

Performance appraisal models in the county health centers of Iran: A systematic review

Firouz Amraie,¹ Soad Mahfoozpour,² Shaghayegh Vahdat,³ Somayeh Hesam⁴

¹Health Services Management Islamic Azad University South Tehran Branch, Tehran; ²Safety Promotion and Injury Prevention Research Center, Shahid Beheshti University of Medical Sciences, Tehran; ³Department of Health Service Administration, South Tehran Branch, Islamic Azad University, Tehran; ⁴Department of Health Service Administration, South Tehran Branch, Islamic Azad University, Tehran, Iran

Abstract

The main component of organizational policy formulation and implementation is performance design and appraisal, which makes the system intelligent and motivates people to exhibit desirable behavior. As a result, this systematic review summarizes current knowledge about performance appraisal models in Iranian county health centers. From 2002 to 2020, 13 electronic databases and search engines were searched for relevant keywords in the current study. The obtained English or Persian health articles were then discussed. The CASP checklist was used to assess the quality of all articles. 13 articles with relevant titles, abstracts, and texts were reviewed out of a total of 2400 articles. According to the findings of

this study, the performance appraisal model's components include health improvement, accountability and fairness in financial participation, financing, service provision, resource production, and stewardship. Performance evaluation of health care systems assists health decision makers and politicians in holding themselves accountable for their actions, allowing them to make better decisions to improve their actions. As a result, it is possible to improve the performance of inefficient health centers in a more appropriate manner by better managing health center personnel and utilizing their power. Because the development and implementation of a health center performance appraisal model can improve the delivery of health services, their use must be carefully planned.

Correspondence: Soad Mahfoozpour, Safety Promotion and Injury Prevention Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of Iran.
E-mail: mahfoozpoursoad@gmail.com

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Introduction

Performance appraisal is an important tool for determining performance quality and desirability. The lack of performance appraisal results in a loss of performance quality.¹ The success of a system in achieving its intended goals is evaluated through performance appraisal.² In recent decades, performance appraisal has become a serious concern in organizational management. According to studies, it is not possible to create a comprehensive model for evaluating organizational performance, and performance appraisal for each organization must be done separately. Any organization's performance appraisal model should be based on its goals, missions, and strategies.³ The main issue with performance design is the lack of a precise method for doing so. Managers benefit from performance appraisal because it provides feedback on how to improve performance.⁴

Health care systems are complex organizations that require performance evaluation in order to conduct organizational analysis and improve quality. One of the most important priorities of health organizations is determining the performance appraisal indicators.⁵ County health centers are the Iranian healthcare system's smallest independent units. County health centers and rural health centers are parts of a primary health care system that provides primary health care. Performance appraisal is a process that evaluates current and expected performance in relation to objective goals. According to reports, more than 32% of large organizations conduct performance appraisals, and more than 15% of them evaluate performance on an annual basis.⁶ Performance evaluation is critical for calculating efficiency and identifying inefficient units in order to compensate for deficiencies and increase efficiency.⁷ The design of a model for evaluating the performance of the health system in each country is dependent on the country's political, economic, and social condi-

tions and is based on the expected goals. There is a need to develop a performance appraisal model at various levels of the health system in order to evaluate the performance of various executive units and properly plan their activities.⁸ Organizations can obtain comprehensive information about their position, status, and performance through performance appraisal. In other words, performance appraisal is critical to organizational improvement. Many large Iranian organizations (particularly those in the public sector) Many organizations have created performance evaluation programs.⁹ Health centers are the smallest unit for providing health services to rural residents. In comparison to hospitals, health centers are the first unit to provide free, preventive, and medical services. Because of these characteristics and the importance of health centers, it is necessary to evaluate their performance.¹⁰ Performance evaluation is an effective approach in the proper distribution of health facilities, their optimal use, and meeting societal needs. As a result, developing models for performance evaluation is required.⁵ Paoli *et al.* identified three key factors of the EU expert group on health system performance assessment in a study (HSPA). First, it was created using a bottom-up participatory approach, which increases members' sense of ownership. Second, it cultivated a flexible and pragmatic mindset capable of adapting to changing needs and priorities. Finally, the group identified a previously untapped niche: identifying methods for translating HSPA findings into effective policymaking.¹¹ The majority of studies focused on personnel competence (skilled/non-specialist) and center performance (patient satisfaction/cost/efficiency).¹² As previously stated, county health centers provide more than 90% of primary health care services in Iran and play an important role in the health-care system. In the absence of standard models for assessing health center performance, models with unverified validity and reliability in Iranian health centers have caused problems for health policymakers. Furthermore, because of the large volume of health services provided by county health centers, developing a scientific and correct model for performance evaluation of these centers has a significant impact on improving community health. As a result, this systematic review summarizes current knowledge about performance appraisal models in Iranian county health centers.

Materials and Methods

This study was carried out to review studies on the performance appraisal models in the county health centers of Iran using a review procedure and search strategy.

The current review was conducted by searching for published articles on performance appraisal in national and international databases such as PubMed Scopus, ISI web of Science, Springer, Google scholar, Ebsco, ProQuest, Science Direct, Google, Willey, Scientific Information Database (SID), Iranmedex, and ISC without regard to time constraints. In the following step, relevant keywords in English and Persian, such as performance evaluation, performance assessment, evaluate performance, and performance appraisal in health centers, were chosen and search terms were developed in consultation with health professionals.

It was then made certain that no articles were overlooked. Finally, to increase sensitivity, articles that could not be obtained through databases were included in the study.

Inclusion and exclusion criteria

The study in English or Persian included studies that were most relevant to the topic. Exclusion criteria were articles in the

field of performance design and evaluation that had no relevance to the health field.

Selection of articles

The articles obtained from the databases were screened in a number of stages. The first step was to exclude articles with irrelevant titles from the study, and then the abstracts were reviewed. Books, conferences, reports, and editorials were not included. The remaining articles were evaluated using the inclusion criteria.

Database search

After searching databases, a total of 2400 articles were obtained. Articles with titles that were relatively relevant (n=640) were identified. After reviewing the titles and abstracts, 569 articles remained. Then 452 irrelevant titles were removed, leaving 205 full texts. Following the study, 52 relevant articles were chosen. Following that, the eligibility of 52 articles was determined. In addition, four articles from other sources were included in the study. Finally, this study included 13 articles.

Quality assessment

The Critical Appraisal Skills Programme (CASP) was used to assess study quality. First, the goals of the articles were determined. The CASP checklist was then updated with appropriate objectives. The articles were then classified into three levels based on their quality (low, medium and high quality). Articles that scored 4, 4-7, and above 7 were defined as low quality, medium quality and high quality articles, respectively. The study included articles with a score of 7 or higher. Figure 1 depicts the flowchart of the process of selecting articles for Systematic Reviews and Metaanalyses (PRISMA).

Data extraction

A researcher-made form was used for data extraction. The data including the name of the first author, year of publication, type of research, and place of research were used for data extraction.

Data analysis

Data analysis was performed based on a qualitative framework analysis.

Results

The performance evaluation model of health care centers in different cities of Iran has been carried out according to the models proposed in the studies. So that, in Iran can be classified into 5 main variables and several subcomponents given the models proposed in the studies conducted by Mahdiyan *et al.*¹³ on identification and prioritization of the challenges related to improving the performance appraisal of the health system in Iran, Darghi and Doroudi⁶ on the performance appraisal of the health and therapeutic centers in the health network of the south of Tehran, Zare Ahmadabadi *et al.*¹⁴ on evaluating the technical efficiency health and therapeutic centers using a hybrid approach of data envelop-

ment analysis (DEA) and game theory (GT) in health and therapeutic centers in Yazd City, Shirvani *et al.*⁸ on a review of models for performance appraisal of health care systems, Mousavi¹⁵ on designing a model for performance appraisal of the subsidiaries urban management through developing BSC, Shoja' *et al.*⁷ on performance appraisal of health houses in Firoozkooch city using DEA, Miraki *et al.*¹⁶ on performance appraisal of therapeutic centers affiliated with Kurdistan University of Medical Sciences using Pabon Lasso Model, Bahrami *et al.*⁵ on designing a health system performance appraisal model for Iran, Ali Mohammadi Ardakani¹⁷ on human resources relative efficiency appraisal of health centers in Yazd cities using DEA model, Paoli *et al.*¹¹ on an EU approach to health system performance appraisal: building trust and learning from each other, Sathyananda *et al.*¹² on primary health Centers' performance assessment measures in developing countries, Kress *et al.*¹⁸ on assessment of primary health care system performance in Nigeria using the conceptual Framework of primary health care performance indicator, Tashobya *et al.*¹⁹ on health systems performance assessment in low-income countries basing on international experiences, as well as the integrated performance model for health care system [intra-organizational performance, including preserving values and creating new meanings and concepts, integration and stabilization of production processes; two extra organizational performance, including interaction with the environment to obtain the required resources and adapt to the environment, and attaining valuable goals of the system,²⁰ WHO model (health improvement, accountability and fairness in the financial

participation as inherent goals, and basic performance, including financing, service provision, resource production and stewardship),²¹ the model proposed by the Organization for Economic Cooperation and Development (OECD) (health improvement and health outcomes, accountability and accessibility, financial participation and health system expenditures),²² and the model for the US health system with excellent performance (providing services, health sector human resources, information, medical products, vaccines and technologies, financing, leadership and governance (stewardship)).²³ It can be classified into 5 main variables and several sub-components. The main performance evaluation variables are: i) health improvement, ii) accountability and fairness in financial participation, iii) financing, iv) service provision, resources production, and v) stewardship (Table 1).

Discussion

This systematic review summarizes the current state of knowledge regarding performance appraisal models in Iranian county health centers. According to the study's findings, there are five major components in the performance appraisal model of Iranian county health centers: health improvement, accountability and fairness in financial participation, funding, service provision, resource production, and stewardship. Managers prioritize performance appraisal as one of their primary concerns in order to improve the

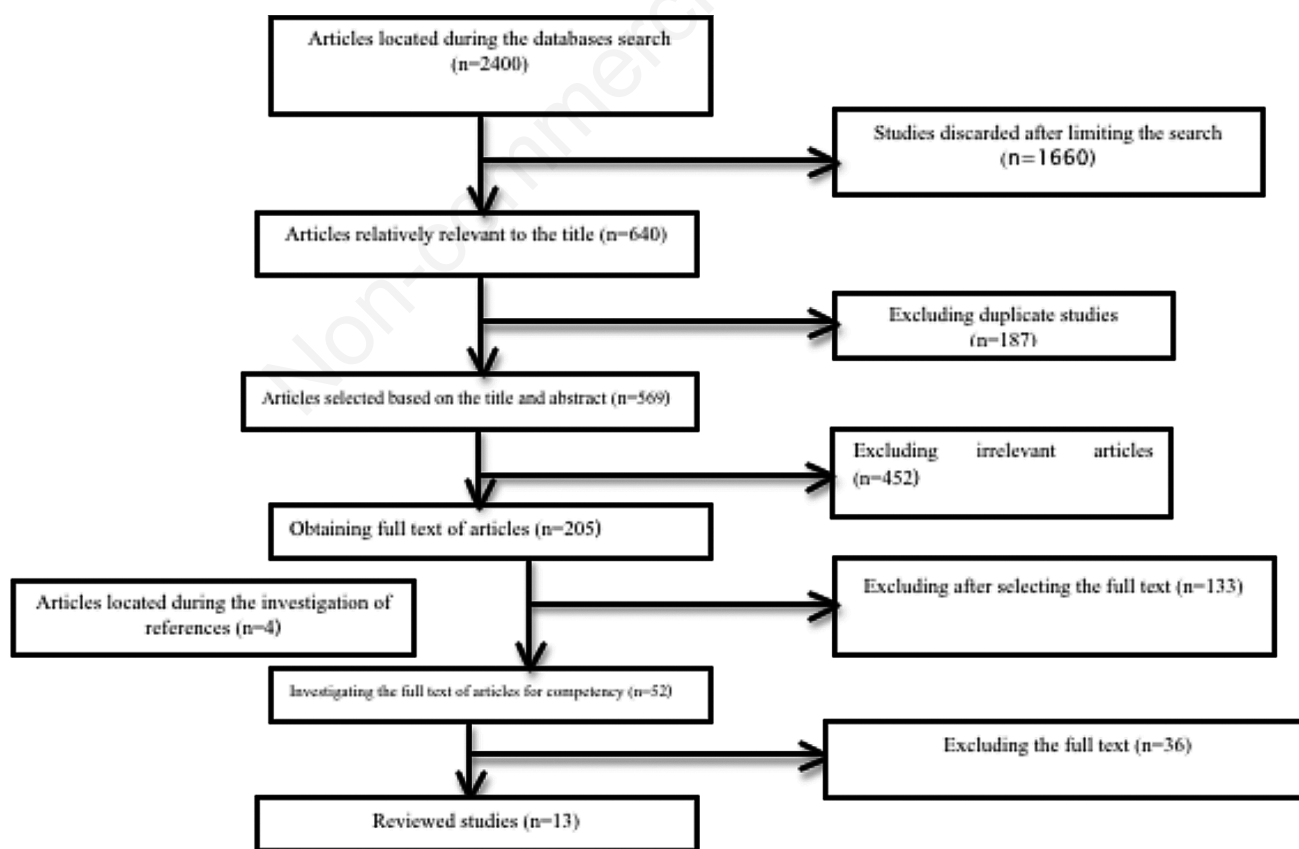


Figure 1. Flowchart of the process of articles investigation and selection based on Systematic Reviews and Meta analyses (PRISMA) method.

Table 1. Population and data studied in different articles.

Title of the study	Population and place under study	Investigated data	Method	Research tool	Type of study
A review of models for performance appraisal of health and therapeutic systems	-	Political, economic, and social structure; transparency and accountability	Various electronic and library resources related to the years 1998-2012	The most common and important international models for performance appraisal of the health sector were reviewed and compared; the most important concepts and topics contributed to designing a performance appraisal model were extracted; the experiences of some selected countries were reviewed and compared	Review ¹⁴
Performance appraisal of the health and therapeutic centers in the health network of the south of Tehran	Persons who referred to the health and therapeutic centers in the health network of the south of Tehran	Access to the first level of care; continuity of care; comprehensiveness; Inter-sectoral coordination; family-centered care; community-centered care; educational and skill characteristics of care providers	Analytical statistical tests: t-test and ANOVA	SPSS 22	Descriptive-analytical and cross sectional ¹⁵
Identification and prioritization of the challenges related to improving the performance appraisal of the health system in Iran	52 performance assessor	Themes (sub-branches) including infrastructures (cultural and technological), implementation (organizational support, trend, and responsibilities), human resources (motivation and education), evaluation (performance monitoring) and content of actions (reliability and credibility)	Coding and qualitative data analysis	MAXQDA Plus version 12 and Microsoft Excel	Qualitative and cross-sectional ¹⁶
Designing a model of performance appraisal of the subsidiaries urban management through developing BSC	Specialists, including managers of all organizations and affiliate organizations to Mashhad municipality (14 organizations and 6 affiliated agencies)	7 indices of financial clustering, 2 indices of customer clustering, 5 indices of process clustering, 2 indices of growth clustering, 7 indices of financial performance, 4 indices of customer performance, 7 indices of process performance and 7 indices of growth performance	Delphi method	Balanced score card (BSC)	Qualitative ¹⁷
Performance appraisal of health houses in Firoozkooh city using data envelopment analysis (DEA)	Experts and professors of operations research	Efficiency, performance, growth and development	Using CCR model to evaluate performance efficiency	Data envelopment analysis (DEA)	Retrospective ¹⁸
Designing a health system performance appraisal model for Iran	31 Iranian health system experts	Health status, governance, accessibility, aging care, quality of services, insurance system, efficiency and productivity, technology and health information system, health information system, care quality evaluation, Integrated care and primary care, supporting activities	Delphi method and during 3 phases, including review of theoretical concepts, preparation of drafts of health system performance appraisal indicators	Environmental monitoring, face-to-face and web-based interviews using designed forms	Descriptive, research, applied and comparative ¹⁹
An EU approach to health system performance appraisal: building trust and learning from each other	Expert group	-	Delphi method	First, it is built through a bottom-up participatory approach. Second, it developed a flexible and pragmatic attitude. Finally, the group positioned itself in a niche that was still to be exploited.	Qualitative ²⁰
Primary health Centres' performance assessment measures in developing countries: Review of the empirical literature	-	Components of personnel competencies (skilled/non-skilled) and centre performance (patient satisfaction/cost/efficiency)	Topographic analysis and measurement content, comparing with World Health Organization's (WHO's) framework criteria	-	A retrospective and systematic review ²¹
Assessment of primary health care system performance in Nigeria: using the conceptual Framework of primary health care performance indicator	-	(1) segmented supply chains hinders the performance of primary health care (PHC) system (2) lack of financial access to PHC of the country (3) shortage of infrastructures, drugs, equipment, and vaccines at the facility level; and (4) poor performance of health worker	Using different resources, including the recent data of the level of facilities obtained from the World Bank Service Delivery Indicators Survey	World Bank Service Delivery Indicators Survey	Review ²²
Health systems performance assessment in low-income countries: learning from international experiences	Ugandan expert group	An inclusive development process embedded in the health system's conceptual model, its relation to the governing policy and organizational structure and societal context, the presence of a specified target, constitutive dimensions and indicators, a proper institutional set-up, and, its capacity to provide mechanisms for making change in the health system	Attribute validation for low income countries learning	Review a set of existing health system performance appraisal frameworks	Review ²³
Evaluating the technical efficiency health and therapeutic centers using a hybrid approach of DEA and GT: A case study of health and therapeutic centers in Yazd City	Experts from different functional areas	Number of physicians, number of paramedics working in therapeutic centers and number of active beds, number of hospitalized patients, number of outpatients and occupied bed days	Hybrid DEA and GT method	DEA-Solver and Lingo software	Hybrid ²⁴
Performance appraisal of therapeutic centers affiliated with Kurdistan University of Medical Sciences using Pabon Lasso Model	12 therapeutic centers affiliated with Kurdistan University of Medical Sciences	Bed turnover rate, bed occupancy rate and the average duration of hospitalization	Pabon Lasso model	Excel software	Descriptive ²⁵
Human resources relative efficiency appraisal of health centers in Yazd cities using data envelopment analysis models	Health centers of Meybod and Yazd cities	Number of health workers and number of family health personnel, the most important services provided in health centers	Survey method, data envelopment analysis (returns to scale (RTS) model)	DEAOS (Data Envelopment Analysis Online Software)	Descriptive-cross-sectional ²⁶

performance of the system under their supervision. It is important to note when designing performance appraisal models that the design must be done specifically for each organization and that there is no comprehensive model that can be used for all organizations. In fact, creating a successful performance appraisal model necessitates paying close attention to the organization's unique circumstances. By developing a performance appraisal model, researchers demonstrated that there should be coordination between an organization's goals, missions, and strategies.²⁴ Performance evaluation has become a common practice in the health care system in recent years.²⁵ The evaluation of health centers' performance is an efficient way to improve the quality of health services and the efficiency of health systems.¹⁶ Health centers are complex organizations whose performance evaluation ensures better community service.²⁵

Performance appraisal is a factor of performance improvement that can itself lead to a consensus of the forces of an organization for the excellence of the organization. Organizations are increasingly utilizing performance appraisal models to improve performance feedback. All of the preceding is impossible without measurement and evaluation. The most important factor in organizational analysis is performance. Therefore, its improvement requires performance appraisal. In fact, assessing the performance of health-care systems fosters a shared understanding of the priorities required to improve performance. Furthermore, health system performance evaluation assists health policymakers in making strategic decisions to improve the system. Performance evaluation can assist the health system in identifying inefficiencies and converting them into effective opportunities. Health and therapeutic service providers, including the Ministry of Health, Universities of Medical Sciences, the Deputy of Health, and health and therapeutic networks, use a performance appraisal model.

Different countries around the world have developed various models for the performance appraisal of health systems.

It has been reported that the performance appraisal in India is self-reported. It is complex and difficult, particularly when assessing changes in system behavior. This necessitates not only an understanding of the principles of health system behavior change, but also provides a solid foundation for evaluation.²⁶ The performance appraisal of health centers in Brazil indicates the norms or criteria that should be used in the performance indicators, so that their repetition will help to improve the quality of the system. A health system's measurable quality is comprised of three axes: structure, process, and result. This tool assesses health policy characteristics such as human resources, financial resources, and information systems. In this country, an integrated model for performance evaluation is proposed, which includes a balanced form of the three main functions of goal achievement, value production, and value retention. In this country, assessing the performance of the health-care system is about more than just numbers. It has been proposed that the performance evaluation of the Brazilian health system be divided into two parts: population health conditions and health system structure. The dimension of "population health status" includes disease, functional status, well-being, and mortality, whereas the dimension of "health system structure" includes the government's ability to create and improve health programs, financing, human resources, and health technology. Access to services, the outcomes of actions and services, and the identification and evaluation of problems and defects in the system are all specific objectives in evaluating the health care network. Performance appraisal forms in this country are numbered from zero to ten.²⁷ Chronic and non-chronic disease health performance is effective and efficient.²⁸⁻³⁰ Evaluating the performance of health centers

identifies the norms or criteria that should be used in performance indicators to repeat them in order to improve the system's quality,³¹⁻³⁸ particularly in various health categories.³⁹⁻⁴⁵

Conclusions

Performance evaluation of health care systems assists health decision makers and politicians in holding themselves accountable for their actions, allowing them to make better decisions to improve their actions. As a result, it is possible to improve the performance of inefficient health centers in a more appropriate manner by better managing health center personnel and utilizing their power. Because the development and implementation of a health center performance appraisal model can improve the delivery of health services, their use must be carefully planned.

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