Iranian J Publ Health, Vol. 38, Supple. 1, 2009, pp.58-62
A supplementary Issue on:
Iran's Achievements in Health, Three Decades after the Islamic Revolution

Iran's Approach to Knowledge Translation

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Abstract
Knowledge translation was created in response to the knowledge-do gap. With the growing number of research projects, utilization of research knowledge roused interest. One of its defects, which are seen more in developing countries, is the scarcity of recognized practical knowledge translation applications. The actions taken to strengthen knowledge translation can be classified into three categories of 'push, pull and exchange'. In Iran, some of the interventions effective in knowledge translation, may not have primarily taken place with this aim, but can however be effective in it. Some of the measures taken specifically in Iran's research system are: capacity building of human resources for knowledge translation, better utilization of research by the Ministry of Health and Medical Education, creating necessary incentives among medical universities, identification of barriers and proposing interventions. Pilots of knowledge translation interventions are concerned with 'push' activities whose main focus is to support knowledge translation activities and promote active strategies (or increase interaction between researchers and decision makers during research and utilization of results). Long-plan programs such as 'Iran's Health Innovation and Science Development plan have also been designed for the future. These include formation of centers for reducing the knowledge-do gap in the form of knowledge and health technology translation centers.

Keywords: *Diffusion of innovation, Evidence-based medicine, Information dissemination, Policy, Research, Iran*

Introduction
The main strategies of health research have had different focal points at different times (according to the challenges it has faced). Two decades ago the main strategy for promoting the quality of research was through capacity building of researchers and holding health service research workshops. But there came a time when identifying the gap between health needs and research i.e. research priority setting, was recognized as the main strategy of research (1). The World Health Report on Knowledge for Better Health in 2004 clearly pointed out the gap between production and utilization of health knowledge and advised strengthening the strategy of knowledge translation (2). Four years have passed since then but in the Minister's Summit in 2008 again it was concluded that: "*to promote knowledge translation and exchange through the application of effective and safe interventions, evidence-informed policies, policy-informed research, and publication and effective dissemination of research results, including to the public, taking into consideration the diversity of languages and advances in information technology*" are necessary (3).

This article discusses the efforts made by the Islamic Republic of Iran in materializing knowledge translation strategies. The aim of knowledge translation is to reduce the knowledge-do gap. In Iran the health system is an integrated system, in which medical universities deliver health services as well as offer education and research (4). This has created an opportunity to bring knowledge producers (Push/ supply side) and decision makers (Pull/demand side) close to each other, therefore offering useful experience in this respect.

According to the definition, knowledge translation is "*the exchange, synthesis and ethically-*

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sound application of knowledge-within a complex set of interactions among researchers and users-to accelerate the capture of the benefits of research through improved health, more effective services and products, and strengthened health care system" (5). But working on knowledge translation is not limited to the process of disseminating research results, as this is only part of the measures to be taken. For knowledge translation to materialize, the entire knowledge production-utilization chain must be dealt with (6). Knowledge translation begins with the formation of the research question and ends with the application of the research results and eventually with behavioral change.

The actions taken to strengthen knowledge translation can be classified into three categories of 'push, pull and exchange'.

Push/supply side

One of the problems faced in promoting knowledge translation in different countries is the absence of a formulated education curriculum. For this very purpose, and through a program sponsored by WHO/EMRO, an educational curriculum was prepared for knowledge translation and representatives from nearly all the country's medical universities participated in the course. The following topics were taught during this program: knowledge translation concepts, passive and active strategies, compilation of a plan for dissemination of research results, the role of knowledge brokers, assessment and identification of barriers and facilitators of knowledge translation (7). Self-assessment of research institutes' knowledge translation activities was one of the sections discussed in this course. The 'self-assessment tool for research organizations' was used for this purpose. This tool has been prepared in Iran and its validity has undergone evaluation. With the help of this tool, universities and knowledge producing centers can assess their knowledge translation status, and design interventions appropriate to their own organization (8).

Currently, some universities are executing knowledge translation interventions as a pilot. The Research Affairs in Tehran University of Medical Sciences has a program through which the following issues have been proposed as points of knowledge translation interventions and are currently underway: 1) research proposal format, 2) final report format, 3) publication of articles in peer-reviewed academic journals, 4) founding a knowledge brokering office, 5) creating incentives for researchers to practice knowledge translation, 6) compiling a code of ethics for observing stakeholder rights, 7) funding knowledge translation-related activities in projects whose target audiences are not researchers (other than publications in peer-reviewed journals and/or scientific meetings), and 8) designing a website for displaying results appropriate to various target audiences. Also, in order to promote knowledge translation-related issues, an electronic newsletter in Persian is printed monthly (which is accessible on the website http://vcr.tums.ac.ir).

One of the important interventions in knowledge translation is creating incentives for activities in this field (9). After the evaluation and ranking of universities and research centers in 2001, one of their assessment criteria is the implication of research (10). Academic promotion criteria have also been reviewed in 2008 and in addition to publication of research articles implementation of research knowledge has been considered as one of the criteria that people can get benefits for their promotion (11).

Exchange

Major efforts have been made to set research priorities in medical universities at national and provincial level. In a review done on priority settings between 2002 and 2003 it was shown that in nearly half of research centers and universities research priorities are set with stakeholders' participation. At provincial level, the flow of information from the executive sector to the university is easier and therefore the status of provincial priorities is better than at the na-

tional level. On the other hand one of the problems of research funding in Iran is that private sectors rarely invest in research (12).

Another measure effective in knowledge translation is the launching of incubators. Incubators are places wherein research results that can be commercialized are presented (to companies that have been formed by graduates) and initial entrepreneurship support is provided (13). Therefore incubators can reduce the knowledge-do gap by tending to research which can be commercialized. In 2008, only six incubators were active in health sciences. Ten more are intended to be founded in 2009. Likewise one of the National Innovation System's components that can help strengthen communications between researchers and research users, and bring all these together are Science and Technology Parks (14). In Iran this facility has not been created for health sciences yet (though they have been created for other specialties), however, the Ministry of Health and Medical Education (MOHME) is supporting a program for running a specialized medical science park. Finally, it may be said that structures such as public or private companies active in knowledge translation and/or technology have not been formed in Iran yet.

Regarding research which can be beneficial to health promotion, multiple Community-based Participatory Research (CBPR) centers have been formed in the country's universities in the past few years (15). Since these types of research are conducted with the community, academics and other stakeholders' collaboration, they can easily lead to practice if they are performed correctly (16).

One of the important topics discussed in knowledge translation is the use of mass media in transfer of research results. The validity of the news that is conveyed to the public is of due significance here (17). In 2008 MOHME issued a guideline which specifies that researchers should peer-review research results prior to publicly announcing them.

Pull/demand side

In the past three years MOHME has made calls for research proposals at national level for applied research projects, which is an important step in directing research and using universities for solving health problems.

Among the important changes that have taken place in responding to executive needs is 'Health System Research'. In the past few years medical universities' executive sectors have allocated around 2% and even more of their funds to applied research. As a result, executives of relevant sectors have defined their needs in the form of research questions and their needs have been met with applied research.

Other changes that have widely taken place in the country are promotion of evidence-based decision making, use of systematic reviews and compilation of clinical guidelines (18). This kind of capacity building can create the need for evidence among service providers and policy makers. A living example of this need in the country is compilation of numerous clinical guidelines in the fourth 'Five-Year Program' in the health sector.

Along with educational developments, similar to other countries in the world, evidence-based decision making has expanded in the country. On the other hand, the country faces massive diffusions of novel and costly technologies, among which diffusion of magnetic resonance imaging and β-interferon can be named as examples (19, 20). This is why running a national unit of 'Health Technology Assessment' (HTA) was foreseen in Iran's Health System Review (21). The HTA Secretariat has been set up in MOHME's Health Affairs in 2008 and a few projects have begun too.

Conclusion

Multiple measures effective in knowledge translation but not necessarily with the goal of knowledge translation have taken place in Iran. These activities have been classified into three categories of Push, Pull and Exchange. Iran's

edge over the region's countries is capacity building in the field of knowledge translation. These trainings run along side the only education program that has been conducted in the East Mediterranean Region's countries (22).

Currently, some points in the country are trying knowledge translation methods similar to pioneer countries in this field. It must be kept in mind that there is still doubt and disagreement over knowledge translation definitions and techniques around the world (23), and a more coordinated approach is required for its development.

Studies that have examined the status of knowledge translation in Iran have shown that the ordinary approaches of producing and publishing research results in peer-review journals (which are passive efforts) are dominant in the country (24). However, conditions are no better in countries which have a longer history of being active in knowledge translation (25). These results show that in both developing and developed countries systematic interventions are required to reduce the knowledge-do gap; these may be performed in the contexts available. But more specialized and organized management of knowledge is necessary for qualitative and quantitative development of knowledge through research and particularly for the future. That is why founding specialized centers for reducing the knowledge-do gap-such as centers active in clinical guideline compilation, Health Technology Assessment, knowledge and technology translation- is important. In the country's Health Innovation and Science Development plan, the significance and launching of these centers has been considered too (26).

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