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Burden of Circulatory System Diseases and Ignored Barriers of Knowledge Translation

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ABSTRACT

Circulatory system disease raise third highest disability-adjusted life years among Iranians and ischemic cardiac diseases are main causes for such burden. Despite available evidences on risk factors of the disease, no effective intervention was implemented to control and prevent the disease. This paper non-systematically reviews available literature on the problem, solutions, and barriers of implementation of knowledge translation in Iran. It seems that there are ignored factors such as cultural and motivational issues in knowledge translation interventions but there are hopes for implementation of started projects and preparation of students as next generation of knowledge transferors.

Introduction

According to the findings of last national study on burden of disease and injury in Iran, circulatory system disease raise third highest disability-adjusted life years among Iranians and ischemic cardiac diseases are main causes for such burden.[1] In addition, although cardiovascular diseases are the first main cause of mortality in Iran,[2] they have been of less concern than infectious diseases in health care system of Iran. Being among five main causes of chronic diseases, heart disease and stroke have been listed as the first and forthcoming increasing burden of chronic diseases, especially in developing countries;[3] however, no tangible intervention is seen to decrease the burden of cardiovascular diseases.

Increasing trend of circulatory disease followed by ignored active health policies to control the risk factors encouraged us to review the presented problem of the disease and its probable solutions to provide a brief document on how the collaboration of health community including people, health professionals, researchers, and policymakers could help the implementation of solutions in Iran.

Presented problem

Iran has not developed or operated an integrated non-communicable disease policy, yet there are policies and surveillances addressing specific risk factors and reported key elements for prevention of the disease. Controlling tobacco, as one of the risk factors, through some interventions is the only implemented program in Iran to prevent the diseases[4] whose effectiveness has not been studied. However, hypertension, diets lacking fruits and vegetables, less physical activity and obesity still remain considerable.

Chronic health disease is increasing extensively in Iran[5,6] and a quick raise in the prevalence of hypertension based on age has been shown; the prevalence of hypertension in Iran is estimated to be extensive[7] and related to obesity.[8] Also, it should be mentioned that mentioning lifestyle elements such as eating processed food with saturated fat and also low physical activity in addition to the increasing prevalence of obesity and diabetes type II would lead to an increase in the prevalence of cardiovascular disease risk factors and chronic health diseases.[9,10] Not surprisingly, the incidence of stroke and prevalence of coronary artery diseases, coronary risk factors, and metabolic syndrome in Iran is noticeably more than in most western countries. Ischemic stroke incidence is also greater than other areas.[11,12] Furthermore, non-communicable diseases such as cardiovascular diseases and injuries are the main of adult mortalities pertaining to various risk factors. Therefore, the relation between the risk of the mortality and socioeconomic factors is not as simple as what happens for infectious diseases with more direct relation to socioeconomic status.[13] Here, we are faced with

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diseases defined as high burden, multifactorial, warned by researchers, and ignored by health system.

Researchers' warnings

A simple search in PubMed reveals how many times researchers warned health policymakers on the different aspects of burden of circulatory disease suggesting solutions. Some of the researchers' cautions and solutions are listed as follows:

Hatmi et al, 2007: Iranian adults are of a high level of risk factors of coronary artery diseases which may need urgent decisions to deal with national control procedures.[14]

Janghorbani et al 2008: Prevention and treatment programs are urgently required to address the burden of Pre-hypertention and hypertension and to stop pre-hypertensive people from emerging hypertension and cardiovascular disease.[8]

Esteghamati et al 2008: There is a high prevalence for hypertension and pre-hypertension and the awareness, treatment, and control rates are inappropriately low. Such results underline the urgent need for development of national programs for detection, prevention, and treatment of hypertension in Iran.[15]

Haghdoost et al 2008: Health system of Iran should pay more attention to manage and treat hypertension in general population.[7]

Hadaegh et al 2009: Regarding high prevalence of cardiovascular disease risk factors and metabolic syndrome, urgent steps are required to decrease the risk factors by changing diets and increasing physical activity levels.[16]

Tran et al 2010: There is an urgent need to define strategies for prevention and improved care of stroke patients in the Middle East and North Africa.[17]

Sadeghi-Bazargani et al 2011: Burden of cardiovascular diseases is projected to rise if an efficient prevention approach is not applied.[18]

Ebrahimi et al 2011: Prevention of coronary artery diseases including life style and dietary modifications are highly recommended for the Iranians.[12]

Farzadfar et al 2012: Primary care system of Iran should develop the number and scale of primary health-care worker programs to deal with blood pressure and to progress performance in regions with low number of primary care staff.[19]

Karami et al 2012: Policymakers, as the ones to implement interventional plans in Iran, *are recommended* to observe hypertension and overweight as risk factors.[20]

There is a question that how much research-supported urgency is needed to convince policymakers to develop effective plans. Another query is that if policymakers read the papers? Here, we are looking for solutions and answers.

Presented solution

Health system consists of people, researchers, healthcare professionals, and policymakers who form the Knowledge Translation (KT) community members which could bridge the knowledge gaps among each other. In such system, passive works of researchers or policymakers could not achieve expected results without contribution of healthcare professionals and people in all aspects of the decisions. In Iran, we are facing busy clinicians, people who watch the TV, idealist energetic researchers ready for research and publication, and unstable short-term passive decisions. Considering socioeconomic, cultural, and behavioral issues, it will be so hard to change attitude, practice, and behavior by knowledge injection.

Therefore, what we present here as solution could be considered in different points of view leading to the detection of implementation barriers. The suggestion is formation of action teams including all of involved groups in health system. The next step could be the definition of possible effective KT models and methods.

In research division, researchers could focus on observational researches more than the other types such as pharmacologic and surgical interventions, while the prevention is better than cure.

In public domain, there is a need for promoting public awareness and knowledge and encouraging critical appraisal which needs long-term efforts and until then, public health officials should control the delivery of right information to the people.[21]

In clinical section, health professionals need clear evidence-based guidelines for the practice and KT interventions through presentation of consumer health information and information therapy.

In health policy part, we need stable informed experienced decision makers to develop long-term interventional research and knowledge plans.

The Gap between problem and solution

While the research results of various studies in different years warn policy and decision makers to interfere in the system, the only feedback is just passive interventions such as establishment of specialized hospital (expecting more patients!) and research centers that lead in more papers, foundation of new research fields which results in more graduates, and ignorance of people as the main part of health system that causes ineffective prevention programs. It is worth noting that most of research studies in biomedical sciences are disease-based not prevention-based which means researches address disease and patients and ignore people who could be prevented to turn in to patients. It could be happen by transferring proper knowledge interventions to people that will change their attitudes, practice, and behavior.[22,23]

Knowledge translation

KT is not a new concept in Iran. It is a long time that research projects are classified in three categories of applied, developmental, and theoretical studies. Recently,

health system research was added as the fourth category. Although, Mahdian in 1992 discussed the status of utilization of research reports in Iran,[24] there was a huge time gap between his paper and first serious attempt for establishment of Knowledge Utilization Research Center at Tehran University of Medical Sciences in 2008. The center, acting as the main KT center in Iran, empowered Mahdian's comments on the utilization of research findings. Such gap is a result of KT barriers because the presented knowledge in Mahdian's paper was not properly transferred to policymakers.

KT for policymakers and stakeholders

KT education through workshops and integration of KT in academic curricula,[25] development of KT center to utilize and transfer knowledge to the health community instead of just paper publication, establishment of health media for people (TV channels and scientific magazines in simple language), encouragement of researchers,[26,27] and prioritization of people-based instead of patient-based researches could be applicable suggestions for policymakers.

KT for healthcare professionals

It is hard to think a busy clinician spend time to train the people. Obviously, they could not repeat the same information prescription for patients hoping they will remember and recall them. Beside medical advice, there is a need for evidence-based consumer health information and information therapy websites and leaflets for various people. Health professionals strongly should contribute in health programs with KT centers to save their information prescription time by producing and updating patient information media.

KT for Researchers

Science-Metrix has ranked Iran as the country with highest growth in paper publication,[28] as a passive activity in knowledge translation,[29] which could be because of supported policies and regulations for the publication. Although paper production in Iran had an increasing trend in last three decades;[30] these is no evidence to show the effect of such scientific production on people's lives since developing countries can only contribute to international science when they concentrate their attempts on team research to meet country-specific diseases and health problems.[31] Actually, emergence of KT and triple helix (relations among academia-industry-government) serves as solutions of knowledge gaps. Besides, self-assessment of research centers for detection of obstacles of KT and their solutions could be another suggestion.[29]

We should ask researchers to be trained by KT guidelines and workshops to focus on control and prevention beside clinical studies, develop research teams including different health professionals, create of evidence instead of paper, and present research results in proper format for different audiences,[32,33] whereas journals are formal scientific communication and KT tools in researchers' hands.[34] Since KT implementation needs studies producing higher levels of evidence, studies such as clinical trials and systematic reviews should be in higher priorities of research.[35]

As researchers need grant supports, research centers should collaborate with stakeholders while specifying research priorities which lead to granted research from funding support of the universities. Also, it may have synergic positive effect on utilization of research findings.[36]

KT for people

People need to be informed about what health community members do. Media is the main bridge between people and health policies and people watch TV and read newspapers every day. Also, online social media is the best tool for KT interventions on young people. But people need critical thinking and appraisal of information which are rarely considered as a study field. Therefore, considering socioeconomic, cultural, and behavioral aspects of Iranians, people have nothing to do except for waiting for knowledge. While newspapers and media have an effective role in information translation to the people,[37] quality of health news reporting is not pleasing and educational interventions are suggested to promote awareness of researchers and journalists. In addition, strategies need to be developed to raise motivations and support infrastructures, including guidelines development and news monitoring efforts.[38]

Barriers for implementation

In addition to studies reporting nurses' attitudes about KT and barriers, there is a need for a comprehensive national study to reveal the problem.[39] Nurses declared different barriers for utilization of research findings: lack of facilities, lack of time for implication, lack of time for studying researches and developing novel ideas, lack of organizational support, less skills of nurses, inaccessibility of research findings, lack of collaboration between university and hospitals, lack of contribution of physicians, and lack of educational interventions for research skills and methodology.[40-45] Only an etiological study could reveal the cause of such shortcomings.

Policy and decision makers

In a reported case that utilization capability of research reports was high; the utilization was low because of management and implementation barriers.[46] Choosing and grading research studies for decision makers[47] necessitate the need for specialized KT centers and human resource in close participation of policymakers could be a suggestion but it never quarantine active instead of passive implementation. Indeed, such efforts need team work among health system sections and members which is the weakness of developing countries. Maybe the organizational structure of Ministry of Health and Medical Education, as main decision-making bodies, would have effect on KT[48] and should be considered by health policy makers.

Clinical section

Hospital information systems are not integrated and

limited number of disease registries extends the problem of insufficient data about circulatory system disease which are already reported in studies.[12,16]

Busy clinicians do not have enough motivation to participate in KT activities which need encouragement and education.Transferring information to people needs new health professionals such as informationist and clinical librarians who are a part of information therapy programs in all of the studies in developed countries.[49]

Researchers

A KAP study showed less knowledge, positive attitude, and practical attempt exists among researchers for KT activities[50] and KT is the ignored part of research projects and grant applications.[27,51] Also, the researchers assess the rate of their own KT activities higher than what they really are.[52] So, interventions for education, encouragement, and changing the employment policy[53] are required but not enough while researchers have their own values to publish papers in top journals based on researchers' interests[34] and journals' aims and scopes and not necessarily based on national problems. Since most of top journals are published in developed countries consider their own interests, type of published papers from developing countries in such journals is likely predictable. It is another barrier that should be considered through establishment and politically support of national journals.

People

Self-medication is one of the common problems and there are rarely homes without extra medications in the refrigerators in Iran. Level of education, family, society, regulations, drugs accessibility, advertisements, and expenditure are possible reasons resulting in self-medication. There are studies verifying self-medication in different groups of people.[54-57] People acquire information from different channels and apply them without expertise knowledge, reliable evidence and critical appraisal. Health professionals are one of their channels and may be for this why practitioners are less likely to present enough information to the people in simple instead of cryptic language, because they know that the people may generalize the information for any similar condition of themselves as well as friends and families. It is probably a cultural issue in which people avoid visit costs by direct provision of medication and even diagnosis. So the question is how to deliver information to people.

Hopes for implementation

First step

In policy development, some interventions for promotion of KT of research reports were already suggested.[58] Also, primary KT interventions are considered for first-step activities whose major focus is on supporting KT activities and encourage dynamic strategies including linking between researchers and decision makers during research and application of results. Long-term prospective programs such as 'Iran's Health Innovation and Science Development plan have also been developed including establishment of centers to reduce the knowledge-do gap.[59] In addition, a model consisting of five domains (knowledge creation, knowledge transfer, research utilization, question transfer, and the context of organization) was developed for KT in Tehran University of Medical sciences that presents a theoretical foundation for specifying fundamental requirements and connecting mechanisms in the KT for research utilization.[60,61] Utilization of this model in university levels may be the first implementation of a KT activity in Iran.

Students are future governors

Despite passive activities of researchers, students are interested in novel, experimental, community-based researches with applicable findings. Furthermore, inapplicability of research findings is one of their main concerns.[62] Students are the next generation of researchers, clinicians, and policymakers, so their training and developing their attitudes may have more long-term effects on the system.

Conclusion

Circulatory system diseases are the main concern among chronic non-communicable diseases, but available evidence just tries to show the current status of problem and suggest solutions. In action, there is no reported effective intervention on public domain to prevent and control the risk factors. KT is a way to facilitate the knowledge flow among different members of health system, but it faces many different implementation barriers among involved health groups. It seems that lack of connections among sections of health system turned them into separated islands stand alone. Also, the cultural and motivational issues should be taken in account while KT interventions supposed to be performed. We tried to present ignored KT barriers to help the involved staff to be aware of the extent of problem in health system. In addition, there are hopes that expansion of currently started KT projects and students' contribution would lead into a more healthy system.

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