



Status of Human resources management in Iran's health sector and the path to development: A qualitative study

Behzad Damari¹, Elham Ehsani-Chimeh*²

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Abstract

Background: Resource generation, stewardship, financing, and provision of health care services are 4 major functions of the health system. In this study, human resource management, as a vital aspect of resource generation, was studied and some interventions have been suggested for Iran.

Methods: This was a mixed method study. Data were collected through the review of the relevant articles and government documents, interviews with human resources managers and experts in the health sector, and focus group discussions with selected authorities. The interview questions were based on a model proposed by the WHO.

Results: The collected data were categorized into 3 broad sets: description of the current status, factors contributing to the current status, and suggested interventions for improvement. Lack of a comprehensive human resources management policy and inattention to the human resources management in the developmental plans are some of the most common problems in Iran's health sector. Also, unequal distribution, unemployment, migration of graduates, and inadequate and ineffective participation of faculty members in universities are some other problems referred to as lack of a unified stewardship and dearth of a comprehensive human resources planning. Suggested interventions have focused on stewardship function of the health care system.

Conclusion: A policy brief on the human resources for health needs should be developed and added as a separate article to the upstream documents of the country (eg, Iran's 20-year outlook plan). Implementing and monitoring operational plans for policy execution at Ministry of health has a major role in executing the adopted strategies.

Keywords: Health workforce, Human resources for health, Health care system, Human resources management, Labor market, Strategic planning

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Introduction

Resource generation, stewardship, financing, and service provision are 4 key functions of the health system (1). Human resource management is an aspect of the resource generation function. Human resources for health (HRH) refers to all the people who are engaged in promoting, preserving, maintaining, and improving the health community. In Iran, HRH includes both registered and unregistered workforces in public and private health organiza-

tions, different types of institutions providing different level of preventive care, medical care, and public health and health promotion. The human resources of unofficial health sectors, such as traditional practitioners, volunteers, and community caregivers, should also be added to this list (2). The health care system is struggling with multiple unexpected crises and difficulties. Increased life expectancy in the country and a rise in age-related chronic ill-

Corresponding author: Dr Elham Ehsani-Chimeh, e_ehsani@tums.ac.ir

¹ Governance and Health Department, Brain & Spinal Cord Injuries center of Neuroscience institution, Tehran University of Medical Sciences, Tehran, Iran

² National Institute for Health Research (NIHR), Tehran University of Medical Sciences, Tehran, Iran

↑What is "already known" in this topic:

Human resources for health (HRH) are considered as the vital aspect of resource generation in health system functions. Identifying HRH status, its challenges and associated factors, and needed interventions could help stakeholders to improve health system and quality of service.

→What this article adds:

HRH management in Iran faces many problems. In this study, by determining HRH status in Iran, the challenges and associated problems were identified and appropriate interventions were proposed.

nesses along with some epidemics, globalization trends, and the country's barriers to join the global marketposed some problems to the health sector. Shortage of health workers, inequality in the distribution of health skilled workers, poor working conditions, poor knowledge, high unemployment rate, migration, insufficient financing for health sectors, and high HIV and hepatitis incidence among health workers are some of the issues that the Health care system in Iran is encountering with (3).

Human resources management is an organizational function which refers to efficient management and leadership of the staff in an organization (4). Huddart recounts 6 substantive areas in human resources management: (1) planning, (2) capacity building, (3) personnel policy, (4) human resources data, (5) performance management, and (6) training (5). He categorizes the benefits of human resources management in 4 items: (1) moving rapidly toward organizational missions and goals, (2) reducing the conflicts and increasing the employees' motivation (by defining responsibilities, linking responsibilities and organizational goal, and setting appropriate compensation criteria), (3) increasing cost efficiency, and (4) increasing the organization's ability to manage changes (4).

In developed and developing countries, 3%-8% of the workforce positions are allocated to the health sector, and around 35 million people are working in the health sector across the world (6, 7). Dussault and Dubios state that coverage, productivity, technical quality, sociocultural quality, and organization stability are main functions of the human resources management for health (8). Other factors with greater importance in HRH management are the health needs of the society and their changes, including demographic changes, disease burden, epidemics, and disasters. The background factors, including globalizations, education system, and health system reforms, re-

quire due response of the human workforce in the health sector (2, 7, 9).

Two broad political and economic approaches exist for status analysis of HRH. The first approach heavily draws on the qualitative data and the second mostly implies on quantitative evidence (10). In general, different conceptual models can be used to describe and analyze human resource management systems in the health sector. Table 1 summarizes some of these models. The WHO has offered a conceptual framework and states that human resource management systems can monitor and improve HRH performance. According to the WHO model, health and educational sectors need to move toward achieving 3 core goals: competence, coverage, and motivation (7). This model suggests 4 priority areas for governments: (1) motivation and incentives, (2) imbalances, (3) migration, and (4) AIDS (9). The assessment of HRH management consists of data collection in 4 areas, including clarifying health-related job descriptions, educational organizations, health care facilities, and health care service providers (2).

Despite numerous quantitative and qualitative studies on HRH projection models, failure to find a decent job among Iranian physicians, Iranian physicians' tendency to work in underprivileged areas, inequality in the distribution of Iranian physicians, and lack of development models for human resources in the Iranian health sector (11-16), in no comprehensive study was found on the status of human resources management and its components in the Iranian health sector, especially from stakeholders' point of views. Therefore, in this study, the WHO's rapid assessment of human resources model was adopted to examine the status of HRH management in Iran. Then, the challenges and associated factors were identified and some interventions were suggested to overcome the related issues.

Table 1. Conceptualized models for analysis of human resources management system

Model name	Model components
The basic indicators of HRH management model (10)	Distribution, status of employment and unemployment, income and benefits, education and empowerment, and productivity
The main process of human resources management model (10)	Needs assessment, decisionmaking and planning, recruitment and education, accreditation (issuing licenses and permits), human resources distribution, continuing education
The most critical problems of human resources management in countries model (10)	Imbalance between specialty and employment (geographical areas, institutes, private or public sector, services and goods), immigration, poor investment in public HRH, low income and poor working conditions, weakness in primary and continuing education, and high rate of unemployment
Health system functions model (2)	<ul style="list-style-type: none"> • Resource generation (primary education, retention, skill mixed and number, investment) • Stewardship (policies, laws and regulations) • Financing (production costs, retention costs, incomes and benefits) • Service provision (bonuses, selection, management, and distribution)
Rapid assessment of HRH model (1)	<ul style="list-style-type: none"> • Stewardship (policies, laws and regulations, plans, stakeholders, financing) • Management and performance improvement: job description, working conditions, workforce leadership, immigration, motivation and bonus, employment, and retirement • Workforce labor market: work load, work sector (private and public), associations and unions, and income • Education, empowerment and research: continuing education, human resource research, number of entrants and graduates, educational staff, and educational institutes • Prioritized Health plans and human resources management: tuberculosis, malaria, AIDS, reproductive health, and other prioritized regional plan • Monitoring and evaluation: available data, number of staff, information utilization, and monitoring methods

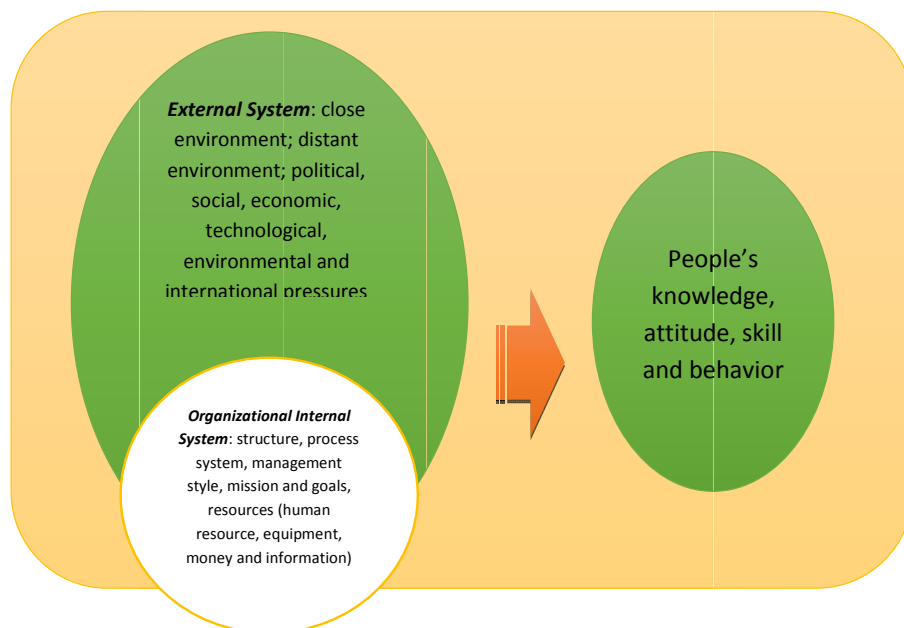


Fig. 1. The conceptual framework of human resources management in Iran

Methods

This was a synthetic content analysis-based mixed methods study that aimed to develop a human resources policy document, with 3 main steps:

1) Reviewing the articles, reports, and documents of HRH policies and reforms in different countries (1-10, 17, 18). These documents were collected from online scientific databases such as Irandoc, Elsevier, Scopus, PubMed using Google Scholar and websites of relevant local or global organizations such as WHO. After analyzing the documents, the conceptual framework of the HRH was developed (Fig. 1).

2) Semi-structured in-depth interviews with the stakeholders applying the rapid assessment of human resources questionnaire (3). This questionnaire focuses on 4 HRM areas, including stewardship, resource generation, financing, and service provision. Its validity was approved with Delphi technique (among related health experts and managers). The objective of the interview was to obtain the stakeholders' viewpoints on various aspects of Iranian HRH management and the associated factors (Table 1).

The data were gathered via 30 structured interviews conducted by an experienced interviewer. Interviewees were selected by 2 researchers (B. D., and the Director of Human Resources in the Ministry of Health and Medical Education) and included (1) managers and decisionmakers of the HRM committee and (2) researchers and experts in the field of HRH. The selection criteria were at least 1 year of experience in the current position as a committee manager, and conducting at least 2 studies in the HRH area (19). According to denaturalized approach, transcribed interviews were coded separately by 2 individuals and the codes were organized in related categories. The data were analyzed according to the steps described by Strauss and Corbin (20, 21). First, in open coding, each line of the text was examined and the codes were attributed to individual words or sentences to categorize the data

according to their meaning and actions. The codes were often directly derived from the data, known as an in vivo coding (22). The emerging codes were compared to the existing codes using constant comparative analysis to examine similarities or differences. Descriptions were given to codes to ensure reliability in the coding strategy. As data analysis progressed, relationships were developed between categories through axial coding. Constant comparative analysis and theoretical sampling continued until each category was saturated and no new code emerged (21).

3) Focus group discussion (FGD) for warping up the main problems and proposing interventions. Based on 3 criteria of practice in the field of human resources, related specialty, and published books or papers, 6 people were selected as members of a FGD. Members were asked the following questions within 3 sessions of FGDs:

- 1) In general, what is the most common challenge that the human resources system is facing and what are the causes?
- 2) What is your suggested intervention in each domain of stewardship, financing, human resources, and service provision?
- 3) What resources and supports are needed to implement those interventions?

Sessions were managed by an experienced researcher (B. D.). The participants' consent was obtained to record and transcribe all the discussions. Previous results were discussed and revised, if necessary, in the following sessions. Ultimately, all the discussions were presented as suggested interventions. Therefore, data of causes and factors and interventions related to the current status were concluded based on the triangular analysis model in 3 domains of macro (policy, regulation and law), middle (structure and operation), and micro (culture and behavior).

Results

Identifying the current state

The status of density of health personnel in Iran is partly acceptable according to the similar countries, though there is still a shortage in most of HRH occupational groups. However, the important issue is inequality in geographic distribution of HRH. It seems that disadvantaged areas still suffer significant deficiencies. This inequity is not only geographic and there are disparities in access to different occupational groups and specialties (17, 18).

Some plans were run for avoiding imbalance distribution of HRH. HRH projection and extracting real HRH needs in the Ministry of health and affiliated organizations is one of these plans. The family physician program was an effort to address GPs recruitment. Other issues taken by the Medical Council were the ideas of school doctor, terminal and train doctor, and registering and dispatching doctors to other countries. Still, Iran needs a national unemployment reduction program in the health sector.

Also, development of guideline for public recalls for faculty member recruitment and elite special share in sub-specialty medical programs might be considered as indirect actions to prevent graduate immigration. Strategies to tackle the issue of graduate immigration could be categorized into inhibitory and motivational approaches. The Cultural and Social Council has recommended the following strategies: (1) reinforcing Iran's social and cultural attractions and reducing existing repulsions through cultural activities, developing infrastructures and supportive laws; (2) reinforcing the process of knowledge sharing through developing international scientific communications; and (3) moving toward a proper scientific status for the country in the path of globalization through scientific infrastructures.

Numerous practical measures were taken to enhance the quality of training and continuous education through needs assessment according to health needs, including empowering universities in different fields of medical education, establishing centers for research and development of medical education, holding fellowship courses for medical education and MS in this field, designing national workshops for curriculum revision, and pilot programs for revising the curriculum for general medicine and medical specialty and other fields of study.

Also, the following activities were performed to increase the faculty members' satisfaction: establishing the faculty affairs committee for faculty members in the Deputy of Educational Affairs of Iran's Ministry of Health, revision of the guideline for recruitment and promotion of faculty members, revision of faculty members' salary system, and increasing their salary. Some universities used motivation and punishment methods and include reports of monitoring professors' arrival and departure time in annual evaluations.

Challenges of HRH management in Iran

Challenges of HRH in Iran were as follows:

The most important problem in stewardship domain was the lack of a national policy in Iran's 20-year vision plan (23). "Currently, no national comprehensive and unified

policy exists in this domain. Like scattered islands, each unit may make its own decisions. For example, the academic disciplines and specialties have increased without any needs assessment or coordination with other sectors," said a committee manager.

In the planning domain, either shortage or surplus of HRH in different occupational groups and the lack of a comprehensive plan for providing the workforce for priority health problems could be named as related challenges. Moreover, the lack of stewardship and coordinated committees for HRH management, insufficient knowledge and skill of senior management of HRH, and failure to apply the research were other problems of the human resources stewardship and planning. "Offices which are working in human resource management in the Ministry of Health are scattered without any department for integrating and coordinating them. For instance, education, employment, continuing education, and HRH distribution are managed in separate departments. The Ministry's human resources' office is primarily responsible for employment and compensates the Ministry of Health's workforce and plays no significant role in other fields," said a committee manager.

In the field of regulation, there were problems such as inefficient role of scientific communities in monitoring professional performance, weakness in the process of accreditation, lack of approved professional guidelines, and lack of a system to monitor the performance of the private sector. In the field of monitoring and evaluation, the most important challenges were decentralized, semi-valid and scattered (especially in the private sector) statistics and information, lack of stewardship, and dearth of national system for registry and monitoring HRH (HRH observatory system). Other stewardship problems in this field were lack of national indicators for the ratio of human workforce in different groups to the population (except for the physicians and nurses) and the impossibility of using the health workforce census. "A major problem with the data collection methods is the lack of a systematic approach and appropriate methodology for data collection," said a HRH expert researcher.

The most important challenge for the service provision function in incentives and compensations field was the lack of general policies for compensations in 3 areas: working in special geographical locations, at certain hours, and with patients who have special needs. In the field of employment and retention, lack of clear policies for employing different groups and shortage of information about employment rate and inactive HRH were the most important challenges. "Out of 100 trained doctors, 10 are unemployed, 6 work in nonmedical fields, and 10 spend 50% of their time on medical affairs. In general, the health system benefits from 79 out of 100 trained doctors; therefore, 21% of training costs is wasted," said a HRH researcher.

In the field of equity, the most important issue was the lack of policy for balancing the workforce at different (first, second, and third) levels. A HRH researcher said, "According to the national indicators and compared to the international ones, we almost have no overproduction in any field. We have deficiencies in some places but they

are not severe. The major indicators are almost similar to those of EMRO.”

Shortage of research on immigration and its problems were the most important challenges of service provision. According to a HRH researcher, “A research plan in 2008 showed that around 1600 people translated their certificates to leave the country; they included GPs (34%), specialists (9%), subspecialists (1.1%), dentists (8.7%), and pharmacists (7.3%). A more serious issue is that out of 7 immigration applicants, only one may come back.”

From the existing list in the field of working conditions, low job satisfaction and ambiguity in causes and solutions, low salary and inequality in income of the same level groups, and delayed payments, especially for newly employed individuals, are notable. Unclear performance standards for different groups and outdated job descriptions for the health workers were the main problems in the areas of job definition and human resources performance.

Some of the challenges of providing human resources for education centers were the lack of mechanisms of matching workforce supply with health sector demands, executive difficulties in integrating education and service delivery and priority of service delivery. Also, ambiguous cost-effectiveness of short- and long-term scholarships, low return rate of scholars, and the quality of fulfilling their regular commitments were other related problems. “In clinical education, research centers are implementing new methods of teaching such as model-based education and quality promotion. However, in other disciplines, teaching is mostly done through lectures”, said a committee manager.

Trainers-related problems included weakness in the process of recruitment and selection of the most competent faculty members, ineffective presence of professors in universities, and professors’ immigration. According to a HRH researcher, “The ratio of faculty members to students is one of the key indicators but we have no official information about it. Although recruitment is based on the departments’ needs in medical universities and is authorized by central audit boards of universities and the Ministry of health in the majority of cases, identification of departments’ needs and university recruitments are not based on a particular development plan.”

Surplus enrolment of general physicians and specialists were categorized as the issues of graduates and entrants of medical universities. Lack of research centers or a network for HRH research and unclear search priorities were among the challenges at the research area.

Underestimation of per capita costs for graduating each medical group was the most important financing and budget allocation challenge. “The government and students are currently the main players in funding policies, implementation of policies, and planning,” said a committee manager.

Traditional methods of assigning job positions in the health system and occupying these positions by unrelated graduates were major problems of the field of employment. Also, there were claims for inappropriate staff payment systems and low and unequal salaries. The insignificant role of professional association in planning and poli-

cymaking and the work overload among specialty residents were the most important challenges. Insufficient professional guilds for different related groups, the large number of patients’ visits by the doctors, and the low quality of service delivery were problems of the domain of guilds.

Causes and influential factors

Data of causes and factors were extracted based on the triangular analysis model in 3 domains of macro (policy, regulation and law), middle (structure and operation), and micro (culture and behavior).

For the laws and policies, the most common challenges included restrictive and fast changing national laws and regulation for recruitment and employment, lack of single stewardship for managing human resources in the Ministry of health for planning, immigration, employment and unemployment coordination, lack of a comprehensive conceptual model, and inappropriate methods for HRH planning and lack of stewardship for HRH information collection.

Identified issues with performance and structures included the weakness in graduate employment, lack of competition between universities to reduce the unemployment rate in various provinces, weakness in needs assessment methods for university admission and ineffective regulations. In addition, other challenging factors in this domain were weak industry-university cooperation, poor implementation of guidelines for employment and promotion, weak systematic cooperation of the service providing sector (health deputy) and the education deputy, and finally problems with HRH payment system. Other causes included weak international relations (no network) for employing out-of-the-country specialists, weak inter-sectoral cooperation for intervention of social, cultural, and political factors.

In terms of culture and behavior, the problems included weakness in accountability of policymakers for employing related graduates, low participation of faculty members in university affairs, graduates’ insufficient knowledge, weakness in entrepreneurial attitudes and skills, and little agreement on the model and structure of service delivery in the future, and weak infrastructures and incentives for educational-research activities of faculty members.

Interventions

Table 2 represents the proposed interventions for improving the HRH management based on the stakeholders’ opinions and analysis of documents.

Discussion

Examining the HRH management system revealed numerous problems in 4 areas of assessment, especially stewardship. The first step in refining HRH management is to reform the stewardship system. Related interventions are presented into 2 groups: (1) establishing 4 interrelated systems, including a committee for HRH management, a research and information system for HRH, monitoring the performance of the private sector, and redesigning pay-

Table 2. Proposed interventions

Strategic goals	Area	Proposed interventions
Strategic Goal 1: Establishing 4 Interrelated Sys- tems	Stewardship	<ul style="list-style-type: none"> Establishing the HRH information system in the statistics and information management center (monitored by human resources management sector) and providing information about human resources indicators periodically in cooperation with the information network Setting up a research center or a unified network for HRH studies in the private or public sector
		<ul style="list-style-type: none"> Appointing a unit of the Ministry of health to stewardship of HRH management in cooperation with internal and external stakeholders' Revision of human resources distribution indicators, specially physicians mandatory service according to the new classification of disadvantaged areas Developing intersectoral cooperation to identify strategies to enhance physicians' motivation for working in disadvantaged areas Determining the number of HRH in the health sector for next 10 years in all occupational groups according to (1) Service provision structure in the health system and the health sector's plan to achieve the 20-year outlook (2) Determining limitation margin for accepting new medical students and relative specialties (3) Determining an appropriate skill-mixed workforce and removing role overlaps among different job occupation groups based on 3 levels of service provision Determining the adequacy of HRH demand for priority diseases and health problems for next 10 years Developing strategies to reduce unemployment through <ol style="list-style-type: none"> Research on unemployment distribution in different occupational groups and related factors and providing necessary interventions Entrepreneurial training in the health sector Establishing counseling and employment agencies for physicians by the medical council and medical universities Accelerating establishment of referral system and family physician and physicians' employment
Strategic Goal 2: Developing the National Policy Document in 8 areas	Financing	<ul style="list-style-type: none"> Revision of payment systems for health staff to increase their motivations Determining real costs of education per student
	Service provision	<ul style="list-style-type: none"> Accelerating the revision and approval of curriculums for disciplines related to medical sciences based on the needs of referral system and family physician plan and empowering universities to implement new plans Revising the approach of integrating education and services and also holistic medicine based on family physician plan and referral system Assessing cost-effectiveness of granting scholarships in the last 10 years and revising the policy Improving the quality of continuous education system Designing and holding empowerment courses of "HRH management" for planners, researchers, and decisionmakers Revising and developing a system for monitoring the professional performance of physicians, specialists, and health staff in the private sector at national and provincial levels
	Resource generation (supply)	<ul style="list-style-type: none"> Setting priorities for research implementation on HRH management and allocation of budgets for it Increasing effective participation of faculty members in medical universities through <ol style="list-style-type: none"> Improving the levels of knowledge, attitudes, and skills of faculty members based on need assessment. Selecting the most competent faculty members based on scientific capabilities and educational and research leadership qualifications. Revising payment systems for faculty members Determining the appropriate number of faculty members based on need assessment and collaboration of stakeholders Developing policies for improving the health of HRH

ment systems for the staff based on incentives; and (2) developing a national policy document to limit workforce supply, improve distribution, reduce unemployment, reduce immigration, enhance staff health, improve education and training medical staff through needs assessment of the health system, and to enhance effective the participation of the faculty members in the university.

Findings of this study were in line with those of a study on human resources challenges in Iran (24). The main challenges were extracted as 2 main groups: (1) HRH challenges consist of inappropriate and unequal distribu-

tion of HRH, lack of a reliable HRH information system, low HRH productivity, and Low HRH motivation; (2) HRH managers' challenges consist of inattention to HRH managers as key managers and excess interpretation of HRH laws and regulations.

There were also similarities in the results of the present study and those of a study by Dussault and Dubios who suggested staff planning, staff distribution, working conditions and organization, incentive systems, professional development processes, training, deployment of the personnel, methods for recruiting and retaining staff, transfer

of authority, skills needs, redefinition of professional roles and job description, and integration of services as interventions for HRH reforms (8).

Dussault and Franceschini mentioned 5 factors that may affect the unequal HRH geographical distribution: individual; factors related to the health care and educational systems; organizational, institutional, structural, and socio-cultural environment; all of which were observed in the Iranian health system which led to unequal distribution according to the present research (25).

In an enriched representation of HRH management, Hassani et al provided 3 main categories in HRH policy-making: (1) workforce education and training, (2) health workforce labor market, and (3) HRH management. The present study recommended interventions in these 3 domains in addition to other domains, which showed the comprehensiveness of this study (24). Mobaraki et al found that recruitment licenses for the Ministry of Health's employment need to be redistributed, which represents the need for reform in the areas of stewardship and service provision and were taken into account in the present study (26).

The present study showed that Iran's status was similar to Palestine's, as Hamdan and Defever argued that changes in Palestine's health system required changes in HRH. According to them, shortage and maldistribution of the health staff, low motivation of the public personnel, and inadequate data indicate the need for defining explicit strategies addressing HRH deficiencies. In this study, it was concluded that there is a need for a stewardship by a national body for strategic planning and coordination. According to this research, international cooperation can be improved by better planning, identifying national priorities, and coordination mechanisms. Moreover, human resource development has to be considered in view of the overall national health development framework and the Palestine's particular condition and we think the same is true for Iran (27).

In total, 45 out of 57 countries have a national HRH plan (79%). There is evidence that HRH plans are on the agenda or currently being developed in a few countries, (Djibouti, Honduras, Papua New Guinea and Zimbabwe). The present study showed that one of the major problems in HRH in Iran is lack of a national plan for HRH (28).

Linking the national health policies to HRH plans deemed to be important. Globally, 40 out of 45 (89%) HRH plans are integrated into the national health plans. In EMR, SEAR, and WPR, all HRH plans are integrated into the national health policies. Only 5 of the countries with a national HRH plan did not link it to the national health plan (4 in AFR and 1 in AMR).

Taking other health system components and country specific contexts, findings interventions in these areas would improve human resources outcomes and consequently enhance equity, effectiveness, efficiency, and quality of services and finally result in 5 key strategies for human workforce, including engaging leaders with other stakeholders, planning for human resource investments, performance management, and empowering and developing education policies (7, 29).

As a research limitation, there was a shortage of statistical information. Moreover, the opinions of provincial managers and guild managers were not reviewed. Thus, it is highly recommended to collect the views of the health staff, managers, and planners in the Management and Planning Organization of Iran and the members of the parliament in future research.

Conclusion

In this study, the main interventions proposed for improving the HRH management in Iran's health sector include developing a policy document for HRH management, establishing a temporary committee for HRH management, and determining research priorities, and developing related planning and policy documents based on the reliable HRH information and research. Also, planning and monitoring the operational plans for policy execution at the Ministry of Health headquarters and provincial levels have a major role in executing these strategies.

Findings of this study may be used as a reference to enhance the state of HRH management for the deputies of the Iranian Ministry of Health and Medical Education, the Medical Council and the Nursing Council, professional scientific associations, and guilds.

Conflict of Interests

The authors declare that they have no competing interests.

References

1. World Health Organization. The world health report 2000: health systems: improving performance: World Health Organization; 2000.
2. Bertone MP, Witter S. The complex remuneration of human resources for health in low-income settings: policy implications and a research agenda for designing effective financial incentives. *Hum Resour Health*. 2015;13(1):1.
3. World Health Organization. A guide to rapid assessment of human resources for health. Geneva: World Health Organization. 2004.
4. Islam M. Health systems assessment approach: a how-to manual. *Ration Pharmac Manag Plus*. 2007; pp.374
5. Huddart J. Assessment of ministry of health human resource management policies and practices, Jordan human resources development project report. United States Agency Int Develop. 2005.
6. Bangdiwala SI, Osegbeaghe Okoye MBBS M. Workforce resources for health in developing countries. *Public Health Rev*. 2010;32(1):296.
7. Chen L, Evans T, Anand S, Boufford JI, Brown H, Chowdhury M, et al. Human resources for health: overcoming the crisis. *Lancet*. 2004;364(9449):1984-90.
8. Dussault G, Dubois C-A. Human resources for health policies: a critical component in health policies. *Hum Resour Health*. 2003;1(1):1.
9. World Health Organization. Human resources and national health systems: shaping the agenda for action in the European Region, Berlin, Germany 22-23 May 2004. 2004; Copenhagen : WHO Regional Office for Europe.
10. Dreesch N, Dolea C, Dal Poz MR, Goubarev A, Adams O, Aregawi M, et al. An approach to estimating human resource requirements to achieve the Millennium Development Goals. *Health Policy Plan*. 2005;20(5):267-76.
11. Alaoddini F, al e. The inclination to immigration and the related factors among Iranian physicians. *Hakim*. 2005;8(3):9-15.
12. Alla-Eddini F, Fatemi R, Ranjbaran Jahromi H, Asghari E, Eskandari SH, Ardalan A, Hosseinpour AR, Tavakoli HR, Feiz Zadeh A. Iranian Physicians' Willingness to Work in Underserved Areas and Related Factors in 2001. *Razi J Med Sci*. 2004;11(40):247-55.
13. Alla-Eddini F, Fatemi R, Ranjbaran Jahromi H, Feiz Zadeh A,

- Ardalan A, Hosseinpour AR. The inclination to immigration and the related factors among Iranian physicians. *Hakim Health Sys Res.* 2005;8(3):9-15.
14. Farzadi F, Mohammad K, Maftoun F, Labaf-Ghasemi R, Tabibzadeh R. General practitioner supply: family physician program and medical workforce. *Payesh.* 2009;8(4):415-21.
 15. Voghoufi H. brain drain, an investigation of elite immigration from different perspectives: Zohd Publication; 2002.
 16. Delgoushaei B, Tabibi SJ, Pahlavan P. A model for human resources development in Iran's health sector. *Res Med (Pejouhesh),* 2007;31(4):317-25.
 17. <http://www.emro.who.int/entity/statistics> [Internet]. 2014.
 18. Hagh Doost A, Kamyabi A, Shrafi Asgarabad A, Sadeghirad B, Shafieian H, Ghasemi S. The geographical distribution of the medical groups in country and the disparities. *J Med Council Iran.* 2010;28(4):411-9.
 19. Koch T, Harrington A. Reconceptualizing rigour: the case for reflexivity. *J Adv Nurs.* 1998;28(4):882-90.
 20. Oliver DG, Serovich JM, Mason TL. Constraints and opportunities with interview transcription: Towards reflection in qualitative research. *Soc Forces.* 2005;84(2):1273-89.
 21. Corbin JM. The body in health and illness. *Qual Health Res.* 2003;13(2):256-67.
 22. Charmaz K. Constructing grounded theory: A practical guide through qualitative analysis (Introducing Qualitative Methods Series). 2006.
 23. Council IsE. Iran's 20-year vision plan. Tehran, Iran, 2003.
 24. Hassani SA, Mobaraki H, Bayat M, Mafimoradi S. Right place of human resource management in the reform of health sector. *Iran J Public Health.* 2013;42(1):56.
 25. Dussault G, Franceschini MC. Not enough there, too many here: understanding geographical imbalances in the distribution of the health workforce. *Hum Resour Health.* 2006;4(1):1.
 26. Mobaraki H, Hassani A, Kashkalani T, Khalilnejad R, Ehsani-Chimeh E. Equality in distribution of human resources: the case of Iran's Ministry of Health and Medical Education. *Iran J Public Health.* 2013;42(1):161.
 27. Hamdan M, Defever M. Human resources for health in Palestine: a policy analysis: part I: current situation and recent developments. *Health Policy.* 2003;64(2):243-59.
 28. Observator HRfH. Policies and practices of countries that are experiencing a crisis in human resources for health: Tracking survey. Geneva: World Health Organization, 2010.
 29. Ehsani-Chimeh E, Behbahani AA. Factors Affecting the Service Delivery Locations of Newly Graduated Iranian General Practitioners. *Iran Red Cresc Med J.* 2017;19(2).