

An analysis of network governance theories with an emphasis on the requirements and challenges of the health system of Iran

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Abstract

The present study aimed to analyze the network governance theories with an emphasis on the requirements and challenges of the health system in Iran according to theoretical principles and studies, as well as formulating the network governance model of the health system of Iran after interviewing experts. The research was applied in terms of purpose, and qualitative in terms of method. Since the research was exploratory in terms of purpose, the use of grounded theory was the main strategy in applying the research. Taking notes was initially performed using the study of theoretical principles and research background, and then the final dimensions, components, and indices for the network governance model of Iran's health system were identified and determined by classification and tabulation, the semi-structured interviews with experts, obtaining the necessary agreement, and then analyzing the data using the MAXQDA software. According to the analysis of previous studies, interviews with 15 experts, analysis of data, removing duplicate codes and categories, and integrating similar codes and categories, 767 key points, 53 abstract concepts, 18 sub-categories, and finally, 6 main categories were extracted as mentioned below: External effective categories with 2 sub-categories; predictive factors with 4 subcategories; contextual factors with 3 subcategories; elements with 3 subcategories; functions with 3 subcategories, and the results of implementing the network governance model in the health system with 3 subcategories. According to the results, the health system is a multifaceted and complex phenomenon, and a set of strategies must be implemented for its improvement. The effective implementation of the presented strategies can have many consequences, the most important of which is the society and citizens' health promotion. The research results are presented in a model with the main predictive categories, internal effective categories, elements, contextual categories, functions, results, and consequences.

Keywords: governance, network governance, health system
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Introduction

Network governance is becoming a prominent paradigm in the field of governance. According to this form of governance, actors in the public, private, and semi-public sectors make political decisions. According to the governance law, the use of power is removed from the traditional mechanisms related to democratic accountability [17]. In other words, network governance is presented as a new paradigm and an alternative to traditional public management

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models. This type of governance is largely based on network theories [9]. According to the existing views, the factors that play roles in the emergence of network governance are as follows:

- 1- Complication of issues of policy-making,
- 2- Necessity of using the existing power and capacities in non-public sectors
- 3- Necessity of interaction between all actors (stakeholders, beneficiaries, and decision-makers)

Network governance means that different institutions in society work together so that governance can be carried out correctly. The multiplicity of actors, social factors, global communication, and technological factors make the issues more complicated than before. The governments do not have the necessary capabilities as before and the power is not concentrated in the central structure. According to network governance, we need to identify all actors who are around an issue and involve them in policy and decision-making [8].

Health systems play important roles in improving and increasing life expectancy. Nevertheless, there is a large gap between the potential power of health systems and their current performance, many of which are related to governance issues. Health is a macro-social goal that is not only inseparable from human well-being, social and economic development, and environmental conservation, but it is also an essential element and representative of good governance for sustainable development [11]. The health system includes organizations, institutions, groups, and people who are involved in policy-making, resource production, financing, and providing health services in the public and non-public sectors to restore, promote, and maintain public health [13]. Public health systems tend to create collaboration among health service providers to promote public health [15]. There are a variety of collaboration networks in the field of health care, such as organizational exchange networks, physician collaboration networks, clinical conference networks, and workplace interaction networks. In this regard, network collaboration can enhance the effectiveness and efficiency of healthcare systems, and also increases joint learning by sharing knowledge and information among colleagues. The advantages of network cooperation will not be achieved without designing and implementing a suitable governance model in the network [1].

The World Health Organization is of the opinion that developing countries, including Iran, do not have a desirable governance status in their health systems, and it is essential to pay more attention to this important issue in these systems. In this field, the main problems of health policy in developing countries from the WHO's views are as follows: Not paying attention to all factors and stakeholders in policy-making, only paying attention to the formulation of laws and regulations, and not paying attention to other components of management such as knowledge production, implementation, and monitoring of policies and laws, and finally, a major lack of attention to some problems of these systems, especially in the provision of private services [16].

The governance of Iran's health system also faces challenges such as the interference of the health sector duties with other executive bodies, the incomplete implementation of the structure approved by the Ministry of Health, the lack of transparency in responsibilities, authorities, and accountability levels of individuals, the multiplicity of health insurance organizations, the lack of attention to all determinants of health, the inefficiency of evidence-based policymaking, and the inefficiency of monitoring the implementation of laws and regulations. It is impossible to solve the existing challenges and problems only with public measures, but the participation of the private sector and civil society is also necessary to overcome these problems; hence, the existence of these problems in Iran's health sector was the basis for conducting the present research. Therefore, a desirable governance model helps to make inter-organizational interactions in the health system more effective through transparency in the cooperation structure and coordination mechanisms.

It is inevitable to bring to governance a network, which is resulted from the mutual interaction and communication between the government, private sector, and civil society in the form of networks, due to the nature of public issues facing Iranian society and the government's inability to solve all challenges, as well as the promotion of citizens' science and knowledge, and demanding more not only to receive better services, but also to participate in the processes of formulating, implementing, and evaluating public policies.

Theoretical principles

Governance

Governance is a set of personal, institutional, public, and private measures for joint planning and management of affairs and also a continuous process of creating understanding between different and conflicting interests that moves

in the form of cooperative and compatible measures and includes official institutions and non-official arrangements, and citizens' social capital. Accordingly, the concept of governance is based on the cooperation of the government and civil society. This concept is based on the fundamental principle that governments are better to be along with citizens, the private sector, and public institutions and should be considered as an institution or agent responsible for the management of society instead of taking full responsibility for the management of society at all levels.

Network governance

Network governance is the outcome of interactions by which informed citizens and social organizations help public organizations transfer information about social goals to make the right decisions. Some authors also consider governance a network form in today's society.

Network governance includes two main dimensions:

1. Official rules which are defined by official laws and decrees and establish the legitimacy of actors about environmental issues.
2. Non-official policy structures which are characterized by interactions in networks and affect the information and knowledge sharing among different levels of governance and political communities.

The network governance framework (compared to other theories) accepts that public policies are no longer formulated by the government alone, but are determined by a network of connections between politicians, bureaucrats, private companies, pressure groups, and citizens. This issue is the strength of network governance analysis [5].

The governance plays the role of "adjuster and facilitator", and not controller and orderer, in network governance. The government must be a good regulator and facilitator in the communication network of various public and private actors.

The definitions of network governance have a high affinity and overlap with a new type of governance (collaborative governance). Both of them cover different dimensions of government governance as an agent with a dual role of partner-underlying (supervisor) in public and non-public sector cooperation to carry out public affairs; however, sometimes differences have been found between these two types of governance in terms of possessing economic and social approaches.

There are many definitions of network governance from different dimensions and aspects, but determining the components and functions of health system governance and the intervention of all activists and actors in policy-making, implementation, and evaluation of policies formulated in this field constitute the concept of network governance which the researcher is looking for in this manuscript along with the formulation of the network governance model of Iran's health system. In this regard, the gathering of various actors, who are related to the issue or have a direct benefit from it, becomes an opportunity to help solve complex issues in Iran's health system through positive interaction with each other.

The health system

Health is a basic value and need of human development, which is emphasized in international documents and theological schools, and governments have to mobilize all their facilities to respond to the health needs of different members of society and provide high-quality and affordable healthcare at all levels of health, therapy, and rehabilitation service for each person in the country, which is entrusted to the health system [12].

Countries are trying to strengthen their health systems in various fields, and policymakers must know how they can properly improve the performance of health systems. To help with these decisions, health system managers must have a good understanding of the performance of health systems to properly govern them. Even though several frameworks have been proposed to evaluate governance in the health sector, their application is often limited or very complicated owing to unrealistic indices.

Policy-making in the health system is the center and mastermind of the health system to determine general strategies of the system in various health-related issues and it must be based on evidence and carried out by experts.

The transition from health system management to health system network governance

Four answers can be given to the question of why governance is necessary for the health system:

1. Health is not created by the healthcare sector.
2. Health is the heart of sustainable development.
3. Health is the productive force and among the key indices of a dynamic economy and a successful society.
4. Crisis of healthcare costs

Regarding the mutual collaboration of the government and society to achieve the objectives of governance and also, paying attention to health issues and its determinants, views, and approaches are changing towards paying attention to the health system governance, strengthening it, and the necessity of collaboration between the health sector and other sectors (private, public, and citizens) to achieve good governance in the health system. The government must manage and control the activities of the public and private sectors by formulating appropriate laws and regulations. The government must determine the priorities of the health sector to better allocate the limited resources. Formulating laws and regulations to improve the performance of the health system, achieving the objectives of the health system, and improving the public health level in society are among the governance duties of the Ministry of Health [13].

Network governance in the health system requires a set of synergistic and interactive policies, most of which are proposed in sectors other than the health sector and outside the government, and need support through structures and mechanisms that facilitate cooperation. The individuals' participation is an important and significant factor in this field [14].

Comparative studies on the health system in developing countries indicate a great distance between them and the systems of developed countries on the way to effective governance in the health system. Iran is not an exception to this rule and is facing many problems, for example, the issues and problems in the national healthcare system are summarized as follows:

1. Inadequacy of applied research and information for policy-making and planning
2. Inadequacy of public participation in decision-making for health and treatment programs
3. Inadequacy of inter-sectoral collaboration
4. Weak management at some levels of the network
5. Inadequacy of coordination between private and public sectors
6. Inadequacy of the information system for planning and monitoring
7. Lack of attention to health economics
8. Inadequacy of supervision in the private sector

Network governance of the health system includes interactions among three groups of actors:

1. Citizens/ service users (people and communities)
2. Service providers (private and public facilities, educational institutions, pharmaceutical companies, and insurance institutions)
3. Government actors (politicians, policymakers, managers, and employees of the relevant ministry and other relevant public departments)

If these interactions are well established, they will lead to an outcome that is characterized by health network governance: Responding to public health needs and citizens' priorities; managing priorities and interactions; announcing the needs and priorities of the health sector that are acceptable to all; transparent and operational accountability; transparency in performance and resource allocation/exploitation; decision-making and policy-making based on valid evidence and documentation; and efficient management of service delivery.

Furthermore, there are many measures such as the realization of the comprehensive health approach and healthy people in all laws, executive policies, and regulations which will not be achieved according to the existing system (general health policies).

The health experiences in successful countries and all over the world indicate the necessity for paying attention to governance to empower the systems of this field and manage the basic functions of public health.

Elements of network governance from the perspective of Sorensen and Torfing

The ability to manage the network is a key element in the creation of network governance. Since network governance requires the connection of various combinations of government units, and private and non-profit sector suppliers, the level of mutual collaboration based on trust between the private and public sectors is also a key element in creating this governance model. Network design, creation, management, and participation are among the elements that are important in the creation of network governance.

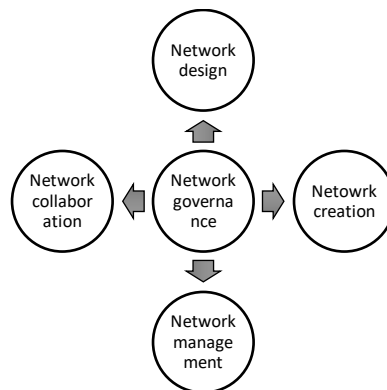


Figure 1: Important elements in designing a network governance model from Sorensen and Torfing's view

Elements of network governance from the perspective of Goldsmith and Eggers

In a book titled "Governing by network", Goldsmith and Eggers enumerate the main elements of network governance as follows:

1. Network strategy development
2. Network design and activation
3. Network human capital

Elements of network governance from the perspective of Danaeifard

According to Danaeifard [6], the following cases should be taken into consideration to establish network governance:

- Network strategy development
- Networking the network
- Network design
- Choosing the right partners

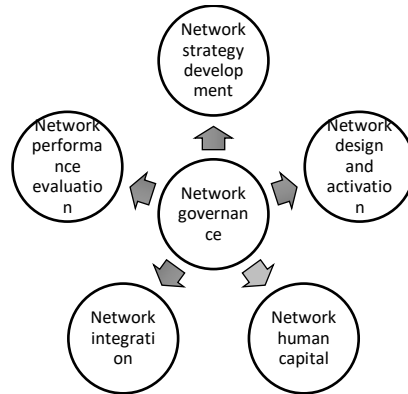


Figure 2: Important elements in designing a network governance model from the perspective of Goldsmith and Eggers

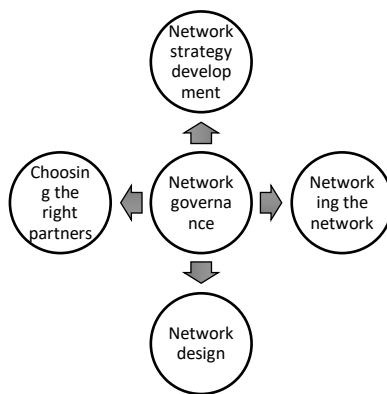


Figure 3: Important elements in designing a network governance model from the perspective of Danaeifard

Research background

A study titled “Governance structure challenges in the Ministry of Health and Medical Education based on a network structure model” in 2019 analyzed the existing structural challenges in the governance system of the Iran Ministry of Health and Medical Education based on the network governance structure model. The research findings indicated that managers’ instability, not keeping up with the pace of social changes in policy-making, not providing a definition of appropriate inter-sectoral cooperation, lack of transparency, lack of knowledge about requirements of collective decision-making by health policymakers, not using evidence-based policy-making, the improper budget system, and lack of control of the private sector were important challenges of the current governance structure of the Ministry of Health and Medical Education. In a study titled “The network governance theory as a basic model for improving the financial support system for the needy in Iran’s health system”, Etemadi et al. [7] reported that creating a better governance system and effective policy-making is essential to improve the poor’s access to public resources. This study aimed to improve the effectiveness of the health system network of Iran and design a financial support network for the poor based on the theory of network governance. the World Health Organization (WHO) should consider the following three principles for better governance in the COVID-19 era: It should delegate governance policymaking to local stakeholders who have better capabilities and status. According to the principles of cohesion and stewardship, WHO should focus exclusively on ensuring that the transfer of shared responsibilities is correct, evidence-based, coherent, and timely to ensure responsible coordination. It should also fulfill its responsibilities to stakeholders through institutional reform and gaining public trust rather than trying to expand power, resources, and control. In a study titled “Out-of-Network Factors Affecting Governance in the Health System: Systematic Review”, Alikhani et al. [2] reported that network collaboration became an important approach to increase the provision of high-quality services in healthcare systems. The use of collaboration structures and coordination mechanisms as a proper model of governance is necessary for the success of collaboration in the network. Boumans and Frey [4] conducted a study titled “Networks and Effective Implementation in Policy-making”. Their results emphasized the importance of network governance and the roles of key agents as factors that fill structural gaps and facilitate the exchange of knowledge and resources. In a study titled “Effects of key factors on the optimal network governance model in the

health system: A structural equation modeling approach”, Alikhani et al. [5] reported that weaknesses in network governance models led to various conflicts such as financial conflicts, non-transparency of accountability frameworks for medical errors, and problems in inter-team coordination owing to the complexity of services in the health system that requires the interaction of different people and organizations. According to the results, special attention should be paid to trust and commitment to design an optimal network governance model in the health system. In a study titled “Understanding the Late Logic of Health Policy: Transition to Governance for Health” by Vahdaninia and Vosough-Moghadam [14], given the conceptual evolution of health and trends in governance and the way it is applied in health by the governments, which seek to improve health outcomes, the emergence of a consensus in this regard shows that a collaborative focus on inter-sectoral collaboration and trans-sectoral health coordination strengthens the systemic features of public policies and leads to more effective programs in all policy fields.

Method

The present study was applied in terms of purpose, and descriptive type with a qualitative analysis approach in terms of the data collection method. Since the research was exploratory in terms of purpose, grounded theory was the main strategy for applying the research. “Semi-structured expert interviews and documents” were the two collection tools in the research. This method was used to collect and analyze data extracted from interviews with experts in macro-policy in the national health sector. The components and dimensions of the network governance model of the national health system were detected and explained after analyzing the data with the help of MAXQDA software.

The statistical population consisted of top health policymakers, senior experts of the Ministry of Health, advisors to the Minister, heads and senior managers of research centers affiliated to the Ministry of Health, principals of universities, and experts of the Ministry of Health with at least 4 years of experience and preferably attending policy and decision-making health-related committees and groups in the executive and policy and decision-making bodies that somehow had experience and records in policy and decision-making in the health system. The purposive sampling method was used to determine the samples of this research and determine this group of experts. In this research, 15 individuals from the research population were selected as the samples, including top health policymakers (three males with 13, 13, and 24 years of work experience, and two females with 11 and 22 years of experience), senior experts of the Ministry of Health (two males with 12 and 18 years of experience), experts of the Ministry of Health (a female with 18 years of experience), principals of universities (two males with 22 and 24 years of experience), the National Health Research Institute (three males with 14, 17, and 21 years of experience and a female with 12 years of experience), and senior expert of the Ministry of Health (One male with 27 years of experience).

The grounded theory and Strauss and Corbin coding method are used to analyze the research data. According to the grounded theory stages, the theoretical sampling process continues until the achievement of theoretical adequacy. To this end, a total of 15 specialized semi-structured interviews are conducted according to the above-mentioned criteria. The interviews are recorded (from 60 to 120 minutes) so that a more detailed analysis and review of the participants’ views can be performed using the multiple reviews of conversations. The interview questions are pre-designed. Since the researcher tries to create a new theory instead of validating or testing pre-set theories, gives the interviewees minimal guidance by asking main questions so that they can talk about their important experiences. After extracting the interviewees’ important events and experiences, the researcher creates a theory through coding. In this study, data collection continues until the theoretical saturation of the categories, and more clearly, until obtaining new data is no longer possible.

Qualitative data analysis and the self-emergence approach are used to formulate the model according to the “Grounded Theory”. In this approach, the grounded theory emphasizes the use of data analysis stages through open coding (formulating concepts and categories), axial coding (creating a link between a category with subcategories), and selective coding (combining categories for the theoretical framework), and also provides a logical paradigm or visualization of the developing theory.

Findings

As mentioned earlier, the sources of data collection in this research include the review of previous studies and conducting interviews. Therefore, data coding in the platform of MAXQDA facilitates the data analysis and thus helps understand the concepts and makes it possible to achieve the results as easily as possible. A total of 53 (new) concepts, 18 sub-categories (new), and finally, 6 main categories are extracted by analyzing the interviews and also reviewing the previous studies after removing duplicate codes and categories, and merging similar codes and categories as follows:

Table 1: Description of qualitative phase participants

s	Gender	Education degree	Position	Work experience
<i>A</i>	Male	Ph.D. in health policy-making	Faculty member and health research institute member	14
<i>B</i>	Male	Ph.D. in Health Service Management	Faculty member and health research institute member	17
<i>C</i>	Female	Ph.D. in health policy-making	Faculty member and health research institute member	12
<i>D</i>	Male	Ph.D. in health policy-making	Faculty member and health research institute member	21
<i>E</i>	Male	Medical specialist	Senior expert in the Ministry of Health	12
<i>F</i>	Male	Ph.D. in nursing education	Senior expert in the Ministry of Health	18
<i>G</i>	Female	Ph.D. in health economics	Health Expert in the Ministry of Health	18
<i>H</i>	Female	Ph.D. in health policy-making	Faculty member and professor	22
<i>I</i>	Male	Medical specialist	President of the University of Medical Sciences	22
<i>J</i>	Male	Medical specialist	President of the University of Medical Sciences	24
<i>K</i>	Male	Medical specialist	Advisor to the Minister	27
<i>L</i>	Male	Ph.D. in health policy-making	Faculty member and health expert	13
<i>M</i>	Male	Ph.D. in health policy-making	Faculty member and health expert	24
<i>N</i>	Male	Ph.D. in health services management	Faculty member and health expert	13
<i>O</i>	Female	Ph.D. in health policy-making	Faculty member and health expert	11

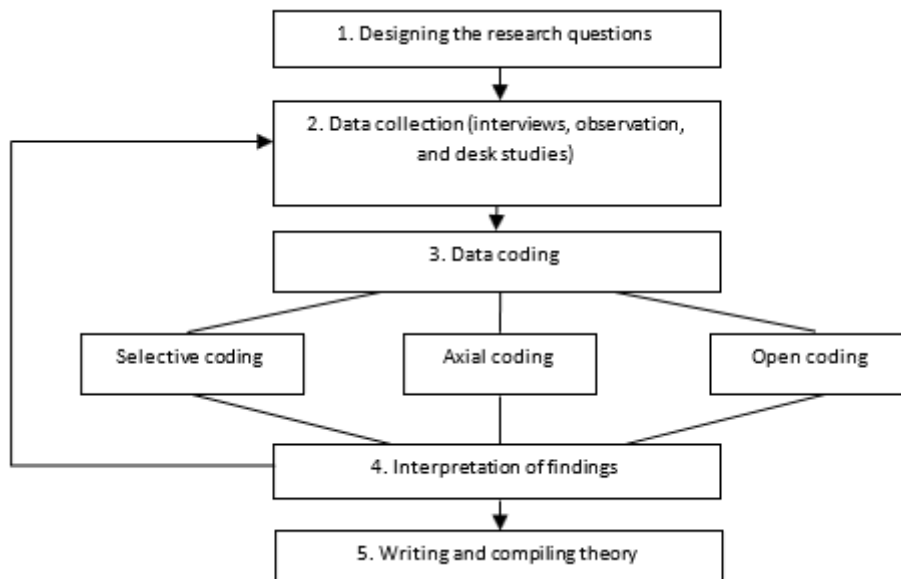


Figure 4: Stages of the grounded theory

1. External categories affecting the network governance of the health system with 2 categories;
2. Antecedents of the network governance model for the health system in 4 categories;
3. Elements of network governance model for a health system with 5 categories;
4. The network governance model context for the health system with 4 categories;
5. The functions and applications of the network governance model for the health system with 3 categories;
6. The results of creating a network governance model for the health system with 5 categories; and effective partners (institutions) in each dimension along with their subcategories.



Figure 5: The evolution of research codes to main categories

The categories and subcategories and the main achievement of using the grounded theory, or the response to the sub-questions are examined as follows.

1- External categories affecting the implementation of the network governance model for the health system

Table 2 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

Table 2: Categories and subcategories of external factors affecting the network governance model for the health system

Main category	Subcategory	Concept
External categories affecting the implementation of the network governance model for the health system	Environmental effects	Society needs; public supervision; Healthcare market conditions; Important events and changes in the external environment
	Upstream policies	Policies; political factors; Legal issues

2- Antecedents of the network governance model for the health system

Table 3 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

3- Contextual factors for the implementation of the network governance model for the health system

Table 4 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

4- The elements of implementing the network governance model for the health system

Table 5 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

Table 3: Categories and subcategories of antecedents of the network governance model for the health system

Main category	Subcategory	Concept
Antecedents of the network governance model for the health system	The government's inability	The inefficiency of government forces; Failure to allocate sufficient funds; Lack of meritocracy in government appointments
	Political activism	Correct policy against low budget; Equitable distribution of facilities
	Universalism	keeping up with global developments; Connection with the global health network
	citizen orientation	Social participation; increasing health knowledge

Table 4: Categories and subcategories of contextual factors for the implementation of the network governance model for the health system

Main category	Subcategory	Concept
Contextual factors for the implementation of the network governance model for the health system	The growth of social institutions	The authority of civil institutions; the stability of the health system due to the stability of these institutions
	Ethics-orientation	Attention to the structure of the network system; attention to the position of primary health service providers; Preventing corruption in the health system
	Economic stability	Economic stability; Adequate budget for the health system

Table 5: Categories and subcategories of elements of implementing the network governance model for the health system

Main category	Subcategory	Concept
Elements of implementing the network governance model for the health system	Information technology	Improving access to the basic information about patients and the whole society; Improving health management; Increasing the level of information and knowledge; Supporting decision-makers in the correct implementation of policies

5- The functions of implementing the network governance model for the health system

Table 6 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

Table 6: Categories and sub-categories of functions of implementing the network governance model for the health system

Main category	Subcategory	Concept
Functions of implementing the network governance model for the health system	Meritocracy	Specialization; personal abilities; scientific abilities
	Creating capacity	Empowering human resources; Empowering society; equipping with up-to-date technologies; Developing the quantity and quality of human resources
	Creating interaction between bodies	Government-people interaction; creating a discourse between different institutions in terms of health and treatment; Creating popular institutions

6- The results of implementing the network governance model for the health system

Table 7 presents the categories and subcategories of this section of the research extracted from the text of interviews and previous studies.

Table 7: Categories and sub-categories of the results of implementing the network governance model for the health system

Main category	Subcategory	Concept
The results of implementing the network governance model for the health system	Service improvement	Savings; preventing the waste of resources; desired service provision
	Comprehensive development	Economic, social, and cultural development
	Credibility	Social credibility; Stability; citizens' law abiding; and trust

According to the components extracted from the qualitative phase of the research, the network governance model in the health system is according to Figure 6.

Discussion and conclusion

According to the results, the health system is a multifaceted complex phenomenon that should be improved using a set of strategies. The effective implementation of the strategies can have many consequences, the most important of which is the improvement of society and citizens' health. The present study has a comprehensive and integrated model that can provide a systemic perspective for managers, planners, and policymakers in the health system and provide the basis for improving the current status and long-term growth and development.

In the present research, the semi-structured interviews, as well as the review of the theoretical principles and literature were used to identify the issue in the field of implementing the components of network governance in the health system of Iran and provide a suitable model, and finally, 6 main components were extracted: The effective external factors with 2 categories; predictive factors with 4 categories; contextual factors with 3 categories; elements

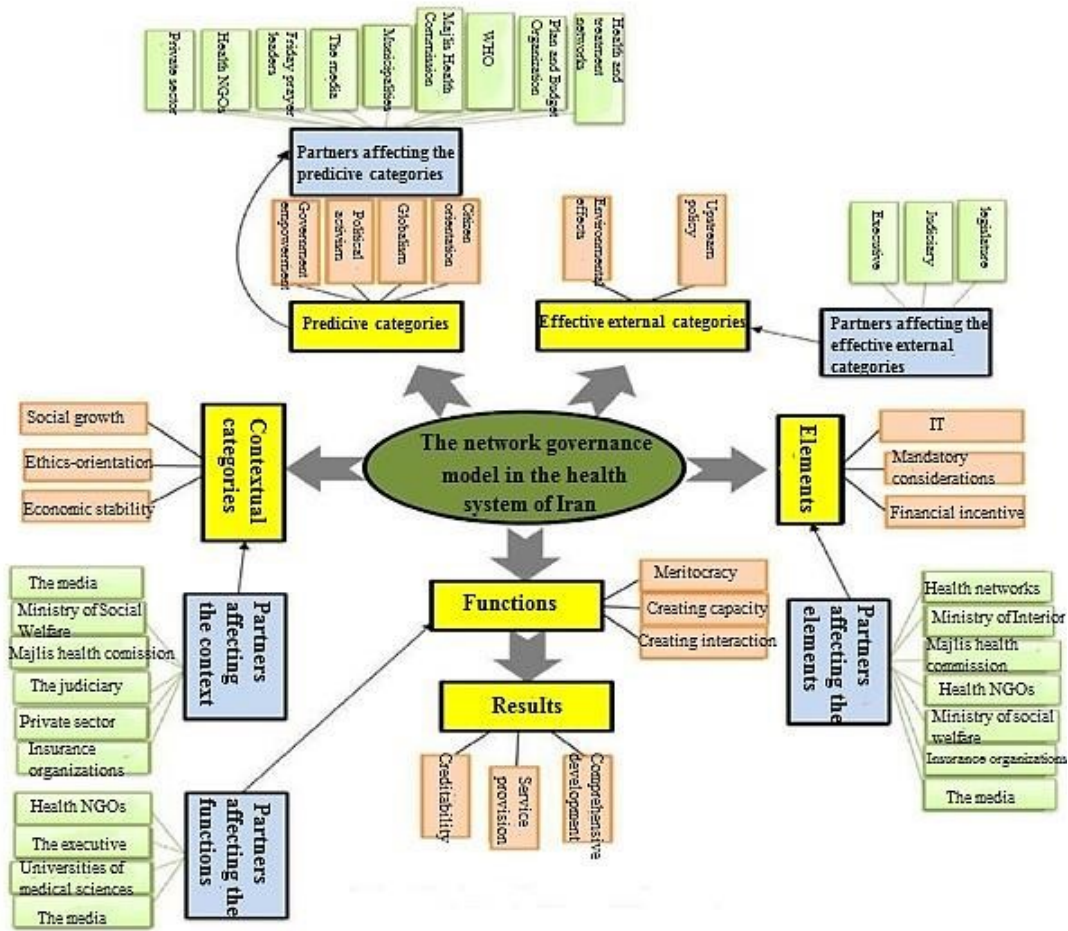


Figure 6: The network governance model in the health system of Iran

with 3 categories; functions with 3 categories, and the results of implementing the network governance model in the health system with 3 categories.

Furthermore, a total of 6 main categories and 18 sub-categories were extracted in the inferential statistics phase, and each category had sub-components. The 6 components were as follows: 1- Effective external factors with two categories, namely environmental effects and upstream policies; 2- Predictive and antecedents factors with four categories, namely government empowerment, political activism, globalism, and citizen orientation; 3- Contextual factors with three components, namely the growth of social institutions, ethics orientation, and economic stability; 4- Elements with three categories, namely information technology, mandatory considerations, and financial resources, 5- Functions with three categories, namely meritocracy, creating capacity, and creating interaction between bodies, and 6- Results of implementing the network governance model for the health system with three categories, namely service improvement, comprehensive development, and credibility. Furthermore, there was a category, named the effective partners, during the research model and it was different in all the extracted stages and sections and had some effects.

According to the interviews and the research results in the field of effective external categories, environmental effects are related to the effects of various peripheral factors of the network members and they affect the network. Changing the environment and important events affect the cooperation between actors and the governance model in the network by changing the market conditions. The need for network-based collaboration has increased owing to tougher market conditions and differentiation in service delivery. Collaborative strategies are adjusted based on market conditions and change owing to changes in market conditions. Network collaboration can be made to respond to public needs and may be created for profit or in non-profit, public, or private forms. According to the interviewees' opinions, policy refers to government programs and laws in healthcare systems. On the one hand, government policies can be an obstacle to network collaboration and limit it, and on the other hand, can be a facilitator. The executive, legislature, and judiciary are the main institutions and partners of health in the effective external category of the

health governance model.

Regarding the categories related to the antecedents of network governance, the interviewees stated that the actions of governments regarding welfare issues were issues related to the necessary antecedents of the implementation and creation of a suitable model for the health system. Since political orientations, opinions, beliefs, tendencies, values, ideology, and stereotypes determine the strategies of governments and their policies in social and economic dimensions, it is important to identify the political actors' ideological positions and perform a detailed analysis of the effects, consequences, and outputs of policies.

Regarding the contextual categories of the network governance model in the health system and according to interviews and research results, health provision is introduced as a duty of governments owing to the importance of "health" and its consideration as a fundamental right of individuals in international documents and internal health laws. Since the provision of this right covers a wide range of legislative, executive, and judicial measures, and also imposes extra costs to the government, which cannot alone perform all these tasks and provide all related costs, the recruitment of independent, spontaneous, and voluntary people in NGOs is an important help to the government to ensure this right. According to the analysis of the interviews, attention to public and civil organizations and their roles in the health system is considered a dimension of the authority of the health system and an important platform for creating a network governance model for the national health system. Compliance with ethical frameworks and ethics orientation in top-level managerial and organizational decisions is the most important aspect in the governance of the healthcare system that has received little attention.

Regarding the categories related to network governance elements in the national health system and according to the review of the interviews, on the one hand, health is considered a real human need and is an important necessity that deserves attention even in the virtual world, and on the other hand, IT plays an important role in improving public health and raising the quality of life. Identifying the potential effects of information technology in the health service industry, such as the effect on the treatment process, the speed and ease of information retrieval, and making this information available for making clinical decisions based on the situation and managerial, educational, and research activities, can become the basis of strategic planning to promote the achievements of the health system on technology, and finally, the improvement of the health level in society. Awareness about the way of providing financial resources for the health system to provide financial resources for the health sector activities, and identifying the credit provision models according to the development of the economic-social level, financial capacities and infrastructures, the ability to implement, responsibility, and political accountability for the adopted policies can be a right basis for planning justice-oriented health and treatment policies.

Regarding the functions of the network governance model in the health system and according to the results and views of the interviewed healthcare experts and senior managers, the creation and implementation of a network governance model proportional to the health system have several functions and applications. Meritocracy can be caused by the proper implementation of governance in all sectors and systems. The health system is a complex level of open systems. The aim and mission of the health system, which is the creation and survival of each component of this system, are completely dynamic and variable according to the priority of needs and the occurrence of risks and diseases in different periods. Human resources are the main pillars and driving and decision-making engines in a health system. The recruitment of qualified personnel in the health system can widely increase the capacity of the quantity of personnel and human resources in facing problems, and can also result in the high quality and high competence of human resources. Others aspects of capacity creation include increasing the capacity of medical and health facilities and equipping the centers and bodies of the health and treatment system with modern health machines and technologies worldwide.

Regarding the results of the network governance model in the health system, according to the research findings, and based on the opinions of experts, elites, and interviewees, the costs of healthcare are rapidly increasing in the present era, and this problem has attracted more attention to the quality and effectiveness of health services. According to the results, paying attention to health is the axis of comprehensive development and an important example of justice. Therefore, the implementation of the network governance model in this field is probably the main driver to move toward comprehensive development. The analysis of interviews and literature review indicate that the establishment of network governance increases public satisfaction with the government and their acceptance of the central government.

Regarding health partners, stakeholders, and activists, it should be noted that all health partners, which are defined separately for each dimension of the model, are involved in the health governance system and sometimes overlap, but it does not prove the importance of one institution and body over another and is separately specified and determined based on the greatest possible relationship according to the functions and the health experts' opinions. Given the development of network collaboration-based models in different fields of the service sector, there is an increasing

tendency towards more and deeper interactions between different actors in the health system. Public health systems tend to create collaboration among health service providers to promote public health. Given the nature of the public issues facing Iranian society and the government's inability to overcome all these challenges, the promotion of citizens' knowledge and awareness, and more demand not only to receive better services, but also to participate in formulating, implementing, and evaluating public policies, it is inevitable to bring to network governance that is resulted from interaction and mutual communication among the government, private sector, and civil society in networks.

References

- [1] A. Abd Rahim, R. Abdul Manaf, M. H. Juni and N. Ibrahim, *Health system governance for the integration of mental health services into primary health care in the sub-Saharan Africa and South Asia region: A systematic review*, J. Health Care Organ. Provis. Financ. **58** (2021), 00469580211028579.
- [2] R. Alikhani, A. Aliahmadi and M. R. Rasouli, *Out-of-network factors affecting governance in the health system: Systematic review*, ORMR **9** (2020), no. 3, 45–60.
- [3] R. Alikhani, M.R. Rasouli and A. Ali-Ahmadi, *The effects of key factors on the optimal network governance model in the health system: A structural equation modeling (SEM) approach*, Health Manag. (2018), no. 74, 19–34.
- [4] D. Boumans and M. Ferry, *Networks and efficient policy implementation: Insights from cohesion policy*, Evaluation **25** (2019), no. 4, 411–429.
- [5] R. Courtney, *Network governance in the heritage ecology*, J. Manag. Govern. **22** (2017), no. 3, 689–706.
- [6] H. Danaeifard, *Network public management in Iran: Theoretical and practical principles, requirements*, Manag. Res. Iran **17** (2013), no. 2 (Serial 80).
- [7] M. Etemadi, P. Kenis, K. Ashtarian, H. Abolghasem Gorji and H. Mohammadi, *Network governance theory as basic pattern for promoting financial support system of the poor in Iranian health system*, BMC Health Serv. Res. **21** (2021), no. 556.
- [8] E. Gholampour Ahangar, *An overview of the concept of network governance*, Majlis Research Center Press, Office of Basic Government Studies, Tehran, 2016.
- [9] G.A. Huppé and H. Creech, *Developing Social Capital in Networked Governance Initiatives: A lock-step approach*, International Institute for Sustainable Development, 2012.
- [10] A. Khaje Naeini, H. Mohammadi Kangarani and K. Ashtarian, *Network analysis of the decision-making stage in Iran's nanotechnology policy-making: Case Study of Nanotechnology Plan*, Manag. Res. Iran **18** (2014), no. 2, 25–54.
- [11] I. Kickbusch and D. Gleicher, *Governance for Health in the 21st Century*, WHO Regional Office for Europe, 2012.
- [12] R. Lozano, N. Fullman, J. E. Mumford, M. Knight, C. M. Barthelemy, C. Abbafati and A. Abedi, *Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019*, Lancet **396** (2020), 1250–1284.
- [13] A.M. Mossadeghrad and P. Rahimi-Tabar, *Health system governance in Iran: A comparative study*, RJMS. **26** (2019), no. 9, 10–28.
- [14] V. Vahdaninia and A. Vosough-Moghadam, *Understanding late logic of health policy making: The transition to governance for health*, Payesh (Health Monitor) **17** (2018), no. 6, 631–646.
- [15] S. Van den Oord, N. Vanlaer, H. Marynissen, B. Bruggemans, J. Van Roey, S. Albers and P. Kenis, *Network of networks: Preliminary lessons from the Antwerp Port Authority on crisis management and network governance to deal with the COVID-19 pandemic*, Public Admin. Rev. **80** (2020), no. 5, 880–894.
- [16] WHO, *The World Health Report 2000: Health Systems: Improving Performance*, World Health Organization, Geneva, 2000.
- [17] E. Wilson, *Towards Accountability in Democratic Network Governance*, Doctoral dissertation, Dalhousie University, Canada, 2015.