

Research Fields and Priority Setting for Health Sciences in Korea

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This study was conducted to identify the important research fields and areas for solving current and future health care problems in Korea and to develop priorities in selected research fields and areas. Delphi technique was used to collect experts' opinion. Questionnaire surveys were carried out three rounds, and 29 panel members were invited. From second questionnaire survey, we proposed the median value of score and respondent's score in each item. Prevalence, seriousness and manageability were the main criteria to select the research fields and areas and in priority setting. In health fields, 20 research fields were selected and population, family planning, and environmental pollution were the most important research fields among them. In each research field, several research areas were selected. Because our study had 85 research areas, the priority of research areas was selected in each research fields.

Key Words: Health care, research field, research area, health services research.

Traditionally research activities have been regarded as the domain of academicians who enjoyed their liberty and discretion in selection of their research topics based mostly on their personal interest over concern on solving national health problems. Therefore, those research works have been primarily oriented toward biomedical and academic concerns.

Due to rapid economic growth during the last two decades, health status and health problems have changed significantly in Korea. The government has started to put a high priority on national health and welfare, and several applied researches have been carried out since the Fourth Five-Year Economic Development Plan (1977-1981). The government provided some research funds for studies in organizing a health care delivery system. However, the government budget has been quite limited for research which deals with national policy issues for health promotion. The government officials also did not have enough insight in research priority setting nor they paid much attention to the research problems per se, though they are never entirely outside of their responsibility.

Korean health problems are quite different from those in developed countries in the Asian region such as Japan and those in the small intermediate countries such as Singapore and Hong Kong. In addition, social indicators, especially on the educational level, are significantly higher than in any other country with similar income levels. In this sense, the Korean health scene, as well as research needs, is rather unique among the intermediate countries in the region.

Some researchers (Kim *et al.*, 1980) paid attention to the research needs in the health field and certain efforts to develop research topics in the health services were made without mentioning research priority. A feasibility study (Yu and Oh 1983) was done on organizing a national level health and medical research council in order to collect and disseminate the relevant information giving guidelines for government-funded policy-related research. However, research areas and priority setting in the health field have not been studied yet. Therefore, the necessity to discuss health related research by field/area and their priority setting should be strongly emphasized.

The overall aim of this study is to provide effective tools and guidelines in assessing and selecting important research fields and areas and developing priority among them.

The specific objectives are:

- 1) To collect and categorize research fields and areas for solving current and future health problems in Korea.

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- 2) To develop priorities in selecting research fields and areas in health care.

RESEARCH DESIGN

Generally, health care is defined as "The field concerning the maintenance of health individually or as a group." As declared by the WHO, "Health is a state of complete physical, mental and social well-being."

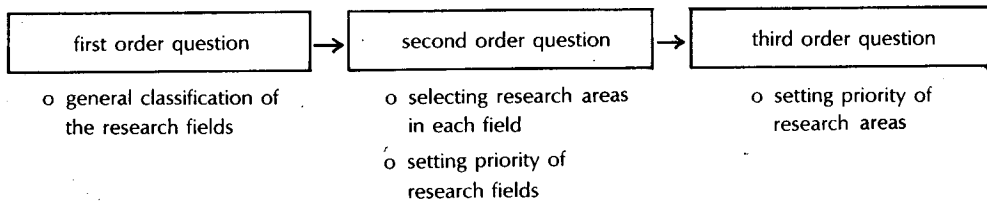


Fig. 1. Approach for establishing research field and area.

Health science covers all fields concerning the maintenance and promotion of health. Therefore, basic medical science, clinical medicine, and preventive medicine and public health are all included. Generally, researches in health care are classified into biomedical research, health services research, and research in health behavior.

In this study, we put the focus on researches in health services and health behavior in the belief that they have much more impact to the formulation of a national health policy.

Because the field of health sciences is varied, the establishment of its extent is very difficult and it is even more difficult to categorize and determine its priority. Since there is no rule nor scientific basis and there is no generalized objective criteria, objectivity could be lost due to the prejudices and subjectivities of the researcher if one is not careful.

Therefore in this study, an effort was made to remove such prejudices or subjectivities. The opinions of experts in the fields of health sciences as well as those in the related fields such as economics, administration and sociology were summarized, so that subdivisions of the health science fields could be determined and their priorities could be set.

Though there may be several ways to integrate opinions and each way has its merits and defects, it is important to select adequate group decision making method. After reviewing various group decision making methods, we decided topics and priorities in health science by introducing the Delphi technique.

It is well known that the Delphi technique (Hyman 1976, Spiegel *et al.*, 1978) is used when deciding group

opinion. It is more commonly used when the problem has a qualitative characteristic which is hard to quantify. It is not necessary for the panel member to be all in one place. It does not have the risk to be decided by one or two dominant persons. The results can be objective, and it is possible to predict the result in the absence of quantified data. But in the Delphi technique, in case the panel members are inappropriately selected, the results of the study may be inaccurate or unbelievably biased.

Therefore, selecting a panel in this study, much effort was made to secure appropriate panel members. Through the procedures below, the priority and the research fields/areas of the health sciences were decided (Fig. 1).

Panel

The panel was formulated in two steps. In the first round where we generally classified the research fields in health sciences, not only the experts in the health sciences but those in the related fields such as health administration, economics and sociology were included to make up the panel. The problem of health science is not merely the problem of health and medicine itself, but that of the total system, so by converging the opinions of those outside the field of health science, it is possible to eliminate the prejudices and subjectivities that those in the field of health sciences may have. We selected panel members evenly in each field because the categories which the health science fields deal with are broad and subdivided. The composition of the panel in specific fields is shown in table 1.

We would want to select experienced senior personnel to avoid the weakness which may arise from an inadequate selection of panel.

The second and third round where we select each research area and set its priority, the panel members are confined to those in the field of health sciences. The experts of the related field are excluded because the second and third round deal with specific field.

Questionnaire survey

In this study, we carried out questionnaire surveys three times. In the first question, we tried to make

the general classification of fields of health sciences and labeled their priority. For making a general classification, the researchers selected fields after analyzing existing data (WHO 1982; Last 1980) and summarizing the opinion of panel members.

We ask the panel members to express their judgement of the classification of fields. They are to score a 0 to 10 grade by each field in consideration of size and prevalence of the problem, its seriousness and manageability. They also describe the research area of each field.

In the second question, we propose the median value of score in each research field which is classified generally by summarizing opinions of panel members who respond to the first question, and we also ask questions about priority of the fields. At that time, panel members score a 1 to 5 grade by each field in consideration of size and prevalence of problem, its seriousness and manageability. Also, after categorizing research areas which were finalized by panelist at the first question, we ask their priority and solicit additional research areas:

Table 1. Number of panels in delphi technique

Fields	1st round	2nd and 3rd round
Health field		
Epidemiology & disease control	3	3
Health services	5	5
Population and MCH	4	4
Occupational health & environmental sanitation	5	5
Others	6	6
Economics	2	—
Sociology	2	—
Administration	2	—
Total	29	23

Table 2. Research fields and its priority

Priority	Research fields	Score			
		P	S	M	Total*
1	Population and family planning	5	5	4	100
	Environmental pollution	5	5	4	100
2	Occupational health	4	4	4	64
	Food sanitation and water supply	4	4	4	64
	Health care system	4	4	4	64
	Health behavior/utilization	4	4	4	64
	Health education	4	4	4	64
	Maternal and child health	4	4	4	64
3	Infectious disease control	4	3	4	48
	Chronic and degenerative disease control	4	4	3	48
	Health resources	4	4	3	48
	Health economics	4	4	3	48
	Health information system	4	4	3	48
	Accident prevention	4	4	3	48
	Mental health	4	4	3	48
	Rehabilitation	3	4	4	48
4	Tropical disease and helminthiasis control	3	3	4	36
5	Nutrition	3	3	3	27
	Drug addiction and alcoholism control	3	3	3	27

* Total=Prevalence×Seriousness×Manageability

P: Prevalence

S: Seriousness

M: Manageability

In the third question, we ask whether panelists agree with the results of the second question. At that time, we propose median value of a score in each research area and their priority, and we send questionnaires to panelists with their own opinion recorded in the second question.

RESULTS AND DISCUSSION

Research fields and their priorities

As the scope of health sciences is vast, we first set their priority by dividing into several fields and subdivide to the research areas in each field and set their priority in that field. First of all, the classification of research fields and their priority will be considered. As the result of carrying out three times it was concluded that the fields of health science could be divided into 19 fields and 5 groups in general (Table 2).

That is to say there would be 3 research fields in disease controls such as infectious disease control, chronic and degenerative disease control, and tropical disease and helminthiasis control; three research fields in maternal and child health and family planning such as population and family planning, maternal and child health and nutrition. Also, 3 research fields such as environmental pollution, occupational health, food sanitation and water supply in industrial health and environmental sanitation. In health services research, those 5 fields such as health care system, health resources, health economics, health information system and health behavior and utilization were included. The other group includes 5 research fields such as health education, accident prevention, mental health, rehabilitation and drug and alcohol addiction.

These research fields were put in order by priority considering their size and prevalence, seriousness and manageability and results are as follows:

1) Priority 1 group: Two of the most important fields of health science considered to be studied are population and family planning, and environmental pollution. The opinions of panelists agreed that these fields should be investigated first as the prevalence, seriousness and manageability of these problems.

Although the rate of population growth in Korea has been reduced as the result of the family planning program and socioeconomic development during the last 20 years, it is not yet sufficient, taking account of the high density of population and poor natural resources.

Considering the problems of today, such as the reduction of population growth rate at a standstill recently, stubborn boy-preference tendency, and the

substantially increased number of eligible couples as the result of the post Korean Conflict baby boom, researches in the field of population and family planning should aim to find the clue to overcome those problems.

As is generally known, environmental pollution in Korea is a by-product of the rapid industrialization since the 1970's and reveals a very serious problem in Korea today. During the period when economic growth was given the top priority, the environmental pollution problem was almost ignored from the priority order. However, recent numerous outbreaks of grave environmental pollution problems due to the violation from industry plants, some measures to prevent such problem must be taken urgently.

2) Priority 2 group: Occupational health, food sanitation, health care system, health behavior and utilization, health education, and maternal and child health received great attention to improve. Similar to environmental pollution, occupational health issues became acute in the 1970's. Although the health of workers were overlooked by the employees and also the employer, its importance is now being recognized. As the economic level gradually improves, employees increase in number, working environment varies, so occupational disease became a social problem. Occupational health is not only a health problem for employees themselves but also directly affects productivity and work efficiency, and is believed to be a field which needs thorough investigation.

The processing food industry has grown tremendously in Korea keeping pace with social and economic development. Accordingly, the quality of food sanitation began to affect a growing number of people's health which called for a higher standards of food sanitation.

It is very important to utilize health care resources effectively in this situation in Korea where health care resources are quite limited. Research in this field was carried out continuously and is devoted to the improvement of the health care system. However, there is a need to reform and develop the health care system constantly in accordance with the changing environment of socioeconomic conditions and the system itself.

A number of the research projects concerning health behavior and utilization were carried out in comparison with other fields in the past. There is discussion now as to how to develop the financing system of health insurance, public medical assistance, and to reform the health care delivery system as well as primary health care. Health behavior and utilization are changing continuously due to the improve-

ment of the educational level and economic growth. Especially, it is essential to understand the health behavior and utilization pattern accurately for the development of a health policy and improvement of and effective health care system in our situation of scarce resources. Research concerning this field is needed with a high priority in the health policy development.

Health education has an increasing importance in every country, past and present. It is well known that most projects for the improvement of level of health are related to health education and regarded to have a high value in terms of cost-effectiveness. Therefore, health education must be emphasized continuously, and its effective method should also be developed by systematic research.

Recently, government and other voluntary organizations extend much efforts to improve maternal and child health. Maternal and child health is emphasized because their target population is very large and the program could be relatively easily manageable.

3) Priority 3 group: Priority 3 group of health care research has 8 fields including control of infectious disease, control of chronic and degenerative disease, health care resources, health economics, health information system, accident prevention, mental health and rehabilitation.

The prevalence and incidence rate of infectious diseases have been greatly reduced recently and in most cases, are easily curable. The environmental sanitation program is not so satisfactory that the risk of an epidemic outbreak of infectious diseases is still high, and the prevalence of infectious hepatitis and tuberculosis are also high. Therefore, this is the area where more research is needed.

The incidence rate of chronic and degenerative disease has increased rapidly after the 1970's since many social and environmental factors changed. Once such diseases developed into an advanced stage, then not only it is hard to expect complete cure but it adversely affects the welfare and economy of the family and society as a whole. Therefore, continuous research on effective control measures, particularly preventive measures and control measures in early stages, is desirable.

In Korea most health resources are limited. There is a particular need to train health personnel in managerial competence. Taking into account that the majority of health facilities are privately owned, and lack of government control on investment and utilization of health care resources as well as the lack of an efficient health care delivery system, there is an

urgent need for research on efficient management in order to avoid waste and unnecessary trial and error.

It has long been established among developed nations that increases in medical care cost is one of the major problems in the health field. In Korea, it is gradually becoming a serious problem. Specially since 1977 when the compulsory health insurance plan was launched, public interest in health economics has been increasing. Unlike other fields, research in the health economics field emphasize the economic approach, and therefore, not only health related persons but economists too, are expected to participate in the research.

Research projects into health-related fields, policy development, and evaluation are basic and necessary in all fields, as is the information and statistical data related to health services. In Korea, some health indices are inaccurate, therefore, there are many difficulties in research and policy formulation. Although there have been many discussions concerning the development of a health information system, because of many reasons, it has not yet been realized.

Because of recent changes in the social environment, one field that has been recognized as important in the health field is accident prevention. There is a tremendous increase in the incidence of accidents involving industrial workers and accidents resulting from a rapid increase in the number of automobiles with the development of transportation. Such a sudden increase of accidents indicates that accident prevention is one of the important health concerns. Prevention of such accidents can not be achieved only by health measures but by a joint effort with many other fields as well. The health field occupies a greater proportion in the field of accident prevention, and it further emphasizes the need for research because it has not yet been given much attention.

Mental health, too, is a field that has been gaining attention recently. It can be said that currently its research is at the initial level. With society becoming more complex, mental diseases have been on the increase, especially with the aging of the population and the consequent increase in the number of older people. Mental health management has gradually gained momentum. Even if the definition of health set forth by the WHO that "Health is a state of complete physical, mental and social well-being", research on improving mental health in modern society should be actively pursued.

Rehabilitation of physically handicapped, particularly of war veterans, was a primary concern in Korea till 1970's. It is only from 1981, 'The Year of the Handicapped', that the community concern developed not only for the disabled, but for rehabilitation of all

kinds of handicapped people. However, there are relatively few specialists in this field in our country and no elaborated research has been conducted yet. Therefore, active research in this field is required.

4) Other research fields: Fields of research not discussed before, that should be studied in Korea, are tropical disease and helminthiasis control, nutrition, drug and alcohol addiction. Although they are not serious at the moment, they are fields that need to be studied nevertheless.

Research areas and their priorities

There were two ways in which we were able to set the priority of research areas included in 19 research fields. One was by setting the priority of all research areas in health fields, and the other by setting the priority of the research areas in each research field.

Each method has its merits and defaults. In the first method, one can evaluate the relative priority of the research areas by setting the priority of each research area in the total health field, but in a number of research areas it may lose its accuracy, and it might be difficult to evaluate.

In the second method, in contrast to the first, it is easy to decide its priority in each research field. But it is difficult to compare its priority of research areas with that which is in other research fields.

Because our study had 85 research areas, it was very difficult to choose priorities. Considering that each field had its priority, the second method, which decided the priority of the research areas in each research field was selected. Research areas and their priority selected in each field were as follows.

1) Research areas in priority I group: Six research

areas were selected in the population and family planning field and their contents and priority are listed in Table 3.

Sociological approach to family planning was selected as the most important area in population and the family planning field. Although the family planning project in Korea was said to be a great successful example in developing countries, the rate, 1.57% per year, of increase in population remains high. Taking into account that the decrease in population growth rate has been slow down recently, it is highly recommended that some sociological studies be conducted to find measures to counteract against the obstacles. What is the focal point of sociological and systematic improvement? Would the amendment of related laws and regulation favorably affect to eliminate the stubborn boy-preference attitude? If it is, then what would be the best strategy to motivate community leaders for action?

The contraception and its related studies are ranked in the second priority in population and family planning. The priority target in the family planning project is the increase of the contraceptive practice rate. So grasping the contraceptive practice rate, analyzing the influencing factor, studying a plan which promotes the wide use of contraceptive methods and improving the method concerned with its field effectiveness, are all very important.

Sex education and population education for youth is necessary. Sociological and public studies on abortion which has decreased recently and the studies on the side effects due to contraception are research areas necessary for population and family planning.

The control of water pollution was selected as the primary research area in many environmental research areas. Now in Korea, available resource for fresh water has reached its limit, and the consumption of fresh

Table 3. Research areas in priority I group

Research fields	Priority	Research areas
Population and family planning	1	Sociological approach to family planning
	2	Contraceptive method and its related studies
	3	Sex education as well as population education for youths
	4	Induced abortion
	5	Complication of family planning
	6	Population movement
Environmental pollution	1	Management of water pollution
	2	Management of air pollution
	3	Management of soil pollution
	4	Management of noise and vibration
	5	Management of marine pollution

Table 4. Research areas in priority II group

Research fields	Priority	Research areas
Occupational health	1	Control of working environment
	2	Prevalence of the occupational disease
	3	Heavy metal poisoning
	4	Organic and chemical Poisoning
	5	Silicosis
Water supply and food sanitation	1	Drinking water supply in rural area
	2	Management of food handling facilities
	3	Management of instant food
Health care system	1	Health care delivery system
	2	Primary health care
	3	Activation of public health institution
	4	Quality assurance
Health behavior and utilization	1	Behavior and pattern of health care utilization
	2	Factors affecting health care utilization
	3	Knowledge about health care
	4	Relationship between patient and medical personnel
	5	Researches on community
Health education	1	School health education
	2	Development of textbook for health education
	3	Social health education
	4	Health education for personal hygiene
Maternal and child health	1	Antenatal care
	2	Delivery care
	3	Child health care
	4	Risk factor analysis in pregnancy
	5	Growth and development in child

water is increasing. Hence, the rapidly increasing amount of sewage is aggravating the pollution of rivers that several rivers near large cities are polluted above the level of allowable limits. Therefore, studies on the control of urban sewage and industrial waste and on the health effects of chemical pollutants, heavy metals and detergents need to be carried out.

Furthermore, the exhaust gas from houses, industrial factories and vehicles have aggravated the quality of air. So, in several areas, concentrations of air pollutants are above the permitted level. Therefore, studies on the control of air pollution and health effect due to air pollution should be made. Others such as the soil pollution due to pesticides, chemical fertilizers and heavy metals, noise and vibration, marine pollution due to increased marine transport ships are subjects which must be studied also.

2) Research areas in priority II group: In the oc-

cupational health field, the control of working environment was selected as the most important research area (Table 4). Considering that poor occupational environment leads to higher incidence of occupational disease, particular studies on the effective control measure of working environment in heavy-industrial factories where industrial accidents frequently occur and in small and medium sized factories as well, should be carried out.

Moreover, although periodical health screening of workers has been made, the actual status of occupational diseases will be known by further reliable studies. So through improving annual physical examinations, to investigate the prevalence of the occupational diseases and identifying the influencing factors are very urgent issues.

Among many agents which induce occupational disease, heavy metals, organic vapours, chemicals, and silicon were most frequently quoted. Occupational diseases caused by the above mentioned agents

appear rather frequently, and sometimes end up with a fatal sequelae. Studies on these areas should be carried out continuously. Beside the above research areas, women workers' health problems are an area which need much attention. There are many women workers in our country and their working conditions are relatively poor.

The sanitary drinking water supply system does not cover on entire rural village yet. Some of the existing facilities in rural areas are poorly maintained. In the water supply and food sanitation field, drinking water supply in rural areas was selected as the most important. The management of food handling facilities such as sanitary food service is also important.

In spite of the user's convenience of instant food, sometimes they are not treated sanitarily. It is dangerous because of infection as a result of a complex delivery system, poor production process, and poor storage condition. It is necessary to manage instant food services tightly and to recognize it as an important research area.

In the health care system, the health care delivery system was selected as the most important research area.

Provided available health resources are limited, the important matter is how to maximize their utility by the development of a health care delivery system which includes a rational patient referral system. Though many studies have been done trying to develop an ideal and feasible health care delivery system, it is not established so far.

Since the late 1970's an equity of health services to the people in rural areas and to urban low income levels compared to the people of the middle and upper class emerged to be an issue which is an important research area.

Besides, reinforcement in a public health system and program, quality assurance in medical successfully developed in other countries must also be studied in our country.

The panel gave top priority to behavior and pattern of health care utilization as a research area. Therefore, attention must be called upon to obtain such data and the analysis of the data. Next, priority was given to the study on health value and expectation of the community. Therefore, study must be done on what the public thinks about health.

Recently, there are significant changes in the relationship between doctor and patient which necessitates a study on desirable adjustment for future direction. Also we must study the dynamics of community organization, and local culture of rural areas to understand the people.

Because school health covers many students and

has much impact, education in general was regarded as an important program. But school health in Korea has not been as successful as expected due to the shortage of facilities and manpower. The school lunch program which is an important part of the school health program has been insufficiently implemented due to the financial shortage. Programs need to be started to develop school health care and health education.

Also, the development of a textbook on personal health and hygiene for school children is recommended. The textbook which is developed must be comprehensive and applicable to all levels of formal education.

Besides, there must be study about informal health education for adults through mass media and social groups. Because health education plays an important role in all medical and health fields, the four research areas stated previously must be studied constantly.

The general objective of the maternal and child health program is to promote the health of mothers and child, the reduction of maternal and infant mortality. Antenatal care was indicated as the most important subject of study in maternal and child health field.

Second highest priority was given to the delivery care program. This is perhaps, the reflection of the current prevailing situation that more than half of child births in rural area are attended neither by medical doctor nor midwives.

Child health care was indicated as the third priority research area. It does reflect that the infant mortality, particularly neonatal mortality rate, is higher than that of other developed countries. Besides, risk factor analysis in pregnancy and in growth and development of children must be studied.

3) Research areas in priority III group: Although it appears that the rate of occurrence of infectious diseases had been decreasing in Korea since the 1960's, there is still some risk of infectious disease outbreaks although the probability is far less than before.

An infectious disease control surveillance system was recommended as the most important research area of this field (Table 5). In order to prepare an efficient plan for controlling infectious disease it is necessary to complete the surveillance system which will prevent the outbreak and reduce the prevalence of infectious disease.

Since the environmental sanitation in general is yet to be improved, the control of water-borne infectious disease was recommended with second priority order. The control of hepatitis, tuberculosis, sexually transmitted disease were recommended with third,

Table 5. Research areas in priority III group

Research fields	Priority	Research areas
Infectious disease control	1	Surveillance system of acute infectious disease
	2	Control of water-borne disease
	3	Control of hepatitis
	4	Control of pulmonary tuberculosis
	5	Control of sexually transmitted disease
Chronic and degenerative disease control	1	Development of screening test
	2	Hypertension and cardiovascular disease control
	3	Early detection of cancer and its control
	4	Patient registration system
	5	Metabolic disease control
Health resources	1	Effective utilization of health manpower
	2	Demand and supply of health manpower
	3	Training program in health manpower
	4	Allocation of resources
	5	Effective utilization of medical equipment
Health economics	1	Financing mechanism of health insurance
	2	Cost-containment program of medical expenses
	3	Management of medical care institution
	4	Paying system for medical care
	5	Adequate hospital cost development
	6	National health expenditure
Information system	1	Vital statistics improvement program
	2	Management to improve reliability of health statistics
	3	Development of information system
Accident prevention	1	Prevention of traffic accidents
	2	Prevention of industrial accidents
	3	Prevention of general accidents
Mental health	1	Community mental health
	2	Neurologic disease control
	3	Senile disease control
	4	Epilepsy control
Rehabilitation	1	Rehabilitation program expansion plan
	2	Rehabilitation therapy and occupational training
	3	Control of the handicapped
	4	Occupational rehabilitation

fourth and fifth priority respectively.

In the field of chronic and degenerative disease control, developing an efficient method for early diagnosis and effective mass screening was recommended as the most important research area. Also, it was found important to provide an effective control measure of such diseases as hypertension, cerebrovascular disease and cancer which recently have shown high mortality, and becoming the most important causes of deaths.

Patient registration by specific disease, which has not been established yet in this country, is recommended as an important research area. The reason for this is that through specific patient registration the scope of the prevalence, incidence and prognosis could be known. Also, it is said that control of metabolic disease is an area to be worthy of research in the near future.

In the area of health resources, efficient planning on the part of health and medical personnel has been

Table 6. Research areas in other research fields

Research fields	Priority	Research areas
Tropical diseases and helminthiasis control	1	Intestinal helminthiasis
	2	Clonorchiasis and paragonimiasis control
	3	Overseas employees surveillance system
Nutrition	1	Dietary habit
	2	Weaning and compensatory diet
	3	Nutrition during pregnancy
	4	Study on physical of a nation
	5	Overweight prevention
	6	Specific deficiency syndrome
Drug addiction and alcoholism control	1	Pesticide poisoning
	2	Smoking
	3	Alcoholism
	4	Drug addiction

recognized as the most important in health sciences. The development of an effective supply plan and the education system for this needs to be studied.

Health facilities, in which there is a lot of interest nowadays, has been decided as an important research area. To invest effectively in the health care field, a reasonable distribution plan of facilities should be decided and there should also be a plan to minimize every unnecessary investment with expensive facilities.

As the most important area of studies in this field, the financing mechanism of health insurance by which enable to broaden the coverage was selected. Second priority was given to the study on the medical cost-containment measure.

Also, the following has been decided to be an important research area; the plan to modernize the administration of the health care organizations by the introduction of modern managerial principles and technique, the study on a new payment system to replace current fee-for-service system, a study to develop adequate medical care cost.

It was further stated that the study of the total health care expenditure, which has not been evaluated accurately until now, might be needed in the very near future.

The importance of the health information system field was emphasized in the past and by the use of computerized systems nowadays, an improved health information system might be developed. In this field, the study to make an improvement in various kinds of vital statistics associated with population has been selected as the most important research area. Such data or population and vital statistics are considered to be essential for health planning, administration and

research.

Measures to improve reliability of those statistics had been noted as an important research area. The study to develop an information system of health facilities and to make use of them has also been decided an important one.

In the field of accident prevention, traffic accident prevention has been chosen as the most important research area. Also, the researches to prevent industrial accidents and various other kinds of accidents have been decided as important areas because the number of industries and factory workers are increasing.

In the field of mental health, the important of community mental health has been emphasized, and the study on this area has been decided as important.

Taking into account the recent increment of neurologic disease and prolongation of life-expectancy, the control of senile mental disorder was selected as a major research area. The design of a measure for an effective control of epilepsy was also recommended as a research area not to be neglected.

Concerning the field of rehabilitation, the plan to acquire more rehabilitation facilities and to increase the availability of rehabilitation services for those people who need them has been selected as the most important research area.

Also, the capability of such patients to adapt to society through rehabilitation therapy and occupational training was selected as an important area. The plan to educate the handicapped effectively and to rehabilitate industrial handicapped people was also an regarded as an important area.

4) Research areas in other research fields: Other research areas selected from the field of tropical and helminthiasis control, nutrition, drug addiction and alcoholism control were as follows (Table 6).

CONCLUSION

Research fields and areas were selected for solving current and future health problems in Korea and priorities were developed among them. In research fields, 20 research fields were selected and were categorized 4 groups by their priority. Population and family planning, and environmental pollution were the most important research fields and belong to priority I group. In each research field we selected research areas and put priority among them. 85 research areas were selected.

This study has several limitations. As previously mentioned, concrete research topics in health fields and areas have not been developed in this study. In the selection of research topics, available resources such as manpower, facilities, and equipment must be taken into account. In this study, we have only selected general areas for research, leaving the selection of specific research topics to future considera-

tion. It is not the surprising opinion of the panel that it would be good to include topics related to biomedical and basic health science in considerations of future research.

The focus of the study itself, health services research and health behavioral research to the exclusion of biomedical research and basic health sciences research was a limiting factor.

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