Social Affairs (KIHASA), in an effort to promote information exchange.

KIHASA is an autonomous policy-oriented research organization under the Ministry of Health and Social Affairs. Its major function is to conduct research and evaluation on national policies and programs that are related to population, health and social welfare. This function is aimed at providing basic data for the government in formulating policies for the national issues in these fields.

KIHASA conducts around thirty research projects and several seminars or workshops every year. This Institute places particular emphasis on research management, the selection of timely research topics, derivation of rational and objective research results and their utilization for policy formulation.

Twenty-nine research projects and seven policy development workshops were carried out during 1989, the results of which have mostly been published and distributed to the institutions concerned.

This publication is only a summary of the results of our researches and if you are interested in more details, please do not hesitate to contact us. This publication will give you an outline of our performance and I hope you will find it useful as reference material.

Any enquiries regarding KIHASA research activities are mostly welcomed.

March 1990



Dal-Hyun Chi, PhD  
President  
KIHASA



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# **I. POPULATION RESEARCH**





## A COMPREHENSIVE STUDY FOR A NEW STRATEGY ON THE POPULATION CONTROL POLICY

by M. S. Hong, Y. S. Chang  
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S. K. Kim, Y. H. Oh

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### *Objective*

1. Through analysis of factors influencing contraception and fertility behavior, a new strategy for the long term population policy goal is developed.

2. Through the analysis of managerial problem in the existing family planning program, the program quality improvement is attempted.

### *Method*

1. Short and long-term targets of family planning program are established based on the study results of the 1988 national fertility and family health survey.

2. Indepth analysis of factors influencing contraception and change in fertility level is carried out.

3. Field observation and survey on family planning program management is performed.

### *Result*

Annual average target of contraceptive supply to maintain current level of fertility for the period of 1990-1995 is drafted as Table 1 and based on the contraceptive target, expected level of contraceptive use among the eligible couples will be as Table 2.

1. Government's supply for the clinical methods is shown in the following Table 3 which maintains equal proportion of sterilization between government sector and private sector and 60 percent of IUD in the government sector by 1995.

2. Non-clinical method is accepted mostly by personal payment in the market and government supplies have not been effectively used. Accordingly adjustment of target of the government supply is required and an appropriate countermeasure for the effective IEC activities by the field workers should be developed.

**Table 1. Target of Contraceptive Supply by Year**

(Unit: 1,000 cases)

Contraceptive method	1990	1991	1992	1993	1994	1995
Vasectomy	40.6	42.2	43.9	39.8	36.0	38.5
Tubal ligation	180.6	186.4	192.4	182.2	174.5	185.9
IUD	232.1	240.3	249.0	255.1	259.1	266.7
Condom	670.4	689.3	709.2	730.2	744.8	760.1
Pill	190.2	198.4	206.9	215.9	222.2	228.8
Others	604.0	620.7	638.4	657.1	672.8	689.5

**Table 2. Expected Level of Contraceptive Use among the Eligible Couples**

(Unit: %)

Contraceptive method	1990	1991	1992	1993	1994	1995
Vasectomy	11.1	11.1	11.2	11.2	11.2	11.2
Tubal ligation	37.5	37.6	37.8	38.0	38.0	38.1
IUD	6.8	6.9	6.9	7.0	7.0	7.1
Condom	10.3	10.3	10.3	10.3	10.4	10.4
Pill	2.9	3.0	3.0	3.1	3.1	3.1
Others	9.2	9.2	9.3	9.3	9.4	9.4
Total	77.8	78.1	78.5	78.9	79.1	79.3

**Table 3. Contraceptive Supply by Government**

(Unit: 1,000 cases)

Contraceptive method	1990	1991	1992	1993	1994	1995
Vasectomy	32.9	31.7	30.3	25.1	20.2	19.3
Tubal ligation	137.3	132.3	127.0	111.1	96.0	93.0
IUD	139.3	144.2	149.4	153.1	155.5	160.0

3. Considering the high level of contraceptive use and improved contraceptive behavior, gradual increase of contraception proportion in the private sector is desired.

4. Recent achievement is decreasing in the medical support for families of sterilization acceptors with less than two children and supporting subsidies for livelihood protection beneficiaries and medical aid for families of sterilization acceptors with less than two children. Therefore, the social support policies should be reviewed.

5. Recent trend of induced abortion is decreasing. However, among the young women of high fertility group the abortion rate is highly maintained. A new strategy of IEC and contraceptive services for those young women should be developed.

6. Considered the increase of life expectancy at birth and per capita GNP, a possibility of further decline in fertility level of 1.6 is not elimi-

nated while there is also the possibility of increase in fertility level since the fertility decline has been achieved drastically in a short period of time. Therefore, future direction of the family planning program should be carefully adjusted according to the 1990 census result and 1991 fertility survey which are periodically fixed schedules of the government program.

### *Expected Effect and Utilization*

1. Existing conservative method of family planning strategy and program management can be revised and improved in accordance with the socio-economic and demographic situation change, in order to maximize the program effectiveness and efficiency.

2. Government contraceptive supply free of charge will be gradually switched to the charged program and the program management system as well as workers' activities could be improved to meet the service quality improvement.

## REGIONAL POPULATION PROJECTION: APPLICATION OF IIASA MODEL

by E.H. Choe, H.Y. Chung

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### *Objective*

1. To provide regional population projection data for the establishment of social welfare policy and balanced regional development policy, depending on change in population size and structure,

2. To suggest the appropriate demographic projection method in Korean context.

### *Method*

1. Corrected the omission rate of the recent 'census' and the vital rates.

2. Applied IIASA Model(Roger's Model).

### *Findings*

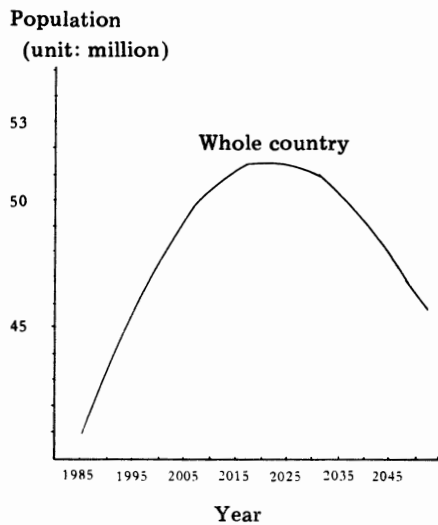
1. The total population, 40,980,000 in 1985, will amount to the peak with 50,740,000 in 2020 after when it will decrease and when the population of six metropolitan cities including Seoul will reach 52.5 percent of total population. (See Figure 1)

2. Total dependency ratio recorded 54.0 percent in 1985, will decrease to 42.4 percent in 2015, and is expected to increase to 56.5 percent in 2040 because of continuous aging trend of population. (See Figure 2)

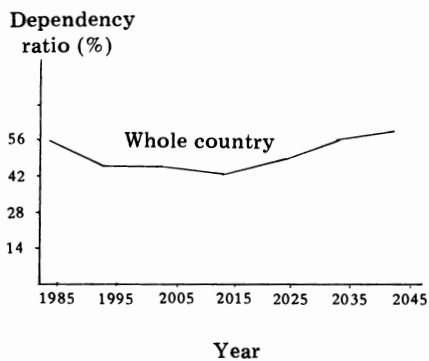
3. Aged population rate will continue to increase to 10.3 percent in 2015 and 18.9 percent in 2050 in national level, and it will more rapidly increase in other areas than in largest cities. (See Figure 3)

4. Total population of school age will decrease from 21.1 percent in 1985 to 12.6 percent in 2020, and more, school age population by provinces and cities will drastically decrease in 2050 to 40-50 percent of that in 1985. (See Figure 4)

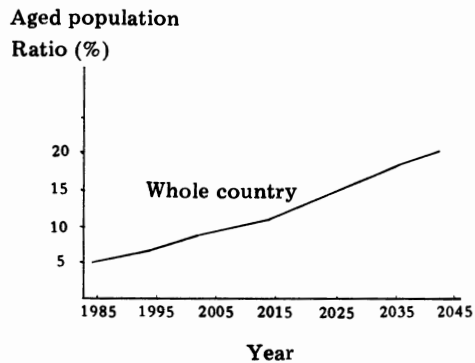
**Fig. 1. Population Projection, 1985-2050**



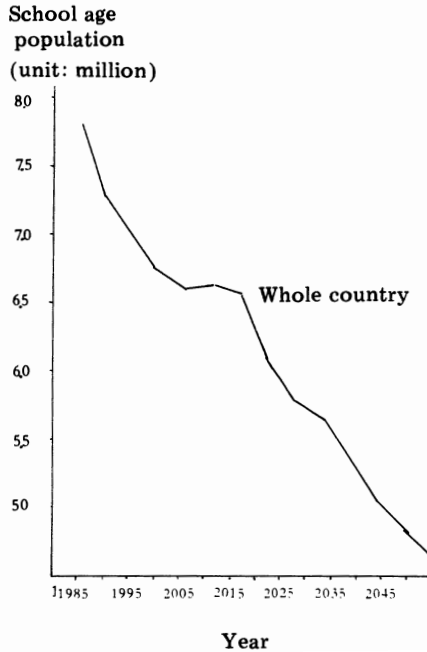
**Fig. 2. Projection of the Dependency Ratio**



**Fig. 3. Projection of the Aged Population Ratio**



**Fig. 4. Projection of School Age Population**



## A STUDY ON MORTALITY IN KOREA

by E.H. Choe, D.H. Cho,  
H.B. Kye, Y.K. Kim,  
S.B. Kim.

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### *Objective*

1. To calculate the basic statistics on mortality level, differential mortality and mortality structure,

2. To analyze other vital rates related to mortality and various population indices.

### *Method*

A sample survey was conducted; divided into household survey and facility survey. A household survey was conducted on 69,124 households in 305 sample areas selected throughout the country through the home visit interview by trained interviewers. Institution survey was conducted on 25 sample social welfare institutions, of which the current staff and facility conditions were examined through interviewing and questionnaires provided by the institute.

### *Findings*

1. Crude Death Rate (CDR) recorded around 5.4.

2. When classified by age, infant death rate was higher among boys

than girls, and while adult death rate also was prominently higher in males than in females, especially so in 30s and 50s.

3. Infant death rate is estimated to be 11.8 (males: 12.7, female: 10.9) per 1000 according to the indirect projection, but the accurate rate will be derived based on concrete re-investigation.

### *Expected Effect*

This study can i) provide a more accurate mortality rate and mortality structure, ii) provide statistical reliability from the compilation of the mortality survey acceptable to an international standard and iii) make out mortality survey necessary for establishment of health and social welfare policies.

### *Policy Recommendation*

As the study on population transition should be examined continuously compared with the stationary population, it is recommended to conduct research on vital changes through the continuous observation in specific areas.

## ANALYSIS OF POPULATION VARIABLES FOR SOCIO-ECONOMIC DEVELOPMENT PLANNING

by N.H. Cho, I.H. Kim,  
M.H. Seo, Y.S. Chang.

### *Objective*

The objective of the study project, which has been implemented with the support of UNFPA since 1986, was to conduct a comprehensive analysis and evaluation on the population policy in Korea during the past two decades (1962-1985) based on the series of national fertility surveys and census data, and to design the long-term population policy goals and strategies (1987-2000) responsive to the new circumstances of Korea's socio-economic and demographic transition.

The project was not only to set the directions and details of the population programmes regarding the population control and re-distribution policies, but also to explore the proper means for improving the current programme management systems of the population programmes to meet changing phenomena of socio-economic and cultural conditions in Korea.

### *Project Activities*

The proposed project has been conducted by the following three

### *phases:*

1. Indepth analysis of the major determinants affecting the fertility change by utilizing the 1985 national fertility/family planning survey and the population census data, holding of the seminar on the results of indepth analysis for policy implications,

2. Preparation of the long-term population policy background papers including the sixth five-year population plan (1987-1991), and holding of the national seminar on the draft of the long-term population plan, and

3. Implementation of the interim evaluation on the progress and achievements of the new population policies starting in 1987.

The first phase of the project was completed in May 1987 by publishing the report entitled "Fertility Changes in Korea" (pp. 554), and the second phase report under the title of "Population Problems and Their Counter-Measures in Korea" (pp. 441) was published in December 1987. The results of the

above two studies were directly fed into the government's sixth five-year population plan (1987-1991). This on-going final report is to assess the specific contributions towards the attainment of the goals and objectives in the sixth five-year population plan, based on the 1988 national fertility and family health survey done by KIHASA, population vital registration data of National Bureau of Statistics, Economic Planning Board and other service statistics data.

### *Major Findings*

#### 1. Population Control Policies

Since the strong population control policies in 1981, there have been rapid changes in fertility and contraceptive practice rates of married women aged 15 to 44 years. The recent findings showed that the fertility rate had declined from 2.7 in 1981 to 2.1 in 1984, while the contraceptive practice rate of married women had increased from 57.7 percent in 1982 to 70.4 percent in 1985. Considering these rapid changes in the 1980s, the government set the demographic goals of the Sixth Five-Year Economic and Social Development Plan (1987-1991) in 1986 for a reduction in the population growth rate from 1.25 percent in 1985 to 1.0 percent by 1993. These goals were made under the assumption that the total fertility rate will decline from 2.1 in 1984 to 1.75 in 1995. For achieving these goals, the contraceptive practice rate was planned to

increase to 77.2 percent by 1991. However, these goals have been already achieved earlier than that planned. The 1988 national fertility survey and other data showed that the total fertility rate has declined below the replacement level to 1.6 in 1987, while the contraceptive practice rate has increased to 77.1 percent.

In accordance with the rapid decline of fertility in recent years, the government revised the demographic goals during the sixth five-year plan period in 1988 for a further reduction of the population growth rate to 0.96 percent by 1991. The new population projection indicates that the 1987 population of 41.6 million is expected to reach 43.2 million by 1991, with the population stabilizing at around 50.2 million in 2020.

Considering these demographic conditions, the future directions of the population control policies in Korea have to shift from the current quantitative approach focused on the reduction of fertility, to the qualitative approach for eliminating problems regarding the contraceptive acceptance and use effectiveness. At this point, the following areas must be carefully considered for redirecting and establishing the future family planning programs;

a. Improvement of program management system to improve the quality of services and continuation rates of reversible contraceptive methods,

b. gradual shift of the govern-



ment program to private sector,

c. integration of family planning with public health programs,

d. shift of the contraceptive distribution from free of charge to the self-paid system,

e. extension of family planning program in its scope to the family welfare aspect of adolescent, aging, and kinship problems,

f. revision of IEC and beyond-program strategies for the improvements of women's status and equality of the sexes for maintaining a balanced sex ratio, and

g. overall evaluation of individual program activities for enhancing the program efficiencies.

## 2. Population Distribution Policy

During the last 29 years, the structural shifts towards non-agricultural sectors have produced rural to urban migration. Between 1960 and 1989, urban population grew almost fourfold, from 7.0 million to 30.0 million. Consequently, the proportion of urban population increased from 28 percent in 1960 to 71 percent in 1989. It is anticipated that by the year 2000 about 78 percent of Korean people will be living in cities. In 1988, Seoul City encompasses 24 percent of the total population. During the same period, the urban population has been almost quadrupled with an annual growth rate of 5.3 percent and the rural population has decreased in absolute number with the rate of minus 1 percent.

Recent migration indicates that about 24 percent of the population in Korea relocated in 1988 and about 14 percent of these migrants moved from the rural to the urban areas. The most important reasons for the migration have to do with housing, employment and transportation. The urbanization pattern in the late 1970s and 1980s was found in the accelerated population growth rate in the small and medium cities.

The policy measures introduced by the government since 1970s to cope with the problems of the population agglomeration in the large cities can be summarized as follow; 1) provision of tax exemption to those industrial facilities that move out of Seoul city, 2) establishment of satellite cities around the large cities, 3) upgrading and expansion of educational facilities in non-urban areas, 4) relocation of government offices and government-run-institutions out of Seoul, 5) levying the special residence tax in large cities, and 6) financial, fiscal and other incentives to rural residents. In addition, restrictions on zoning have been imposed on the Seoul and other large cities, and the Ten-Year National Land Development Plan (1982-91) has been implemented for the promotion of growth poles throughout the country. In recent years, the tempo of population growth rate of Seoul has been steadily slowed down, while the population growth in the small and medium cities has been accelerated.

In general, it can be said that the

numerous population distribution policies in the past years have not been enough to ensure the attainment of the planned goals, mainly

due to lack of coordination among concerned ministries, and inconsistencies in implementing policies and programs.

## 1988 NATIONAL FERTILITY AND FAMILY HEALTH SURVEY

by H.S. Moon, I.J. Lee  
Y.H. Oh, S.Y. Lee

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### *Objective*

The present survey, the 13th serial of National Fertility and Family Health Survey implemented every 2 or 3 years since the national family planning programme was put in effect in the very early part of the 1960s, aims to provide for the future development of population policy the basic indicators related with pregnancy, fertility, contraception, value of child and so forth, and to keep up the time-series continuity of those indicators.

### *Methodology*

#### 1. Sample Size

The survey employed the same sampling unit as was used for the Population and Housing Census in 1985. 150 sampling units were selected from the whole country by the probability sampling method, and 11,864 households and 7,792 ever-married women aged under 49 within these units were interviewed.

In this study, the data on contraception, pregnancy, value of children, and MCH of 6,515 currently-married women out of 7,792 interviewees, were analyzed.

#### 2. Content of the Survey

The survey used two kinds of schedules, one for household and the other for individual, that is, ever-married woman aged under 49. The items in the schedules can be summarized as follows.

- a. Household schedule
  - socio-demographic characteristics of household and household members
  - birth and death events that have occurred within household since 1986
- b. Individual schedule
  - socio-demographic characteristics
  - contraceptive practice
  - pregnancy and contraceptive histories
  - induced abortion
  - value of child
  - exposure to the IE&C activities and perception of the incentive system
  - maternal and child health

#### 3. Implementation of the Survey

Grouped into 12 teams, 60 personnels, temporarily hired and trained for the survey, made home-

visits for face-to-face interviews from May 9 to June 30, 1988. 6 out of 12 teams covered 72 sample areas (12 per team) from May 9 to June 26, 1988, and the rest 78 sample areas (13 per team) from May 9 to June 30, 1988.

### *Major Findings*

#### 1. Some Selected Characteristics of the Respondents

a. The women aged 25-29 occupy 28.4 percent, the largest proportion, and aged 30-34 27.9 percent, aged 35-39 20.4 percent, aged 40-44 15.4 percent and aged 15-24 7.9 percent. Mean age is 32.4 with no difference between urban and rural areas.

b. As for the educational attainments, the proportion of the primary or no schooling group is 22.3 percent, the middle school group 30.8 percent, the high school group 36.7 percent and the university or higher level of schooling group 10.2 percent.

c. Labour force participation rate of the women is 37.5 percent, and the higher rate is found among those aged over 35 than among the rest.

#### 2. Perceived Value of Child

Ideal number of children is 2.0, the same level as was observed in 1985, and no significant difference is found between urban areas (2.0) and rural areas (2.1).

a. The proportion of those affirmative for the one-child-family

norm is 53.8 percent, which is 6.0 percent point higher than that in 1985, and seen by educational level, it is 64.4 percent in the group of university or higher level, 52.6 percent in the middle school group and 37.8 percent in the primary or no schooling group. It is shown that there exist sizable differentials among the educational groups.

b. The proportion of those who replied that they were indifferent to sex of child is 49.4 percent, which is around 10 percent point higher than that in 1985, but which still is below a half.

#### 3. Contraceptive Practice

a. The proportion of contraceptive acceptors is 77.1 percent, 6.7 percent point higher than that in 1985. It is found that the permanent sterilization is more popular than the temporary methods. The proportion of acceptors of female sterilization stands at 37.2 percent, vasectomy 11.0 percent, condom 10.2 percent, IUD 6.7 percent and oral pill 2.8 percent.

b. The most popular reason for the contraceptive practice is fertility termination, and the next most popular birth-spacing. The proportion of the former reason is 69.9 percent and the latter 5.7.

c. The proportion of those who have ever used contraception is 88.5 percent, and in turn, 29.0 percent of those with contraceptive experience have ever got pregnant despite their use of contraception.

d. 60.8 percent of the current contraceptive users are getting their contraceptive services through the governmental network, 36.2 percent at their own expenses and the rest through medical insurance.

Of the female sterilization acceptors, no more than 11.1 percent got their sterilizations at their own expenses, and of the vasectomy acceptors, 5.7 percent. It is shown that the governmental network still serves as a major source of sterilization supply.

#### 4. Fertility and Prevalence of Induced Abortion

a. Total fertility rate as of 1987 is 1.6, lower by 0.5 than was observed in 1984, and there remains a notable difference (0.44) between the urban rate (1.52) and the rural rate (1.96).

b. 52.3 percent have experienced induced abortions, and the average number of induced abortion is 1.0. The higher rate is found in urban areas (54.3%) than in rural areas (46.7%).

c. 53.5 percent rated fertility termination as the reason of their first induced abortion, 17.4 percent birth-spacing, 7.0 percent premarital pregnancy, 6.3 percent maternal health and 5.3 percent fetal abnormality.

As for the reason for the last induced abortions ever experienced, the most popular is also the fertility termination, for which 79.3 percent of the last induced abortions were practiced.

#### 5. IE&C Activities and Maternal and Child Health

a. 11.6 percent have ever got any kind of contacts with family planning field workers in 1987. The proportion of those who have been exposed to the information on family planning in 1987 through the Bansang Meeting is 33.0 percent, through air media 82.3 percent and through printed media 68.0 percent.

b. Of the last children ever born since 1983, 52.3 percent (urban: 57.5%, rural: 37.3%) have been given prenatal cares, and 87.8 percent (urban: 92.9%, rural: 73.3%) were delivered in medical institutions.

As for the lactation type, 48.1 percent (urban: 44.8%, rural: 57.4%) were given breast feeding, 18.0 percent (urban: 19.6%, rural: 13.5%) bottle feeding and the rest, 33.9 percent (urban: 35.6%, rural: 29.1%) mixed feeding of both types.

#### *Expected Effect and Utilization*

The survey finds that the proportion of women who were pregnant at a time point of interview is 6.0 percent, who were in amenorrhea period 4.3 percent, who were spontaneously sterilized 3.6 percent, who had no children but were going to have children in the near future 2.7 percent, who were infecund from uterus removal or menopause 1.5 percent and finally whose husbands were temporarily staying outdoors for business trips or hospitalization around 2 percent. Based on these

findings, the proportion of the women whom contraception is necessary for is estimated at around 80.0 percent, which can be regarded as an upper bound of contraceptive prevalence. It is, thus, found that the current contraceptive practice rate, 77.1 percent, comes quite close to its limit.

Moreover, the total fertility rate has fallen down to 1.6, which amounts to the level prevailing in the developed countries.

Supported by these demographic circumstances, there comes out a strong need to shift a primary operational focus of family planning programme from the quantitative expansion of contraception, to the qualitative enhancement of the services. For such a turn in policy direction, what is prerequisite would be to have a quite better idea on the behaviours and the attitudes related with contraception, fertility, pregnancy, value of children and so forth.

In this connection, the survey is expected to be of a great value for the future development of policy measures in that it provides a wide range of the data concerning the

issues mentioned above.

### *Policy Recommendations*

Although it is widely recognized that family planning programme has made a great contribution to such a rapid fall in fertility and a swift expansion of contraceptive use as has been observed during the last two or three decades, there still remains much to be improved for the qualitative provision of contraceptive services. Therefore, in short term, the management system of the programme should be improved so that the programme can work mainly for the qualitative supply of contraceptive services, which will necessarily entail a shift of managerial emphasis from the fertility termination to the prolongation of birth intervals in young age groups and the prevention of unwanted pregnancies and induced abortions, and in the long term, the family planning programme, implemented by the government and based on the principle of free service so far, should be replaced by the one driven by the private sector and based on self-financing for the service.

## EVALUATION OF THE PROGRAM PROGRESS AND EFFECTIVENESS ON 1989 NATIONAL FAMILY PLANNING PROGRAM

by M.S. Hong, Y.S. Chang  
S. K. Kim

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### *Objective*

To conduct monthly, quarterly, and annual monitoring and evaluation of and feedback on the various activities of the national family planning program and thereby to improve program efficiency and effectiveness, and to provide basic data for long and short-term family planning program and population policy formulation.

### *Approaches*

1. Program statistics have been collected monthly from 15 cities and provinces and 247 health centers to conduct regular monitoring and evaluation of the national family planning program. Program progress reports of each city/province and health center were analyzed, using several evaluation indices, and the results were periodically fed back for program implementation, monthly to cities and provinces, quarterly to health centers.

2. Government-supported contraceptive service statistics, 591,180, in 1989 were collected and analyzed

to evaluate the characteristics of government-supported contraceptive acceptors and to provide basic data necessary for long and short term program planning. The long and short term population target was revised and supplemented based on these results.

3. The population control committee (MOHSA, KIHASA, PPFK, KAVS) held meetings regularly to promote policy implementation of various research and evaluation results and to coordinate activities among the agencies.

4. An annual evaluation meeting of program personnel at the central and local government levels was held to review the program achievements and problems of the previous year (1988) in each city and province and to revise future program directions based on the overall evaluation.

5. Evaluation teams at all levels were organized and operated as follows:

a. Central level evaluation team was composed of 8 key per-

sonnel from MOHSA, KIHASA, PPFK, and KAVS. A city and provincial evaluation team was composed of 6 personnel members including division director, FP section chief, senior supervisor in the Family Health Division of the city and province, and a chief administrator of the PPFK branch office. The county and district level evaluation team was composed of 4 personnel as director, Family Health Section chief, family health worker in the health center and a lecturer from the PPFK county and district level branch.

b. The central evaluation team conducted a round of joint meetings with the city and provincial evaluation teams and the city and provincial evaluation teams with the county and district level evaluation teams, to activate the operation of the city and provincial and the county and district level evaluation team. The evaluation teams have attempted to increase skill and knowledge on program monitoring, evaluation, and supervision and to study alternatives in solving difficult problems through a special study or pilot project.

## **Results**

### **1. Evaluation of the Program**

a. The 1989 contraceptive targets were set lower with the exception of condom compared to the previous year; sterilization and IUD targets were cut from 260,000 to 157,000, from 250,000 to 245,000, respectively and oral pill target was

30,000, the same level as the previous year, while condom target increased from 125,000 to 140,000. In terms of achievement, sterilization achieved 115.8% of its goal, the remainder did not achieve their goals, i.e., IUD 96.3%, condom 102.8% and oral pill 98.1%.

b. With regard to contraceptive acceptance, during the period January 1989 — June 1989, the mean age of acceptors appeared to be 28.7, which was higher than 28.6 of the period 1987-1988. Seeing by method, it was 27.8 for IUD, 30.0 for tubaligation and 29.5 for vasectomy, respectively. In terms of age distribution, for married women aged under 24 it decreased to 2.3% point, while for married women aged 30-34 it increased to 2.7% point. For married women aged 25-29 with high fertility it was almost equal.

c. In 1989, the mean number of children born was 1.7 for acceptors. Seeing by method, it was 1.5 for IUD acceptors, 1.8 for vasectomy acceptors, and 2.1 for tubaligation acceptors, respectively.

d. For the induced abortion, the acceptors experienced 1.9 times, which was higher than those of previous year; 0.8 in 1986, 0.8 in 1987, and 1.0 in 1988. Seeing it by method, the acceptors experienced 1.9 IUDs, 1.9 vasectomies and 2.0 tubaligations, respectively.

e. Looking into the educational level of acceptors, the proportion of those who were educated high



school or higher was 64.9%, which was higher than those of 46.5% in 1986, 52.9% in 1987 and 60.0% in 1988. This means that educational level is improving recently.

f. At the time of contraceptive acceptance, the mean age of last child was 2.3. For tubal ligation acceptors that of last child was the lowest, 1.8. For IUD and vasectomy acceptors, it appeared to be 2.4.

g. Organized efforts to provide family planning supplies and services are required for promoting the prevalence of reversible methods with growing emphasis on the private sector.

h. The induced abortion is not desirable method although it contributes greatly to population control. Especially, women in the twenties appear to prefer induced abortion. Thus, family planning program will be implemented with concentrated management of women in the twenties.

i. For the diffusion of contraceptive prevalence, government should arrange free primary care and living cost support policies for sterilization acceptors in terms of social welfare.

## 2. Opening of the Management Workshop

Date: 1989. 3.23-24.

Place: The Federation of Korean Industries (FKI Auditorium)

Participants: 128 persons

Subjects of presentation: 1) Policy development in population transition;

2) Maternal and child health program transition; 3) Evaluation and direction of the program, 4) Analysis on current status of contraception; 5) Roles of non-governmental organization for the family planning program

3. The Family Planning Evaluation Units contributed to the effective implementation of population policy.

4. Joint meeting of the central and provincial FP Evaluation Units contributed to strengthening the function of the FP Evaluation Units at the provincial and county levels and improving the program efficiency.

## *Expected Effect and Policy Recommendations*

### 1. Effect

- Improvement of the program effectiveness
- Enhancement of program manager's capabilities on family planning, evaluation and supervision
- Contribution to successful achievement of demographic goal

### 2. Policy recommendations

a. Contraceptive prevalence should maintain the current level with growing emphasis on quality rather than quantity of contraceptive prevalence.

b. Contraceptive prevalence through private channel should be gradually increased with less emphasis on government-supported contraceptive prevalence.

c. In spite of high contraceptive practice rate, total induced abortion rate was 1.6 in 1989. Especially, induced abortion rate was high for ages 20-29. This means that there was the various problems in contraceptive use and IEC activities. Thus, the policy measures that are directed to women in the twenties should be considered.

d. Since temporary method is mostly covered by the private cost, government support should be applied

only to people who want reversible methods. An appropriate management system is necessary so that IEC activities can be continuously carried out by field workers.

e. Government-supported contraceptive prevalence should be re-considered, in coordination with the execution of the national health care, improving level of national income and autonomous contraceptive practice, etc.

**A STUDY ON DEVELOPMENT OF NEW CONTRACEPTIVE  
DELIVERY SYSTEM**  
— Related to Contraceptive Delivery System  
through Medical Insurance —

by E.S. Kim, J.K. Lim  
S.H. Lee

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*Objective*

The objective of the study is to analyze the present situation of family planning programs and to supply necessary data for the improving contraceptive delivery system through medical insurance.

*Method*

The source of data used was sterilization acceptors' records supplied by the National Federation of Medical Insurance and the 1988 national fertility and family health survey conducted by the Korea Institute for Population and Health. (Former KIHASA).

To collect the data measuring the attitude toward contraceptive operation service by medical insurance, service providers such as medical doctors, directors or subsection chiefs, FP workers in health centers were interviewed.

*Findings*

1. Since information on contraceptive service acceptors by medical insurance or their own expense could not be collected through government contraceptive service statistics, the analysis of these contraceptive acceptors was very difficult.

2. The level of education and income of contraceptive operation acceptors by medical insurance were higher than that of contraceptive acceptors by government contraceptive services. The occupation of the husband of contraceptive operation acceptors' by medical insurance was higher in professionals, administrative managers, and clerks, etc. comparing with that of contraceptive acceptors by government's free service.

3. The wife's age of contraceptive operation acceptors through medical insurance was mostly between late twenties and early thirties.

4. When those who had severe

side-effect after receiving contraceptive operation by medical insurance, he/she cannot receive any follow-up services supported by the government.

5. It appeared that contraceptive acceptors operated by their own expense were mostly advised by their friends, neighbors, doctors and nurses for practicing the contraceptive operation. Most of them tended to accept it together with a delivery or induced abortion.

6. Service providers showed strong positive attitudes toward improving the contraceptive operation service through medical insurance system. While service providers agree strongly on the current contraceptive delivery system through medical insurance, but they do not have much informations on the system.

7. Even though the current free contraceptive service system by

government be changed to partly paid insurance system, the low income group or the mentally and physically retarded should be continuously benefited with free service.

### *Recommendation*

1. In order to figure out the current status of contraceptive performance by medical insurance or own expense, data collection system should be unified.

2. In case severe side-effect occurred after the contraceptive operation supported by medical insurance, government has to be responsible for the follow-up care and medical expanses for the treatment of the side-effect should be paid by the government under government family planning programs.

3. Family planning program through the hospitals or clinics should be strengthened.

## GROWTH OF CAPITAL REGION AND MIGRATION AMONG INTEGRATED REGIONAL SETTLEMENT AREAS

by H.S. Moon, Y.J. Han

### *Objective*

This study aims to provide basic data for formulating government regional development plans by analyzing factors related to capital region agglomeration and migration patterns of Integrated Regional Settlement Areas (IRSA).

### *Data and Methods*

This study is based on data from the Population and Housing Census report, Statistical Yearbook of thirteen special cities and provinces, resident registration and other existing research results. Percent distribution, concentration ratio, correlation,

multiple regression analysis, indirect estimation methods were used for this study.

### *Findings*

Components of population growth in the capital region are as shown in the Table 1.

The following is correlation coefficient between migrants to the capital region and other variables: Population size of province 0.71, distance 0.67, gap of job opportunity -0.76, gap of convenience facilities -0.79, gap of medical indicator -0.64, gap of higher education opportunity -0.60.

**Table 1. Components of Population Growth in the Capital Region**

unit: %

Year	Population growth due to migration	Population growth due to natural increase
1960—1966	49.0	51.0
1966—1970	73.2	26.8
1970—1975	54.0	46.6
1975—1980	64.2	35.8
1980—1985	50.3	49.7
1960—1985	58.1	41.9

The multiple regression model was applied for analysing the factors of capital region population concentration.

79 percent of the changes of the population influx to the capital region is explained by the living environment gap and 83 percent of the changes can be explained if the job opportunity gap variable is added. Job opportunity gap is the more important variable influencing the population influx rate.

Great disparity of socio-economic concentration ratio among IRSA was found. Regarding the relations between migration and socio-economic concentration ratio, concentration ratio of working age population, industrial workers, piped water facilities, medical personnel and higher education facilities show high correlation with migration.

### *Expected Utilization of Study Results*

The results of this study can be utilized for formulating balanced regional development and decentralization policy.

Among the variables attracting population to the capital region, job opportunity gap between the capital region and other regions was the most important one. So, fostering local industry development especially in the middle and south-west region is suggested.

Disparity of socio-economic variables in terms of socio-economic concentration ratio is great among IRSA. Government should make efforts to evaluate disparity and provides measures for people to settle in their local region.

## THE COMPARATIVE STUDY OF FERTILITY CONTROL EXPERIENCES IN THE REPUBLIC OF KOREA AND THE REPUBLIC OF CHINA (II)

Organized by Nam-Hoon Cho, et al

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### *Background*

In October 1985, a formal agreement was signed between the Korea Institute for Population and Health (KIPH, current Korea Institute for Health and Social Affairs) and the Chinese Center for International Training in Family Planning (CCITFP) to enhance the exchange of experiences in fertility control studies between the Republic of Korea and the Republic of China. Under this agreement, teams are to be sent to study each other's programs, and a comparative study workshop is to be held once every two years on subjects to be decided in advance. The first workshop was thus organized by the KIPH on 3-10 November 1986 in Seoul, Korea and attended by 21 participants from both sides. The first workshop focused on: 1) review of fertility control policies; 2) population projections; and 3) use-effectiveness of contraceptive methods.

The second workshop, which was planned for November 1988 in Taipei, the Republic of China, was postponed following the termination of the CCITFP and taking over the exchange program by the Maternal and Child

Health Association of the Republic of China, and again organized by the KIPH. It thus took place on 26 June through 4 July 1989 in Seoul, Korea.

### *Objective*

The objective of the workshop is to contribute to policy formulation in the population and family planning field by exchange of related information and experiences between the Republic of Korea and the Republic of China.

### *Summary of the Presentation Papers*

This workshop focused on the six subjects and they are summarized as follows.

#### 1. Future Direction of the Population Control Policies

a. Current status and future directions of family planning program in Taiwan area, Republic of China, by Te-Hsiung Sun and Ming-Cheng Chang.

b. Current status and future directions of the population control policies in Korea, by Nam-Hoon Cho and Moon-Hee Suh.

Although the family planning pro-

gram has attained its fertility decline goal and fertility in both countries has reached even below the replacement level, the family planning program should continue to be promoted not for fertility control reasons but from the point of view of social and family welfare and for the improvement of the quality of population. To avoid the sudden change in the age structure of the population and the early arrival of the aging of population, future policy measures have to be sought with careful deliberation, and to plan well ahead programs to meet the medical care needs of the aged and the labor force problems that are bound to come as a consequence.

## 2. Induced Abortion Prevalence

a. Induced abortion in Taiwan area: a report on induced abortion survey, by Chin-Yeh Chiang.

b. A follow-up survey of married women receiving induced abortion in Taipei, by Shwu-Ching Hsieh.

c. Induced abortion prevalence in Korea, by Jong-Kwon Lim, Sang-Young Lee and Hwa-Oak Bae.

Induced abortion was "legalized" in Korea in 1973 and in Taiwan in 1985. In Korea, the total induced abortion rate of married women 20-44 years of age had declined from 2.7 in 1981 to 1.6 in 1987; while in Taiwan, the same rate for married women aged 15 to 49 years had increased from 1.2 in 1984 to 1.4 in 1986. Both papers presented urge that though induced abortion is a simple and relatively safe procedure, there are side effects and

complications, and it should be regarded as an emergency means and family planning should be practiced if pregnancies are unwanted. In Taiwan, the incidence rates of induced abortion defined as the number of events occurring during a specific period of time, for married women aged 15 - 49 years had increased from 36.4 per thousand in 1984 before the legalization of induced abortion to 38.7 in 1986 after the legalization.

## 3. Breast-feeding

a. Changes in breastfeeding behaviors in Taiwan: trends and differentials, by Tzu-Mei Huang.

b. Patterns of lactation and post-partum amenorrhea in Korea, by Eung-Suk Kim, Seung-Uk Lee, and Ju-Moon Park.

Family planning should cover the promotion of breastfeeding because breast-feeding is central to both child health and fertility and acts as a biological and behavioral link between them. It is noted that about a half of Korean babies are breast-fed for about 12 months, though the tendency is that more women prefer mixed- and bottle-feedings. Whereas in Taiwan, the prevalence and duration of breast-feeding have dramatically declined from 1950-59 to 1980-85. Both studies have found that mother's education is the key determinant to the prevalence, duration and intensity of breast-feeding, and produces negative effects on each breast-feeding behavior.



#### 4. Trends and Differentials in Birth Intervals

a. Birth intervals in Taiwan: Trends and differentials, by Mei-Lin Lee.

b. Analysis of birth interval in Korea: Trends and differentials, by Young-Ja Han and Hyun-Sang Moon.

Birth interval has its demographic implications as well as its health impacts. Many studies have found a positive association between the length of preceding birth interval and the survival of children. In both Korea and Taiwan, the first and second birth intervals are around 12 months and 32 months respectively in Korea, and 10-13 months and 21-24 months respectively in Taiwan. The first interval is found to be substantially shorter than other intervals because of the absence of post-partum amenorrhea period. There is, however, a tendency that the first interval is becoming even shorter due to the increasing tendency of premarital conception. Family planning program should give more attention to the adolescents and the young aged to avoid pre-marital pregnancy.

#### 5. Sex Education in Schools

a. Implications for students' sex education in Taiwan, by Hui-Sheng Lin.

b. Implications for students' sex education in Korea, by Moon-Sik Hong and Jung-Ja Nam.

Secondary school students both in Korea and Taiwan lack some basic sex knowledge, are often not being taught

what they should know about, have fairly permissive attitudes about sexual relationships, are sexually active, want to learn more about the nature of intimate relationships between males and females, and look to schools and public health agencies for more information, as revealed by Mr. Hong, et al. and Mr. Lin in their studies in Korea and Taiwan. The level of sexual permissiveness and the increasing trend of premarital sex among young people in both countries justify an educational program in schools focusing on the physiology of reproduction, contraception, and the intimate relationship between males and females. More specifically, four different aspects of sex education program need to be supported in order to promote sex education in schools: administrative and financial support, development of training methods and training guide, development of training program for teachers, parents, and volunteer counselling mothers, and development of audio visual materials and teaching aids.

#### 6. An Experimental Trial for the Recategorization of Family Pattern in Korea, by Hyun-Seob Chang.

As an experimental trial, family pattern was recategorized to seven patterns: 1) the unmarried household; 2) the forming one generation family; 3) the expanding two generation family; 4) the three generation family; 5) the decreasing two generation family; 6) the decreasing one

generation family; 7) the disorganized household generation family.

### *Resolutions*

At the final session of the workshop, discussion was held primarily on the future role of family planning program between members of the two groups. It was agreed that:

1. family planning will continue to be promoted with more emphasis on the social and health welfare and the improvement of the quality of population, rather than on the reduction of fertility;
2. safe and effective contraceptive services will continue to be provided to those who need them;
3. to avoid the sudden change in the age structure of the population, the current policy measures with emphasis on fertility reduction have to be redirected. The Taiwan group mentioned that a slightly pronatalist policy may have to be taken to encourage more births and to discourage at the same time any pregnancy waste by 1) encouraging marriage; 2) encouraging marriage at earlier age. 3) discouraging divorce; and 4) discouraging induced abortion;
4. to avoid pre-marital pregnancies, sex education in schools should be promoted;
5. for the health of mothers and children, birth-spacing and the practice of breast-feeding should be promoted.

## INCOUNTRY SEMINAR ON SOCIAL DEVELOPMENT AND POPULATION POLICY

Organized by Ehn-Hyun Choe, et al.

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### *Background*

The country is at a turning point in population trends in several respects. With continuous decline in age specific fertility and mortality rates demonstrated in recent years, it is possible to project when Korea will reach a permanent zero growth stationery population and what the population size will be. It can also be demonstrated that various plausible demographic paths will produce roughly similar results in population size and age structure in the next 50 years or so. Therefore, the central concerns of population policy are likely to shift from fertility and population control to other issues.

Among many other areas of population concern, the related issues of urbanization, population distribution, population aging, demographic aspect of manpower, are becoming of increasing importance.

### *Objectives*

1. To foresee the changes in population size and structure following fertility decline in the future and

to propose timely population policy direction.

2. To investigate countermeasures for population problems to be raised due to changes in family structure and function, change in manpower demand and supply, and acceleration of population aging following social changes.

### *Contents*

The incountry seminar was conducted covering the following subjects on 10th May 1989.

1. Demographic transition and future population policy.
2. Population concentration in urban cities and balanced inter-regional development.
3. Changes in family structure and its impact on population growth.
4. Changing population growth and prospect of labor force.

In addition to extensive discussions on the above topics, Dr. Tatsuro Kunugi from UNFPA, New York gave a special paper on demographic change and social development in

Korea and his further suggestions.

### ***Summary and Policy Recommendations***

#### **1. Population Trend and Policy Direction**

a. Korea entered the last stage of population transition from the middle of the 1980s. Major feature of this stage is summarized as the stable decline of mortality and the drastic and continuous decline of fertility.

b. Population structure is changing from pyramid type to bell type with the age group 25-29 enlarged in 1985, and the productive population is expected to compose 70% of the total population in 2000 when the age group 40-44 is greatly enlarged.

c. In 1985, 65.4% of the total population lived in cities, and 4.15% of rural population migrate into urban areas every year. Particularly 40.9% of the total population are concentrated in four big cities including Seoul.

d. It is urgently necessary for policies to meet the structural problems of population transition and researches in the aspects of manpower development and national health improvement.

#### **2. Population Concentration in Big Cities and Balanced Development Policies between Areas.**

a. In 1988, six big cities cov-

ering only 2.8% of the total land occupied 46.3% of the total population, and the population of metropolitan areas including Incheon and Gyonggi Province reached 40.2% of the total population.

b. Six big cities occupied 47.8% of the total national production and the remnant area except Gyongbuk and Jeonnam Provinces recorded below 4%. In a while companies and banking facilities as well as the investment of social indirect capital are concentrated in urban areas.

c. Urbanization rate will reach 78.8% in 1991, 81.3% in 1996 and 82.8% in 2001 and the population in Seoul will increase to 14,000,000, about 30% of the total, in 2001.

d. It is necessary for policies to reduce the outflow of population from rural areas. It should establish long-term employment policy to absorb agricultural population outflowing from change of industrial structure and policy to develop the potential resources in the areas other than large cities. And it should distribute the life convenience facilities balancedly between areas.

#### **3. Change of Family Structure and Policy Directions**

a. Population transition and urbanization have brought the advent of the nuclear family, small-size family, childless family, family separation in the aspects of family structure, and social problems such as decrease of reproductivity, lack of socialization

of children, and decline of support for the aged.

b. It is necessary for systematic policy to meet the adolescent and aged problems and the housing problem due to the increase of nuclear family, small-size family and family expansion.

#### 4. Decrease of Population Growth and Labor Force Supply

a. Change of population structure as well as high educational enthusiasm, decline of fertility and increase of divorce rate are expected to make the labor force structure more aged, high educated and highly participated by women.

b. Policy emphasizing the reduction of population growth should be changed into the improvement of population quality and structure.



## II. HEALTH RESEARCH





## A STUDY ON MEDICAL EXPENDITURE CONTAINMENT MEASURES IN THE DEMANDER'S SIDE

by J.H. Byun, D.H. Chang  
S.O. Choi, J. H. Lee

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### *Purpose*

1. To analyze the increase/decrease factors of medical expenditure,
2. To develop medical expenditure containment measures.

### *Method and Contents*

1. A sample survey was conducted for 2,035 households in Mokpo, Boun and Okchun where national health insurance was implemented.

2. The contents of the study include: health status, medical service utilization, payment of medical fee, practice of healthy living principles and knowledge, behavior on health for the residents in the survey areas, and medical utilization status of a part of the higher spenders of medical insurance fund.

### *Results*

#### 1. Major Findings of the Survey

a. Due to the improvement of living standard and expansion of the health insurance, disease prevalence rate was significantly decreased to 16.1%. In particular, the prevalence rate of chronic diseases was drastically decreased to 5.6%.

b. Medical expenditure contribution rate derived from the increase of medical utilization was estimated to 35-40%.

During the past 15 days, the residents' visits to hospitals or clinics and drugstores appeared to be 25.6 times and 13.4 times respectively, and the ratios of hospital or clinic utilization showed a big increase instead of a decrease of drugstore utilization rate, which caused to increase the payment of medical expenditure.

c. Approximately 69% of the total household medical expenditure was paid to hospitals or clinics, 15.5% to herb-medical clinics, 15.0% to drugstores and 0.8% to public health facilities.

d. Higher medical fees were

paid for the aged and lower income group who had higher morbidity in the chronic diseases.

e. In the findings of the survey for the adults of 45 years old and above, those who practiced less than five out of 10 health living principles showed 30.5% of prevalence rate and 18.7% of prevalence rate for the group practicing 9-10 times.

f. Practice of the healthy living principles affected more in the chronic diseases than in the acute.

g. If the practice of healthy living principles is raised to higher level for the population of 45 years old or above, approximately 520 thousand people are able to prevent the diseases and 45.2% of the medical expenditure can be saved which amounts to 7 hundred billion won a year.

## 2. Strategy and Alternatives for Medical Expenditure Containment

a. In the modern society,

major health problems are the containment diseases and accidents which are affected by the living environment and lifestyle, especially healthy living practice is closely related to health and medical expenditure.

b. Most adequate political alternatives for the containment of medical expenditure from the side of demanders are disease prevention and health promotion, and efficient medical utilization based on the health behavioral change.

c. The policy alternatives for the rising medical cost containment are to develop and to introduce the health promotion programs and the incentive systems in order to induce the health behavioral change by use of education, subsidization, taxation and regulation to the target of households, schools, and working places, mass com., insurance societies, food producers and sellers and other social or religious groups which are greatly affecting health life.

## A SURVEY ON IMMUNIZATION STATUS OF INFANTS AND YOUNG CHILDREN IN KOREA

by H.R. Kim, I.H. Park  
J.M. Park, N.M. Hwang  
W.J. Lee

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### *Objective*

To find out immunization coverage rate for infants and young children in Korea and other factors related with maternal and child health.

### *Method*

A national sample survey on immunization status of children was conducted by KIPH staff from June to July 1989. Relevant information on 1,747 children aged 6 to 29 months from 19,096 households was collected through interviewing mothers of children with the use of structured questionnaire. The children included in this study were selected from 99 enumeration districts taken by three-stage stratified sampling.

### *Findings*

The coverage of pre-natal care during pregnancy of study children was 96.0% (urban 98.0%, rural 88.1%) and a total of 95.0% (98.3% for urban and 81.5% for rural) of child births

was taken place in institution.

Based on survey results, the estimation of vaccination coverage rates with 95% confidence interval were 92.7%-95.2% for BCG, 97.7%-98.8%, 95.4%-97.4%, 91.7%-94.4% and 64.4%-73.6% for DPT and Polio first, second, third and booster, 90.5%-94.3% for Measles/MMR and 88.9%-92.2% for Hepatitis B first.

Though the percentage of children vaccinated timely according to the recommended schedule was relatively high in early childhood vaccinations, but it was gradually decreased with child age. Accordingly the rates showed 85.6%, 83.2%, 77.1% and 56.3% for first, second, third inoculations and booster for DPT and Polio. The recommended interval between one and the other vaccinations was properly observed with the average interval of two months in case of first, second and third inoculations for DPT and Polio.

The utilization rates of public health facilities in child vaccination revealed 29.7%-51.1% in urban areas and 43.1%-77.9% in rural areas. Though a considerable difference

exists by area, it could be said that the child immunization services provided by public sector is highly utilized by local people, when compared with other services of public health programs.

In the context of current situation, it could be concluded that the basic immunization program for infants and young children is properly

observed by overwhelming majority of mothers. Accordingly, in relation with promotion of MCH it is recommended that the other health programs such as regular health monitoring and Rubella vaccination for school girls should be developed and strengthened along with child immunization activity.

## A STUDY ON OPERATION ANALYSIS OF URBAN PRIMARY HEALTH CARE (PHC) PROJECT IN KOREA

by J.S. Kim, H.S. Ryu  
E.J. Kim, H.S. Cho  
G.H. Gho

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### *Introduction*

Rapid industrialization has induced the migration of rural people to urban area. Such migration has created and enlarged the existing low income group or areas.

Residents of low income area have increased health risk owing to their poor living environment, low income, overwork and inappropriate health care. To promote the health of people in low income group in urban area, the PHC approaches should be adopted and strengthened. Since 1987, Seoul city government has carried out the PHC project for solving the health problems of low income people in Bongchon 5th Dong and Sanggae 5th Dong.

### *Objective*

The general objective of this study was to grasp the problems and recommend for improvement of the

urban PHC project undertaken by Seoul city government. The specific objectives were to identify the problems of managerial process of PHC project, analyze the utilization level of health care services as well as the level of health care need, and suggest recommendation for the improvement of PHC project.

### *Methods*

To meet the objectives of this study, various research methods such as household interview, visits to PHC centers and questionnaire distribution to the staff working in PHC center were applied.

A total of 1,803 households in project and control areas were visited and interviewed by field team during the period from April 19 to May 3, 1989 and 18 staffs of PHC centers were visited and assessed their activities.

## **Results**

### **1. Problem Identification of Managerial Process of PHC Projects**

It was revealed that understanding of the concept of PHC project was lack and also close cooperation was inadequate among level of policy formulation, planning and implementation of project agencies.

In addition, the feeling of responsibility of the staff working at health centers and PHC centers was lack and its reason would be derived from inadequate on-the-job training and lack of monitoring activities.

### **2. Medical Care Utilization and Need of Health Care**

Possession rate of own house of surveyed areas was very low (38.2%) and the number of room per household used was one to two rooms.

The employment status of the head of household disclosed that 88.6% had a job and the remaining 11.4% were unemployed.

The average monthly income was 502,770 won, however, 30% of the total income was less than 300,000 won in Bongchon 5th Dong area, and 39.9% in Shinrim 7th Dong area.

41.3% of households had debts, which was consisted of household expenses (33.4%), income formulation (22.7%) and medical care cost

(15.9%), etc.

Prevalence rate of diseases during the preceding 30 days before the date of the household interview was 387.7 per 1,000 persons. The prevalence rate of female was higher than that of male.

8.9% of the sick persons wasn't receiving any medical treatment, and the main reasons of which were lack of economic availability (43.3%) and feeling of non treatment needed (33.7%).

62.2% of the surveyed population was aware of the establishment of PHC center in their resident areas, and some half of them visited this PHC center actually (33.6%).

Main purpose of visits to PHC center was to get the child care such as immunization, check-up of growth and development, maternal care and asking for prevention of diseases and promoting health.

It was revealed that 90% of the respondents was expecting health care consultation, simple treatment, infant care, maternal care and any kinds of health maintenance measures.

## **Conclusion and Recommendation**

According to the study results, it was found that the prevalence rate of chronic diseases and the disabled in low income resident areas was higher than that in the other areas.

Therefore, the health status of this group should be improved through PHC approaches. In addition, in order to prevent the diseases and

promote the health of those people, the health center as well as health subcenter or PHC center's activities should be strengthened. Furthermore, under the national medical insurance system for the entire population, preventing diseases and also promoting health of the people in country are indispensable to control the increase of health care cost. PHC approaches is only means to solve this problem.

Based on these study findings, proposals for adopting urban PHC are as follows: 1) establishment of health sub-center for providing

appropriate health care to the urban low income groups under the guidance of health center; 2) utilization of medical doctors and nurses at the health sub-center covering more than 10,000 population, while the area covering less than 10,000 population should be served by full-time nurses with consultation of medical doctors from the health center; 3) revision of health center law to assure the autonomy of health center director for effective management of various health programmes, staffs and budget for operating health center.

## RECOMMENDED DIETARY ALLOWANCES FOR KOREANS, REVISED 1989

by Korean Nutrition Society  
H.R. Kim, Y.Y. Kim

### *Objective*

Recommended Dietary Allowances (RDA) are the level of intake of essential nutrients considered to be adequate to maintain nutriture among almost all normal persons.

RDA are used as a reference for planning food supplies for population groups; and for developing nutrition education programs.

The objective of this study is to establish RDA for Koreans, which are the basis for planning of national food and nutrition policy.

The specific purposes of this study are as follows:

1. To revise Korean RDA appropriate to our local conditions in accordance with the shift of socio-economic circumstances, promotion of physical standard of the population and increase in new knowledge of nutrition science,

2. To indicate the main foods in which each nutrient is found and requirements of each nutrient for various age groups and for pregnancy

and lactation,

3. To suggest dietary guideline for Koreans, which placed emphasis on prevention of disease and promotion of health.

### *Approaches*

1. Relevant national data on nutritional metabolism as well as international reference materials have been collected and compared. In addition, reports on physical standard and nutritional status and changing life style such as reduced physical activity are collected and reviewed.

2. KIPH (former KIHASA) organized and coordinated 9 following expert committees: energy, protein, vitamins (water-soluble, fat-soluble), minerals (macro-, micro-nutrients), physical standard, basic food patterns and food composite tables.

A total of 21 professors and specialists from the Korea Nutrition Society were involved in this project.

3. Final conclusion on the requirement level of each nutrient has



been drawn from continued reviews and adjustment through meetings among expert committee members.

### *Findings*

1. Energy allowances have been set as 2,500 kcal/day for a man and 2,000 kcal/day for a woman engaged in moderately active occupation. Protein requirements are 70 g/day for a man and 60 g/day for a woman.

2. Vitamin requirements for the following are suggested: retinol (vitamin A), vitamin D, ascorbic acid (vitamin C), thiamine (vitamin B<sub>1</sub>), riboflavin (vitamin B<sub>2</sub>) and niacin.

3. The absorption and deficiency problems connected with an inadequate intake of calcium and iron in Korean traditional diets are also mentioned.

4. Recommended allowances for essential nutrients in the revised RDA are as shown in the following table.

This report also suggests following guideline for Koreans:

- 1) Eat a variety of foods.
- 2) Keep ideal body weight.
- 3) Consume enough protein.
- 4) Keep fat consumption at 20% of energy intake.
- 5) Drink milk everyday.
- 6) Reduce salt intake.
- 7) Keep good dental health.
- 8) Restrain alcohol and caffeine consumption, and smoking.
- 9) Keep the harmony between the diet and daily life.
- 10) Enjoy the meals.

This report covers several pattern diets in accordance with the RDA and food composition table for the users' convenience.

## Recommended Daily Dietary Allowances for Koreans, Revised 1989

Category	Age (years)	Weight (g)	Height (cm)	Energy (kcal)	Protein (g)	Vitamin A (R.E.)	Vitamin B <sub>1</sub> (mg)	Vitamin B <sub>2</sub> (mg)	Niacin (mg)	Vitamin C (mg)	Vitamin D (μg)	Calcium (mg)	Iron (mg)
Infants	0~3 mo.	5.5	58.5	800	25	350	0.40	0.48	6.4	35	10	400	10
	4~6 mo.	8.4	67.5	900	25	350	0.45	0.54	7.2	35	10	400	10
	7~9 mo.	9.5	76.0	1,000	30	350	0.50	0.60	8.0	35	10	400	15
	10~12 mo.	10.4	79.0	1,100	30	350	0.55	0.66	8.0	35	10	400	15
Children	1~3	12.6	87.0	1,200	35	350	0.60	0.72	8.0	40	10	500	15
	4~6	19.0	110.0	1,500	40	400	0.75	0.90	10.0	40	10	600	10
	7~9	26.0	130.0	1,800	50	500	0.90	1.08	12.0	40	10	700	10
Males	10~12	36.0	144.0	2,100	60	600	1.05	1.26	14.0	50	10	800	15
	13~15	51.0	161.0	2,600	80	700	1.30	1.56	17.0	50	10	800	18
	16~19	59.0	169.0	2,500	75	700	1.25	1.50	16.5	55	10	800	18
	20~29	64.0	170.5	2,500	70	700	1.25	1.50	16.5	55	5	600	10
	30~49	65.0	168.5	2,500	70	700	1.25	1.50	16.5	55	5	600	10
	50~64	63.0	168.0	2,200	70	700	1.10	1.32	14.5	55	5	600	10
	65~	61.0	167.0	1,900	70	700	1.10	1.20	13.0	55	5	600	10
Females	10~12	37.0	145.0	2,000	60	600	1.00	1.20	13.0	50	10	800	18
	13~15	48.0	155.0	2,300	65	700	1.15	1.38	15.0	50	10	800	18
	16~19	52.0	158.0	2,200	60	700	1.10	1.32	14.5	55	10	700	18
	20~29	52.5	159.5	2,000	60	700	1.00	1.20	13.0	55	5	600	18
	30~49	55.0	158.0	2,000	60	700	1.00	1.20	13.0	55	5	600	10
	50~64	54.0	156.0	1,900	60	700	1.00	1.20	13.0	55	5	600	10
	65~	53.0	156.0	1,600	60	700	1.00	1.20	13.0	55	5	600	10
Pregnancy	First half			+150	+30	+ 0	+0.40	+0.30	+2.0	+15	+5	+400	+2
	Later half			+350	+30	+100	+0.40	+0.30	+2.0	+15	+5	+400	+2
Lactation				+700	+30	+300	+0.60	+0.30	+6.0	+35	+5	+500	+2

## DEVELOPMENT OF HEALTH INFORMATION SYSTEM FOR CITY HEALTH CENTER

by H.A. Park, J. S. Choi  
H. J. Hong, M.H. Lim  
G.H. Cho, S. I. Joo

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### *Objective*

1. To improve operation and management of the health center activities through computerization.

2. To provide necessary information for planning and evaluation of public health policy.

3. To contribute to development of the national health information system.

### *Method*

A process of development of health center information system at city level is divided into planning, development, and operation and maintenance stages. These three stages can then be divided into five steps according to system development life cycle, namely, strategic planning, system analysis, system design, system implementation and system evaluation. Detailed activities and outputs of these five steps are described in the following table.

### *Results*

This project is to develop and evaluate a health center information system, and the study period was about 2 years from 1988 to 1989. The summary of result according to five steps of system life cycle is as follows.

#### 1. Strategic Planning

District Dobong was selected for the demonstration site. An IBM AT compatible computer and dBASE III were selected for the programming. Six activities - family planning, maternity and child health, tuberculosis control, primary care services, management of equipment and supplies, and management of pharmaceuticals - were selected for computerization through internal and external environment analysis of demonstration site.

#### 2. System Analysis

Detailed analyses of 6 activities selected for computerization using various analysis techniques (such as flow charts of visitors and forms,

forms analysis, HIPO, data element analysis) were performed. User's request toward information system was collected and related problems were identified.

### 3. System Design

Logical design of system was done. Input/output forms and data base files were designed. Actual programs were written and user's manual was prepared.

### 4. System Implementation

Newly developed system was set up in the demonstration site. Staff members of the demonstration site were trained.

### 5. System Evaluation

System was evaluated in terms of user satisfaction, system usage, system reliability, and simple response time. Upon evaluation programs, if necessary, were modified.

### *Significance*

In a narrow sense, it is expected that health center information system will improve the quality of health center activities and service for the public by reducing manual work load through minimizing unnecessary duplications of data among different forms.

In a broad sense, it is expected that health center information system will help health policy making by producing quick and concise reports of health statistics and even health

indicators when the health center information system is spread throughout the whole country and connected one another as one communication network.

In addition, health center information system as a part of regional health information system will contribute planning and evaluation of public health by connecting city, county health center and health sub-centers. Health center information system will perform a role of overall information provider for public health activities in the community by connecting regional health insurance system and hospital information system.

### *Recommendations*

In order to make the newly developed information system more effective, following measures should be considered.

1. In order to produce meaningful information, it is necessary to improve the reliability of the raw data by educating the public health workers.

2. Since forms being utilized at health center lack connection with its activities and integration of information, they need to be reorganized.

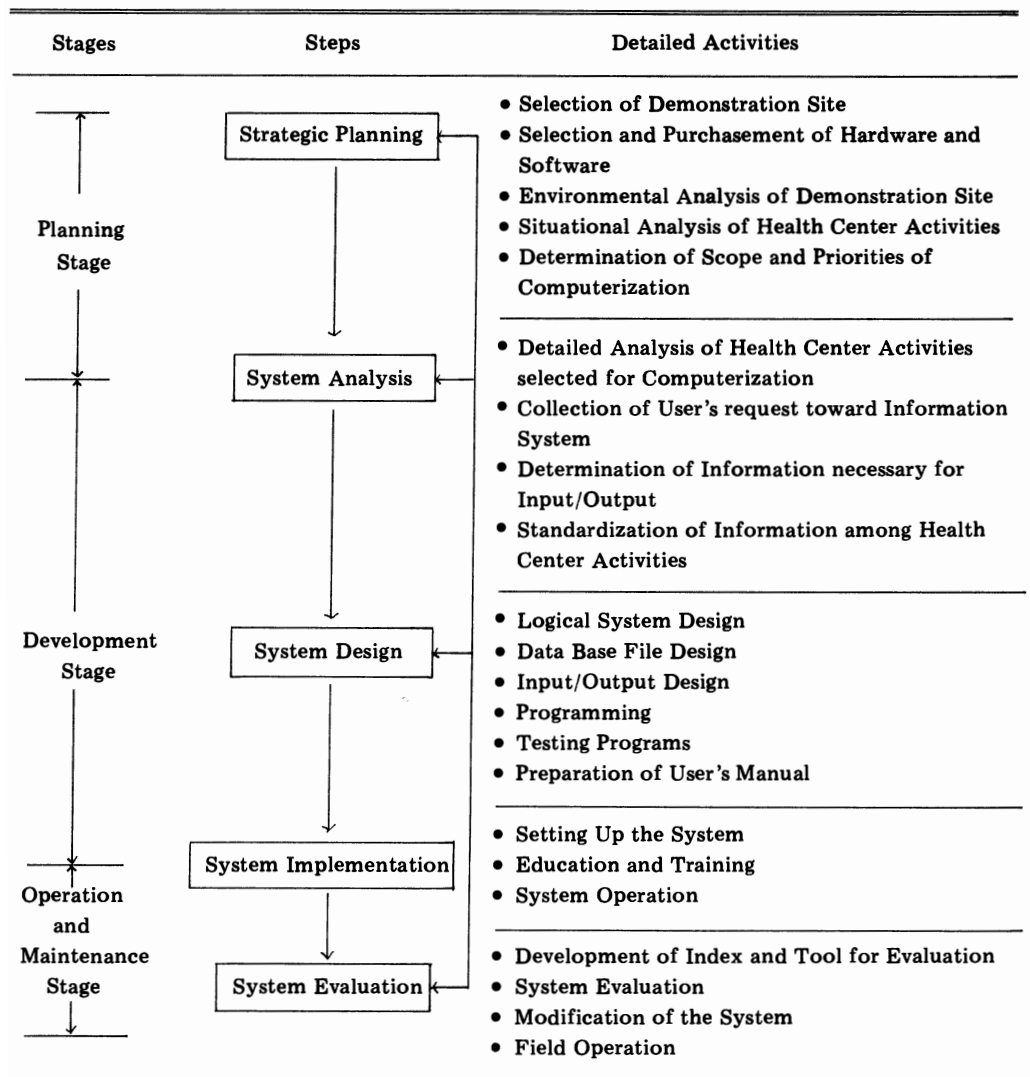
3. When the information system is implemented at health center, a computer personnel needs to be stationed for software revision and

update as well as user training.

4. In order to use the output

produced from the information system directly for reporting, administrative action must be preceded.

### System Development Life Cycle of the Health Center Information System



## RESEARCH IN THE SCHOOL HEALTH EDUCATION (II) — Need Assessment —

by J.J. Nam, K.H. Chung

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### *Purpose*

The purpose of this study is to assess students' health educational needs using Green's PRECEDE framework. The more specified research objectives are :

1. To identify the specific health problems that appear to be contributing to the health problems,
2. To identify the specific health related behaviors that appear to be linked to the health problems,
3. To identify the factors that have potential for affecting health behaviors; predisposing factors, enabling factors, and reinforcing factors.

### *Methods*

The subjects were selected from Seoul City, Chungbuk, and Jeonbuk Provinces. The proportional stratified sampling method was used in allocating the number of subjects for each students group (primary, middle, and high school students) and regional distribution (Seoul City, other cities and rural areas).

Following this procedure, 14,361 subjects consisting of 4,653 primary school students, 5,209 middle school students and 4,499 high school students were selected.

Questionnaire was developed by researchers focused on adolescents health problems: accidents, nutrition, physical fitness, dental health, smoking and drinking, drug use and mental health. The field survey was conducted from 19 June to 14 July 1989 by 12 experienced interviewers.

### *Results of the Study*

1. Female and Seoul students were more concerned with their health and tend to believe that they were responsible for their health engaged in protective health measures.
2. During the last 3 months, 74.1% of the students had experienced headache. Female students experienced headache, stomach ache, and constipation more frequently than male students.
3. About 1/4(22.4%) of the students wore glasses.

4. About 2/3(74.5%) of the students answered that they took a bath more than once a week. However, only 27.1% of the students indicated that they wash their hands before every meals.

5. One out of four students (25.7%) had involved in accidents during the last year. Male students' accident rate was higher (32.4%) than female (18.8%).

6. Students' intake of oils and fats and dried small fish, the leading source of calcium was not adequate.

7. Majority of students (53.1%) were not eating breakfast regularly and the main reason was the lack of time.

8. Students had positive attitude toward physical exercise however, their actual practice rate was low.

9. More than half (56.4%) of students had some tooth decay and about half (53.4%) of the students did not visit dentist unless they had dental problems.

10. The adolescent students (middle and high school students) who experienced alcohol drinking was higher in the males(29.2%) than in the females (11.4%) and was higher among the rural students (23.3%) than the Seoul students (18.7%).

11. Among the adolescent stu-

dents, 8.1% was smoking cigarette. The rate of current cigarette smoking was higher in the males (14.8%) than in the females (1.2%) and was higher among the high school students (15.6%) than the middle school students (1.6%).

12. The pain relievers (Saridon, Begorin, Penzal etc.) were the most commonly abused drugs by the adolescent students. Adolescent students who experienced Narcotics (Marijuana, Morphine, Opium, and Philopon) was 1.2% and Hallucinogens (Bond and Thinner sniffing), 2.8%. The hallucinogen experiencing rate was higher in the males (3.9%) than in the females (1.6%) and was higher among the rural students (4.3%) than the Seoul students (2.1%).

13. One out of five middle and high school students (20.4%) had attempted suicide and 62.6% of the students experienced suicidal impulsiveness.

14. The self-concepts of the students were significantly different by age, sex, and socio-economic status: middle school students showed more positive self-concept than high school students; the student with higher socio-economic status had higher self-concepts than those from the lower class family; male students showed positive self-concept than female students.

15. There was a significant correla-

tion between risk taking behaviors (drinking, smoking and drug taking) and self concepts: students who experienced the more risk taking behaviors had significantly the lower self-concepts.

16. High school students showed more psychological distress (depression, anxiety, hostility) than middle school students. Students with smoking, drinking or drug taking showed more psychological distress symptoms.

### *Recommendations*

1. As identified through this study students are facing many health problems such as high rate of accidents, poor dietary, general hygienic problems, poor sight, high rate of dental decays, smoking, alcohol, drug use, and emotional problems.

However, problem identification is just the first step so it is necessary to develop specific educational interventions to improve student's health and text books should be revised based on the identified student's needs.

2. Health education teachers should be alert to identified specific behaviors and give every efforts to reinforce students health enhancing behaviors.

3. The health education teachers should be more concerned with factors related to students' smoking, drinking, drug use and mental health.

4. School health education should be more adequately supported, organized and delivered by the school administrators and policy makers.



## DEMONSTRATION PROJECT FOR THE DEVELOPMENT OF PERSONAL HEALTH HANDBOOK

by Y.Y. Kim, W.J. Lee  
K.S. Baik

### *Objective*

This project aimed to develop a Personal Health Handbook useful to management of personal health, then evaluate whether it can contribute to promote one's health, and find out alternative methods which will promote utilization of the hand book.

### *Outline*

1. First period
  - a. Period: July 1986 - December 1987 (16 months)
  - b. Area: Wonsung 2-Dong, Chonan-Si, Choongchungnam-Do: Sosoo-Myon, Okgu-Kun, Cholabuk-Do
  - c. Contents:
    - 1) Developed Personal Health Handbook, then distributed the handbooks to 12,511 persons over 7 years old.
    - 2) Conducted public information program.
2. Second period
  - a. Period: March 1987 - June 1988 (15 months)
  - b. Area: Moonsung-Dong, Chonan-Si, Choongchungnam-Do:

Choosan-Myon and Puan-Myon, Puan-Kun, Cholabuk-Do

- c. Contents:
  - 1) Reduced the size of the handbook; from 10.2 x 15.0cm to 9.4 x 14.4cm
  - 2) Expanded the contents of the handbook
  - 3) Distributed the handbooks to 25,455 persons over 7 years old
  - 4) Provided physical examination to the dwellers in the demonstration area
  - 5) Conducted public information program.
3. Third period
  - a. Period: May 1988 - June 1989 (13 months)
  - b. Area: Wonsung 1-Dong and a part of Wonsung 2-Dong, Chonan-Si, Choongchungnam-Do: Kyehwa-Myon and Sangso-Myon, Puan-Kun, Cholabuk-Do
  - c. Contents
    - 1) Produced the handbook in three kinds by age of use
    - 2) Expanded the contents of the handbook greatly
    - 3) Reduced the size of the

handbook

4) Distributed the handbooks to 26,326 persons over 7 years old

5) Reinforced the public information program.

### *Results*

1. Keeping rates were high in the range of 73.3—79.4%.

2. Carrying rates were very low in the range of 0.4—1.6%.

3. Rate of referring handbooks was moderate in the range of 46.6—54.3%.

4. Recording rate of the results from physical examination was rela-

tively high in the second period in comparison with the other periods, because of the provision of physical examination program by government.

5. Recoding rates of the medical care was somewhat low in the range of 0.5-1.5%.

6. These results above suggest that health behavior of the people could not be changed in short period; people still have treatment-centered way of thinking.

### *Effects Expected*

Basic policy data for the improvement of national health were provided.

## SEMINAR ON HEALTH ISSUES OF KOREAN YOUTH AND THEIR COUNTER-MEASURES

Organized by N. H. Cho, M. H. Seo

### *Objective*

To study the problems of the adolescents' health and their counter-measures through reviewing various adolescent related research and program, and further to propose new directions of adolescent program in 1990s.

### *Contents and Method*

The seminar sponsored by the World Health Organization (WHO), was held during April 24-25, 1989 with 50 specialists and government officials engaged in the juvenile delinquency problems. There were 3 presentations in the workshop.

The seminar placed emphasis on the mental health issues of adolescents in relation not only to their physical growth, but also in relation to the changing socio-cultural environments that affect the adolescents' mental health, including the socio-cultural factors that are involved in sexual mores of the adolescents and the drug addiction.

### *Summary of Papers*

#### 1. Mental Health Issues of Korean Youth and Their Counter-measures

The major characteristics of the adolescence are 1) the emergence of physical changes, including the sexual maturity; 2) the emotional and psychological independence from parents; and 3) the establishment of ego-identity. Mental health problems (psychopathology) are conceptualized as failure to achieve these developmental tasks which result in emotional conflicts that usually result in various behavioral problems.

A review of psychiatric literature in Korea reveals that 31.5% of a sample of 190 high school students suffer from various forms of mental disorders and 87% of all these students reported more than one kind of emotional-behavioral problems. Smoking and drug abuse are reported to be increasing among Korean adolescents.

Some of the social factors interfering with adolescent development are: 1) lack of attention to personality development of adolescents, their turmoil and their search for ego-identity in high school days; 2) confusions and conflicts in value orienta-

tion by rapid economic growth and industrialization, and recent political disturbances; 3) changes in family structure from a large extended family to a small nuclear family, inevitably various changes in family relationships; 4) exposure to adult oriented mass media and lack of community control; and 5) lack of trained mental health specialists for adolescents who can provide counseling services.

The following recommendations are made to effectively deal with mental health problems; 1) strengthening education for parents on adolescent needs and to provide appropriate help to adolescents in their efforts to help solve adolescent problems; 2) promoting a balanced, integrated development in physical and psychological as well as in the intellectual domain for adolescents; 3) changing educational system in such a way as to make it possible for the adolescents to pursue and achieve healthy ego-identity, and find meanings and goals of personal life and their role in the community and society; 4) controlling of mass media to reduce or eliminate social pathogenic factors at the level of community resulting from the uncontrolled exposure of adolescents to mass media.

## 2. Trends and Strategies on the Drug Abuse and Delinquency of Korean Youth

The respondents were 2,700 junior and senior high school students, 605 working youths, and 916 delinquent youths. The present patterns of

drug abuse are summarized as follows:

a. The percentage of youth who smoke was 35% in the student group, 32% in the working youths group, and 94.4% in the delinquent youths group.

b. 50.3% of students, 71.6% of working youths, and 93.3% of delinquent youths experienced drinking alcohol beverages.

c. The percentage of those who used tonic(non-alcoholic, caffeinated beverages) at least once was over 90% in all three groups.

d. About 70% of each group used sedative and the proportion of working youths who used sedative was higher than that in other groups.

e. Those who used stimulants accounted for around 15% in each group.

f. Somewhat less than 5% of students and working youths, and 28% of delinquent youths, used tranquilizers.

g. The users of hypnotic amounted to 0.4% among students, 2.6% among working youths, and 13% of delinquent youths.

h. Those who have used marijuana indicated 0.7% of students, 0.8% of working youths, and 13% of delinquent youths.

i. The percentage of glue-sniffing was 3.7%, 5% among students group and youths group respectively, but the proportion was unusually high, at 40.7% among delinquent youths group.

Drug abuse among Korean youths is low relative to that of western

youths. Moreover, early drug abuse is evident, and it appears to have a close connection with adolescent deviant behaviour.

Following recommendations are made: 1) There should be a periodic evaluation of drug abuse among young people as well as of the treatment and rehabilitation of drug abusers. 2) The method of punishing drug abusers should be focused on the prevention oriented rather than punishment oriented measures. 3) Drug prevention education should be instituted for youths, their parents and the persons related to the drug use. 4) Rehabilitation centers for the drug addicts should be built at the province level.

### 3. Sexual Problems of Korean Youth and Their Countermeasures

This paper focuses on problems of adolescent sexuality in this country and considers the countermeasures for the existing problems.

Amongst the problems are: 1) increasing younger age of the adolescents who start sexual intercourse; 2) non-use of contraception; 3) unwanted pregnancies; 4) increase in the number of induced abortion, and 5) increase in the number of unwanted children and unmarried mothers.

Even among the unmarried female factory workers, only 42.5% replied they know of the condom, and 25.1% and 23.1% said they had knowledge of spermicide and menstrual regulation respectively.

Among the middle school students 0.8% said they had experience in sexual intercourse, while 7.3% of the high school students reported having had sexual intercourse, 46.7% had more than one sex partners. Only 39.1% of male students and 18.9% of female students among those with sexual intercourse experience have used contraceptives, mostly condoms and oral pills. 45.1% of female factory workers with sexual intercourse experience used contraceptive such as pills, condoms and rhythm methods.

The pregnancy experience rate among the female factory workers who had experience in sexual intercourse is 29.5%, which is 11.1% among the total respondents.

In order to cope with the problem of adolescent sexuality, a drastic and strong policy measures should be taken by the government. The most effective countermeasures to the adolescent sexual problems appear to be education. The sex and population education in the school is very much in need. In addition, sex education in the school is very much in need. In addition, sex education program through mass media and at the job site should be promoted for a healthy development of adolescents' sexual behavior. Also, the existing national family planning program, which has focused on the married couples, should be extended to the unmarried people in its scope and contents of the program.

### *Policy Recommendations*

For a better implementation of countermeasures against the adolescent problems, the following measures are recommended.

First, a long-term measure should be studied, and better management system which includes planning, evaluation, and supervision should be established so that efficient information gathering could be made possible.

Second, a system should be worked out where by a better coordination between government agencies involved in adolescent issues could be established.

Third, a long-term planning should be made, in which the training of professional manpower and the expansion of the facilities for rehabilitation and treatment of the adolescents.

Fourth, a greater emphasis should be placed on adolescent issues in the five-year socio-economic development plan of the government.

Fifth, efforts should be made to

get rid of the many social institutions that considered to be factors creating adolescent problems, like the current college entrance examination.

Sixth, major revisions to the existing school textbooks should be made so that adolescent could better absorb the diversified value systems of the information society that differ from those of the traditional society.

Seventh, the parent-teachers association (PTA) should be strengthened in its function for the use of in studying adolescent problems, since most adolescent problems are directly related to the adolescents' parents and their teachers.

Eighth, a fuller utilization of the existing health worker network should be made.

Lastly, efforts should be made to bring about a better condition between private organizations working in the field of adolescent problems, and greater support should be given to them.

**WORKSHOP ON HEALTH MANPOWER PLANNING**  
**— Dental Health and Oriental Medicine Manpower,**  
**Medical Technicians and Nurse Aids —**

Organized by K. Y. Song, et al.

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*Objectives*

To exchange and share views with the representatives of professional organizations, academic circles and policy makers on the long term projection for the demand and supply of health manpower which will be conducted in 1990 by the KIHASA. Detailed objectives of the workshop can be summarized as follows:

1. To set up policy directions for oriental medicine doctors' service and dental health under the system of medical insurance for all the nation
2. To analyze supply and demand and long-term projection for dental health manpower (dentists, dental hygienists and dental technicians)
3. To analyze supply and demand of oriental medicine doctors and long-term projection
4. To analyze supply and demand of medical care plan.

*Method*

The workshop was conducted from 25-26 July 1989.

*Results*

1. Dental Health Manpower
  - a. Dentist: The total number of dentist in Korea in 1985 was 4,790 which means the ratio of dentist per 100,000 population was 11. This is expected to be increased to 39 by the year 2005.
  - b. Dental hygienist: It is estimated that a total of 19,900 dental hygienists will be in demand by the year 2005.
  - c. Dental technician: Korea's 1989 dental technician ratio per dentist is 0.79. The average ratio of the ten advanced countries is 0.38.
2. Oriental Medical Doctor
  - a. Demand for oriental medical doctors is estimated at 17.5 percent of the occidental medical care demand (0.133 time of visit to oriental medical institution per person annually).

b. In 2004 the demand for oriental medical doctors can be estimated as 13,580 persons. The estimated number of demand is very close to that of the expected number of the employed (13,300).

### 3. Medical Technicians

a. Radiological technicians: In 2005, the difference between supply (32,030) and demand (12,530) is thought to be 19,500. It means the over-supply of radiological technicians.

b. Physical therapist: The estimated number of licenses issued in 2005 will be 26,829 and the total demand will be 2,830. There will be a great difference between supply of and demand for physical therapists in 2005.

c. Clinic pathology technician: The number of licenses issued in 1989 is estimated to be 1,500, and in 2000 the total number of licenses issued will be 31,360. In case of freezing the present number of supply there will be a great difference in 2000 between supply and demand, that is over-supply.

### 4. Nursing Aid

a. It is estimated that the annual total number of graduated nursing aids of 5,752 will be continued until the year of 2,000, and the total produced number of nursing aids for that period except all losses will be 79,700.

b. The demand for nursing aids in 2000 is estimated at 41,800-53,800. Therefore nursing aids will be

supplied too much even though the current level of supplying capacity will be continued.

### *Conclusions*

1. Common problems which are related to health manpower planning can be summarized as the scarcity of data, lack of information on the employment and loss of health manpower, difficulty in setting up norm for the estimate of demand, change of roles and functions of health manpower, inappropriate curriculums of the health related colleges, etc.. The health manpower which we have discussed at this workshop is closely related to the manpower planning of the medical doctor and nurse. Therefore, the workshop became a worthwhile opportunity to recognize again the need for preparing a comprehensive manpower planning including the medical doctor, nurse, pharmacist and all the health manpower.

2. The common interest, views and recommendations of the professional organizations were exchanged. All the valuable information such as problems related to the manpower which are being faced by the professional organizations and countermeasures, actual conditions of the complication with other health manpower, status of the mutual cooperation amongst the health manpower, etc., will be used by the KIPH as the valuable information in mapping out health manpower planning.



## NATIONAL WORKSHOP ON THE HEALTH INSURANCE EXPANSION AND MCH SERVICES

Organized by Y.Y. Kim, et al.

### *Objective*

1. Review the status of MCH services.
2. Predict the effect of national health insurance expansion to MCH services.
3. Explore the direction of MCH services development.

### *Method*

The workshop was conducted during March 3-4, 1989 with the participation of a total of 30 participants, experts in health insurance and government officials. After the keynote speech by Director-General of Public Health Bureau, Ministry of Health and Social Affairs, three topics were presented and panel discussions followed.

Topics presented were: 1) level of MCH services; 2) the effect of health insurance expansion to MCH services; and 3) linkage measures of MCH services between public and private sectors. Problems on the above issues were identified and alternatives were discussed.

### *Summary and Recommendation*

1. Problems and Alternatives Discussed
  - a. Levels of MCH services: Policy priority should be put on the selection, training and deployment of MCH professional manpower and the MCH services should meet the requirement of the community.
  - b. Advantages and disadvantages of Caesarean operation and the necessity of breast feeding should be trained to private sector MCH facility health workers through MCH training program.
  - c. MCH referral system should be established in order to effective treatment of risky pregnant women and newborn children.
  - d. MCH indices and statistics production should be systemized through the compulsory reporting system of pregnant women registration and various death reports.
2. Health Insurance Expansion and MCH

a. To provide effective MCH services according to the expansion of health insurance, a recompensation system should rather be introduced to encourage MCH health workers than instructing or training them.

b. To prevent excessive treatment in private sector MCH facilities in accordance with the health insurance expansion, the function of public sector health facilities should be strengthened and pregnant women and infants should be induced to public sector.

c. To increase the facility delivery rates, cash benefit for home delivery should be excluded from health insurance payment and expenses for prenatal or postnatal care should be paid by the insurance.

### 3. Linkage Measures of MCH Services between Public and Private sectors

a. Public sector MCH programs should strengthen the preventive side including pre and postnatal care, public relations, immunization and consultation, etc. and linkage measures with private sector should be developed.

b. Public sector should sublimate quantitative management of MCH service which is called target system and qualitative management of the projects should be encouraged.

c. Information exchange system between public and private sectors should be developed in order to raise the utilization of comprehensive MCH centers.

### **III. SOCIAL WELFARE RESEARCH**



## A STUDY ON COST-SHARING IN KOREAN MEDICAL INSURANCE SYSTEM

by I.C. Noh, S.C. Kim,  
C.S. Lee, H.K. Han

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### *The Purpose of Study*

The purpose of the study is to analyse the actual situations as regards cost-sharing as applied to medical care, and also ascertain the reasons for the introduction of cost-sharing and its consequences. It is also designed to examine the aspects of the non-beneficial portion of medical care cost. Based on various investigations, alternative to overcome some critical problems arising from cost-sharing scheme will be suggested.

### *Methodology*

The paper tries to develop theoretical underpinnings for cost sharing in medical care. Study may be conducted to examine impacts of the cost-sharing scheme on utilization rates of out-patient care by age, disease type of medical care facilities, income levels, etc.

Data are presented on utilization at the Korea Medical Insurance Corporation for government employees and private school teachers, and on utilization by income levels at the Seoul First District Society for

industrial workers and Kanghwa regional society for self-employed residents. Data for non-beneficial portion of medical care cost consist of 4,602 cases which were claimed by patients against the medical care costs during 1983-1989.

### *Results*

1. The effective rate of patient's charge to total medical cost was shown at 35.4 percent in 1988 (44 percent in case of out-patient cost). If including the non-beneficial portion, the ratio appeared to be approximately 50 percent, which may be felt relatively high under the social insurance scheme.

2. A copayment (flat payment) introduced in 1986 resulted in a large decline for the first year, and a slightly decreased utilization rate of outpatient care for the second year. These declines were short-lived and utilization returned to previous levels on the two years after the flat payment was implemented.

3. Such a substantial deduction,

in particular, resulted in 5-14 years old group, type of frequent disease, low income group, and hospitals. It is also found that consumers utilize more clinics relative to hospitals.

4. An additional enforcement of the flat copayment had a negative impact on days of visit, but positive on days on medication per case. It may be further required to be tested.

5. Two steps in 1986 were made at the same time on purpose to stabilize the medical insurance financing; one was to introduce a flat payment to the existing cost-sharing devices, the other to increase premium rates. It is analyzed that any one might be enough to achieve the purpose.

### *Implications*

The financing of Korea medical care insurance system has been characterized by a low premium and high cost-sharing. Such a strategy might be evaluated in a good sense, in that the goal of universal coverage was realized in 12 years after the medical insurance scheme was partially implemented in 1977.

The cost sharing should be modified in the short run to ensure accessibility to medical care by means of the differentiation allowed for in the cost-sharing regulation, granting derogations in specific circumstance relating to the persons with either low incomes or over 65 years old.

In the long run, however, it is necessary that a new financial strategy be established in a more equitable financing manner, that is, a high premium rate and low cost-sharing.

## STUDY ON RENOVATION OF MEDICAL AID PROGRAM IN KOREA

by B.R. Chung, K.S. Kim

### *Objective*

The present medical aid program has raised many problems since it became effective in 1977. The purpose of this study is to provide renovation measures for better medical aid program through analyzing the actual status of, and the beneficiary's response to the program.

### *Methods*

To achieve the above goals, the areas of the study were divided into four parts: allocation, provision, finance, delivery system. The main study points are as follows:

1. Is the selection of beneficiaries reasonable?
2. Don't beneficiaries feel stigma when they use the medical aid program services?
3. Do beneficiaries feel satisfied with the provided medical services?
4. Is the medical care delivery system convenient for beneficiaries?

5. Are beneficiaries' shares in total expenses proper?

6. Is the medical fee reviewed properly by experts?

The study adopted two approaches. One is to review literatures and the other is sample survey covering 600 households in 32 regions.

### *Findings*

1. Allocation: There is no specific and reasonable standard for the selection of the beneficiaries. The selection of beneficiaries used to be done by the recommendation of such non-experts as chiefs of 'Ban' or 'Tong', or staff of 'Dong' offices. Means test is difficult due to the absence of specific standards and professional knowledge.

2. Provision: While inpatient utilization rate of medical aid program is 5.5 times higher than that of the medical insurance program, outpatient utilization rate of medical aid program is 77.5% of that of medical insurance program. 42.7% of the beneficiaries are dissatisfied with the medical

service level of medical aid program and 76.4% feel discriminated because of the lower medical fees.

3. **Delivery system:** Since only 53.1% of the total medical institutes were designated as medical institutes for medical aid program and are located only in 57 medical regions, it is inconvenient for users to find medical care.

4. **Finance:** The fund for medical aid program has been operated at a deficit due to the insufficient budget, increases of users, treating period and medical fee.

### ***Policy Recommendations***

For better medical aid program, it is necessary:

- to make logical and objective standards for the selection of the beneficiaries,
- to keep consistency in applying the program,
- to keep equality in the management of the beneficiaries,
- to provide high quality of medical services,
- to actualize the medical fee in medical aid program,
- to reform the pay system of fund for medical aid program,
- to secure enough fund for medical aid program,
- to increase the number of medical institutions designated for medical aid program,
- to unify medical fee review system, and
- to find out measures to refund overdue medical fee.



## LONG-TERM PROJECTION MODEL FOR THE NATIONAL PENSION SYSTEM (I)

by K.B. Chung, S.W. Ryu

### *Objective*

The purpose of this study is to develop a national pension projection model under the assumption that the ongoing system will not be reformed in the projection period (1988-2050) and forecast the long-term pension financial status for using as a tool and basic data for modifying the system properly.

### *Methodology and Contents*

1. System analysis and long-term projection model construction of national pension system
2. Literature review of social insurance financing method
3. Programming and data collection required
  - programming language: MISFTN (Micro-Soft Fortran)
  - computer type: DAEWOO PRO-3000, AT
4. Forecasting the financial status of national pension system (1988-2050)
  - three assumptions for the

basic rates (interest of fund, wage increasing rate, increasing rate of CPI, increasing rate of the insured considering band of variation)

### *Results*

#### 1. Financing Method of Social Insurance

The financing methods of social insurance are classified into two theoretical types: capitalization method and assessment method. These are ideal types. As in the real world modified types are applied according to each nation's social characteristics, in Korea a modified capitalization method is adopted.

#### 2. Financial Projection and Analysis

The national pension financial status during 1988-2050 was forecasted under the three assumptions. By the intermediate assumption, the fund in the year 2000 is 23,508 billion won (1988, constant price), 53,265 billion won, which is twice that of 2000, in the year 2006, and 144,390 billion won, which is the highest amounts in the projection period, in the year 2027. After

the uppermost point, the fund will decrease gradually, in the year 2034 an adverse balance of payments, in the year 2049 the fund will be in the red. The results by other assumptions are summarized in the Table 1.

Analyzing the variation of fund in the projection period, the financial status of national pension is unstable. And so the financing method must be adjusted by the balance rule for the stable financing.

### *Conclusion*

As a result of this study, the projection model will be a valuable tool in the national long-term pension financing policy and the financial variation of national pension system will be unstable in the long-term period. So the reform of pension system which is sufficient to achieve a balance between income and expenditure, must be made as early as possible and after that expanding entry into the national pension system must be considered.

**Table 1. Summary of the National Pension Projection**

(Unit: billion)

Fund of Year	Optimistic Ass.	Intermediate Ass.	Pessimistic Ass.
2000	28,260	23,508	18,856
2006	69,516	53,265	37,890
Fund Miximum	2027	2027	2027
Year & Fund	217,432	144,390	87,491
Adverse Balance Year	2032	2034	2042
Fund Deficit Year	2045	2049	After 2050

Note: All amounts are constant price based on the year 1988 (1988=100).

## A PROPOSAL FOR EXPANSION OF THE NATIONAL PENSION COVERAGE (II)

by K.B. Chung,  
K.S. Park, N.H. Park

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### *Purpose*

The national pension system started in January 1, 1988 with purpose to cover the whole targeted population from aged 18 to 59. However, there remains a large section of the targeted population uncovered since the pension system requires compulsory coverage only for workers in companies with 10 or more employees. The uncovered section consists of the self-employed (including farmer), workers in the companies with 9 or less employees, temporarily employed workers, employees working on time basis (employed for less than 3 months), and the unemployed. The first project for expansion of coverage of the national pension to these uncovered section was conducted last year. It suggested to expand compulsory coverage by adapting the idea of the basic pension within the current earnings related pension scheme. The purpose of the second project for this year is to establish feasible ways to combine basic and the current earnings related pension scheme in conjunction with the study done last year.

### *Contents*

The content of the project is divided into the two parts. The first part analyses the feasibility of expanding coverage to workers in the companies with 5-9 employees within the earnings related pension scheme. The second part discusses more concrete ways to expand coverage to the uncovered population in terms of classification of coverage, types of pension benefits, methods of financing, and delivery system.

### *Study Methods*

1. Social survey was conducted to examine the feasibility of expanding coverage to workers in the companies with 5-9 employees. 900 sample companies with 5-9 regular employees were randomly selected and questionnaires were filled by interviewers from July 18 to 25, 1989.

2. Literature review was done to give basic informations about the relationship among public assistance, social insurance, and allowance, and about the relationship between the

basic pension and earnings related pension in five other countries — the United States, United Kingdom, Japan, France, and Sweden.

### *Study Results and Policy Implications*

The study results and the following policy implications can be divided into the two parts.

#### 1. The Study Results for the Social Survey of the Companies with 5-9 Regular Employees.

Since the objective and subjective needs were high enough for the national pension and financial situation of the companies with 5-9 employees seemed to be stable, the coverage expansion in near future was recommended. However, while not so serious since there were only about 43,000 companies with 5-9 employees, a few difficult management problems reflected in high company turnover rate (becoming unqualified because of reduction of employee size), low maintenance rate of personnel record, high employee turnover rate, and low participation rate to health and industrial accident insurances are expected to occur. Therefore, those problems should be dealt with before expanding coverage to the target companies.

#### 2. The Contents of the Basic Pension and Earnings Related Pension Scheme Covering the Entire Target Population.

##### a. Principles for expansion:

maintenance of basic living standard for the all target population; maintenance of the function of income redistribution; maintenance of insurance method to keep work incentive and productivity.

##### b. The national pension scheme

1) Compulsory coverage: people from 20 to 59 years old. (earnings related pension has no lower age limit).

#### Classification of Coverage

Classification	Types of people covered
Class I Class II	Employees Self-employed (income equal to or greater than the average wage of the covered employees)
Class III	Heads of family excluding class I and class II

#### Financing Method

Class	1988-92	1993-97	1998-
Class I, II	3%	6%	9%
Class III	5,136won	10,272won	15,407won

#### Types of Penefit

	Types of benefit	Benefit formula
Basic pension	Primary pension	$3.0 \times A$
	Family supplement	Primary pension x 60% for eligible family member
	Old age pension	Primary pension x (contribution months + credited months x 1/2)/480
	Invalidity pension	1st and 2nd degrees:

Earnings related pension (only for class I & II)		Primary pension x 100%
		3rd degree: Primary pension x 60%
	Survivors pension	Primary pension x 100%
	Primary pension	$2.4 \times B \times 0.05n$
	Old age pension	Primary pension x 100%
	Invalidity pension	Primary pension x 100%
	Survivors pension	Primary pension x 60%

\*A is an average wage of the all covered employees in the year previous to the benefit payment.

B is an average wage of the eligible beneficiary throughout his/her working years.

n is the number of year covered.

##### 5) Delivery system:

The next three alternatives should be considered:

- 1st alternative: expansion

of the National Pension Corporation

- 2nd alternative: deligation of detailed administrative work to other government administration bodies such as the Ministry of Home Affairs, the National Tax Administration, the Federation of Korean Medical Insurance Societies.

- 3rd alternative: establishment of the Social Security Administration in the Ministry of Health and Social Affairs.

#### *Expected Utilization of Study Results*

The study results give specific ways to expand coverage as soon as possible while keeping the frame of the current national pension scheme. The expansion of coverage, if implemented as suggested, will provide income security for the whole population in case of old aged, disabled, and survivors.

## A STUDY ON RETIREMENT BENEFIT PLANS

by K.B. Chung, K.W. Cheong,  
H.S. Jun, S.H. Kim,  
M.S. Kim.

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### *Objective*

The purpose of this study is to investigate an agenda for change in retirement benefit plans in private sector. The specific objectives of the study analyze the problems in the current retirement benefit system, to review occupational pension schemes in Japan, America and England, and to describe a new framework of occupational retirement benefit plans in which national pension scheme can be integrated.

### *Method*

1. This study reviews literature on introduction of the occupational pension schemes, development of the schemes in their own socioeconomic settings, and the problems of the schemes in Japan, America and England.

2. Two sample surveys were organized for the analysis of the current retirement benefit system. One is industry-based survey and designed for getting information on

how the existing occupational retirement benefit plans are operating in private sector.

The other is individual-based survey and designed to know what the employees think about the function of retirement benefit and the relationship between national pension schemes and occupational retirement benefit plans.

The samples of the surveys were drawn through a multi-stage random sampling method for industries with ten or more employees, and through random sampling method for individuals working in the industries under study. The sample of the industry survey consists of 525 industries, and the individual survey of 1,050 males and females. The surveys were conducted between July 28 and August 4, 1989.

### *Findings*

1. Realities of Industry-wide Retirement Benefit System

a. A burden on industries: In 1988 the companies under study payed the amount equivalent to 5.9

percent of labor cost to the retiring employees. Of the companies under study 4.8 percent reported that they paid more than 20 percent of labor cost to the retired.

b. Benefit guaranty: Advance funding for the retirement benefit plan is required to assure plan ability to pay promises. Of the companies under study 53.8 percent do not establish any advance funding for the plan.

## 2. Employee's Perception on Retirement Benefit System

a. On retirement benefit: The employees under study defined retirement benefit as either post-paid wage (5.43%) or reward for their service (45.7%).

b. On function of the benefit: The employees reported the occupational retirement benefit plans do the functions of unemployment insurance (59.6%), and of income maintenance for the aged (15.3%). Of the employees under study 63.1 percent were satisfied with the existing retirement benefit system while 36.9 percent were dissatisfied.

c. On conversion of funding: National Pension Law prescribes that some portion of advance funding for occupational retirement benefit plan must be converted to the contribution to the national pension scheme from 1993. However, 70.3 percent of the employees under study argued against the conversion of the funding while only 29.7 percent were for.

## 3. Public Pension Schemes and Occupational Retirement Benefit Systems — Foreign Countries

Contracting-out plans in Japan and England intergrate earnings-related contribution in public pension schemes into occupational pension plans.

### *A Proposal for Policy-making*

This study has policy implications for changing the existing occupational retirement benefit systems.

1. The occupational retirement benefit plans must do the supplementary function to the national pension schemes in terms of their relationship.

2. The choice of lump-sum benefit and pension benefit must be open to recipient's decision in terms of payment of the benefit.

3. Plans must provide for participation to all employees with one-year service. Eligibility for benefits must require some years of unbroken service. Partial vesting must be offered according to employee's age and number of years of credited service.

4. Plans must deposit advance funding for the promised benefit.

5. It is suggested for a new framework of the occupational retirement benefit plans to introduce qualified occupational pension scheme or contract-out scheme.

## THE STUDY ON A MODEL OF SOCIAL WELFARE DEVELOPMENT TOWARD THE 21ST CENTURY

by S.I. Bark, et al.

### *Objective*

Main efforts are centered on searching how much our welfare level is apart from the optional level of welfare provision corresponding to national development and how inefficient our social welfare system is in delivering welfare to the clients. Then we made a bold attempt to suggest a stepwise long-term plan to obtain an advanced welfare nation when our per-capita GNP reached around 10 thousand dollars in terms of 1988 constant price at the end of this century.

### *Contents*

The most critical obstacles to push Korea into an advanced welfare society are categorized as follows.

First, performance of welfare program has been inefficient because of the absence of investment priorities.

Second, welfare level is conspicuously low compared to advanced foreign countries. Especially, relative poverty rate seems to be very high, because our rate, 22% far exceeds over those of Japan (7.54% in 1986) and United Kingdom (6.8% in 1974-

1976). Provision of basic needs is also quite insufficient particularly in the area of housing, health and residential environment.

Third, the most important cause of the low-level of welfare lies in negative and insufficient welfare investment by government. The ratio of government expenditure to GNP is only 4.23% in Korea while it appears to be over 11% in nine advanced Western countries the per-capita income of which was similar to 1989 per-capita GNP in Korea.

Fourth, the welfare administration and the delivery system reveals ineffectiveness. The affairs of social welfare is partitioned into different ministries and delivery systems are separately organized and composed of many laymen.

Based on these problems, the aims and strategies are proposed as follows:

#### 1. Main Goals

a. Provision of basic needs to secure minimum standard of human life, such as clothing, foods, housing, education, and health.

b. Reduction of poverty rate to that of advanced countries (7%), at least, to the end of this century.



c. Improvement of social welfare system.

2. Main Strategies

a. Welfare resources re-distributed by government would be

raised from 4% to about 11% of GNP.

b. Quantitative and qualitative welfare level should be expanded gradually and step by step to reduce radical financial burden to adjust ourselves into a new welfare society.

## STUDY ON STRUCTURAL CHARACTERISTICS OF HOUSEHOLDS WITH THE ELDERLY

by K.O. Rhee, J. D. Kwon  
S. J. Kwon, H. Y. Ahn

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### *Objective*

The family structure has been changed rapidly and consequently the function of the family support for the aged parents has weakened. From the standpoint that problems of the aged were deeply related with the change of the family structure, this study aimed at analyzing the structural characteristics of households with the elderly.

The specific purposes of this study are:

1. To obtain information on the present situation of, as well as changes in, households with the elderly.
2. To explore the socioeconomic status and the family structure of the elderly.

### *Method*

The data analyzed in this study were taken from the National Population and Health Survey conducted by KIPH in 1988. Out of 69,125 sample households, the number of households

with elderly aged 60 years and over amounted to 15,632 households, and the number of the elderly were 19,560 persons. The present study used only the data concerning the household composition and focused on socioeconomic characteristics of the elderly.

### *Findings*

1. Households of the stem family are the highest, 53.3% of total households; those of nuclear family, 31.7%; and those composed of a single elderly person, 9.6%.
2. Households composed of 3 generations are shown as almost the half of total households(49.7%) and those of 2 generations, about the quarter(24.7%).
3. As for the family size, households composed of 2 persons are 19.8%; those of 3-4 persons 27.5%; and those of 5 persons and over 43.1% respectively.
4. As to the regional distribution, 32.7% of the elderly live in six big

cities, 17.8% in middle and small cities and 49.5% in rural areas. The sex ratio of the male to the female elderly is about 2:3. 60% of the aged are uneducated and 27.3% are primary school graduates.

5. 34.7% of the elderly are employed and 74.9% of the employed engage themselves in agriculture. The employment rate are quite different between 52.1% in rural and 15.1% in urban area.

6. 33.5% of the elderly suffer from at least one chronic disease: 31.1% in six big cities; 27.8%, in middle and small cities; 36.2%, in rural areas.

7. As for the status of elderly persons in the household, it is found out that 42.4% of them are the family head of their households and 13.8%, spouses of the family head, while 41.5% are parents of the family head.

### *Policy Implications*

This study suggests that rapid decrease of stem families does not likely occur in the near future, although changes in value and socio-economic conditions will eventually result in the dominance of the nuclear family.

Given the preserved tradition of strong familial ties in Korea, the family is not only the most important but also the most efficient social institution for supporting the elderly. Hence, every effort should be made to encourage families to continue supporting their elderly.

Ultimately, a strong sociocultural tradition may not be a sufficient condition for preserving the social support function of the family. Thus, active governmental policies and social campaigns may have to complement the tradition for such a purpose.

## A STUDY ON ESTABLISHMENT OF MEDICAL REHABILITATION SERVICES AND REIMBURSEMENT SYSTEM

by Kyung-Tae Moon, et al,

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### *Background*

Social welfare services for the disabled in Korea have been mainly confined to the institutional care for some of the profoundly disabled. Because of the limited capacity of those institutions compared with the population of the disabled, less than one percent of the disabled could have been accessible to the institutional services. Therefore, most of the community bound disabled have had no chance to get any kind of welfare services.

Even for those institutional dwellers, it has been almost impossible to achieve meaningful rehabilitation services due to lack of adequate professional personnel, facilities and equipments, programs and budgets, etc.

Among various rehabilitation steps, such as medical rehabilitation, vocational rehabilitation, psycho-social rehabilitation, etc, medical rehabilitation is the first step which the disabled have to get through, and is the most urgent need of the disabled in Korea.

The key element of successful medical rehabilitation services is how to

improve the disabled's geographic and economic accessibility to the qualified medical rehabilitation providers. The qualification of medical rehabilitation depends upon how to compose the medical rehabilitation team which is supposed to compose of physiatrist (rehabilitation medicine specialist), rehabilitation nurse, physical therapist, occupational therapist, speech therapist, prosthetist and orthotist, medical social worker, clinical psychologist, rehabilitation counselor, etc.

Currently we are quite short of qualified medical rehabilitation professionals, for example, physiatrist (less than 100 persons), occupational therapist (just 100 and some persons), speech therapist (no certificate system in Korea yet), prosthetist and orthotist (no training and qualification system yet), etc.

On the contrary to that, we have so far raised too many physical therapists (more than 5,000 persons). Thus, it is said that physical therapy has been abused in almost all kinds of clinics and hospitals.

We are also very much short of medical rehabilitation facilities. Only 20 some departments of rehabilita-

tion medicine have been set up in each general hospitals or teaching hospitals throughout the country. All the more, those hospitals with the departments of rehabilitation medicine are mostly located in large cities, especially in Seoul. Therefore, it is extremely difficult for the rural disabled to have an opportunity to get medical rehabilitation services within their community. Yet, primary health care takers are not prepared to meet the needs of medical rehabilitation services for their community residents.

Many parts of the medical rehabilitation services are not covered by the health insurance benefit. For example, speech therapy, prosthetic and orthotic services are excluded from the benefit. Only three types of occupational therapy are covered now. Therefore, even under the national health insurance scheme for the total population since 1989, the economic barrier to the medical rehabilitation service is still too high for the disabled.

### *Objective*

The purpose of this study is to seek a way to establishment of delivery system of medical rehabilitation system and to betterment of economic accessibility to the medical rehabilitation services.

### *Method*

This study has been conducted through various methods, such as review of domestic and international re-

ferences, professional consultants' advice, home visiting to the disabled, questionnaire, overseas observation (U.S.A., Japan, Sweden), etc.

### *Results*

1. Review and establishment of some definitions of impairment, disability, handicap, rehabilitation, and medical rehabilitation.

2. Composition of medical rehabilitation team: its current situation, problems and some measures.

- psychiatrist
- physical therapist
- occupational therapist
- speech therapist
- prosthetist and orthotist
- other rehabilitation professionals, such as rehabilitation nurse, medical social worker, rehabilitation counselor, etc.

3. A research on prosthetic and orthotic shops.

There are about 130 public or private shops in the country. Questionnaires were delivered to all the shops. Among them, 30 shops responded. Major questions are as below:

- a. Ownership of shop: public or private
- b. Locations
- c. Scale of shops: space, technical personnel, and annual products, etc.
- d. Quality of technical personnel: education, training and experience

e. Number of annual customers: estimation of total amount of domestic market.

f. Amount of annual sales: estimation of total amount of domestic market.

g. Opinions concerning introduction of formal education, training and qualification systems.

4. An exploratory study on the government subsidy project of the provision of rehabilitation equipments to the poor disabled.

Since 1981 government began to provide medical rehabilitation equipments, such as prosthetics and orthotics, wheelchairs, hearing aids to the poor disabled in a very limited quantities for the purpose of achieving rehabilitation goal of the poor disabled. Since then, no attempt has been tried to evaluate the effect of that project.

Five beneficiaries has been randomly selected in two medium size cities. Through home visit case study, several problems related with this project have been discovered. Some measures against those problems have been recommended, including expansion of the quantity of the project by 2-3 times and introduction of primary medical rehabilitation services in the community (community based rehabilitation).

5. Establishment of delivery system of medical rehabilitation services

The basic idea of the establishment of medical rehabilitation

service system is that it should be established within general context of health delivery system. Looking over the current situation of health delivery system so far developed in Korea, it is judged that it will be extremely difficult for us to establish an appropriate delivery system of medical rehabilitation services within a foreseeable future unless we exert extraordinary efforts. Several ideas have been recommended.

6. Compensation and payment system for medical rehabilitation services

Pros and cons of several payment systems for medical services, such as free-for-services, capitation, salary, case payment, negotiation system which has been adopted as a payment system in Korean Health Insurance Scheme were screened. Several negative effects were discovered. Some of them are as below;

First, it is very difficult to secure resources (finance and manpower) for the prevention of disability under the fee-for-service system.

Second, fee-for-service system deteriorates sound health delivery system. Therefore it is very difficult for the lower class disabled to get accessibility to the medical rehabilitation services both physically and economically.

Third, many parts of medical rehabilitation services are excluded from the health insurance benefit.

It is estimated that the health in-

surer will have to carry annual extra burden of \$5 million if prosthetic and orthotic services are included in the health insurance benefit. In addition to that, speech therapy should be covered by the insurance. More diversified occupational therapies should be recognized, too.

7. Introduction of medical rehabilitation services in advanced countries such as U.S.A., Japan and Sweden.

#### *Usefulness and Expectation of Study*

Several ideas and recommendations were suggested as some guidelines of decision-making for the concerning administrative bodies.

Definition of disability which is currently adopted very narrowly by the government should be revised appropriately. Therefore people with problems with internal organs shall be included in the category of the disabled.

Based on the revised definition of disability, more reliable research should be conducted for more exact estimation of total population of the disabled.

It is recommended that introduc-

tion of training courses and qualification systems for professionalization of medical rehabilitation staff is the most urgent step what we have to take.

Primary health care takers, such as, public health center, sub-center, public health practitioners should be prepared to provide community based rehabilitation services to the community bound disabled, especially to the elderly with degenerative disabilities.

It is also suggested that more and more (up to 60) rehabilitation centers convenient for the commuting local disabled should be established for the purpose of easier accessibility to total rehabilitation services.

Those general hospitals with more than 300 beds (60 some hospitals in Korea) should be strongly recommended to set up department of rehabilitation medicine.

Tertiary general hospitals (28 hospitals) should be forced to establish department of rehabilitation medicine (as of now 8 hospitals do not).

It is suggested that the benefit system of the health insurance scheme should be more generous for the economically lower class, especially for the disabled whose medical needs are greater.

## A STUDY ON MEASURING THE POVERTY LINE IN KOREA

by C.S. Ahn, S.K. Lee,  
C.S. Lee, P.D. Lee,  
M.G. Kim

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### *Objective*

The official poverty line in Korea was set without much reference to academic debate. So the objective of this study is to set the reasonable minimum standard of living that the poor in Korea can live without disease and to satisfy basic needs.

### *Methods*

In order to measure poverty line, we have composed a specified market basket of goods and services, which is based on low income consumer expenditure survey in Korea, 1988. This study examines:

1) geographical differences (large city, medium and small city, rural areas) in the poverty line measure.

2) differences due to family size and composition in the poverty line measure.

Because of cost of living difference across the areas, poverty lines are differently measured. So as to ad-

just the poverty line for family size and composition, we have adopted equivalence scale. Finally to adjust poverty line for consumer price change, we have adopted increasing rate of consumer price (1988, EPB) and forecasted increasing rate of consumer price (1989, KDI).

### *Result*

The measured poverty line in Korea, 1988, 1989, 1990 are as shown in the attached table.

### *Expected Effectiveness*

The expected effectiveness is largely classified as follows. This provides: 1) minimum standard of living in Korea, 2) the solution, who is entitled to public assistance, 3) basic information for other social policy (minimum wage, pension, income level of tax exemption, and etc.).



## Poverty Line in Korea, 1988, 1989, 1990

(unit: won)

Year	family size region	1	2	3	4	5	6	7
		1988	large city	116,361	191,416	256,189	315,076	369,939
	medium & small city	109,581	180,326	241,380	296,885	348,597	397,476	444,117
	rural area	98,581	162,823	218,032	268,223	314,984	359,183	401,359
1989	large city	124,622	205,006	274,378	337,446	396,204	451,742	504,738
	medium & small city	117,361	193,129	258,517	317,963	373,347	425,696	475,649
	rural area	105,580	174,383	233,512	287,266	337,347	384,684	429,855
1990	large city	132,487	218,536	292,487	359,717	422,354	481,557	538,051
	medium & small city	125,576	206,648	276,614	340,221	393,481	455,495	508,944
	rural area	112,548	185,892	248,924	306,226	359,612	410,074	458,225

## COMPARATIVE STUDY ON MEDICAL CARE INSURANCE FINANCING BETWEEN KOREA AND JAPAN

Organized by InChul Noh, et al.

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### *Objective*

The objectives of the study are to review medical care insurance schemes between Korea and Japan, discuss overall problems related to them and draw fruitful ideas for future designs of a sound national medical insurance system in Korea.

### *Method*

Several topics were presented and discussed as follows.

Topic I is about the situation and problems of medical care insurance system presented by Mr. Ohtsuka (Japan) and Dr. Chung (Korea). Topic II deals with the deteriorating medical care finances presented by Mr. Ohtsuka and Mr. Aoyagi (Japan) and Dr. Noh (Korea).

Topic III is on financial stabilization of medical care expenditures presented by Mr. Takahara (Japan), Prof. Kiikuni (Japan) and Prof. Moon (Korea). The last topic deals with public policy issue on medical insurance and medical services for the elderly presented by Mr. Konya

(Japan) and Prof. Fujino (Japan).

### *Results*

The financing of National Health Insurance in Japan has been continuing in deficit since 1984 due to the introduction of the medical care system for retired persons that year. To cope with the rising medical care costs for the elderly, financial adjustments have been making inter-health insurance schemes.

Together with employee's insurance, thus, the National Health Insurance scheme has come to shoulder the main burden of medical care insurance in Japan. Since due to population aging and advances in medical facilities, medical care costs are expected to keep growing at a rate in excess of GNP, a more efficient and effective financing will be necessary in the future. For instance, it is suggested that insurance premiums will have to be augmented and that the Government also provide more funds.

On the other hand, due to Japan's medical care insurance being separated into a number of schemes, there are

discrepancies in benefit ratios between the schemes and between the insured persons and their dependents. From the point of view of social fairness, correcting these inequalities in benefits and burdens has become a critical issue. So in order to maintain the necessary medical care, it is essential to integrate the various systems and equalize out the financial burdens.

### *Implications*

As for reforms, an equitable method of financing was suggested in a way that is fair to all, with cost burden distributed equitably among the various segments of the population. In addition, to curtail the expenditure for medical care insurance and to control medical care supply, it is also suggested that the present health care delivery system be reformed in a cost-saving fashion.

## SEMINAR ON FUTURE PERSPECTIVES OF THE WELFARE POLICY FOR THE ELDERLY

Organized by Yon-Soo Park, et al.

### *Objective*

1. To examine and review overall problems of the aged
2. To explore effective approaches for the wellbeing of the elderly.

### *Proceedings*

1. The seminar was held with attendance of about 150 participants including distinguished groups of scholars, administrators and professionals at the KIPH auditorium during August 17-18, 1989.

2. Dr. Dal-Hyun Chi, President of the KIPH, in his opening address said that according to social changes the family structure has changed and the function of the family support for old parents has weakened, while the social support has not fully supplemented the traditional family support for the aged. He indicated that great demands were being placed on developing more comprehensive alternatives to cope with various problems of the aged.

3. The Hon. Dr. Chong-In Kim, Minister of Health and Social Affairs

(MOHSA) pointed out that the socio-economic changes from industrialization and urbanization made the problem of the elderly a major issue in need of social concern. In this sense he appreciated the KIPH for holding the seminar on the future perspective of the welfare policy for the elderly at the right time.

4. There were five presentations in the seminar.

### *Summary of Presentations in the Seminar*

1. Dr. Ka-Oak Rhee, senior fellow of the KIPH, presented on the subject "Changes in the Family Structure and the Support for the Elderly". She examined changes of the family structure, especially of households with the elderly aged 60 years and over. Then, she explored problems of the elderly in the viewpoint of economic, physical and emotional support for them.

2. Dr. Chong-Kee Park, Professor of Inha University, made the presentation on the topic of "Change of Economic Conditions of the Aged Population and the Welfare Policy for the Elderly". He suggested to extend

the retirement age to 60 years old and to expand the opportunities for the employment of the aged.

3. Dr. Dal-Sun Han, Professor of Hallym University, presented the paper on "Aging of the Population and the Health Care System". He emphasized that it was very important to develop the health care system at the community level in order to strengthen the management of chronic diseases of the elderly.

4. Dr. Sung-Jae Choi, Professor of Seoul National University, argued in his presentation on the subject "Long-term Policy Approaches of Welfare Services for the Elderly" that the problem of the elderly was no longer limited to a poverty issue for certain people, but the overall welfare

for all elderly persons should be an important topic for Korea to deal with.

5. Mr. Yun-Gu Kang, Director of the Division of Home Welfare of the MOHSA, presented a paper on "Future Approaches of the Welfare Policy of the Elderly". He explained the existing measures and policies for the aged persons and proposed ideas and plans to promote welfare services for them.

Mr. Yon-Soo Park, the former Director-General of the Bureau of Home Welfare, who was a seminar coordinator, concluded that Korean society, including government and community, should make further efforts to promote services and measures for the elderly to meet their needs in a rapidly changing social environment.

## A SEMINAR FOR DEVELOPMENT OF THE KOREAN NATIONAL PENSION SYSTEM

Organized by K. B. Chung, et al.

### *Purpose*

KIHASA conducted a "Study on a National Pension Scheme to Extend Coverage over the Entire Nation" in 1989. The purposes of the seminar are 1) to publicize the study results, 2) to hear the ideas of those persons concerned on the study results, 3) to investigate policy measures for extending the national pension scheme coverage and further, and 4) to seek policy development of the national pension scheme in general.

### *Method*

The seminar was held on May 4, 1989 with the participation of about 150 specialists or administrators. Two specialists presented their subject papers and discussions by eight selected discussants and by 6 participants from floor followed. Topics presented were: 1) A policy alternative for expansion of the Korean national pension system, by Kyungbae Chung, 2) Policy direction toward expansion of the voluntary insured, by Sang-Kyun Kim.

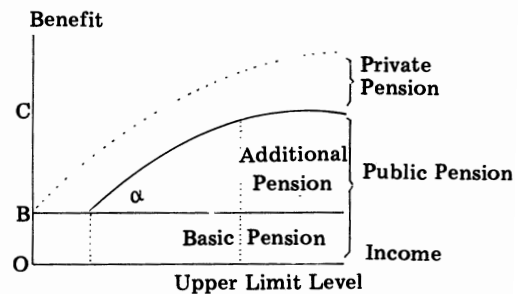
### *Results and Policy Implications*

Topic I: Policy Alternative for Expansion of the National Pension System

#### 1. Basic Principles for Establishing Expansion Scheme

- secure the minimum living standard of the entire nation
- secure the real income level
- realize the income redistribution
- adopt the general system nationwide
- maintain the relevancy with other social security systems

#### 2. Model of Expansion Scheme: united conduct of basic pension and income proportion pension



$\alpha$  = Benefit ratio of the  
Income Proportion Pension

B = Basic Pension

Total Pension Level

= Basic Pension (Fixed amount benefit)  
+ Additional Pension  
(Income proportion benefit)

### 3. Expansion Scheme by Stages

#### a. The insured classification

Category (remarks)	1st stage 1990-1991	2nd stage 1992-1996	3rd stage 1997-2001	4th stage after 2002
1st category insured	<b>Employees pension</b>			
	employees in firms with 5 workers or more (compulsory)	employees in firms with 5 workers or more (compulsory)	employees in firms with 5 workers or more (compulsory)	all the employees  (compulsory)
2nd category insured	Regional pension:	householders aged 18-60 except 1st and 3rd categories (compulsory)	householders aged 18-60 except 1st and 3rd categories (compulsory)	unemployed householders aged 18-60 except 1st and 3rd categories (compulsory)
	entire nation aged 18-60 excluding 1st category (voluntary)			
3rd category insured		employees with the fixed income except 1st category (voluntary)	employees in firms with 5 workers or less except 1st category (compulsory)	the self- employed except 1st category (compulsory)

#### b. Financial contribution by stages

	1st stage	2nd stage	3rd stage	4th stage
1st category	fixed ratio	fixed ratio	fixed ratio	fixed ratio
2nd category	fixed amount	fixed amount	fixed amount	fixed amount
3rd category	non applicable	fixed ratio	fixed ratio	fixed ratio
government investment	operational cost 1/2 of the amount of the exempted	operational cost, 1/2 of the amount of the exempted	operational cost, 1/2 of the amount of the exempted	operational cost, 1/2 of the amount of the exempted

## c. Pension benefits

## 1) Basic pension benefit

=The minimum living cost per 1 person x 1.5 x total remunerated months/240

## 2) Survivors' benefits

- spouse and children: 1/3 of the basic pension benefit
- parents: 1/6 of the basic pension benefit

## 3) Income proportion pension benefit

=  $2.4(A+B) \times 0.05n$  — the basic pension benefit

A: average monthly income of the previous year of the benefit acceptance time

B: average amount of the average monthly incomes during the insured years

n: number of insured years of the 1st and 3rd categories

## d. Finance projection

Pension finance will reach 67,200,000,000 won in 2035 due to the increased insured in 1997 and in 2003 when the pension scheme is expanding the target insured, while it will decrease rapidly after 2040.

Topic II: Policy Direction toward

## Expansion of the Voluntary Insured

## 1. Reasons for the Expansion of the Voluntary Insured

- People cannot sufficiently provide for their own future.
- Compulsory pension system is necessary to realize the income redistribution.
- Compulsory application is necessary for the efficient management of pension system.
- The early practice of pension is necessary for the prevention of poverty.

## 2. Basic Principles

- keep as far as possible the major components of the current National Pension Law
- expand as far as possible the target persons of compulsory application
- targeting for the poverty resolution at first
- adopt the tripartite financial contribution including government

## 3. Matters Needing Attention

- classification of the membership
- finance contribution method
- calculation method of basic pension amount
- period of the maturity of the pension system