Review Paper
Iran's Health System Performance in Achieving Goals Based on the World Health Organization's Framework: A Scoping Review

Reza Negarandeh[1] , Aziz Kamran[2] , Heshmatolah Heydari[3,4]

1. Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran.
2. Department of Public Health, Faculty of Medical Sciences of Khalkhal, Ardabil University of Medical Sciences, Ardabil, Iran.
3. Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran.
4. French Institute of Research and High Education (IFRES-INT), Paris, France.

ABSTRACT

Background: The health system of each country are required to achieve the goals based on appropriate frameworks. Assessment of health system performance provides an opportunity to address the main mission through recognizing new needs and resolving existing gaps. This review study aims to investigate Iran's health system performance in achieving its goals based on the World Health Organization (WHO)'s conceptual framework.

Methods: This scoping review was conducted based on Arksey and O'Malley's methodological framework. A search in international databases including Web of Science, Scopus, PubMed/Medline and in national databases such as SID, MagIran and IranDoc was conducted using the keywords "health system, Iran", "disease burden", "responsiveness" and "financial contribution", which were used in both English and Persian separately for each variables of health promotion, responsiveness, and fair financial contribution. Retrieved articles were analyzed using qualitative synthesis method.

Results: Data extracted from articles categorized into the three groups of "Health" (with sub-categories of epidemiologic and demographic transitions), "Responsiveness" and "Fair financing and financial risk protection". Synthesis of data revealed that the profiles of diseases has been changed over recent decades in Iran, which has resulted in epidemiologic and demographic transitions. In terms of responsiveness, services provided by the health system had not fulfilled patients' expectations. Regarding fair financial contribution, synthesis of data showed that people had faced high health costs, with a high amount of out-of-pocket payment.

Conclusion: Iran's health system has not yet achieved the goals recommended by the World Health Organization. Fundamental reforming is required in the health system of this country.

* **Corresponding Author:**
Heshmatolah Heydari, PhD.
Address: Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran.
Phone: +98 (916) 6632337
E-mail: h-hidari@razi.tums.ac.ir

1. Introduction

According to the World Health Organization (WHO), "A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities" [1]. Governments are responsible for providing health and managing health systems [2]. Therefore, the WHO recommends countries to assess their health system performance based on the goals of this system [3]. The framework provided by the WHO for evaluating health system performance in a country includes definitions, goals, and functions of the system. In this framework, all resources, organizations, and activities that perform or support health-related measures are considered as the components of health system [4]. Based on this framework, three goals including health promotion, responsiveness, and fairness in financing are used for evaluating the health system performance. The first goal, health promotion focuses on how the system is succeeded in terms of community-based disease prevention and promotion of health. The second goal includes the assessment of responsiveness to public expectations in nonclinical dimensions such as timely response to the health needs, respect to dignity, clear communication, providing autonomy, confidentiality, quality of environment, and family and social supports. Based on the third goal, firstly, households should not become pauperized or spend a greater share of their income on health costs, and secondly, poor households should spend less on the health costs than rich households [5].

Iran, as a developing and populous country in the Middle East, is struggling with the burden of diseases and an increasing rate of disease-related morbidity and disability [6]. The structure of Iran's health system was established in 1905. Ministry of Health (Vezarat-e Behdari) and Ministry of Health and Welfare (Vezarat-e Behdari va Behzisti) were established in 1941 and 1975, respectively [7]. In 1983, based on the existing problems and poor health status compared to the world standards, the government established health networks throughout the country, which were based on a model of primary health care [8]. In 1985, the leadership of Iran's heath system was changed to the Ministry of Health and Medical Education. Currently, Iran's health system is based on the health network system and provides healthcare services based on a primary health care model. In each province, medical universities are responsible for providing health and educating human resources [9]. There are urban and rural health centers in the structure of this system that cover a district and provide healthcare at three levels of disease prevention. Patients can be referred from the health centers to sub-specialty and specialty hospitals [10]. Although the health network system was established to respond to the existing problems, Iran's health system has faced a number of challenges in terms of structure, process and function after the establishment of the original system [11]. A variety of measures have been taken to address these problems which include the development of family physician program, integrating medical education with healthcare services, definition of a self-governing policy for hospitals, and the health evolution plan. The health evolution plan was launched in 2014 and is still ongoing. Each plan had some advantages and disadvantages [11, 12]. Assessment of health system performance in a country provides an opportunity to address the main goal through recognizing new needs and resolving existing gaps [13]. Health systems are required to examine their goal achievement based on appropriate frameworks. This review study aims to investigate Iran's health system performance in achieving its goals based on the WHO's conceptual framework.

2. Methods

This scoping review was conducted based the methodological framework of Arksey and O'Malley [14] in 2021. This approach including five steps: Identifying the research question, searching for relevant studies, selecting studies, charting the data, collating, summarizing and reporting the results. A search was carried out in international databases including Web of Science, Scopus, and PubMed, and in national databases such as SID, MagIran and IranDoc to find relevant studies published from 2000 to September 2021. Appropriate and relevant keywords were identified using the thesaurus including "health system, Iran", "disease burden", "responsiveness" and "financial contribution" were used in both English and Persian separately and together for each variables of health promotion, responsiveness and fairness in financial contribution.

After retrieving the relevant studies, their references were also examined. In this regard, manual search was carried out for retrieving additional studies relevant to the study objective. Moreover, grey literature in the form of reports from the WHO website was searched using the google search engine which identified further grey literature (theses, conference summaries, unpublished research projects). Wherever possible, we used the PRISMA criteria for reporting results (Figure 1).

Inclusion criteria for articles and manuscripts were: focus on the accountability of health system, health indices, disease burden, Disability-Adjusted Life Years (DALYs) and Quality-Adjusted Life Year, trend of diseases, fair financial contribution in health costs, payment system, and challenges and opportunities of health system, being published in English or Persian from 2000 to Sept 2021, and available full-texts. Exclusion criteria were the lack of access to the full-text and being published in non-English and non-Persian languages.

After retrieving the studies, their abstracts were read to ensure they were relevant to the study objective. Then, their full texts were read provided that they meet the inclusion criteria. Retrieved studies were analyzed using the qualitative synthesis method. Data were then extracted and coded.

3. Results

After initial search and reading the titles and abstracts, 27 articles from the online search and 2 articles by the manual search were yielded. Their specifications are listed in Table 1. Based on the study objective, data extracted of these articles categorized in terms of "Health" (with sub-categories of epidemiologic transition and demographic transition), "Responsiveness" and "Fairness in Financing & Financial Risk Protection".

Health

Each organization should be responsible for providing care to the community and the system must be accountable for the mission defined for the organization. Data synthesis showed that, after establishing health networks, Iran's health system achieved significant success in health promotion and increasing life expectancy. This system was successful in controlling contagious diseases and maternal and neonatal health promotion such that mortality rate in children aged <5 years were 63.6%, 38.8%, 24.9%, and 19.4% of 1000 live births in 1990, 2000, 2010, and 2015, respectively, indicating its decreasing trend. Accordingly, the millennium development goals were achieved [15]. In the current situation, the profile of diseases in Iran has changed from contagious to chronic [16]. These changes can be categorized under two titles of epidemiologic transition and demographic transition.

Epidemiologic transition

Studies revealed that increasing urbanization and change in lifestyle in Iran resulted in new health challenges. Currently, the most common cause of mortality is cardiovascular diseases (43%), followed by cancer (16%), and other chronic diseases (15%) [17]. In the future decades, Iran's population will enter its fourth epidemiologic transition, when the most common cause of mortality will be observed in older people with chronic diseases [18, 19].

Demographic transition

The structure of Iran's population has changed considerably over recent decades. The highest rate of population growth occurred in the 80s, when the trend of population growth was high (about 3.9%). Currently, Iran's population growth has decreased such that the fertility rate reached to 1.72% in 2019, and is predicted to decrease and reach to 1.5% by 2030. Iran's older population growth was 8.8% in 2017 [20], which is estimated to reach 14.4% in 2030 and 31.2% in 2050. Increased aging population results in increasing disease burden. It is predicted that, with upcoming crisis of aging, Iran will face social challenges including generational gap between the young and the elderly, family support, and increase of healthcare costs.

Responsiveness

Data synthesis results showed a gap between peoples' expectations and perceptions of delivered healthcare such that the provided care do not meet their expectations [21]. Regarding responsiveness of hospitals to the admitted patients, they were reported poor in terms of selecting healthcare providers, respecting to autonomy, clarity in communication, and confidentiality. Private hospitals obtained the highest score in dimensions of autonomy and selecting healthcare providers than other hospitals. In all dimensions of responsiveness, charity hospitals had poorer performance than public and private hospitals. Female patients reported better level of responsiveness than males [22, 23].

Responsiveness of the health system to the needs of patients with chronic disease was reported poor. In terms of confidentiality and maintaining dignity dimensions, highest scores were reported, while in autonomy, access to services, quality of comfort equipment, the health system had low scores. Female patients had less satisfaction with responsiveness of health system. People with low income and literacy levels and those with long hospital stay had less satisfaction with the health system's responsiveness [24, 25]. According to patients with heart failure, the most important dimensions of responsiveness were maintaining dignity and fast response [26]. According to outpatients, access to family support and
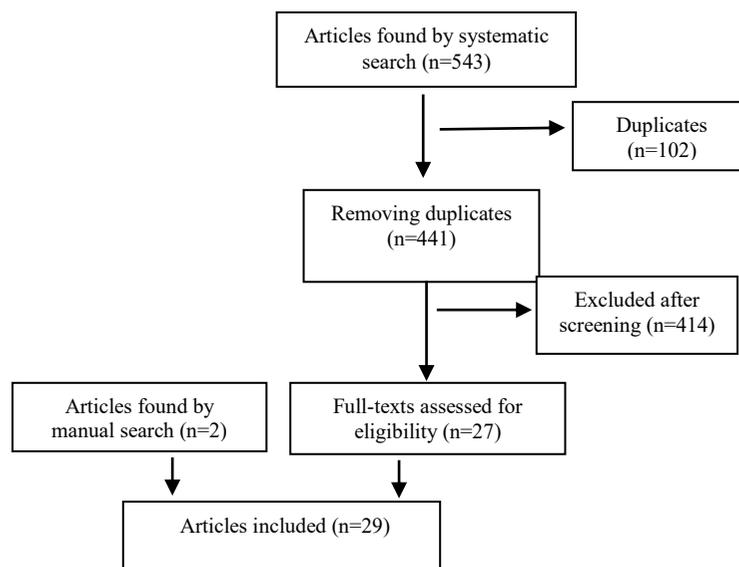
Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

67

Figure 1. PRISMA diagram for reporting results

confidentiality were reported good, while the autonomy, quality of comfort equipment, and fast response to critically-ill patients were reported poor. Public health centers performed better in terms of fast response. Responsiveness of the health system was poorer for inpatient service users than for outpatients [23, 27]. In rehabilitation centers, responsiveness was reported poor. Speed of response and quality of comfort equipment had the lowest scores. Private health centers had better communication, comfort equipment and autonomy maintenance than public health centers [28].

Fairness in financing & financial risk protection

Data synthesis results showed that people have faced catastrophic health expenditure in recent years such that out-of-pocket payment has reached 70%, and some healthcare services and specific medications were not covered by the insurance. On the other hand, there are various insurances with different health insurance plans. Families' cost health expenditure has increased in the recent decades such the 7% of families' income spent on health costs in 2001 which raised to 11% in 2010. Over these years, public payment has increased [29] such that 7.5% of families had suffered from catastrophic health expenditure from 1984 to 2014 [30]. Hospital beds, physicians, healthcare providers and other resources have not distributed equally in various provinces of Iran [31]. The poor people receive healthcare mainly from general physicians while the rich people receive healthcare from specialists [32]. High level of disease burden in aged people, high economic burden, outcomes and unpredicted demands of population aging have put pressure on the health system [33]. The system also faces shortage of hospital bed and technical staff, particularly nurses [34-36]. Financial resources are not provided equally and their distribution are not fair. Moreover, the portion of public and government participation is not clear.

Synthesis of data showed that the health system costs has increased considerably due to the health evolution plan, and the insurance companies have confronted various problems in payment. The goal of health evolution plan was to decrease the health costs of patients, promote the quality of services, and provide fair access to the healthcare services. In the early years of implementing this plan, the result was satisfactory because it decreased costs and increased the income of healthcare providers; however, it faced some challenges including financial burden for the government, neglecting primary healthcare, inefficient payment, financial scarcity, unequal distribution of specialists, and neglecting outpatients in general hospital wards and patients in private hospitals. The health system has no developed and efficient road map and has confronted disturbance in financial and management sections. Conflict between public and private sectors, isolated health insurance, and lack of national guidelines for different domains are obstacles of the health system. The health system's share from gross national income is still low [12]. After the health evolution plan, public payment was decreased significantly, particularly in the inpatient domain. The number of families who suffered from catastrophic health expenditure was decreased by about 0.57% (2.92 before plan implementation vs. 2.35 after plan implementation) [37].

68

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

Table 1. Reviewed studies

Author(s)	Title	Study Design	Findings
Mohammadi et al. [15]	Measuring Iran's success in achieving Millennium Development Goal 4: a systematic analysis of under-5 mortality at national and subnational levels from 1990 to 2015	A systematic analysis	Iran achieved Millennium Development Goal goals by 2015.
Abbaszadeh et al., [16]	Changing the care process: A new concept in Iranian rural health care.	Qualitative study	The trend of health care in rural areas of Iran is changing rapidly and community health workers face new challenges.
World Health Organization [17]	Noncommunicable Diseases Country Profiles 2018	-	The non-communicable diseases are increasing in Iran
Sasanipour et al. [18]	Epidemiologic Transition in Iran with Emphasis on the Third Stage of Transition	Meta-analysis	Iran has gone through the third stage of epidemiological transmission in the last two decades, as a large proportion of deaths are due to chronic diseases such as cardiovascular disease, and life expectancy at birth has dropped to 70 years. There are also indicators of the fourth transition period in recent years, because with the increase in deaths related to chronic diseases, the average age of death has increased significantly.
Aghamohamadi et al. [19]	Population and mortality profile in the Islamic Republic of Iran, 2006-2035	Cross-sectional, descriptive/analytical study	By 2035, the percentage of people aged 60 years and higher will reach 17.6%. Metabolic, endocrine and nutritional disorders will be the most causes of increased mortality in the community.
World Population Ageing [20]	World Population Ageing	-	Iran's population is ageing.
Aghamolaei et al. [21]	Service quality assessment of a referral hospital in Southern Iran with SERVQUAL technique: patients' perspective.	Cross-sectional study	Service quality gaps were observed in all five dimensions of service quality and in overall. The highest perception was related to the dimension of assurance and the highest expectation was in the dimension of responsiveness and assurance. The lowest perception was related to the dimension of responsiveness and the lowest expectation was related to empathy. Moreover, 56.1% of the subjects perceived the quality of services as moderate.
Bazzaz et al. [22]	Health system's responsiveness of inpatients: hospitals of Iran.	Cross-sectional study	The responsiveness of hospitals was good, but in some dimensions such as clear communication, confidentiality, respect to autonomy of individuals and choosing health care providers there were lower responsiveness.
Piroozi et al. [23]	Assessing health system responsiveness after the implementation of health system reform: a case study of Sanandaj	descriptive-analytical and cross-sectional study	Communication, autonomy and quality of basic amenities were determined as priority dimensions to improve the responsiveness of health care system.
Forouzan et al. [24]	Measuring the mental health-care system responsiveness: results of an outpatient survey in Tehran.	descriptive-analytical and cross-sectional study	About 47% of subjects reported poor responsiveness. Among responsiveness dimensions, dignity and confidentiality showed the best performance, while access to care, quality of basic amenities and autonomy had the worst performance. Subjects with low social status were more likely to experience poor responsiveness.
Sajjadi et al. [25]	Health system responsiveness for outpatient care in people with diabetes Mellitus in Tehran	Cross-sectional study	Health system responsiveness was not appropriate for diabetic patients. The worse performance was related to the confidentiality.
Karami-Tanha et al. [26]	Health System Responsiveness for Care of Patients with Heart Failure: Evidence form a University Hospital.	Cross-sectional study	Responsiveness of the health care system for inpatient services was poorer than for outpatient services. In outpatient services, worst performance was for choice and prompt attention domains. In inpatient services, autonomy had the worst performance.
Fazaeli et al. [27]	Responsiveness of the Health System in Outpatient Services in Low- and High-Income Areas of Mashhad	Descriptive study	The most of the subjects reported good responsiveness for outpatient services. The quality of amenities and confidentiality showed the lowest and highest performance, respectively. The responsiveness of the heath system for high-income residents were higher than for low-income residents
Alavi et al. [28]	Responsiveness of Physical Rehabilitation Centers in Capital of Iran: Disparities and Related Determinants in Public and Private Sectors.	Cross-sectional study	The confidentiality and Prompt attention were the least and most important domains, respectively. Private rehabilitation centers had better performance in basic amenities, autonomy and communication compared to public health centers.

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

69

Author(s)	Title	Study Design	Findings
Almasiankia et al. [29]	Equity in health care financing among Iranian households	Cross-sectional study using secondary data	Given the negative Kakwani index for out-of-pocket payments, a heavy burden is expected on households.
Aryankhesal et al. [30]	Catastrophic Health Expenditure in Iran	Systematic review and meta-analysis	The catastrophic health expenditures in Iran is relatively high.
Ramandi et al. [31]	Trend of Inequality in the Distribution of Health Care Resources in Iran.	Retrospective study	Physicians, paramedics, and hospital beds have been unequally distributed throughout the country.
Mohammad-beigi et al. [32]	Socioeconomic inequity in health care utilization, Iran.	Cross-sectional study,	There was inequality in the use of health care
Zarea et al. [34]	Nursing staff shortages and job satisfaction in Iran: Issues and challenges.	Review study	The shortage of nursing staff is a really important and challenging issue in Iran.
Emamgholipour [36]	The Burden of Elderly's Non-Communicable Diseases in Iran	Letter to Editor	The burden of non-communicable diseases are increasing in Iran
Arani et al. [37]	Iran's Health Reform Plan: Measuring Changes in Equity Indices.	Cross-sectional study	There is inequality in the health system
Dadgar et al. [56]	Assessing Trend of Health System Responsiveness in Iran Using Household Survey (Before and After the Implementation of Health Transformation Plan)	longitudinal study	The importance of all dimensions of responsiveness decreased in 2015 compared to previous years.
Shirkhani et al. [57]	The Iranian Health System Responsiveness after Implementation of Health Transformation Plan: A Study of Jahrom County in Southern Iran	Cross-sectional study	Responsiveness of Jahrom's health care system was higher than average level.
Baharvand et al. [58]	Responsiveness of the health system towards patients admitted to west of Iran hospitals	Cross-sectional study	Social support was at the highest level, while responsiveness to the choice of therapist and autonomy were at the lowest level
Khodamoradi et al. [59]	Measuring Equity in Iranian Healthcare System Financing: Experiences of Recent Health Reform Plan	Retrospective descriptive study	The health reform plan has not been successful in achieving the goal of fair financial contribution in the health care system
Hadizadeh et al. [60]	Health System Responsiveness in Obstetrics and Gynecology Departments of teaching hospitals in Mashhad, Iran	Cross-sectional study	The highest to lowest dimensions of responsiveness included confidentiality, social support networks, prompt attention, dignity, communication, basic facilities, autonomy and choice of healthcare provider.
Khezri et al. [61]	Comparison of Responsiveness Status of Rehabilitation Services Organization from the Perspective of Services Recipients	Descriptive-analytical and cross-sectional study	Responsiveness in welfare centers was better than in Red Crescent organizations and private health Centers.
Keyvanlo et al. [62]	The study of the most important aspects of responsiveness from the point of view of those referring to Sabzevar health centers	Cross-sectional study	The most important aspect was the right to choose healthcare provider, and the least important dimension was autonomy.
Malekzadeh et al. [63]	Health system responsiveness in Iran: a cross-sectional study in hospitals of Mazandaran province	Cross-sectional study	Responsiveness dimensions of confidentiality and communication were identified as the most important dimensions.
Afifi et al. [64]	Performance of Community Pharmacies in Iran by Measuring Responsiveness to Non-Medical Needs: An Application of WHO Responsiveness Framework	Cross-sectional study	In more than half of the subjects, the responsiveness performance of non-medical pharmacies was reported moderate or high.

JRH

70

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

4. Discussion

Findings of the current study indicated that Iran's health system has not yet been successful in achieving the goals based on the WHO's conceptual framework. Consistent with these findings, according to the WHO report (2000), Iran ranked 93rd in health system performance [38]. The current study also showed that the health system in Iran increased life expectancy through controlling contagious diseases, maternal and infant mortality rate, and achieving the millennium development goal [15]. However, it was not successful in health promotion. According to the WHO report (2000), Iran ranked 96th regarding the level of health promotion [38]. This adverse condition can be due to changes in the profile of diseases and population structure in this country. Studies have shown that the burden of chronic diseases is increasing in Iran [6]. Due to the nature of these diseases, patients have to live with their disease. These diseases may start when a person was young and affect his/her daily life, which can result in many disabilities and increased DALY index [39]. On the other hand, changes in the population structure and population aging can worsen the situation [40, 41]. Management of this situation impose direct and indirect costs on the society and the health system [42]. Studies have shown that the health system has scarce resources to confront this phenomenon [43, 44]. On the other hand, peoples' life style and expectations have changed considerably [16]. Community-based services can help address chronic conditions and their management. These services can be provided at all levels of disease prevention. Some community-based services provided to people suffering from diseases focus on the secondary and tertiary levels of disease prevention. The most important goal of these services is to promote the quality of life in these patients and their families [45]. The community-based services focused on the primary disease prevention aims at preventing diseases and decreasing their burden, which is consistent with the primary health care and Alma-Ata Declaration [46]. Given the burden of diseases and population aging in Iran, it is essential to provide both community-based and community-oriented services so that patients suffering from disease complications can benefit from these services. Incidence of chronic diseases can be prevented by appropriate planning. Therefore, health system policy-makers should perform fundamental measures for including community-based services in the health system. As Iran's health system is based on the primary health care, and infrastructures is provided to deliver of community-based health services. The WHO also suggests that some community-based services should be integrated into the primary health care

[47]. Iran's health system can define these community-based services in their structure and provide more cost-effective services to the public [48, 49].

According to the WHO report (2000), Iran ranked 100 in terms of health system responsiveness [38]. Factors contributing to responsiveness of health system include resources, health system organization, institutional factors, and population characteristics [50]. Health expenditure per capita as the most important factor can affect all dimensions of health system responsiveness. More resources in the form of increased staff and training can enhance health system responsiveness [50] According to World Bank report, health expenditure per capita was reported 365.98 USD in 2015 [51]. Khosravi et al. found that Iran's health expenditure per capita was lower compared to other countries [52]. In the current situation, Iran has limited financial resources and the healthcare providers expect more salary; in the meanwhile, the public expects cheap or free health services from the government and the health system. Given the burden of chronic disease, health cost management in these patients has increased significantly. Iran's health system can promote responsiveness through increasing and management of the health expenditure per capita.

Another finding of this study was that Iran's health system was not successful in fair financial contribution. According to the WHO report (2000), Iran ranked 113th in the world for fairness in financial contribution [38]. In recent years, many families in Iran have struggled with catastrophic health expenditure [52]. According to the WHO report (2018), achieving universal health coverage was one of the goals for sustained development in 2015, and countries moving towards universal health coverage were able to achieve other goals related to health [53]. It is needed that the public have access to high quality healthcare services without financial hardship. Iran's health system plan was reformed in 2014 by considering public financial protection, providing access to health services, and promoting the quality of health services [12]. After implementing the health evolution plan, public health cost was decreased, particularly for inpatient services [37]. However, it was costly for the health system, needed a high financing over time [54]. The WHO considers strengthening health financing systems and public insurance with an emphasis on primary health care [55], and family physician [53] as the milestone of universal health coverage. Considering Iran's heath system structure and distribution of health networks throughout the country, which provides healthcare based on the primary health care, universal health coverage and fair financial contribution can be achieved through public insurance and development of family physician program and referral system in the country.

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

71

5. Conclusion

Iran's health system has not yet achieved its goals based on the WHO's conceptual framework. Since Iran's health system is treatment-focused, it is necessary to consider disease prevention for health promotion of the community. The health expenditure per capita is low in Iran. Basic steps should be taken to improve responsiveness of health system by increasing health expenditure per capita and public awareness. Iran's health system provides health services based on the primary healthcare which can be considered as a potential. The goals based on the WHO's framework can be achieved by focusing on the prevention of non-communicable diseases, providing community-based services, development of referral system, and revision of financing and insurance plans.

One of the limitations of this study was that it focused on the main health indices. Therefore, it is recommended that more systematic reviews and meta-analyses for each health system goal and contributing factors be conducted based on the WHO's conceptual framework.

Ethical Considerations

Compliance with ethical guidelines

This study was a scoping review. No experiments on human or animal model were conducted. Hence, there was no need for ethical approval.

Funding

This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

Authors' contributions

Conceptualization: Heshmatolah Heydari and Reza Negarandeh; Data collection: Heshmatolah Heydari and Aziz Kamran; Data analysis: Heshmatolah Heydari, Reza Negarandeh, Aziz Kamran; Supervision and review: Reza Negarandeh; Writing: Heshmatolah Heydari.

Conflict of interest

The authors declared no conflict of interests.

Acknowledgments

The authors would like to thank all individuals who had cooperation in conducting this study.

References

[1] World Health Organization (WHO). Strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: WHO; 2007. https://www.who.int/healthsystems/strategy/everybodys_business.pdf. Accessed 12.4.2021

[2] World Health Organization (WHO). The world health report: 2000: Health systems: Improving performance. Geneva: World Health Organization; 2000. https://apps.who.int/iris/handle/10665/42281

[3] Smith PC. Measuring health system performance. The European Journal of Health Economics. 2002; 3(3):145-8. [PMID]

[4] Murray CJ, Frenk J. A framework for assessing the performance of health systems. Bulletin of the world Health Organization. 2000; 78(6):717-31. [PMID]

[5] World Health Organization (WHO). A WHO Framework for Health System Performance Assessment. Geneva: World Health Organization; 2021. https://apps.who.int/iris/bitstream/handle/10665/66267/a68870.pdf?sequence=1&isAllowed=y.%20Accessed%2012.4.2021

[6] Farzadfar F, Naghavi M, Sepanlou SG, Moghaddam SS, Dangel WJ, Weaver ND, et al. Health system performance in Iran: a systematic analysis for the Global Burden of Disease Study 2019. The Lancet. 2022; 399(10335):1625-45. [DOI:10.1016/S0140-6736(21)02751-3]

[7] Azizi MH. The historical backgrounds of the Ministry of Health foundation in Iran. Archives Of Iranian Medicine. 2007; 10(1):119-23. https://www.sid.ir/en/journal/ViewPaper.aspx?ID=55231

[8] Nasseri K, Sadrizadeh B, Malek-Afzali H, Mohammad K, Chamsa M, Cheraghchi-Bashi MT, et al. Primary health care and immunisation in Iran. Public Health. 1991; 105(3):229-38. [DOI:10.1016/S0033-3506(05)80112-X]

[9] Mehrdad R. Health system in Iran. Japan Medical Association Journal. 2009; 52(1):69-73. https://www.med.or.jp/english/pdf/2009_01/069_073.pdf

[10] Zanganeh Baygi M, Seyedin H, Salehi M, Jafari Sirizi M. Structural and contextual dimensions of Iranian primary health care system at local level. Iranian Red Crescent Medical Journal. 2014; 17(1):e17222. [PMID] [PMCID]

[11] Shadpour K. [Health sector reform in Islamic Republic of Iran (Persian)]. Hakim Research Journal. 2006; 9(3):1-18. https://www.sid.ir/en/journal/ViewPaper.aspx?id=101360

[12] Heshmati B, Joulaei H. Iran's health-care system in transition. The Lancet. 2016; 387(10013):29-30. [DOI:10.1016/S0140-6736(15)01297-0]

[13] World Health Organization. Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies. Geneva: World Health Organization; 2010. https://apps.who.int/iris/bitstream/handle/10665/258734/9789241564052-eng.pdf

[14] Arksey H, O Malley L. Scoping studies: Towards a methodological framework. International Journal of Social Research Methodology. 2005; 8(1):19-32. [DOI:10.1080/1364557032000119616]

[15] Mohammadi Y, Parsaeian M, Mehdipour P, Khosravi A, Larijani B, Sheidaei A, et al. Measuring Iran's success in achieving Millennium Development Goal 4: A systematic analysis of under-5 mortality at national and subnational levels from 1990 to 2015. The Lancet Global Health. 2017; 5(5):e537-e44. [DOI:10.1016/S2214-109X(17)30105-5]

[16] Abbaszadeh A, Eskandari M, Borhani F. Changing the care process: A new concept in Iranian rural health care. Asian Nursing Research. 2013; 7(1):38-43. [DOI:10.1016/j.anr.2013.01.004] [PMID]

[17] World Health Organization (WHO). Noncommunicable diseases country profiles 2018 [Internet]. 2018 [Updated 2018]. Available from: https://apps.who.int/iris/handle/10665/274512

[18] Sasanipour M, Asadi S. Epidemiologic transition in Iran with emphasis on the third stage of transition. Journal of Community Health Research. 2017; 6(4):248-57. http://jhr.ssu.ac.ir/article-1-359-en.pdf

[19] Aghamohamadi S, Hajinabi K, Jahangiri K, Asl IM, Dehnavieh R. Population and mortality profile in the Islamic Republic of Iran, 2006-2035. Eastern Mediterranean Health Journal. 2018; 24(5):469-76. [PMID]

[20] United Nations. World Population Ageing 2015. New York: United Nations; 2015. https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf

[21] Aghamolaei T, Eftekhaari TE, Rafati S, Kahnouji K, Ahangari S, Shahrzad ME, et al. Service quality assessment of a referral hospital in Southern Iran with SERVQUAL technique: Patients' perspective. BMC Health Services Research. 2014; 14:322. [DOI:10.1186/1472-6963-14-322] [PMID] [PMCID]

[22] Bazzaz MM, Taghvaee MRE, Salehi M, Bakhtiari M, Shaye ZA. Health system's responsiveness of inpatients: Hospitals of Iran. Global Journal of Health Science. 2015; 7(7 Spec No):106-13. [DOI:10.5539/gjhs.v7n7p106] [PMID] [PMCID]

[23] Piroozi B, Mohamadi Bolban Abad A, Moradi G. [Assessing health system responsiveness after the implementation of health system reform: A case study of Sanandaj, 2014-2015 (Persian)]. Iranian Journal of Epidemiology. 2016; 11(4):1-9. http://irje.tums.ac.ir/article-1-5457-en.html

[24] Forouzan S, Padyab M, Rafiey H, Ghazinour M, Dejman M, San Sebastian M. Measuring the mental health-care system responsiveness: Results of an outpatient survey in Tehran. Frontiers in Public Health. 2016; 3:285. [DOI:10.3389/fpubh.2015.00285] [PMID] [PMCID]

[25] Sajjadi F, Moradi-Lakeh M, Nojomi M, Baradaran HR, Azizi F. Health system responsiveness for outpatient care in people with diabetes Mellitus in Tehran. Medical Journal of the Islamic Republic of Iran. 2015; 29:293. [PMID]

[26] Karami-Tanha F, Moradi-Lakeh M, Fallah-Abadi H, Nojomi M. Health system responsiveness for care of patients with heart failure: Evidence form a university hospital. Archives of Iranian Medicine (AIM). 2014; 17(11):736-40. [PMID]

[27] Fazaeli S, Yousefi M, Ebrahimipour H, Banikazemi H, vakilzadeh K. [Responsiveness of the health system in outpatient services in low and high income areas of Mashhad (Persian)]. Journal of Paramedical Sciences & Rehabilitation. 2016; 5(2):58-66. [DOI:10.22038/JPSR.2016.6912]

[28] Alavi M, Khodaie Ardakani MR, Moradi-Lakeh M, Sajjadi H, Shati M, Noroozi M, et al. Responsiveness of physical rehabilitation centers in capital of Iran: Disparities and related determinants in public and private sectors. Frontiers in Public Health. 2018; 6:317. [DOI:10.3389/fpubh.2018.00317] [PMID] [PMCID]

[29] Almasiankia A, Kavosi Z, Keshtkaran A, Jafari A, Goodarzi S. Equity in health care financing among Iranian households. Shiraz E-Medical Journal. 2015; 16(11-12):e59926. [DOI:10.17795/semj28653]

[30] Aryankhesal A, Etemadi M, Mohseni M, Azami-Aghdash S, Nakhaei M. Catastrophic health expenditure in Iran: A review article. Iranian Journal of Public Health. 2018; 47(2):166-77. [PMID]

[31] Ramandi SD, Niakan L, Aboutorabi M, Noghabi JJ, Khammarnia M, Sadeghi A. Trend of inequality in the distribution of health care resources in Iran. Galen Medical Journal. 2016; 5(3):122-30. [DOI:10.31661/gmj.v5i3.618]

[32] Mohammadbeigi A, Hassanzadeh J, Eshrati B, Rezaianzadeh A. Socioeconomic inequity in health care utilization, Iran. Journal of Epidemiology and Global Health. 2013; 3(3):139-46. [DOI:10.1016/j.jegh.2013.03.006] [PMID] [PMCID]

[33] Karimi S, Javadi M, Jafarzadeh F. [Economic burden and costs of chronic diseases in Iran and the world (Persian)]. Health Information Management. 2012; 8(7):996-84. https://www.sid.ir/fa/journal/ViewPaper.aspx?ID=347868

[34] Zarea K, Negarandeh R, Dehghan-Nayeri N, Rezaei-Adaryani M. Nursing staff shortages and job satisfaction in Iran: Issues and challenges. Nursing & Health Sciences. 2009; 11(3):326-31. [DOI:10.1111/j.1442-2018.2009.00466.x] [PMID]

[35] Hunter DJ, Reddy KS. Noncommunicable diseases. New England Journal of Medicine. 2013; 369(14):1336-43. [DOI:10.1056/NEJMra1109345] [PMID]

[36] Emamgholipour S. The burden of elderly's non-communicable diseases in Iran. Evidence Based Health Policy, Management & Economics. 2017; 1(3):128-30. http://jebhpme.ssu.ac.ir/article-1-84-en.html

[37] Arani AA, Atashbar T, Antoun J, Bossert T. Iran's Health Reform Plan: Measuring changes in equity indices. Iranian Journal of Public Health. 2018; 47(3):390-6. [PMID]

[38] World Health Organization (WHO). The World health report 2000: Health systems: Improving performance. Geneva: World Health Organization ; 2000. https://apps.who.int/iris/handle/10665/42281

[39] GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: A systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 2018; 392(10159):1789-858. [DOI:10.1016/S0140-6736(18)32279-7]

[40] Zhao C, Wong L, Zhu Q, Yang H. Prevalence and correlates of chronic diseases in an elderly population: A community-based survey in Haikou. PLoS One. 2018; 13(6):e0199006. [DOI:10.1371/journal.pone.0199006] [PMID] [PMCID]

[41] Kingston A, Robinson L, Booth H, Knapp M, Jagger C; MODEM project. Projections of multi-morbidity in the older population in England to 2035: Estimates from the Population Ageing and Care Simulation (PACSim) model. Age and Ageing. 2018; 47(3):374-80. [DOI:10.1093/ageing/afx201] [PMID] [PMCID]

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74

73

[42] Chen S, Kuhn M, Prettner K, Bloom DE. The macroeconomic burden of noncommunicable diseases in the United States: Estimates and projections. PloS One. 2018; 13(11):e0206702. [PMID] [PMCID]

[43] Arredondo A, Aviles R. Costs and epidemiological changes of chronic diseases: Implications and challenges for health systems. PloS One. 2015; 10(3):e0118611. [PMID] [PMCID]

[44] Roncarolo F, Boivin A, Denis JL, Hébert R, Lehoux P. What do we know about the needs and challenges of health systems? A scoping review of the international literature. BMC Health Services Research. 2017; 17(1):636. [PMID]

[45] World Health Organization. Community-based rehabilitation. Geneva: World Health Organization ; 2010. https://www.who.int/publications/i/item/9789241548052

[46] Rigg KK, Engelman D, Ramirez J. A Community-Based approach to primary health care. In: Arxer S, Murphy J, editors. International Perspectives on Social Policy, Administration, and Practice. Cham: Springer; 2018. p. 105-17. [DOI:10.1007/978-3-319-61557-8_9]

[47] World Health Organization. Why palliative care is an essential function of primary health care. Geneva: World Health Organization; 2018. https://www.who.int/docs/default-source/primary-health-care-conference/palliative.pdf

[48] Basu R, Ory MG, Towne SD Jr, Smith ML, Hochhalter AK, Ahn S. Cost-effectiveness of the chronic disease self-management program: Implications for community-based organizations. Frontiers in Public Health. 2015; 3:27. [PMID]

[49] Heydari H. [Home-based palliative care: A missing link to patients' care in Iran (Persian)]. Journal of Hayat. 2018; 24(2):97-101. http://hayat.tums.ac.ir/article-1-2281-en.html

[50] Robone S, Rice N, Smith PC. Health systems' responsiveness and its characteristics: A cross-country comparative analysis. Health Services Research. 2011; 46(6pt2):2079-100. [PMID]

[51] Lauderdale DS, Wen M, Jacobs EA, Kandula NR. Immigrant perceptions of discrimination in health care: The California Health Interview Survey 2003. Medical Care. 2006; 44(10):914-20. [PMID]

[52] Khosravi B, Soltani S, Javan-Noughabi J, Faramarzi A. Health care expenditure in the Islamic Republic of Iran versus other high spending countries. Medical Journal of the Islamic Republic of Iran. 2017; 31:71. [PMID]

[53] World Health Organization. Conceptual and strategic approach to family practice: Towards universal health coverage through family practice in the Eastern Mediterranean Region. Geneva: World Health Organization; 2014. https://apps.who.int/iris/handle/10665/250529

[54] Ferdosi M, Kabiri S, Keyvanara M, Yarmohammadian MH. Challenges of Iran health transformation plan about inpatients payment: Viewpoint of experts. Health Scope. 2017; 6(3):e14388. [DOI:10.5812/jhealthscope.14388]

[55] World Health Organization. Universal Health Coverage. Geneva: World Health Organization; 2021. https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-(uhc)

[56] Dadgar E, Rashidian A, Majdzadeh R, Arab M, Kazemi-galougahi MH. Assessing trend of health system responsiveness in Iran using household survey (before and after the implementation of health transformation plan). Health Scope. 2018; 7(S): e63866. [DOI:10.5812/jhealthscope.63866]

[57] Sarikhani Y, Heydari ST, Razmjou S, Zare S. The Iranian health system responsiveness after implementation of health transformation plan: A study of Jahrom County in Southern Iran. Health Scope. 2018; 7(S):e12383. [DOI:10.5812/jhealthscope.12383]

[58] Baharvand P. Responsiveness of the health system towards patients admitted to west of Iran hospitals. Electronic Journal of General Medicine. 2019; 16(2):em121. [DOI:10.29333/ejgm/93481]

[59] Khodamoradi A, Ghaffari S, Fazaeli AA, Toyserkanmanesh R, Rasi V, Bigdeli F. Measuring equity in Iranian healthcare system financing: Experiences of recent health reform plan. Evidence Based Health Policy, Management and Economics. 2019; 3(2):87-95. [DOI:10.18502/jebhpme.v3i2.1215]

[60] Hadizadeh Tala Saz Z, Vafaee A, Askari F, ShariatiNezhad K. Health System Responsiveness in Obstetrics and Gynecology Departments of teaching hospitals in Mashhad, Iran. Journal of Midwifery and Reproductive Health. 2019; 7(4):1906-13. [DOI:10.22038/JMRH.2018.31090.13395]

[61] Fathi F, Khezri A, Khanjani MS, Hosseinzadeh S, Abdi K. [Comparison of responsiveness status of rehabilitation services organization from the perspective of services recipients (Persian)]. Archives of Rehabilitation. 2019; 20(3):270-85. [DOI:10.32598/rj.20.3.270]

[62] Keyvanlo Z, Fazayeli S, Barghamadi B, keykhosravi A, Sabzevari N, Neamatshahi M. [The study of the most important aspectsns of responsiveness from the point of view of referring to Sabzevar health centers (Persian)]. Journal of Sabzevar University of Medical Sciences. 2020; 27(6):817-25. http://jsums.medsab.ac.ir/article_1257.html?lang=en

[63] Malekzadeh R, Yaghoubian S, Hasanpoor E, Ghasemi M. Health system responsiveness in Iran: A cross-sectional study in hospitals of Mazandaran province. International Journal of Human Rights in Healthcare. 2021; 14(2):133-42. [DOI:10.1108/IJHRH-03-2020-0018]

[64] Afifi S, Alizadeh Bahmani AH, Zarei L, Mahi-Birjand M, Hoorang M, Zare M, et al. Assessing the performance of community pharmacies in Iran by measuring responsiveness to non-medical needs: An application of WHO responsiveness framework. Journal of Research in Pharmacy Practice. 2021; 10(2):59-64. [PMID]

74

Negarandeh R. et al. Iran's Health System Performance in Achieving Goals. JRH. 2022; 12(2):65-74