

*Educational Research Article***Health research priority setting in Iran: Introduction to a bottom up approach***

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Abstract

BACKGROUND: Priority setting is one of the major issues in the health research system and no health system can afford to pay for every research they want to do, particularly in developing countries, so we decided to set the national main areas of the health research priorities.

METHODS: In this study, according to Essential National Health Research (ENHR) strategy and with cooperation of all the Iranian universities of medical sciences and other stakeholders, the national health research priorities were extracted.

RESULTS: The number of research priorities collected from the universities of medical sciences was 6723. Seventeen percent of the research priorities were related to basic science, 78 percent applied science and 5 percent were related to developmental type. According to epidemiological classification, 50% of the research priorities were in descriptive form. In this process, 9 main extracted areas consist of communicable diseases, non-communicable disease, Health System Research, pharmaceutical sciences and Industry, basic science, traditional medicine and herbal medicine, nutrition, environmental health, and dentistry. And then for each area, five main projects were defined.

CONCLUSIONS: In the Health Research System, the participatory priority setting is the main function based on needs assessment.

KEYWORDS: Priority Setting, Health Research.

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Priority setting is one of the most important issues in a health research system, and no health system, especially in developing countries, can afford to pay for every research they want to do.

Difficult decisions must be made as the gap increases between the need for health system research and the amount of money available to provide them.

Under an ideal situation, every organization should have a clear statement of priorities, and it formally must be ratified and shall be updated annually. These priorities provide the basis of resource allocation, whether growing or declining. Unfortunately, the truth is that many organizations do not have the priorities list until they are placed in critical situations such as reducing the budget¹.

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Such priorities provide a sound basis for decisions necessitated by changing resources, whether growing or shrinking².

Logical and transparent appeal to determine priorities guide policy makers in their choice of health interventions and maximum social welfare³. Internationally, the processes of the health research priority setting aim to produce knowledge that will have more comprehensive benefits to our community. These benefits consist of developing policy⁴, improving health systems⁵ and better health outcomes⁶.

Over the past decades, a number of approaches for priority setting have been developed including evidence-based medicine, the burden of disease analysis, cost-effectiveness analysis and equity analysis. These approaches focus to single criteria only; whereas in reality, policy makers need to make choices taking into account multiple criteria simultaneously. Moreover, they do not cover all the criteria which are relevant to policy makers.

Therefore, the development of multi-criteria approaches to priority setting is necessary, and this has indeed recently been identified as one of the most important issues in the health system research⁷. The Commission on Health Research for Development 10 years ago proposed countries to undertake Essential National Health Research (ENHR) in order to help correct imbalances in global health and development. ENHR is an integrated and systematic approach for organizing and managing the country specific and global health research in order to promote health and development based on the equity and social justice⁸.

This requires countries to develop and retain the capacity to set the research priorities, and for research and development agencies, funding bodies and other international actors to respect these priorities. According to ENHR guideline, health research priority setting can be undertaken at several levels.

In this paper, we will explore the demand driven priority setting approach in health research and in developing a system for setting research priorities based on ENHR strategy. This system suggested by ENHR focusing on

an analysis of the health needs, people's expectations and societal trends and facilitating the development of the projects with researchers to ensure that these needs would be addressed.

Methods

The framework that we used in this study for priority setting was based on ENHR strategy. Priority setting in this model was based on an analysis of health needs and demand driven, focusing on community expectations and societal trends. Different stakeholders were involved at multilevel (i.e. multiple inputs from communities, districts, sub-national and national levels) and multi-dimensional (i.e. quantitative and qualitative scientific inputs as well as social, economic, political, ethical and management considerations) which were used.

Following ENHR guideline for priority setting multiple stages were performed during this study.

1- An intersectional and multidisciplinary working group was appointed by the Iranian Ministry of Health. This group was responsible for managing the whole process of study implementation. This group designed a unique guideline and sent it to all the universities of medical sciences.

2- A participatory research group from each university which was tasked to develop and propose processes for priority setting was chosen. Furthermore, in each university of medical science, the strategic committee consists of the university president, scientific groups, other organizations related to health (education, media, municipality and etc.), community and private sectors were established. This committee was responsible for monitoring and evaluation. Technical and political supports of the needs assessment project in the province were based on unique guideline.

All the universities of medical sciences were invited to this study.

3- A national ENHR workshop, with participation of the communities, researchers, health program managers and policy-makers; followed by the formation of a task force with

tripartite representation to refine the research agenda.

4- Participatory needs assessment was done based on Health situation analysis (provincial or sub-national level)

5- Health priorities were determined according to criteria such as the political acceptability, executive ability, cost effectiveness and so on (provincial or sub-national levels).

6- All of the health research priorities from the universities of medical sciences were collected (National level)

7- The national health research domains were extracted based on the sub-national health research priorities (Figure 1)

In this study, the main areas for the national health research priorities were extracted for 2009-2013.

For implementing this study, a common guideline was sent to all the universities of

medical sciences and then, training workshops were designed for all the stakeholders. The executive step consisted of needs assessment and setting priorities in all of the provinces. In national level, the steering committee consisted of some policy makers, and specialists also were established. All the priorities reviewed by the members of this committee.

This committee designed some exclusion criteria for determining national health research priorities as the following: be repeated, lack of national dimension, lack of research dimension, the subjects are too general and so on. Moreover, a specific algorithm was designed for evaluating the priorities (Figure 2)

All the priorities entered to appropriate software, and data analysis was performed by SPSS Software¹¹ (Chicago Ill USA).

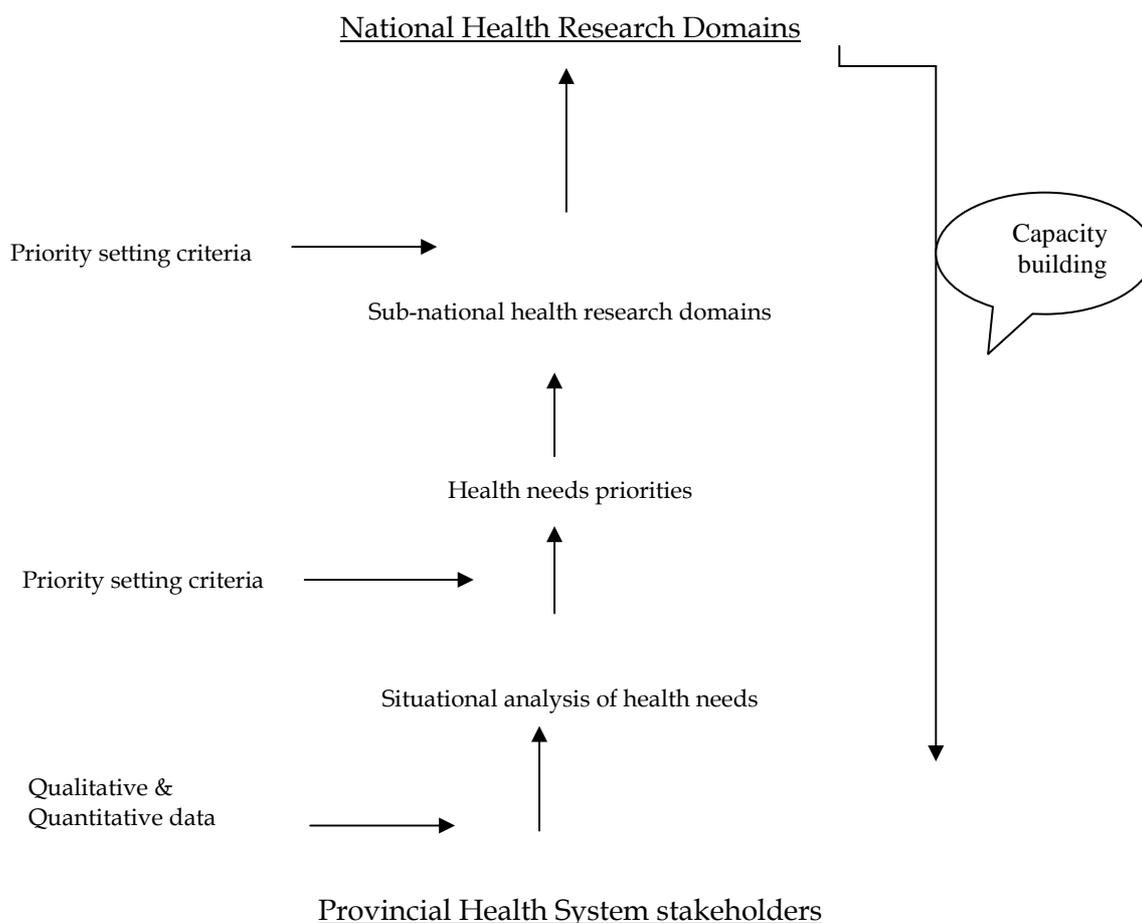


Figure 1. The process of determination National Health Research Priorities

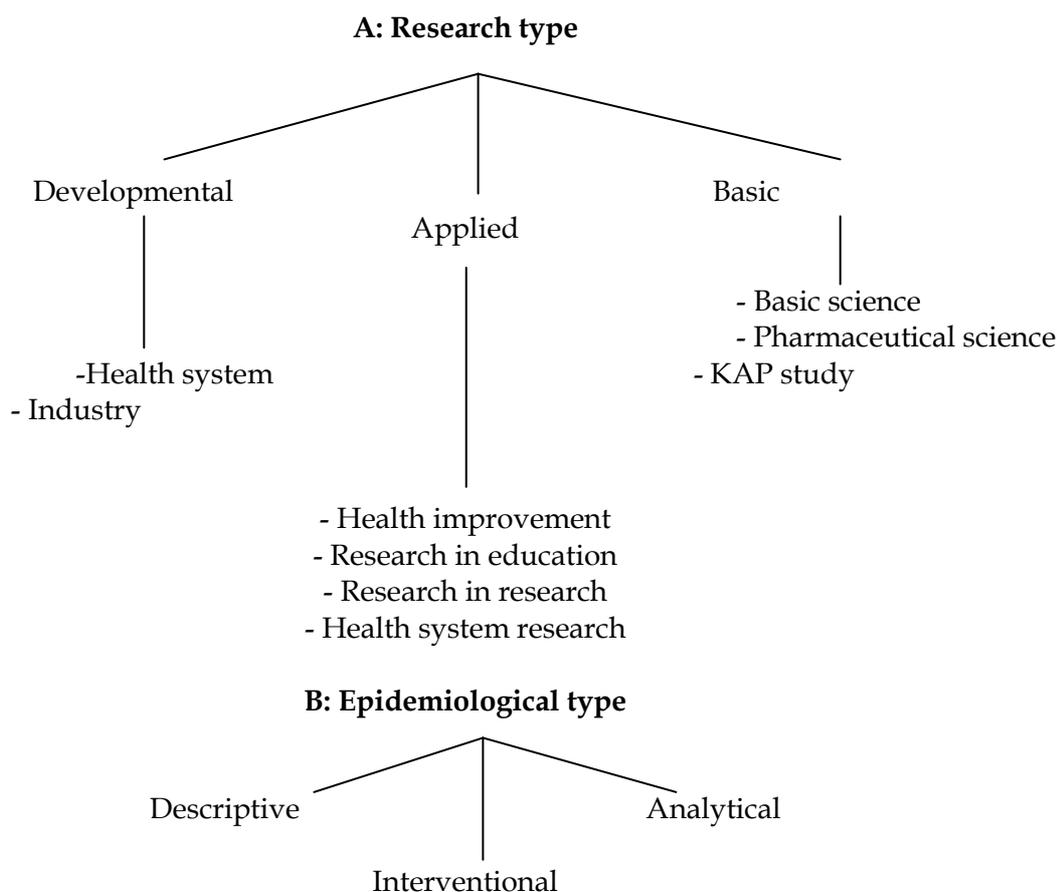


Figure 2.

In this research, permission has been obtained from the Ethics Committee to gather and analyze data related to ethical principles. This project was approved by WHO-JPRM program with AMS Code: 43184425. The results of the completed research have been represented to all the stakeholders.

Results

According to ENHR guideline, to conduct the whole study, intersectional and multidisciplinary working group was formed in research and technology office. The group consisted of a principal investigator, epidemiologists familiar with the priority setting process, representatives from the universities of the medical sciences, research and technology deputy and representatives from research centers. Through eight national workshops, all of the universities of medical sciences were trained on the needs assessment and priority setting process.

Following the workshops, participatory research group in each university applied mixed quantitative and qualitative methods for needs assessment. The list of needs was presented to the strategic committee in each university and health research priorities were extracted according to the mentioned criteria. All the universities of medical sciences participated in this process and the total number of priorities that was gathered from these universities were 9607. All of priorities' titles were reviewed by working group in research and technology national office and irrelevant topics were excluded. At the end of this review process, 6723 research priority titles were remained.

According to the results, three main areas of priorities were recognized as the following:

Basic, applied and developmental science (Table 1).

According to the epidemiological classification, almost half of the research priorities were

descriptive (46.3%), 36.1% analytical and the rest were related to interventional study (17.6%).

The majority of the research priorities in basic science were descriptive ($p < 0.05$).

But in developmental science, more than 99% were analytical type ($p < 0.05$).

Table 2 shows the frequency of research priorities based on the type of epidemiological study.

(Table 2)

Basic research priorities consisted of basic science (52.4%), pharmacological science (11.5%) and KAP studies (36.1%). Table 3 illustrated the basic research priorities based on the epidemiological studies (Table 3).

Applied research priorities were classified to four groups consisted of health improvement (64.3%), research in education (6.8%), research

in research (1.4%) and health system research (27.5%). Except in health improvement, in another type of applied research priorities, the most type of epidemiological studies was descriptive (Table 4).

Health improvement consisted of health promotion (44.3%), prevention (34%), treatment and rehabilitation (21.7%).

In this group, three top research priorities included psychological disorders, reproductive health and infectious diseases.

The developmental priorities divided into two groups consisted of: health system (98.5%) and industry (1.5%). All of the developmental priorities were in analytical form.

After reviewing all of the priorities and according to exclusion criteria, 9 main areas were recognized and in this article, we illustrated the five most important sub-areas in Table 5:

Table 1. The frequency of research priorities based on the main area

Main area	Number	Percent
Basic	1132	16/8
Applied	5257	78/2
Developmental	334	5
Total	6723	100

Table 2. The frequency of the research priorities based on the type of epidemiological studies

Type of research priorities	Type of epidemiological study			Total
	Descriptive	Analytical	Interventional	
Basic	968 (85)	131 (12)	33 (3)	1132 (100)
Applied	2143 (40.7)	1967 (37.5)	1147 (21.8)	5257 (100)
Developmental	2 (0.6)	332 (99.4)	0	334 (100)

Values are n (%)

Table 3. The frequency of the basic research priorities based on the type of epidemiologic studies

Basic priorities	Type of epidemiological study			Total
	Descriptive	Analytical	Interventional	
Basic science	473 (79.8)	98 (16.5)	22 (3.7)	593 (100)
Pharmacological science	86 (66.1)	30 (23.2)	14 (10.7)	130 (100)
Knowledge, Attitude, Practice (KAP) studies	400 (98)	9 (2)	0	409 (100)

Values are n (%).

Table 4. The frequency of the applied research priorities based on the type of epidemiologic studies

Applied priorities	Type of epidemiological study			Total
	Descriptive	Analytical	Interventional	
Health improvement	1119 (33)	1361 (40.2)	905 (26.8)	3385 (100)
Research in education	151 (42.7)	108 (30.5)	95 (26.8)	354 (100)
Research in research	35 (46)	25 (32.9)	16 (21.1)	76 (100)
Health system research	838 (58.1)	473 (32.8)	131 (9.1)	1442 (100)

Values are n (%)

Table 5. The titles of the main areas and the most important sub-areas in health research priorities

Main Area	Most important sub-areas
1.Communicable disease	1- New and emerging diseases 2- Zoonotic diseases 3- Respiratory tract infection 4- Burden of communicable disease 5- AIDS
2.Non-Communicable disease	1- Cardiovascular diseases 2- Trauma 3- Risky behavior in adolescence 4- Drug abuse 5- Tobacco and Smoking
3.Health System Research	1- Determination of health status in general policies based on valid indicators. 2- Designing an appropriate model of the health service providing based on a new approach to PHC 3- Resource (man, money, material) management and allocation in health sector 4- Study of cost-effectiveness of the new technologies for health 5- Researches related to social determinants of the health and health equity
4.Pharmaceutical Sciences and Industry	1- Application of biotechnology and nanotechnology in prevention, diagnosis and treatment of diseases (vaccines, drugs and recombinant and etc.) 2- Formulations and drug production 3- Drug delivery by new technology 4- Discovery of new molecules 5- Optimization of the industrial process
5.Basic science	1- Molecular study for important communicable disease 2- Molecular and immunological study in vaccine production and new method for treatment 3- Molecular genetics of important communicable disease 4- Cellular and molecular mechanism in drug resistance 5- New methods in the early diagnosis and screening
6.Traditional medicine and herbal medicine	1- Documentation of diagnostic methods and treatment in traditional medicine in Iran 2- Clinical studies on the effects of herbal drugs 3- Biological effects of herbal drug 4- Identification of algae and herbal drug (with emphasis on the Persian Gulf and etc.) 5- To identify and determine the properties and structure (active ingredients of the medicinal plants) and drug formulation of the herbal products
7.Nutrition	1- Improving food safety system in Iran 2- Determination of the nutritional status, including EPM, micronutrients and etc. 3- Process of production, processing, storage, distribution and marketing from the viewpoint of food safety 4- Economical and physical access to food, food choices by consumers and etc. 5- Desirable patterns for changing food habits and feeding behavior to health promotion
8.Environmental health	1- Scientific map compiling in pathogenic factors 2- Transferring the environmental activities to private sector 3- Air pollution 4- Spinal disorders in different careers 5- Chemical, biological and physical pollutants with appropriate interventions
9.Dentistry	1- Epidemiology of the oral diseases 2- Research system development for the dental care 3- New technology in dentistry 4- Improvement of the dental services quality 5- Etiology, prevention and treatment of the oral diseases

Discussion

There are several approaches that are available to guide priority setting for health research. Along with the heterogeneous nature of these approaches there is a need for agreement on appropriate guidance for this exercise. Essential National Health Research (ENHR) approach which mainly focuses on health research priority setting was implemented in this study for national level exercise⁹. The findings revealed that approximately half of the research priorities at the national level were descriptive studies. Considering the category of applied research, almost 65% of the priorities were related to health improvement topic. Among the category of developmental research, the majority of priorities (98.5%) were categorized under the topic of health system research.

Assigning high importance to descriptive studies in Iran might be related to demographic and epidemiological transition the country is going through¹⁰. In other word, when the epidemiological change is rapid, health system stakeholders feel a great need for access to new and up-to-date data and descriptive information in this regard.

Integration of medical education and the health care delivery system and restructuring medical education and research in 1985 in Iran determined a rapid change in health research and education strategies¹¹. In addition, it provided a context that brought academic and field workers closer; this innovative action might influence the research priority setting and provided better insight to importance of health improvement as well as health system research.

Conflict of Interests

Authors have no conflict of interests.

Authors' Contributions

P.O is the main investigator. All of the authors participated in the study design. F.B collected all the data from the universities of medical sciences. M.F performed the statistical analysis. M.B.E and A.S.F wrote the manuscript and finalized it. A.S.F, as the corresponding author, proposed the model for priority setting and supervised the process of the research implementation. All of the authors read and approved the final manuscript.

The present study had some benefits which included providing an appropriate background for health sector stakeholder's cooperation in universities and at national level, fostering ownership and commitment to these priorities and minimizing the chance of researchers' opinions to be overlooked and making the prioritized research to better response to societal and policy needs^{12 13}. In line with the mentioned benefits, there were limitations in data collection process and study design. One of the main limitations was that each university determined the priorities based on their own information collection process. Although we tried to apply a uniform method in all of the medical universities, still there were some differences in the method of implementation of the method which was partly inevitable. According to the recommended protocol, where the priorities must be determined for the next five years, there was a plentiful need for accurate data and information; lack of these prerequisites in some settings might affect the accuracy of findings of this study¹⁴.

This study concluded that although ENHR approach seems to provide an acceptable guidance for health research priority setting, still there are some points that should be noted. Preparing valid information such as literature reviews and other health related data, assessment of broader stakeholder views are samples of these considerations for further studies in this regard. Evaluation of the established priorities and revising health research priorities based on a regularly scheduled program is also recommended.

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