Comparative Study on Health Management for Chronic Patients and Design of a Health Management Model for Iran

Kronik Hastalarda Sağlık Yönetimi ve İran'da Sağlık Yönetimi Modeli Dizaynı Hakkında Karşılaştırmalı Çalışma

Monika Motaghi[1], Leila Riahi[2], Irvan Masoodi Asl[1], Hossein Akbari[3]

[1]Candidate of Health Services Management, School of Medical Sciences, Department of Health Services Management, Science and Research Branch, Islamic Azad University, Tehran, Iran
[2]Department of Health Services Management, Science and Research Branch, Islamic Azad University, Tehran, Iran
[3]Department of Public Health and Statistics, Faculty of Health, Kashan University of Medical Sciences, Kashan, Iran

ABSTRACT

Objective: Health management for chronic patients represents a serious challenge for policymakers. Since the community has to cope with substantial expenses, and a considerable part of health funds are allocated for the continuing care of these patients, designing appropriate policies for organizing, financing, and providing optimal health care is of special importance. This study was aimed to design a health management model for chronic patients in Iran.

Methods: We scrutinized studies done in England, Australia, United state, and Canada and used these as suitable references from which we selected applicable strategies. Subsequently, we submitted these for approval to relevant experts to establish a service health care management model for chronic patients. The final model was developed by the expert panel.

Results: In almost all of our references we found that health and welfare ministries, along with the private sector, provide decentralized health care to chronic patients. Health care programs for chronic patients encompass free services for regular check-ups, vaccinations, lifestyle training, acute illness care, health advisors, health aids, and equipment, and laboratory services. Policies are outlined by the National Committee on Prevention and Control of Non-Communicable Diseases, which has its base at the Supreme Council of Health. Funds are provided mainly by governmental bodies and subsequently, by societies and non-governmental organizations (NGO's), with some participation of the chronic patients themselves (as premium and franchise).

Conclusion: Our model for management of chronic patients includes the formation of a "health committee for chronic patients" in the Supreme Council of Health and Ministry of Health and Medical Education, and the provision of decentralized and provincial health care services. Funds should be provided through taxes, charity aids, and support from international organizations. Nongovernmental and charity aids may be increased to lessen the financial burden on the governments.

Keywords: Chronic disease, Iran, patient

ÖZ

Amaç: Kronik hastalarda sağlık yönetimi politika yapıcılar için ciddi bir zorluk oluşturmaktadır. Toplumun büyük giderlerle baş etmek zorunda olması ve sağlık fonlarının önemli bir bölümünün bu hastaların devam eden bakımları için ayrılmasından dolayı, optimal sağlık bakımının düzenlenmesi, finanse edilmesi ve sağlanması için doğru politikaların oluşturulması çok önemlidir. Bu çalışma İran'daki kronik hastalar için bir sağlık yönetimi modeli oluşturmak amacıyla yapılmıştır.

Yöntemler: İngiltere, Avustralya, Amerika Birleşik Devletleri ve Kanada'da yapılmış olan çalışmaları inceledik ve bunları içinden uygulanabilir stratejiler seçtiğimiz uygun referanslar olarak kullandık. Ardından, kronik hastalar için bir sağlık bakımı yönetimi modeli oluşturmak için ilgili uzmanlara onay için gönderdik. Modelin son şekli uzman panelince geliştirildi.

Bulgular: Referanslarımızın hemen hemen hepsinde, özel sektörle birlikte sağlık ve sosyal yardım bakanlıklarının sağlık bakımını kronik hastalara yoğunlaştırdığı görüldü. Kronik hastalar için sağlık bakımı programları düzenli check-uplar, aşılamalar, yaşam tarzı eğitimleri, akut hastalık bakımı, sağlık danışmanları, yardımcı sağlık cihazları ve donanımları ve laboratuvar hizmetleri için ücretsiz hizmetler sunmaktadırlar. Politikalar Yüksek Sağlık Şurası'na dayanan Bulaşıcı Olmayan Hastalıkların Önlenmesi ve Kontrolü Ulusal Komitesi tarafından şekillendirilirler. Fonlar çoğunlukla devlet kurumları ve sonrasında da topluluklar ve sivil toplum kuruluşları tarafından, kronik hastaların kısmi katılımlarıyla (prim ya da muafiyet olarak) karşılanmaktadır.

Sonuç: Kronik hastaların yönetimi modelimiz Yüksek Sağlık Şurası ve Sağlık ve Tıp Eğitimi Bakanlığında bir "kronik hastalar için sağlık kurulu" oluşumunu ve merkezi olmayan ve il sağlık bakımı hizmetlerinin karşılanmasını içermektedir. Fonlar vergiler, bağışlar ve uluslararası organizasyonların destekleriyle sağlanmalıdır. Hükümetlerdeki mali yükü azaltmak için sivil toplum kuruluşlarından ve bağış yoluyla gelen yardımlar artırılabilir.

Anahtar sözcükler: Kronik hastalık, İran, hasta

Address for Correspondence / Yazışma Adresi: Leila Riahi
E-mail: L.Riahi@srbiau.ac.ir

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INTRODUCTION

One of the greatest challenges that health systems worldwide are facing in the twenty-first century is the increasing burden of chronic diseases. The increase in life expentancy and lifestyle modernization, involving an increased exposure to many risk factors for chronic diseases, have led to a change in the burden of disease that health systems are facing (1). Effective prevention and management of chronic conditions is of high priority, as chronic diseases affect nearly 1 in 2 adults in the United States and account for 75% of our nation's health care costs (2, 3). Efforts to reduce the burden of chronic disease have been fragmented, with different health care systems working independently to achieve a final outcome (4).

The increased collaboration among different health care systems to prevent and manage chronic diseases has been recently prioritized (5-7). Chronic conditions are either preventable or manageable through appropriate prevention or primary care interventions. Appropriate management of these chronic conditions in primary care settings can reduce exacerbation of disease and thus, costly hospitalization. Hospital admission rates serve as a proxy for primary care quality, and high admission rates may suggest poor care coordination or inadequate care continuity. They may also indicate organizational constraints such as inadequate access to family physicians (8). An inappropriate and unhealthy lifestyle is responsible for the occurrence of many types of chronic diseases. Worldwide, chronic diseases are the cause of many deaths, and this problem is increasing in both industrialized and developing countries (9).

Chronic diseases are a serious threat to health and longevity in developing countries. In all countries except the poorest, death, and disability due to chronic diseases currently exceed death and disability due to communicable diseases, being 49% for chronic diseases, compared with about 40% for communicable diseases, and 11% for injuries (10). The prevalence of chronic diseases in developing countries is not well-recognized among health experts, and neither it is among non-experts, because these ailments are often less visible than communicable diseases, progress slowly, and are underdiagnosed. Further, the presence of chronic diseases has overtaken the communicable disease burden partly because of the success in reducing the latter, and also because poor countries are increasingly adopting the unhealthy lifestyle of the developed world (11).

Since the prevalence of chronic diseases has increased steadily among people in Iran, as in other developing countries, the community has been faced with the burden of non-communicable diseases. Therefore, designing a new system that can deal with these emerging problems was strongly felt necessary.

In the past two decades, the geographical distribution of these diseases has changed; therefore, the World Health Organization (WHO) has established health priorities to prevent these diseases in developing countries. This is why planners and public health officers should take appropriate measures to tackle this enormous problem (12).

METHODS

This comparative study aimed to achieve an appropriate model for the management of patients with chronic diseases in Iran. Firstly, some health organizations in the USA, France, Canada, England, and also Iran, including social security, health care organizations, and the Ministry of Health and Medical Education were evaluated. Then, the way in which services provide management to chronic patients and their comparable components were extracted, and finally, data for these indicators were collected and analyzed.

A research-made questionnaire, which was validated by experts and scholars in the field of health service management, health policies, and health technology management, was used.

Moreover, the face validity of the questionnaire was confirmed by four experts. To assess the content validity of the questionnaire, the relevance of each question was assessed by 10 experts. The relevance of each question was determined as follows: 1) whether it was essential, 2) whether it was useful but not necessary and 3) whether it was not necessary. Finally, the CVR (Content Validity Ratio) was calculated.

To assess the simplicity, relevance and clarity of each question, the CVI (Content Validity Index) index was measured based on the four following items:

1) The question met none of the three criteria; 2) the question met the criteria but needed major revisions; 3) the question met the criteria but needed minor revisions are 4) the question met all three criteria. Questions with CVR>0.49 were accepted, and those with CVR<0.49 rejected or reviewed. Questions with CVI>0.7 were accepted, and those with CVI<0.7 were rejected or reviewed.

Also, 30 university professors confirmed the reliability of the questionnaires by the split-half method and calculated the Kuder Richardson coefficient, which was determined to be 0.88 in this study.

The formula for calculating the CVI is as follows:

CVI = total number of voters / number of people scoring 3 or 4 are relevant to the question

CVR = (number of experts who have responded to the essential option / total number of experts) / (total number of experts / 2)

After the questionnaire was confirmed, the questions were classified based on the type, and it was determined which questions were related to organizational structure, financing, control, and policymaking. Moreover, the questions related to the organizational structure of government sectors, insurance, and public and NGO's were determined.

In the control section, different types of questions were found, namely, questions related to the level of control, questions related to the type of policy and funding, and questions related to government sectors, committees and organizations involved with chronic disease. Then, the proposed model was outlined (Figure 1). Finally, a panel of 8 experts participated in a meeting to discuss the proposed model of the present study.

Also, on the panel, the suitability of the model for Iran was compared with that for Canada, Australia, England and the United States, and the results were reported.

RESULTS

Indicators and outcomes of health systems in the countries studied showed that the gross domestic product (GDP) share allocated to the health sector is the lowest in Iran and the highest in the United States (Table 1) (13).

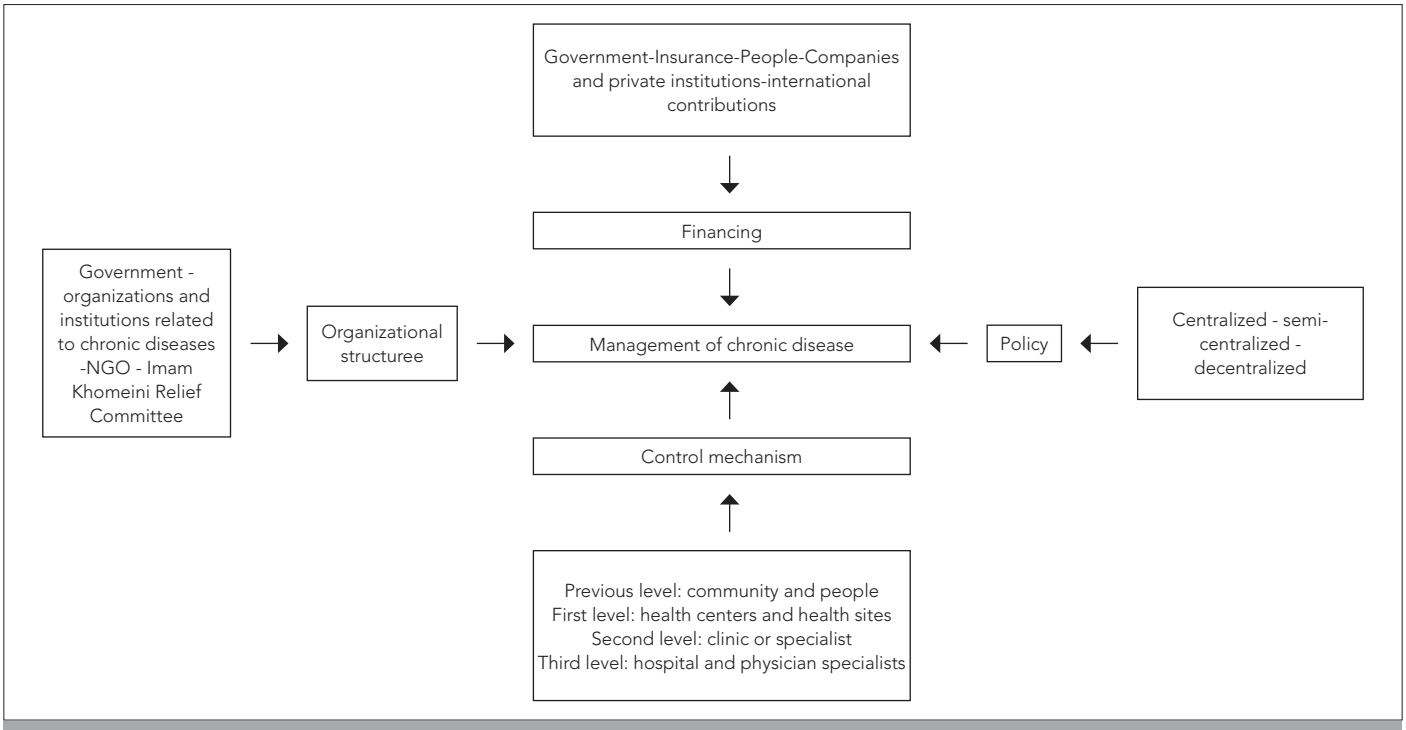

Figure 1. The proposed model
NGO: non-governmental organizations

Table 1. Indicators and outcomes for health systems in the countries studied (year 2013)

Iran	USA	Canada	Australia	UK	Indicator
77/45	316/1	35/15	23/13	63/14	Population (Million)
368/9 billion	16/77 trillion	1/827 trillion	1/560 trillion	2/678 trillion	GDP
432	9146	5718	5827	3598	Health expenditure per capita (current US$)
6/7	17/1	10/9	9	9/1	Health expenditure, total (% of GDP)
74	79	81	82	81	Life expectancy at birth, total (years)
89	100	100	100	100	Improved sanitation facilities (% of population with access)
40/8	41/7	69/8	66/4	83/5	Health expenditure, public (% of total health expenditure)
88	22/3	50/1	57/8	56/4	Out-of-pocket health expenditure (% of private expenditure on health)

GDP: gross domestic product

The trend with respect to GDP share allocation to health sector in the countries studied suggests that this indicator in Iran increased by nearly 20% between 2005 and 2013 (Table 2).

In many of the studied countries, there are costs allocated to special programs for catastrophic diseases. In the United States, special programs for catastrophic illnesses are designed for certain age groups, and this is the way in which health care management for chronic diseases has been implemented in most countries. The management program for catastrophic cases is a targeted program for patients with chronic health problems, as a considerable amount of resources has be spent for providing health care services to those patients.

Chronic diseases typically entail major medical costs. Patients are covered by Medicaid or the Complex Medicaid Cases (14). There are many institutions that control and monitor health care services in many developed countries. four examples of these institutions are the following:

- The National Institute for Clinical Excellence (NICE): it was established in 1999 to reduce inequalities in health care provision by the standardization of clinical practice based on evidence at the national level. The activities of the NICE are divided in three

Table 2. Trend for GDP share allocated to the health sector in the studied countries from 2005 to 2013

Iran	USA	Canada	Australia	UK	Countries Health expenditure, total (% of GDP)
6/7	17/1	10/9	9	9/1	2013
6/6	17	10/9	8/9	9/3	2012
6/3	17/1	10/9	9/1	9/2	2011
7/3	17/1	11/1	8/9	9/4	2010
7/2	17/1	11/1	9	9/7	2009
6/4	16/1	10	8/7	8/8	2008
5/1	15/6	9/8	8/5	8/4	2007
5/1	15/3	9/7	8/5	8/3	2006
5/3	15/2	9/6	8/5	8/1	2005

GDP: gross domestic product

Table 3. Summary of characteristics of the studied countries regarding the management of chronic diseases

Iran	USA	Canada	Australia	UK	Countries Characteristics
Centralized	Decentralized	Centralized	Centralized	NHS	Policy
Governmental and private	Private	Governmental and private	Governmental and private	Governmental and private	Organizational structure
Budget and fee for service	Overcoming payment for service	Budget	Budget and grant	Per-capita	Payment service providers
Taxes and budget	Charity	Taxes and charity	Taxes and charity	Taxes and charity	Financing
The government and the Medical Council	IOM, Professional Organizations	CCOHTA	NHTAP	Trusts of NHS and NICE	Control
Combined Insurance	Public health insurance (Medicare and Medicaid) and private health insurance	Provincial and zonal federal health insurance	Government and private insurance	NHS	Insurance

NHS: National Health System; NICE: National Institute for Health and Clinical Excellence; NHTAP: National Health Technology Advisory Panel; CCOHTA: Canadian Coordinating Office for Health Technology Assessment; IOM: Institute of Medicine

areas: technology evaluation, development of clinical practice guidelines and clinical audit (15).

- The Agency for Healthcare Research and Quality (AHRQ): it is a governmental organization that has the responsibility of organizing and leading other research centers for improving the quality of health care, safety of patients, effectiveness of the health care services and clinical practice. This organization is also responsible for evaluating technologies, the organizational structure for health care services and primary care (such as preventive services), costs, and resources for health services (15).

- Health Technology Assessment (HTA) centers: Health Technology Assessment centers deal with all diseases, including chronic and specific diseases. HTA centers, as a provider of scientific services, are involved in evidence-based policymaking. The purpose of the evaluation and analysis of health-related technologies is to provide information for health policies (15). Health Technology Assessment centers are active mainly at the national level. These centers in the United States and Australia, and to some extent in the United Kingdom and Canada, are fully institutionalized. In Iran, such centers do not exist for patients with chronic diseases.

-The National Coordinating Center for Health Technology Assessment (NCCHTA): This center is responsible for implementing any new advancements in the field of medicine, and for evaluating health management techniques.

Clinical governance at the level of health service providers can control the provision of health care services by the operational staff of the national health system (16).

Comparative studies showed that services provided to patients with chronic diseases included services for 3 levels of prevention:

1: Vaccination, healthy lifestyle education.

2: Health care during the disease, distributing medical pamphlets among patients, health counseling, periodic examinations and tests for the diagnosis and early treatment of chronic diseases.

3: Providing assistive devices for patients with chronic diseases, laboratory analyzes, home care, and drug and rehabilitation services.

The main way of financing health care for patients with chronic diseases in the first stage are governmental funds and then, associations, NGOs and public participation (premiums, out of pocket) (Table 3).

DISCUSSION

One of the main tasks of all health systems is disease management. The disease management system should be based on disease characteristics, facilities, needs, resources, design, and implementation (17).

The increase in GDP share being allocated to the health sector could be a consequence of the costs of diagnosis and treatment of catastrophic diseases, which have increased in the past two decades with the advent of new diagnostic and treatment methods.

Partnerships based on strong scientific documentation and information are trying to integrate long-term plans, and this should form the pillars for the management of non-communicable diseases. Attention should be paid to using a variety of legal and executive procedures in different agencies and ministries to modify people´s lifestyle with the direct participation of the population.

Access to a family physician and the subsidy programs, aimed at improving the health indicators identified in Iran in recent years, have not been approved yet due to the separation of the management of chronic diseases across different offices based on the disease name, as it is common in communicable diseases (17).

Due to the common risk factors of many of these chronic diseases, as well as the similar methods of intervention to modify risk factors and also the relatively similar screenings involved, it can be recommended to organize structures for the management of non-communicable diseases horizontally, i.e., based on the performance of the offices and not on disease names.

Communicable diseases are usually manifested early and attract more attention than other diseases. By contrast, the progression of non-communicable diseases is generally hidden and slow, and therefore, encouraging people to adjust their lifestyle is much more difficult because the relationship between exposure to risk factors and onset of disease symptoms is less obvious (17).

The high prevalence of most non-communicable (chronic) diseases, and not the low risk, is what causes high social sensitivity; however, it imposes high costs, which can be met by increasing the share of health insurance and accumulation of GDP in a way that the undesirable impact of these costs on a branch of health would be prevented and people, especially the chronic patients would feel more satisfied.

CONCLUSION

Considering the high proportion of patients' out-of-pocket payment in the health care system in Iran, it is suggested that the management of this system should be reviewed. A high cost is allocated to health care in America, despite life expectancy at birth being about 79 years. However, in recent years, life expectancy has significantly decreased due to the increased prevalence of obesity as a chronic disease. In Iran, the faculties of medical sciences and the medical and insurance systems are responsible for controlling and monitoring the performance of the health care system. In order to have a successful management of health care services for patients with chronic diseases, the attention should be focused on regional and national facilities, as well as intersectional cooperation in the region. Another beneficial factor improving the management of chronic diseases is the close cooperation and good working relationship between doctors and managers. This would allow to develop a team performance framework with the division of labor, the involvement of the patients, and the provision of enough information for them. Appropriate social support from community agencies and insurance organizations can guarantee the continuation of the chain for the long-term treatment of chronic patients. It is recommended to monitor the health care management for chronic patients. Monitoring should be conducted by a group composed of representatives of organizations providing health care services to specific patients, representatives of governmental organizations, consumers, and insurance organizations. Finally, it is recommended to conduct a research for determining health care costs, per capita health insurance costs, quality of health service packages, healthy lifestyle, as well as to study the role of education and its impact in reducing the incidence of chronic diseases in the selected countries, and then provide a model for Iran.

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