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## CLINICAL INVESTIGATIONS

# The Quality of Collaboration among Medical Research Centers, Universities, Health Executives and the Community in Iran

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**Abstract:** A health research system is defined as a system for planning, coordinating, monitoring and managing health research resources and activities, and for promoting research aimed at effective and equitable national health development.

This study was conducted to describe the quality of mutual collaboration among medical research centers, universities, executive organizations and the community.

In this situation analysis qualitative methods were applied. In-depth interviews were held with the heads of 20 research centers (RCs), 6 senior executive health administrators at national level, 10 vice chancellors at universities and 3 directors of private medical research firms. In addition to the interviews, records and evidence were reviewed.

The findings reveal that 86% of the RCs' annual budget is secured by public sources. The collaboration among the RCs, universities and organizations is informal rather than formal. The cooperation between RCs and universities in policymaking, priority setting and knowledge production and utilization is stronger than that with other organs. The RCs have weak relationships with the community. About 20% of them have no relations with the private sector. The collaboration of RCs with the executive organizations and managers is also weak, especially in knowledge utilization and priority setting.

It is concluded that the policies of medical research centers should be reoriented towards the basic health problems of the country facing executive organizations as well as the community. The collaboration between RCs and the universities, the private sector and NGOs should also be reinforced through networking and improvement of health information systems.

**Key Words:** health research, System, HRS, Collaboration, Iran

## Introduction

Health research is a process for generating systematic knowledge and for testing hypotheses, within the domain of medical and natural sciences as well as social sciences, including economics and behavioral science (1). The information resulting from this process can be used to improve the health of individuals and groups (2). The term health research system (HRS) is defined as a system for planning, coordinating, monitoring and managing health research resources and activities, and for promoting research aimed at effective and equitable national health development. It is also defined as a concept that integrates and coordinates the objectives,

structures, stakeholders, processes, cultures and outcomes of health research towards the development of equity in health and in the national system (3,4).

There are several reasons for a country to adopt a "system" approach to health research:

- In many countries, health research is uncoordinated and fragmented, resulting in inefficiencies and duplication. A systems approach would better coordinate this research.
- Some research requires collaboration and link between different research organizations or disciplines. A system would be able to create the required synergy between these entities.

- In many countries, research is inadequately linked to the priorities and goals of the health system. A systems approach would better align health research with national health priorities and goals.
- Many research outputs are not adequately translated into changes in the health system, or into the desired health and equity outcomes. This points to a need for a more systematic application of research in policy, planning and delivery, as well as a more systematic link between researchers and users of the research to attain equity in health and health research (4).
- A systems approach is needed to develop research capacity and to mobilize resources for research and development.
- Health research in many countries is unethical, unfair, unaccountable and not transparent. Countries need to develop systems approaches for setting rules, procedures and standards, and to regulate themselves in line with expressed values and principles (5).

Since 1986, in the Islamic Republic of Iran the Ministry of Health and Medical Education (MOHME) has been responsible for a) the delivery of health services to the public, b) the medical education and production of health manpower, and c) directing health research.

In this country with a population of about 65,000,000, 40 public universities of medical science (UMSs) are responsible for medical education, research and health services in defined areas (6).

There are also 62 public medical RCs and 23 private ones, which are active in specialized medical research domains. Most of the RC are operating in the capital, Tehran.

Health research is essential to improve the design of health interventions, policies and service delivery,(7) and analysis of HRS in any country can reveal weaknesses, strengths, difficulties and insufficiencies. Since the component of coordination and collaboration between researchers and research users in HRS is important in the process of development, the objective of this situation analysis is to describe the quality of collaboration among RCs, universities, executive organizations and the community in Iran in 2003.

## Materials and methods

Qualitative methods were applied, i.e. in-depth interviews were conducted with the following groups through purposive sampling:

- a- Directors of 20 licensed medical RCs with at least 3 years' active experience.
- b- Research vice-chancellors of 16 UMSs affiliated to RCs.
- c- Six senior executive administrators at the Ministry of Health and Medical Education.
- d- Ten experienced vice-chancellors responsible for health services at the UMSs as health services delivery managers.
- e- Three directors of private research firms with at least three years' experience.

Structured interviews were conducted to increase the amount of control by the researchers over the content of the interview. The questions asked by the interviewers were designed by the researchers prior to the initiation of the data collection. The questions mainly addressed the UMSs' and RCs' missions, goals, their sources of budgets, and whether they had and how they had mutual collaboration with other UMSs, RCs, health executive organizations, the private sector, NGOs and the community in respect of health policy making, research priority setting, utilization of knowledge, capacity building (both software and hardware), information exchange, financial aid participation in research activities etc.

The protocols of the interviews were pilot tested on subjects similar to those who participated in the study. This allowed the researchers to restructure the sequencing of the questions and the procedure. The average duration of an interview was about 2.5 h.

In addition to the in-depth interviews, authorized records, documents and evidence relevant to the subject of the study were reviewed to increase the validity of the findings. Triangulation was applied in some cases to verify the claims.

The collected data were coded, classified and arranged into matrices, and where applicable quantitative methods were also used for purposes of interpretation.

The variables noted in collaboration among RCs, UMSs, health executives, NGOs, the private sector and the

community were policymaking, priority setting, conducting research projects, research (knowledge) utilization, capacity building, organizing scientific venues, and consultations.

### Findings

The total number of researchers working in the 20 RCs is 361, with an average of about 18 that can be classified by working hours 56% full-time, 32% part-time and 12% other. The source of RCs' average annual budgets is 86% governmental and 14% non-governmental (see Table 1).

A review of the documents and informant interviews reveals that RCs have relationships with UMSs, health managers, the private sector, NGOs, the community and international health agencies (see Table 2).

Some relations are formal, organizational ones (mechanical) and are coordinated by the MOHME, and others are informal (organic) and not officially defined. For example, the relations between RCs or UMSs and NGOs, the community or the private sector are not determined in their articles of associations. Where some RCs or UMSs have research fields within the community and the public, GOs, NGOs or volunteers participate in the

research activities. For example, the Isfahan Cardiovascular Research Center has strong relations with the public in community based interventions. Another good example is the Non-Communicable Diseases Control research project, covering a population of around 50,000 in the Vali-Asr region of Qazvin province. This project is aimed at reducing the risk factors of non-communicable diseases (cardiovascular disease and diabetes mellitus) and intervening to improve patterns of nutrition, behavior and physical activities in the community.

In this project cooperation and coordination exist among the community, health managers, academics, researchers, students, GOs and NGOs, and the private sector in order to achieve health promotion goals.

The project is sponsored by agencies such as the WHO, Qazvin UMS, the under secretary of research and technology at the MOHME, the private sector and NGOs (see Figure 1).

The quality of the cooperation among the RCs, UMSs, health executives (managers), NGOs, private sector community is summarized in Table 3. As this table indicates, RCs have stronger relations with the UMSs in different areas such as policy making, priority setting, research projects, knowledge production, and knowledge utilization than with other stakeholders.

The RCs have weak relationships with the community as the ultimate knowledge utilizes and only 10% have conducted community based research.

Of the total number of RCs, 80% claimed to have direct or indirect influence on education and research policies in their universities. One-third of RCs say that they receive research orders from universities and enjoy some mutual cooperation in conducting research projects.

Table 1. Distribution of RCs' average annual budget by source.

Source	Average (%)	No. of	RCs (%)
Government	86	20	(100)
NGOs	1.7	5	(25)
Private sector	2.1	4	(20)
Foreign	5.3	7	(35)
Donors	1	1	(5)
Revenue	3.9	6	(30)
Total	100	-	-

Table 2. Scientific and research interaction between RCs, medical universities, researchers, managers and the private sector with other organizations.

	RC	Medical university	Researchers	Managers	Private sector	NGOs	Community	International agencies
RC	+	+	+	+	+	+	+	+
Medical university	+	+	+	+	?	?	+	+
Researchers	+	+	+	+	+	+	?	?
Managers	+	+	+	+	?	?	+	?
Private sector	+	?	+	?	?	?	?	-

+ Interaction exists, \* Relationship is more informal than formal, ? Not investigated



Figure 1. The research project into prevention of non-communicable diseases at Qazvin City (Vali-Asr area). Building partnership (collaboration among university, managers, researchers, GOs, NGOs and the community) to solve the community’s health problems through community based interventional research.

About 90% of the RCs collaborate with UMSs for capacity building and the use of experts, labs, teaching hospitals, community health fields etc. These relationships are usually closer between the UMSs and their affiliated RCs or departments. For example, Tehran UMS enjoys

more give-and-take with its own departments and RCs than with other UMSs. This university usually organizes workshops on methodology, scientific writing, medical software the internet etc. and the RCs provide research opportunities in sub-specialties.

Since 2001, faculty members of all UMSs in the country have been able to take sabbaticals in selected RCs.

The RCs also have relations with UMSs in terms of the dissemination of knowledge. For example they publish journals and books, and hold workshops and arrange scientific venues.

The cooperation between RCs and the private sector as well as with private research firms and NGOs is weak. Of the RCs, 20% have no relations with the private sector, and the remaining 80% have some limited exchanges in research projects, resource utilization and the production of pharmaceuticals.

Interviews with RC heads reveal that about 80% of RCs have some collaboration with the health executive organizations (GOs) in policy making, formulating health strategies, epidemiologic action and disease control. About 30% of RCs cooperate with executives in research utilization and translating the results into action in official health instructions.

Table 3. Mutual collaboration among RCs, universities, executive organizations and the community.

Type of link	Medical university	Health executive GOs*	Other RCs	NGOs	Private sector	Community
Policy making	+++	+++	++	-	-	-
Priority setting	++	+	++	-	-	-
Research projects	+++	+++	++	+	+	+
Research (knowledge) utilization	++	+	++	+	+	+
Resource utilization	+++	+	+	+	+	+
Capacity building	+++	++	++	+	+	-
Scientific venues	+++	++	++	-	+	-
Consultation	+++	++	++	+	+	+

\* Includes health managers

+++ Strong (if 3/4 or more of RCs have such links)

++ Moderate (if 1/2 to 3/4 of RCs have such links)

+ Weak (if less than 1/2 of RCs have such links) – If quantitative measures were not deemed sufficient, ratings were based on a comparison of respondents’ replies, e.g., between the views expressed by RC directors and health managers

- Absent

? Not investigated

Of all RCs, 60% cooperate over in-service training and continuing medical education programs for doctors and health personnel, organizing workshops and training courses etc., which are held by the UMSs.

Only 50% of the RCs claim to have any collaboration with NGOs such as the Special Disease Foundation, Thalasemia Society, Eye Bank, and the Leprosy Society .

Half of the RCs are conducting applied problem based health research projects in which the executives are usually engaged .

Interviews with the health managers reveal that the communication between them and the RCs is rather weak, and some of the executives said that the RCs did not have the potential to solve their problems. For example, the manager of the Office for Family Health and Population stated that RCs had not been able to give appropriate responses to their problems. The RCs usually seek the executive's cooperation in data collection for their research projects, while no feed-back is given to these organs. Nearly all managers claimed to conduct applied research independently. They secure domestic funds for their research programs, occasionally boosted by sponsorship from the WHO or other NGOs.

## Discussion

The findings of this study show that the RCs collaborate with other RCs, universities, managers and the private sector in policy making priority setting, knowledge and resource utilization, and capacity building, and this collaboration may range from nil (-) to strong (+++). For example in priority setting research and resource utilization there is a weak give-and-take process between RCs and health executives. It is also noteworthy that the collaboration between RCs and the community is very weak. The relationship is also very weak between the RCs and the private sector, which is why 86% of their budget comes from public sources and cannot be secured by the other stakeholders (Table 1).

Over the past years, research in developing countries such as Iran has been characterized by low adherence to priority research, and by a move away from the country's social and economic needs. In the case of health research, a modern approach requires the revision of this tradition towards an increase in the degree of articulation and integration with the health needs of the population (8,9).

Based on the evidence of this research, research policies and priorities in RCs are more defined and devised by individual opinion and on a per case basis than based on a defined system for the collection, classification and utilization of the evidence. Although in the last 2 years there have been attempts to establish health research priorities in the UMSs by building up partnerships among different stake holders, including health managers, NGOs and the community (5,10), it seems that the RCs are still adhering to their old ways.

The view of knowledge utilization is linked to scales of utilization related to various aspects of the decision making process(11,12) and this entails continuous effective communication among the producers of the knowledge and the different utilizers, within or beyond the HRS.

## Conclusion

Over the last decade it has become increasingly clear that if health research is to make a significant contribution to improving people's health there is a need to go beyond supporting projects and teams. In the past, there were a number of problems on which separate research projects were being implemented at the national level, where a national health research system approach could be seen as a direct response to those problems (13,5). The RCs, UMSs and health executives as well as the private sector and the community, are the components of the HRS of a country and logical linkage and collaboration among them leads to synergy. The experiences of Brazil, the Philippines, Canada and Mali (8,14,15) are good examples of revision of an activated national health research system, and these countries have mobilized and utilized health research resources towards development. Knowledge is far more than a discrete entity, it is a 2-way process that extends the task of dissemination to include the provision of support for actual changes (16). It is at this point that the concept of social capital becomes particularly relevant. Social capital refers to the features of social organization such as networks, norms and social trust in coordination and cooperation for mutual benefit (13,17).

Within the conceptual framework a well organized HRS facilitating bilateral cooperation and coordination among RCs, UMSs and managers and the community as the ultimate knowledge user can maintain its mission to achieve national health research goals.



Empowerment of the practitioners and the community in health action research (18), using appropriate research utilization models (17) and networking, can lead to the better working of the HRS and linkage (13,16) between RCs, UMSs, managers and the community.

It is recommended that a) the research network through which research activities are coordinated should be organized by the MOHME, in order to facilitate collaboration, b) the research priorities of the RCs and UMSs should be set in collaboration with health executives as well as community representatives and other main stakeholders to increase non-public funds in the budgets of the RCs, c) research strategies should be formulated with respect to the interests of all research stakeholders and oriented towards the basic needs of the public at both regional and national levels, and d) the health information systems in communication and delivering information should be strengthened.

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