



The Dimensions of health system performance evaluation with emphasis on the coverage of the vulnerable groups in Iran

Shahri S , Tabibi S. J*, Nasiripour AA and Ghaffari F

Shahri S ,Ph.D condidate, Department of Health Services Management, Science and Research Branch, Islamic Azad university, Tehran, Iran

**Tabibi S.J, Ph.D. Department of Health Services Management, Science and Research Branch, Islamic Azad University, Tehran, Iran(Corresponding Author).*

Nasiripour AA, Ph.D. Associate Professor, Faculty of Medical Sciences, Department of Health Services Management, Science and Research Branch, Islamic Azad University, Tehran, Iran.

Ghaffari F, Ph.D. Assistant Professor, Faculty of Management and Economics, Department of Economics, Science and Research Branch, Islamic Azad university, Tehran, Iran.

ABSTRACT

Evaluation is an integral part of any executive job and activity using of information measurable improvement is followed in administrative activities as a main aim .This study was conducted with aim of determine factors evaluating the performance of health systems based on structural equation modeling. In this descriptive analytical and practical. This study was conducted during 2015. 419 experts participated in this study. Data collection was conducted through researcher made questionnaire. Validity of the questionnaire in the way of their content validity and reliability by using Cronbach's alpha coefficient (0.94) was confirmed. Data were analyzed using the software SPSS 22 and LISREL 8.8. Findings revealed that variable healthcare service delivery with impact factor 0.79 is the most important factor affecting the assessment of health system performance and variable equitable access to health services was in second place with impact factor of 0.72 after variable of health care delivery. Variables stewardship, financial resources, protection against financial risks and resource generation respectively with impact factor of 0.69, 0.58, 0.58 and 0.54 in evaluating the performance of the health system was in third place to sixth. Considering the dimensions of health system performance can be pay evaluating the performance tailored to conditions in the country in order to the objectives of the health system.

Keywords: health system, evaluation dimensions, performance, coverage, vulnerable populations

INTRODUCTION

Improve the performance of health systems and therapy in the agenda of governments, investors and healthcare providers around the world, even high-income countries. The reasons of this problem was documented widely, Including the rising costs of health care, significant prevalence injuries and damage to the patient because of medical errors or insufficient standards of care and most recently the economic crisis, the aging population and increasing chronic burden of disease [1].

During the past three decades, efforts to develop a framework for evaluating the performance with considering the specification of health systems , including the determinants of health, Attention to health has been done as a public good, and health system stakeholders with different views and... [4-2].

Athens and Arugula [5] functions of the health system respectively stewardship and organizing, financing [aggregation and accumulation of funds], resource allocation and payment mechanisms to providers [Allocation of funding and other available resources] [such as human resources, capital equipment] and payment mechanism to health service providers] and service delivery point.

The Statistics Committee and national health information standards knew community integrated and coordinated [6], also important functions of the National Health Performance Assessment Framework Australia efficiency, safety, having and access to programs and services, the effectiveness of interventions in achieving the desired result, to meeting of to the individual needs or community.

According to a report by the World Health Organization Regional Office for Europe [7] to 9 function Georgia Health System has referred these functions include: Health system trusteeship, health information systems, ensuring effectively allocation of healthcare resources, funding, geographical reach and informational of the health system, National protection and justice in the health system, health promotion, health behavior, disease prevention, supervision and inspection, quality health services and clinical outcomes, improving of population health status, health national priorities and their relationship to of health system functions.

Jacobs and colleagues [8], has been pointed in a study entitled of health system Performance Assessment Framework Portugal, four main functions related to the health system performance assessment framework. 1. Achieve better health for the Portuguese people [promotion and distribution of Health, Risk factors and impact on health dimensions]. 2. Ensure access to quality services and satisfaction of care services [to meet system, the health system, and access, quality, safety and health outcomes]. 3. Ensuring social solidarity [social and financial protection, coverage, and justice in access to of health care services] and 4. Of the health system stability and efficiency [costs and expenditures, human resources, innovation and technology, performance effectiveness in the health system].

Specified dimensions and noteworthy framework of the Organization of Economic Cooperation and Organizational development [9] has been mentioned in the context of the health system performance, safety, responsiveness / patient-centeredness, access to the function of health system.

England Performance Assessment Framework medical system [10] has been expressed, improving health, fair access, providing appropriate health care effectiveness, efficiency, patient-care experience and health outcomes as the functional dimensions England national medical system caring medical system results in terms of equitable access, providing care proper health.

In the World Health Report of 2010 was mentioned to this all countries take steps towards achieving of universal coverage, which means that all people access to health services required and with quality with no financial problems [12-11]. The World Health Report of 2000, also has been paid attention to the health system functions and has emphasized on financing of and protect people against the financial risks caused by illness and medical costs [13].

In country of Iran there are laws in attention to public health. Including: Can mentioned 38 article of the Fifth Development Plan of country that to develop quantitative and qualitative of health insurances, achieving to the comprehensive coverage and a fair to health services and reducing the share of people from health costs thirty percent [30%] through several means such as the modifying the structure of funds, mention to resource management, making suitable the tariffs, using the domestic sources of funds and if necessary from the aid of government in the format of annual budget [14]. As well as principle twenty-nine [29] Iran Islamic republic constitution, regulations of social welfare safety umbrella and review of public health sector performance shows that despite the efforts taken to improve the health, some problems relate to had not been resolved relate in this sector [15]. Some of these problems in the health system of Iran include: Inequality in access to services, financing, and inequality in responding to the expectations of non-medical of people... [16].

The World Health Organization knows governments responsible for supplier's people's health [18]. Different countries has been considered certain applications as well as according to their conditions for people of society especially low-income and vulnerable people. The level of support is varies from one country to another for example: In the United Kingdom most outpatient services are free, but some services are not covered by the national health system. In connection with this category of services covered by national health systems have not been placed, there are grants for some people. For example, services of ophthalmology is not among national health system, but an eyesight test are covered, the cost of glasses and contact lenses for children under 16 years, 16-19 years full-time students, people over 60 years of age, low income groups, people with diabetes or those at risk of developing glaucoma.

Japan's support of special people in these fields' increases: Children younger than 3 years only 10 percent of people over the age 74 and people with low and middle income 10 percent of the premium and individuals with up income up pay 20 per cent. As well as, has been considered a maximum of 10,000 yen per month for dialysis patients [approximately \$ 127].

France takes action for support of specific individual through exemption payment of contributions: Prenatal tests, influenza vaccination for people over 65 years, the vaccine against diphtheria - pertussis - rubella, AIDS patients, some drugs for children less than 13 years old and some of are exempt from payment of contributions cancer screening [19].

Therefore, due to the problems in the health system and health insurance [despite recent government programs [healthcare reform plan] importance due to all strata will be double, especially low-income people and vulnerable groups. Being an assessment framework appropriate in the health system performance can be used as a decision-making tool to help health section policymakers. Especially in low-income countries with given limited resources against big needs it is unbelievably important [20]. Due to this issue that there are different models for health systems. It is better to evaluate the performance of the health system of each country, in accordance on the social conditions, political and economic of that country. The aim of doing this study has been to determine dimensions health system performance affecting the performance of the health system of Iran. That with doing this research will take a step towards evaluating the performance of the health system of Iran with emphasis on covering of vulnerable groups.

MATERIALS AND METHODS

The present study is kind of descriptive-analytical and a comparative that was conducted during of 2015. At first in the stage comparative study to evaluate some of the existing health system performance assessment models (countries America, Sweden, France, Denmark, Portugal, Turkey, Georgia, and Japan) was discussed. Paradigms of present study, selected countries, was according to the study criteria. After securing of saturation findings, selected papers studied and by using the method of content analysis, all the factors affecting to evaluation of extraction of performance was extracted and coded. Then coded data were categorized by using of the opinions of experts and results as classified were collected in the matrix. Finally dimensions affecting on the performance evaluation of the health system were identified.

By using the Cochran's formula and calculating error coefficient of 0.05 and $\alpha=0.05$ at least size of sample was calculated 384 person. The study of sample selection criterion related among experts, experienced professors, administrators and experts to consider the field of study, work experience executive. 500 questionnaires were distributed, of which number 80 questionnaires was not returned so 419 questionnaires were collected. Thus, the final volume of the sample in this study has been 419 people. Before sending the questionnaire by telephone, in person or via e-mail provided to meet to general description of the work and was tried that people with great precision and attention to the necessity of work, will give the best answer. Also be sure that optionally of individuals and responsible for the results of the study will be provided.

In the stage of surveys from experts, a very limited number but quit connoisseurs and experts raised of country for select the most appropriate dimensions of assessment were used. Respondents by using of cluster sampling from among provinces of the country (Tehran, Isfahan, Mashhad, Shiraz, Tabriz, Kerman, Yazd, Shiraz, Mazandaran and Gilan) selection, then use the snowball method was chosen samples of the eligible study.

Research data collection tool was to determine the dimensions the health system performance assessment of Iran. This researcher made questionnaire was designed with the help of information extracted from the theoretical foundations and related literature. Mentioned questionnaire were set consisted of 82 questions. 6 dimensions (stewardship, financing, resource generation, health information management, human resources, etc.), health service delivery, equitable access to health services and protection against the financial risks) and has been 82 questions. Questions in the questionnaire mentioned that are based on information extracted from the interview have been set, to assessment of the stewardship and its constituent components, assessment of financing and its constituent components, assessment production resources and its constituent components, Measure of protection against financial risks and its constituent components to evaluate the performance of the health system have been paid with emphasis on universal coverage of vulnerable groups. In other words, questions 1 to 25 and 61 to 63 related to stewardship, questions 26 to 37 related to finance, questions 38 to 53 related to resource generation, questions 15 to 16 and 54 to 60 related to the healthcare service delivery, Questions 64 to 74 related to equitable access to health services and finally Questions 75 to 82 are related to protection against financial risk.

Validity of study instruments in the way of content validity by the opinions of experts, scholars, professors and experts in the field were investigated. As well as to determine the face validity, modified questionnaire was tested in a trial the implementation. The reliability of the questionnaire by using of Cronbach's alpha 0\94 designation and was approved. Questions in format of the five point Likert scale were scored in the form (1 = very little and very high = 5). Score of the each item and the average score was calculated for each of the dimensions between 5-0.

To analyze the data collected from questionnaires were used of spss22 and LISREL 8.8 software with methods (factor analysis, regression and correlation analysis). The test used in the factor analysis includes kmo (Kaiser-Mere-Olkin), Bartlett (Bartlett), varimax rotation variables, (Varimax Rotation), the subscription rate variables (Communities Tests Variables) and tests the eigenvalues of the factor after spin ((Total Variance explained were also correlation and regression tests.

Findings

The results of the factor analysis showed, data are suitable for factor analysis. Results in Table 1 meaningful amount (kmo = 0.867) and as well as Bartlett's test show (Bartlett test = 15630.96) at the level of (p <0.000). As well as for all six components significant values and also Bartlett's test is clear. The results of both mentioned test approved ability of the data for doing factor analysis based on the correlation matrix in the sample group of the studied.

Table 1. KMO and Bartlett test

Latent variable	KMO	Bartlett	p-value
Stewardship	0/754	640/36	0.000
financial resources	0/769	858/50	0.000
resource generation	0/773	817/16	0.000
health service delivery	0/779	806/37	0.000
equitable access to health services	0/707	743/62	0.000
Protection from financial risk	0/760	748/55	0.000
Total	0/867	15630/96	0.000

Table 1: Factors evaluating the performance of health systems and components constituting the aforementioned factors

first factor (Stewardship)		row
Second component (Forming health policies, determining prospects and strategies)	First component (Collecting and using knowledge)	
Provide a strategic program for the comprehensive health care coverage, especially in vulnerable groups, The role of supporting organizations, such as Imam Khomeini Relief foundation, Focusing on health care and treatment policies on the comprehensive health care coverage, especially in vulnerable groups, Proper implementation of laws targeting health subsidies, Review insurance services based on the burden of diseases	Participation of beneficiary organizations and institutions in the implementation of policies supporting vulnerable groups, Getting the participation of beneficiary organizations and institutions to make health system policies and prepare instructions, regulations and circulars, An exact and specific information system, Use recorded information in policy making and planning, Employ health services protocols and standards for vulnerable groups in health centers, Make exact and explicit policies for the comprehensive health care coverage, especially in vulnerable groups, Provide an instruction to decrease hospitalization costs, Provide an instruction for the financial protection program supporting refractory, special and needy patients, and disabled people ,Provide an instruction for the financial protection program supporting elderly	components
Fourth component (Accountability system and intersectoral cooperation)	Third component (approaches for controlling and adjusting)	
Complaint handling system, Provide health information needed to vulnerable groups	Establishing governmental units monitoring human, technical and financial resources for the proper implementation of laws, The role of health donors to support recipients' right, Aligning the activities of beneficiaries (health charities, etc.) with ministries and universities	
Second factor(financial resources)		
Second component (Integrating and allocating the resources to state budget)	First component (Revenue collection)	
Mandatory participation of people and organizations in the health system, A mechanism to mitigate risks in funds, The possibility of providing subsidies from the accumulated funds, specially state taxes, Determine the rate of franchising based on the made policies, variable and in proportion to the service	The gross domestic product share of health sector, The share of public sector of total healthcare costs, The financial estimation of credits and health resources based on	

groups, disadvantaged areas and target population, Free program to provide health services to vulnerable groups in the country, Strengthening the financial structure of insurance organizations		society health needs
Third factor (resource generation)		
	Second component (Medicine)	First component (Human resources)
Planning and comprehensive management for drug supply and allocation, Estimation of medicines and medical equipment required for vulnerable groups, Set the list of drugs covered by insurance, and set the list of subsidies for resources to support vulnerable groups		Human resources specialists development based on the need for each province, Training human resources in the health system based on the needs of country, Cooperation between medical sciences universities and Ministry of Health to provide and estimate needed skilled manpower, considering the needs of each province, Review medical sciences curriculum with the approach of the family physician and referral system, Codification of training programs with regard to the changes, Codify legislations, regulations and instructions to serve medical school graduates in the underserved areas, Employ multi-skilled staff in the underserved areas, Offering a reward for working in difficult conditions or with special patients,
Fourth factor (Healthcare service delivery)		
	First component (Organizing healthcare service delivery)	Third component (Health Information System)
Number of specialists in accordance with standards, Distribution of skilled manpower in accordance with the need to provide services in different regions of the country		Technical infrastructures in the area of e-health in the country, Informational infrastructures in the area of e-health in the country, Minimum physical infrastructures to provide health facilities in different regions according to the burden of time disease, Minimum infrastructures equipment to provide a variety of health facilities in different regions according to population needs
Fifth factor (Fairness in healthcare services delivery)		
	First component (Financial factors)	Second component (Fairness in healthcare services delivery)
Economic status of the family, Non-governmental financial supports		Number of primary health care centers of the health system, according to the population, Allocation of resources, based on the population indices, Allocation of resources, based on the socio-economic indices, Referral system in the country
	Third component (Structural factors)	Second component (Geographical factors)
The appropriate proportion of healthcare workers to the covered population, The working schedule of health care centers to meet the health needs of people in all hours of the day		Distance and time interval to reach health centers, Time interval to reach health centers
	Third component (Consumptions and healthcare costs)	Second component (Economic features)
Hospital services, Dental services, Drug-related costs		sixth factor(Protection from financial risks) First component (Demographic characteristics)
	Family income, Insurance coverage status	Number of family members, Family income, Individuals over 65, children under 5, specific diseases and etc. in the family

Also, the results of the other tests of factor analysis showed that the factors Stewardship, financing, resource generation, health service delivery, equitable access to health services and protection against financial risks are the constituent elements of evaluation health system performance. Collection and use of wisdom, shaping to the health policies, determine the vision and strategies, put the effect: approaches to control and regulate the system of accountability and participation of intersectoral are part of the components the constituent trusteeship. Collecting incomes, to uniform and the allocation of resources to the state budget financing are of the constituent components.

Human resources, pharmaceuticals and information systems of components that are shaped production resources. Organizing providing of health services and justice in the provision of health care services are providing of constituent components. As well as 4 factors financial, geographic, individual and structural are also from constituent component of equitable access to health services. Finally, demographic characteristics, economic characteristics and amount of consumption and cost of health services also are from constituent components protection against financial risks. Of course, each of these components consists of other sub-components (Table 2).

Table 3: components and sub-components of health system performance evaluate

t- value	B	components	Latent variable
12/247	0/82	Collecting and using knowledge	Stewardship
8/49	0/70	Forming health policies, determining prospects and strategies	
11/65	0/82	Influencing: some approaches for controlling and adjusting	
10/77	0/56	Accountability system and intersectoral cooperation	Financial resources
7/31	0/48	Revenue collection	
9/47	0/93	Integrating and allocating the resources to state budget	
6/47	0/43	The providers' payments	Resource generation
11/85	0/60	Human resources	
11/68	0/61	Medicine	
12/28	0/65	Health Information System	
10/02	0/80	Organizing healthcare service delivery	Healthcare service delivery
1/41	0/85	Fairness in healthcare services delivery	
4/22	0/62	Financial factors	Equitable access to healthcare services
1/59	0/59	Geographical factors	
3/48	0/48	Individual factors	
		Structural factors	
3/34	0/54		Protection from financial risks
15/54	0/76	Demographic characteristics	
16/47	0/80	Economic features	
13/81	0/67	Consumptions and healthcare costs	

Results in Table 3 show that "the collection and use of reason" to measure the Stewardship, "making uniform and allocation of resources" to measure the variables of financial resources, "information management system" to measure the variables Resource generation, " Equitable access to healthcare services and therapeutic". To measure the variables health services, "financial factors" to measure the variables equitable access to health services, "economic characteristics" to measure the variables of protection against financial risks is an important indicator than other indicators.

Table4: fit indices of confirmatory factor analysis

against protection financial risks	Equitable access to healthcare services	healthcare service delivery	resource generation	financial resources	stewardship	
2/215	2/53	2/52	2/456	2/58	2/25	χ^2/df
0/010	0/026	0/012	0/049	0/033	0/047	RMSEA ⁱ
0/98	0/97	0/90	0/93	0/97	0/99	GFI ⁱⁱ
0/93	0/95	0/93	0/92	0/95	0/95	AGFI ⁱⁱⁱ

Results listed in Table 4 show that the model of s6tuding was provided with proper fit.

DISCUSSION

This study Evaluation framework to identify and understand key factors influencing health system performance Evaluation and the amount of effectiveness of each of the six factors were identified. In comparison various factors, health services with impact factor 0.79 was the most important factor affecting the performance evaluation of the health system and equitable access to health services with impact factor 0.72 is second place after the health care services. Stewardship, financing, financial risk protection and supplied references respectively with impact factor 0.69, 0.58, 0.58 and 0.54 were ranked third to sixth.

To uniform and allocation of financial resources is one of the important components and in evaluating the performance of health systems has a fundamental role. Most health systems are researching to the three vital functions financing and necessary financing. The three functions are: resource gathering, aggregation and management of resources and shopping services.

Health system provides its resources through the state, family, employer and donations from the public, non-governmental organizations, charitable institutions and international organizations its financial resources. In such a way that the risk of paying for health costs by all individuals and not to be tolerated by individuals in providing the sources. Financial resources should be fair. The health systems it means that the risks that households encountered due to costs related to the health system, in terms of their ability to pay will distribution to their risk of disease itself. A system with equitable financing makes sure of protection of all individuals financially.

Health system that individuals or household sometimes on it through the shopping of their needed care or are driven into poverty or because of the cost, to be forced to not care of shopping, is unfair. This situation is the characteristic of the majority of poorer countries and some of countries with middle-income or higher that in these countries, at least part of the population in amount of inadequate are protecting against financial risks But in most developing countries usually the share of the private sector is higher than the state's share.

Briefly the expansion of coverage and depth insurance with particular attention to more vulnerable groups than by increasing the budget and more credibility to health care programs is as a strategy for effective [28-26].

The results of the study is consistent in this issue with the credibility of prior [21], Athens and Arugula [5], with the report of the World Health Organization Regional Office of Europe [7].

Management information system that is one of the components productions of resources and in assessing the performance of health systems has a fundamental role. In explaining of the "production resources" have emphasize that That health systems only are not limited to financing institutions or preparation and delivery of these services, but are include a diverse group of organizations that producer of data for those services, particularly human resources, financial and physical [eg, facilities, equipment, and knowledge] . The results of this study in this issue are consistent with the World Health Organization Performance Assessment Framework [29 and 17], Athens and Arugula [5], United States Agency for International Development.

Equitable access to healthcare services is one of the components of health care delivery, and has a fundamental role in the evaluation health system performance. The results of this study in this regard are consistent with the England Performance Assessment Framework medical system [10], Athens and Arugula [5], Jacob and colleagues [8].

Financial factors are one of the components of equitable access to health services and have a fundamental role in the evaluation of health system performance. Access to health care is an issue key in the organizations providing health services.

The results of this study in this regard are consistent with Athens and Arugula [5], England's medical system the performance assessment framework [10], report of the World Health Organization Regional Office of Europe [7], Jakab and colleagues [8], the Organization for Economic Cooperation and Development organizational [9] and performance assessment framework by the World Health organization [17], Khayatian and colleagues [30.]

Economic characteristics is one of the components of the protection against financial risks and has a fundamental role and in the evaluation of health system performance. Lack of financial protection in health sectors has been known as a disease. And it is the clearest sign that households will suffer not only of burden of disease but also of the burden of economic poverty and to deal with poverty caused by catastrophic costs and financing their health. The results of this report, is consistent particularly with the World Health Organization Regional Office of Europe [17], Browser and colleagues [31]. In this study, ethical considerations were considered based on without the name of optional questionnaires and kiphng information confidentiality participants in this research.

CONCLUSION

The results of this study with the help of a literature survey of review of related literature, a field study, showed that key variables, include trusteeship, financing, resource generation, service delivery, equitable access to health services and are protection from financial risks. It seems that by using of a Performance Evaluation Model tailored to country's circumstances can lead to improved performance over time by identifying strengths and weaknesses placed at the disposal of policymakers. Then executive strategies that may be close us to the goals of the health system to be identified.

To realize this it is necessary to specify the role of each of the public health system. Organizing to the role of non-governmental organizations and interest groups, which this can be lead to the development of more coordination inter-sectoral. Determination of regulation and oversight to private sector, charitable and non-governmental sector,

through education is for empowerment staff of supervision sector. Organizing to health information management system by determining appropriate indicators with existence of situation and dashboard designing that also helps to the decision. Iran increase in GDP proposed. But according to Iran's low gross domestic product and low portion of its health sector of that, attention to the payment method for financing at different levels of providing service is required. As well as indirect allocation of financial resources to institutions provider health care through basic health insurance organizations and unification of tariffs between public and private sectors can lead to performance, effectiveness and observance of justice in the health system [32].

Integration of health insurance in the country through the establishment of coordinated information system as the infrastructure can cause to be healthcare reform in Iran. Integration of insurance funds can lead to reduction of administrative costs, more aggregate and lower of per capita right. The manner of calculation of premium's persons covered by Civil Servants insurance of fixed premiums per the number of insured person in proportion to the rights of the individual, deeper coverage of services and coverage some services that now are chiefly out of the pack service [such as the dentistry] [33].

Attention to the needs assessment of specialist human resources divided need of each province, training human resources in the health system tailored to the health needs of the country,

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ⁱ *Root Mean Square Error of Approximation*ⁱⁱ *Goodness-of-Fit Index(GFI)*ⁱⁱⁱ *Adjusted Goodness-of-Fit Index(AGFI)*