

Designing Headquarters General Competency Model for The Health Sector

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Abstract

Background An effective health headquarters has behaviors, knowledge, skills, and motivations that are behavioral, technical, and motivational prerequisites for successful performance in a job. This study aims to identify the general competencies of health headquarters to meet the needs of the health system.

Methods To facilitate a consensus-building process on the development of public competencies, a multi-step approach was used. First, to identify the dimensions and components of general competencies in attracting health headquarters, the systematic review and meta-synthesis were used. Then, using a purposive critical case sampling, twenty-six participants were interviewed and the information was analyzed. In the third stage, the health headquarters were classified into three levels. To present the initial model of competencies, the Mini Delphi method was used. Finally, in the fourth step, to validate and finalize the pattern, the three-step Delphi method was used.

Results The six dimensions of competency have been developed, which are (1) leadership and management (12 components), (2) analysis, interpretation, and reporting (6 components), (3) interpersonal relationships (4 components), (4) individual competencies (7 components), (5) cultural and community competencies (5 components), (6), and Administrative competencies (4 components). The leadership and management dimension, in both the first and second stages of this research, had the highest number of codes (42 and 25% of the total codes).

Conclusion Since health headquarters play a major role in supervising and directing human resources and promoting the efficiency and effectiveness of the activities of health-related organizations, they should have a high level of management and leadership skills. It is important to pay attention to the competency level of the health headquarters, their classification, and the use of different competencies to attract each group of these headquarters. Also, due to the effective nature of the duties of third-level headquarters who are recruited to work at the highest headquarter level, these headquarters must have a high level of all competencies. Finally, using the competency model of health headquarters can help health organizations in achieving high visions, goals, and self-help strategies.

Background

Health care in any country is a complex task that must be tailored to the needs of society to be effective. In this regard, human resources for health (HRH) are considered as a key factor in achieving effectiveness in universal coverage and sustainable development goals (SDGs), ensuring a healthy life, and promoting public welfare. According to the global strategies of HRH, by 2030, there will be no desirable health system without an effective workforce (1). However, in many Eastern Mediterranean countries, which the World Bank classifies as low- and middle-income countries, there is limited knowledge of the nature, territory, composition, and needs of HRH (2). However, the issue of competencies has been addressed in the civil service laws of developed countries such as the United States, Canada, the United Kingdom, Germany, Sweden, and Japan(3). In today's world, every country to increase the governance capacity and

increase the efficiency and effectiveness of its services needs competent experts who can provide better services to citizens based on public interests. These experts should be able to improve their capabilities and competencies in proportion to the increasing growth of changes (4, 5).

In this situation, it is important to pay attention to the competencies required by the health headquarters as influential forces working at the top of the staff pyramid at the national level(6). Failure to pay attention to recruit trained human resources in proportion to the needs of the organization will face the effectiveness and efficiency of programs and policies of human resources of the organization, with the irreparable damage. As some experts emphasize, even good education will not compensate for the wrong recruitment and employment. Research has shown that implementing an effective recruitment process is directly related to organizational performance. However, most organizations do not have a strategic plan in this regard (7).

Various plans and tasks should be integrated and aligned to ensure that the organization always has a sufficient number of experts with appropriate competencies to achieve its organizational goals in a balanced and coordinated manner (8). The technical capacity of health headquarters is needed to translate policies and decisions into effective executive processes. As much as the health system needs specialists and clinical experts, it needs experts with the ability to policy, plan, and use evidence and data to adopt appropriate procedures to achieve its goals. In this regard, the existence of a health human resources unit at the level of the Ministry of Health with the characteristics of responsibility and accountability is required. The activity of this unit should be in line with creating a set of functions required by HRH, including policy-making, planning, analysis, data management, and reporting. The existence of organizational mechanisms to determine the competencies and appropriate capacity of human resources at the level of health headquarters is important (9)

Given the increasing expectations of society from the public sector, the need to focus on new approaches in the field of human resource management such as establishing a competency-based management approach, increasing the efficiency and effectiveness of public services to citizens through the use of competent experts, and changing the view from a job-based approach to a competency-based approach, as well as the need for a comprehensive competency model of experts in the field of human resource management is felt especially in the health department (10, 11).

Considering the role of health headquarters in advancing the overall goals of the health system based on the country's development programs, it can be said that one of the most important issues in the field of HRH is to pay attention to the competencies required by this group of experts. Therefore, the present study aims to present a model of general competencies for the health headquarters.

Methods

Study design

To facilitate a consensus-building process on the development of the general competencies of staff (staff who perform their duties nationally), a multi-step approach was used. In the first phase, to identify the dimensions and components of the general competencies of attracting health headquarters in the available electronic resources, a systematic review and meta-synthesis method was used (for more information, refer to the article published in this phase of the study)(12). In the second phase, semi-structured interviews were conducted with experts in the field of health competencies and human resources. In the third phase of this study, the Mini-Delphi method was used to present the initial model of competencies. Finally, in the fourth phase, the Delphi method was used to finalize the criteria. The Delphi method was used to reach a consensus on the importance of each of the competencies for health headquarters and determine the level of competencies required by each group of headquarters.

Study sampling

Phase 1

At this stage, the research team first adjusted the search strategy using appropriate keywords derived from the research question and title to achieve all studies related to the research topic, and all words synonymous with them. Then the electronic databases of PubMed, the web of science, and Scopus Embase were searched and retrieved. To ensure access to all related studies, a manual snowball search was performed by backward and forward tracing. Manual search in key journals related to the topic was done by reviewing the titles of all printed articles in the last 5 years. Expert guidance was also used to obtain gray resources that are published for a specific audience, with a specific purpose, and at a very limited level but may not be accessible via the web.

Phase 2

The opinions of experts in the field of HRH were used by a purposive critical case sampling from among university presidents and deputies, general managers of human resources, and heads of general human resources departments and headquarters who in past or at the time of the study had the above positions for at least 3 years in the health department, as well as researchers with international research activities in the field of HRH.

Phase 3

At this stage of the research, using the purposive critical case sampling, five people were selected from HRH specialists who also had experience in international activities in health sector.

Phase 4

To use the opinions of managers and experts in the field of HRH, a group of 18 experts in the field of HRH was selected using purposive sampling.

Data collection

Phase 1

After searching for all articles, duplicate data was removed first. Then, based on the title and summary of the articles, they were evaluated and the related studies identified during these two stages were reviewed. Relevant articles were selected by considering the inclusion and exclusion criteria of the study. In terms of quality, the type of study was reviewed and critically evaluated by two people using the Standards for Reporting Qualitative Research (SRQR) checklist used to evaluate the quality of qualitative studies. It should be noted that due to the lack of consensus on the performance and role of quality assessment of qualitative studies (13), no study was excluded by the research team.

Phase 2

The interview guide was prepared based on the objectives of the study (Appendix 1) and according to the theoretical foundations of the subject and review of studies and texts in a semi-structured manner with the least possible questions. The questions were designed in such a way that by focusing on them in the interviews, the desired data on the views of stakeholders could be obtained. Also, during practical studies, the usefulness and comprehensibility of the questions in this guide were assessed through three interviews, and some questions were changed and corrected. The interviews were performing at interviewees workplace. Interviews recorded by two recorder devices and researcher made notes during the interview. Each Interview lasted from 30 minutes to one hour. A written consent form was signed by the interviewee, ensuring that individuals could refuse to participate at any stage of the interview. The Face-to-face interview process continued until saturation was reached (14) (no new information was obtained).

Phase 3

The data collection tool was a questionnaire consisting of four open-ended questions, containing the dimensions of the components obtained from the systematic review phase and semi-structured interviews. According to the results obtained from interviews with experts, at this stage, the headquarters were divided into three categories: First-level headquarters who perform low-level staff duties, with the nature of daily and routine duties, Second-level headquarters who perform middle-level staff duties, and third-level headquarters who perform high-level staff duties. After attending the meeting, individuals were asked to confidentially answer four questions about how to categorize competencies at the theme level, sub-theme level, as well as the required competencies according to the expert levels. After receiving the answers, a free discussion took place among the participants and the participants expressed their opinions about the research questions(15).

Phase 4

The research tools for the Delphi method in the first and second stages were a two-choice questionnaire (yes/no) including criteria extracted from a systematic review, semi-structured interviews, and mini-Delphi process to agree on the competencies required by each staff expert. In the first stage, the first

questionnaire was sent to the experts to confirm whether the extracted components are required for each group of experts, and finally, the required competencies of each level were determined by performing the second stage of the Delphi method. Then, in the third stage, to determine the level of competencies required by each group of experts, a questionnaire with a three-point Likert scale (3 = high level, 2 = medium level, 1 = low level) was used.

Data analysis

Phase 1

At this stage of the research, the Thomas & Harden method was used to analyze the obtained data. This method had three steps. In the first stage, the text of the extracted studies was coded. After coding, at the next step, descriptive themes were developed. Finally, the analytical themes were produced.

Phase 2

In data analysis, qualitative content analysis (conventional) was used by Miles MB, & Huberman method(16). In this method, first, repeated data retrieval and active data reading (i.e. search for meanings and patterns) were performed. The initial code was then generated from the data. The various codes were then categorized into potential themes, and all encoded data summaries were sorted into specified themes. The researcher started analyzing his code and tried to figure out how to combine different codes to create a general theme. The themes created by the researcher were then reviewed. This review consisted of two stages: reviewing and refining the themes. The review was at the level of coded summaries and the validity of the themes was associated with the data set.

At the time of this analysis, when the map did not fit well with the data set, the researcher continued coding from the beginning until a satisfactory thematic map was created. When there was a satisfactory map for the themes, the researcher defined the themes he had presented for analysis and reviewed the contract, and then, analyzed the data within them. The nature of the topic discussed by the theme was determined by defining and reviewing. Then, it was determined which aspect of the data each theme contained. Finally, the final analysis and writing of the final report were performed. To increase the validity and quality of the results, a draft report from the analysis and interpretation of the study participants was sent for feedback, and possible cases were applied. MAXQDA10 software was also used for data analysis.

Phase 3

This step was performed using the qualitative content analysis (conventional) method and according to the steps mentioned in the interview analysis. Then, the themes were extracted from the responses obtained from this method. Finally, by aggregating and creating the final themes, the selected and named themes were arranged in three stages of the systematic review, interview, and mini-Delphi method in the form of an initial conceptual model. MAXQDA10 software was also used for data analysis.

Phase 4

After reviewing the responses in the first stage, the components agreed upon by more than 75% of the participants were finally approved. If this percentage was lower than 75%, to achieve stability in the received responses, the mentioned components would enter the second stage of Delphi and the components that received less than 75% of the total scores in this stage, would be rejected.

Also, according to the advice and guidance of experts in the third stage, the level of competencies required by each group of experts was determined in such a way that the scores equal to or higher than the 70th percentile of the average scores obtained from each question, between 40th and 70, and below the 40th percentile classified as high-level, medium-level, and low-Level competencies, respectively. According to the response of 15 people from the research sample at this stage, scores above 31.5 indicated corresponding high-level, between 22.5 and 31.5 medium-level, and less than 18 low-level competencies. Finally, the final report was presented by the researcher.

Integration of results

Finally, by interpreting the information obtained from the four phases of this study, the results were combined and the results were put together to design a competency model for the health headquarters.

Results

Results of the systematic review and meta-synthesis phase

These 12 studies were published over 12 years from 2005 to 2017. These studies have been conducted in 6 developed countries (including the United States, Australia, Canada, Ireland, Spain, and the United Kingdom) (17-27) and 1 developing country (Iran) (28). The focus of this study was on health headquarters working in the health sector. All 12 studies used qualitative methods (including focus group, call, semi-structured, and structured interviews, Delphi, and expert panel).

Based on the results of this stage of the study, a total of seven main themes were obtained, which are: 1) Leadership and management (14 sub-themes), 2) analysis, interpretation, and reporting (6 sub-themes), 3) public health knowledge (7 sub-themes), 4) Interpersonal relationships (5 sub-themes), 5) individual competencies (8 sub-themes), 6) Cultural and community competencies (8 sub-themes), and (7) global health competencies (3 sub-themes). Also, based on the results of this stage of the research, about 42% of the obtained codes were related to management and leadership competencies and its sub-themes. For more information, see the published article from this stage of the study. Table 1 shows a summary of the information obtained from this stage (see the published article for more information)(12).

Descriptive results (interview) - Competencies of health headquarters

To find the competencies of the health headquarters from the experts' point of view, the data were saturated by interviewing a total of twenty-six participants among the experts. Three people refused to

participate because of their responsibility in health organization during covid-19 pandemic. All of participants was PhD with experience in field of HRH. Finally, six main themes (as competency categories) and thirty-four sub-themes were extracted from this stage. Most of the duplicate codes were related to leadership and management competencies, analysis, interpretation and reporting competencies, and individual competencies, each of which is described below.

- **Leadership and management competencies**

Leadership competencies in an organization are the effective abilities by which a person can create an inspiring picture of the future, motivate people to follow the organization's vision, and ultimately effectively guide people toward the organization's goals. Leadership competencies are leadership skills and behaviors that contribute to optimal performance in organizations.

- **Leadership and related skills**

Leadership is important for all organizations to achieve their goals. Since leadership is a key factor in improving organizational performance, the success or failure of the organization depends on the effectiveness of leadership at all levels. One of the key points about leadership is the ability to motivate other experts. Regarding the need to have the ability to motivate, one expert said:

"The ability of a health headquarter to motivate and persuade subordinate units, that is, to lead and manage them, is very important" (P4).

- **Policymaking and related skills**

Policy-making in the health system is a combination of economics, sociology, anthropology, political science, public health, and epidemiology that provides a comprehensive picture of how health systems comply with health policies and seek to understand and improve the achievement of collective health goals. One of the interviewees said in this regard:

"What is certain is that we all have no doubt that policy-making is necessarily a headquarter task, so we need to see what skills are needed for policy-making and supervising" (P23).

- **Planning and related skills**

Planning skills are the best solution for sharing critical and limited resources. If this method is used correctly and scientifically, it will lead to significant results in achieving the goals. Experts emphasized the ability to plan at all levels, as one of the interviewees said about the importance of planning skills for health headquarters:

"An expert who plans at the macro level should be able to plan based on international and upstream policies" (P10).

- **Organizing and related skills**

The organizing is defined as identifying and categorizing required activities, grouping essential activities into achievable goals, assigning a group of activities to a manager and delegating authority to supervise them, and providing horizontal and vertical coordination in the organizational structure.

Regarding the importance of organizing skills for the health headquarters, one of the experts said:

"These experts should be familiar with the skill of labor division in a department to avoid interfering and overlapping responsibilities. Also, every task should be left to people who are capable of it. Also, all people should work coherently and as a whole, so that each work is complementary to the other" (P11).

- **Financial management and related skills**

Financial management includes the method of financing and the type of allocation. This applies not only to long-term resource budgeting but also to short-term resources such as current assets. The lack of financial skills in the health headquarters of the Ministry of Health will lead to decisions that affect the entire health system. In this regard, one of the experts said:

"Since many of the decisions that are made in healthcare organizations have important outcomes, especially in the field of finance, the health headquarters should have financial management skills in addition to policy-making and planning" (P7).

- **Control management and related skills**

Control is an ongoing process to ensure that actual results are in line with planned schedules. About the health headquarters should be familiar with this skill. In this regard, one of the experts said:

"What is certain is that control and supervising activities are necessarily the duties of health headquarters, so we should see what skills are needed to monitor and control" (P25).

Another issue that one of the experts mentioned was paying attention to process control instead of controlling people. He said:

"These experts should also be familiar with the issue of control and supervising. What a health headquarter should control is not the people but the projects, resources, events, and activities that people are involved with (P17).

- **Change management and process improvement skills**

Change management is a skill used for preparing, equipping, and supporting individuals to successfully adapt to change. Change management is done by providing guidelines to create the ground for organizational success and achieve the desired goals. Regarding the need to familiarize the health headquarters with change management skills, one of the experts said:

"One of the most important skills that a health headquarter should have is the ability to manage change, especially in health organizations that face a variety of issues and challenges, and to be able to make the changes made at the system level completely transparent to the members of his/her subset, and reduce their resistance" (P19).

- **Time management skill**

Time management skill is one of the acquired skills that lead to improving people's working life. Regarding the importance and position of this skill in the health headquarters, one of the experts said:

"These experts should be able to manage all their work programs using time management skills. Sometimes the small tasks assigned to the experts are so delayed that it becomes a problem" (P4).

- **Empowerment and counseling and related skills**

In personal productivity, the organization uses the set of potential talents and abilities of the individual to advance the organization. Also, the organization by activating the potential forces and talents of the individuals aligns them with the goals of the organization. Therefore, effective management of these valuable resources is necessary to achieve the goals of the organization. Regarding the need for empowerment skills in the health headquarters, one of the experts said:

"The issue of empowering others to be able to transfer their competencies to other people is very important" (P5).

- **Competencies related to analysis, interpretation, and reporting**

The set of skills of this category to collect, process, analyze, interpret, and reporting data provides significant assistance to health headquarters. Information analysis deals with the process of predicting events and probabilities, based on current data, which will happen in the future. Based on the interviews with their experts, these skills are classified into the following six themes:

- **Basic analysis skills**

The analysis is the breaking of a set into smaller pieces to better understand it. A basic acquaintance with statistics is essential for health headquarters. In this regard, one of the experts said:

"Health headquarters should be familiar with the statistics to some extent (basic for lower levels and advanced for higher levels). They should know statistics to give statistical analysis" (P22).

In the field of research, familiarity with the methods of conducting quantitative and qualitative research was another important issue for experts. One of the experts, while considering the ability to conduct qualitative research more important, said:

"The policymaker must be able to conduct qualitative studies and be fully acquainted with them. The discussion of ability in qualitative studies is important because many studies cannot be estimated quantitatively" (P9).

- **Topic or subject recognition skills**

Problem-solving, as a scientific concept, has key elements with specific definitions and concepts that while being aware of them, one can understand the problem and separate it from other similar concepts, as well as analyze different types of problems from different points of view. Regarding the importance of this skill in the health headquarters, one of the experts said:

"health headquarters who feed the policymakers and can identify issues in-depth, have a very important status especially in the service sector" (P20).

- **The skills of collecting, analyzing, and interpreting data**

Gathering information is one of the most important parts of any scientific process. If this is done regularly and correctly, the work of analyzing and concluding the data will be done with good speed and accuracy. One of the experts said about this skill and related abilities:

"The health headquarters should be able to collect and process information" (P16).

Another skill in this area is the ability to analyze. The analysis is the analyst's mental effort to simplify complex concepts, to understand the components of a phenomenon, to examine the relationship between the analyzed phenomenon and other phenomena, and to predict future developments. Regarding the importance of this skill in health headquarters, one of the experts said:

"A very important characteristic that both executive experts and health headquarters should have is analytical skills, that is, to be able to analyze issues well" (P24).

Interpretation is expressed by taking a critical position on a particular event or incident. The interpreter, by in-depth examination, presents various and relatively invisible aspects of the event to the audience. Also, depending on the expertise and ability of the interpreter to understand and respond to the needs of the audience, the roots of the event are identified and its possible consequences are anticipated. One of the experts said in this regard:

"Having the ability to interpret at this level is essential for the health headquarters. This skill is the ability to reveal hidden layers that are vaguely formed in analyzes and topics and require further explanation" (P13).

- **Problem-solving, solution-providing, and decision-making skills**

Problem-solving skills and abilities help people to solve problems that have occurred in their career path. One of the elites said about the importance and necessity of this skill in the health headquarters:

"He/she must be able to identify solutions to those problems. He/she must also know how to achieve these solutions, for example, he/she should be able to ask elite people for advice on the problem-solving or use other facilities" (P14).

Another skill that was considered by experts in this sub-theme was decision-making skills. Decision-making skills are the process of choosing a course of action from a variety of actions. The process involves using what you have (or can provide) to achieve what you want. In this regard, one expert said:

"Sometimes managers do not allow this skill to be strengthened in experts. That is, managers, think that an expert should only have the power to support decisions, but in my opinion, an expert should also have the ability to make decisions. That is, he should have the power to decide at the moment" (P3).

- **Follow-up analysis and getting feedback on implemented solutions**

Feedback is information that people receive based on their performance. This information includes messages sent by the sender of the message to the recipient of the message. Regarding the importance of using feedback skills (receiving and presenting), one expert said:

"Another ability is the issue of receiving and providing feedback after each decision. Receiving feedback from the manager, colleagues, and people who are influenced by the decisions, especially in the subordinate units, is very effective in improving an individual's performance" (P11).

- **Reporting and related skills**

Reporting is the writing of news, information, facts, causes of problems, and their logical and sequential analysis to achieve the correct solution. The report should be concise and clear. Regarding the importance of reporting skills of health headquarters, one of the experts said:

"In many cases, managers do not know what they want. If the headquarter is a creative one, he/she can create a decision feed for his/her managers. He must be able to manage crises. Many things that are done by the headquarters must be reported and completed quickly" (P8).

- **Competencies related to interpersonal relationships**

Carrying out any activity, including planning, organizing, coordinating, leading, and supervising, requires the establishment of these relationships. By strengthening flat organizational structures and transformational leadership styles, organizations' need for experts with interpersonal competencies also increases.

- **Communication skills**

Communication skills refer to the ability to communicate information to others effectively and efficiently, which can improve a person's personal and professional communication. It is communication skills that determine the effectiveness of communication.

Regarding the importance of this skill in establishing effective communication with the subordinate units, one expert said:

"If a headquarter is unable to communicate with the subordinate units he/she cannot convey his/her messages and instructions to them" (P1).

- **Teamwork skills**

Teamwork is one of the skills used to meet the challenges of today's competitive environment, as a way to increase organizational flexibility and achieve other benefits such as cost reduction, faster processes, innovation, effective decision making, higher work conscience, and better service. Regarding the importance of this skill at all levels of health headquarters, one expert said:

"Teamwork is not related to levels and status. Thus, all members should have this ability" (P3).

- **Networking skills**

The skill of building effective and constructive relationships is called networking. In networking, you connect with people with whom you want to share information, gain support, enter into deeper relationships, share your ideas and interests, or show a sense of belonging. Regarding the need for the experts who are familiar with networking, one of the experts said:

"High-level health headquarters must know networking and should be able to identify and use different networks because, at these levels, works cannot be done without networking" (P21).

- **Establish effective international communication and related skills**

Given that the issue of health is one of the topics for which no boundaries can be imagined, it is necessary to have skills related to communication at the international level. One of the experts said in this regard:

"Diseases exist all over the world. Therefore, we should be in constant interaction with the whole world and have the ability to communicate to exchange information. For example, given the nature of today's world, health headquarters should learn other languages and gain knowledge of other countries' systems through research" (P26).

- **Individual competencies**

The ability of each person to do different things is called individual skill. Individual skill is learnable and teachable and is acquired and improved through experience. So it can be said that skill is the ability to do a job or activity. Of course, sometimes this ability is related to the thoughts and vision of an individual and is not physical.

- **Creative thinking skills**

Creative thinking means the power to develop new solutions to problems, and this is another expression outside the framework of thinking.

Explaining the importance of this skill in the health headquarters, one of the experts said:

"The characteristic of this skill is that it helps other skills as well, meaning that the person is not content with just his own experiences and his thoughts are flexible so that he can try to create new things" (P12).

- **Having systemic thinking skills**

Systems thinking helps people examine the relation between structures, patterns, and events, and not just pay attention to the observations. Systems thinking is based on a kind of holistic approach that cannot be understood by analysis. Systems thinking focuses on how the subject interacts with other components of the system. One of the experts said in this regard:

"They must have a holistic and systematic view, that is, look at the issue through the entire health system and see their place in the health system, which requires knowledge about the health system" (P8).

- **Critical thinking skills**

Critical thinking means correct thinking in the pursuit of relevant and reliable knowledge about the world. Regarding the importance of this skill in the health headquarters, one of the experts said:

"One of the most important things is to have the ability to think critically. When we monitor, we give it credit, which means that our goal is to improve the process. Whatever our goal is, we must have critical thinking" (P3).

- **Skills related to ethics and moral values**

The issue of ethics has always been considered because of its scientific place in the culture of societies. One of the interviewees believed that the issue of professional ethics is a common skill that should be acquired by all those who work at every level of the health system. He said in this regard:

"Some competencies, such as ethics, seem to be common to all people working in the health system" (P2).

Another expert addressed the issue of responsibility and accountability and the importance of their existence as a skill related to ethics and said:

"responsibility and accountability are needed at all levels, but accountability is more needed at higher levels. It is something that many people do not have, of course" (P3).

- **Skills to develop individual capabilities**

Personal development is an effort and investment to develop individual skills. One of the experts said about the reasons for the need for this skill in health headquarters:

"Science is constantly changing. As a result, the health headquarters must be able to use the new sciences "(P9).

- **Individual management and related skills**

These skills help a person to manage and control himself/herself in a variety of situations. One of these skills is anger management, that is, learning to control anger and the skill of maintaining calm and composure. Another skill is stress management. This skill refers to a wide range of techniques and methods that are designed to control the level of individual stress, especially chronic stress, and improve a person's daily functioning. One of the experts said in this regard:

"It is very important for professionals working at this level to be familiar with stress management skills because they constantly face various pressures" (P11).

Conflict is inevitable in the organization and is not necessarily "unnecessary" for the organization. Conflict can increase creativity and promote innovation and change or may waste energy and resources of the organization. Therefore, the ability to lead and control the phenomenon of conflict in organizations is one of the most important skills. Another related skill is self-motivation skill. Self-motivation means the ability to motivate oneself to move forward. This issue was also of interest to the experts (P8) (P10).

- **Cultural and community competencies**

Culture is defined as a complex set of knowledge, beliefs, arts, laws, ethics, habits, and whatever one learns as a member of the community. Social culture is also composed of systematic subsets and elements such as values, beliefs, customs, and norms. There are different cultural systems in different societies. Also, there are subcultures within a large and wide cultural system.

- **Familiarity with community health culture**

A health culture is a coherent and systematic set of goals, values, beliefs, customs, and norms of a people belonging to a large community, ethnicity, or nation that leads to effective unhealthy and healthy behaviors. One of the experts said in this regard:

"Familiarity with the overall health culture program, which is a set of values, beliefs, and norms that meet the needs of everyday life, is very important for someone who works as a member in this organizational set" (P7).

- **knowledge about the health system**

The health system consists of all organizations, institutions, and resources that provide services to maintain and promote the health of individuals. The need to get acquainted with this system is important

for the health headquarters. One of the experts stated in this regard:

"The health headquarters should be familiar with the structure of the health system. When a person works in the Ministry of Health, he must know what components the health system consists of and what its pillars are and be familiar with the process" (P9).

- **Advocacy and related skills**

Many health programs designed to change behavior are not possible without reforming the minds of decision-makers and changing public policy. One of the experts said in this regard:

"Another skill needed by health headquarters is to know the situation and structures outside the health system. They should seek support and advocacy from and interact with other existing social organizations so that they move them in the direction of health goals" (P6).

- **Familiarity with the structure of international health**

The health systems of each country are affected by international organizations involved in the field of health. According to one of the experts, familiarity with international organizations involved in the field of health is one of the competencies required by health headquarters. He said in this regard:

"Experts should be familiar with various international and domestic issues in their field. For example, they should follow the news of the World Health Organization and be aware of the information and news inside the country so that they can update their information. They must acquire these skills at the level of macro-politics" (P10).

- **Competencies related to administrative activities in the health sector**

Working in the public health environment requires a set of skills, abilities, and knowledge that the lack of any of them can lead to dysfunction of experts.

- **Familiarity with the related rules, regulations, and guidelines**

Familiarity with the related rules, regulations, and guidelines provides a clear picture of duties and responsibilities. Familiarity with the rules is considered a relative and general requirement for experts in the current situation, and the lack of initial knowledge will cause huge losses and unpleasant events. One of the experts said in this regard:

"Since health headquarters prepare regulations in the organization, so they must be familiar with the legal basis of the creation of these documents, otherwise the organization will faces problems" (P6).

Familiarity with the related rules, regulations, and guidelines was also considered as an undeniable necessity from the perspective of experts (P8), (P2) and (P4).

- **Familiarity with administrative correspondence**

Administrative correspondence is the official language of the organization and will lead to the success and development of the organization. Therefore, administrative correspondence plays an important role in the administrative structure. It also indicates the level of knowledge and expertise of experts and managers of the organization. One of the experts said in this regard:

"The skill of doing administrative correspondence is very important for someone who works in the headquarters. There are problems at all levels. Familiarity with administrative correspondence and knowing the hierarchy of correspondence are of the most important skills" (P4).

- **Familiarity with computer science and related software**

Every employee, regardless of his/her position, should be familiar with a series of specific skills to use technology practically. One of the experts said in this regard:

"Another important issue is the familiarity of health headquarters with different software" (P10).

- **The skill of honoring the customer**

Proper communication of experts of public and private organizations with the client and providing services to them through desirable and appropriate methods, plays an effective role in improving the quality of services and customer satisfaction and correction of their view toward the relevant organization. One of the experts said about having this skill in the health headquarters:

"Being customer-oriented, the customer of here can be experts in other areas, and not just outsiders, so this is also important. The relationship with other clients is also very important. Being customer-centered and customer-oriented are important capabilities " (P10).

Descriptive results of the third stage: designing a proposed model of competence of health headquarters

According to the results obtained from the analysis of the results of the previous steps, the competencies extracted for each level of health headquarters were determined. The summary of the results obtained from this stage of the research can be seen in Table 2

Descriptive results of the fourth stage: Validation of the proposed model of general competencies of health headquarters by Delphi method

After analyzing the data obtained from the Mini-Delphi stage, interviews and meta-analyses of six themes and thirty-eight sub-themes were obtained to design a model of general competencies to recruit health headquarters. By merging the elements and components obtained from the previous steps, duplicate cases were removed and similar cases, which were mostly cited in the obtained evidence, were extracted. Finally, a questionnaire was designed to conduct Delphi based on the criterion of the need for competency at each level. After sending the questionnaire, 15 questionnaires were completed and collected. About 60% of the participants in this stage were women. Most of the participants had a Ph.D. degree (73%).

After analyzing the results obtained from the first Delphi stage regarding the competencies required by the experts of the third level of the headquarters, all (100%) of the competencies were approved (average agreement scores above 75%). Regarding the competencies required by the second level of health headquarters, 29 competencies out of 38 items were approved in the first stage of Delphi (65.8% of the competencies). 9 competencies entered the second Delphi stage (average agreement scores below 75%) in which seven items were approved. Also, the two items "Planning and related skills" and "Problem-solving, solution-providing, and decision-making skills" were removed from the set of competencies required for this category (average agreement scores less than 75%). Also, regarding the competencies required by the first group of health headquarters, all 13 categories of competencies were agreed upon by the respondents in the first Delphi stage.

Finally, in the third stage of Delphi, to determine the level of competencies required by each group of experts, three-level questionnaires (high level, medium level, low level) were designed and sent. 15 answers were obtained at this stage. Then, based on the method mentioned in the third chapter, the required level of each competency in each group of experts was determined.

Finally, after applying the opinions of respondents in the Delphi stage, the final competency model of the health headquarters was redesigned. Fig. ... shows the final model of the general competencies of the health headquarters.

Discussion

The technical capacity of health headquarters is needed to translate policies and decisions into effective executive processes. Just as the health system needs specialists and clinical experts, it needs experts with the ability to make policy, plan, and use evidence and data to adopt appropriate procedures to achieve its goals. According to the study, six main categories of competencies including (1) leadership and management, (2) analysis, interpretation, and reporting, (3) interpersonal relationships, (4) individual competencies, (5) cultural and community competencies, and (6) public health competencies were finally extracted.

The results of this study showed that the main focus should be on management and leadership skills in health headquarters. Given that this group of experts has a major role in supervising and directing the human resources of health-related organizations, these capabilities have been considered in many health-related and non-health-related organizations (29). Other studies in this field, while confirming the role and necessity of this competence in health headquarters, also emphasize the need to strengthen this competence in them (30). Another skill required by health headquarters is the ability to make policies. These are the competencies required by high-level experts in the health sector. Other studies have also pointed to the need for this ability (31, 32). Planning skills are also essential for high-level and medium-level health headquarters. Since designed programs play an important role in community health, it has been emphasized in many studies (33–35). Also, the ability to restructure according to the emerging needs of the health sector to improve effectiveness and equity in health is one of the capabilities needed

by experts in this sector, which has been mentioned in studies (36, 37). Also, one of the important challenges in the health sector is the limited financial resources in this sector. The emergence of emerging diseases such as COVID-19 and financial crises has had a direct impact on the health system. Therefore, experts in this field must have the ability to deal with these problems and achieve optimal solutions to deal with them. This requires financial knowledge and related skills (38, 39). Also, the health system will not be able to change the organization in line with the goals of health policies. Meanwhile, the existence of experts with the ability to manage change in health headquarters is a necessity of health sector organizations. This issue has been emphasized in other studies (40, 41). Another skill needed by health headquarters is control management. Once the expert knows what the criteria are, what the behavioral and performance criteria are, and what the standard is for performance, efficiency, and effectiveness, then he/she will be able to judge these criteria (42). Another competency is time management. Given the sensitivity of the health sector and the importance of time in performing the duties of the experts working in this sector, this competency is required for all levels of expertise. In one study, this ability was introduced as a factor in improving performance and reducing stress in experts (43). Also, due to the limited resources available in the health sector, having the ability to manage resources is one of the most important competencies of this group of experts. The health headquarters with these capabilities will be able to efficiently and effectively develop the organization's resources at the right time. This competence has also been considered in studies (44). Today, understanding and applying the empowerment strategy is an obvious goal to promote the health of communities. There is ample evidence in most developed countries that bottom-up activities have a positive effect on the development and promotion of health in society (45, 46). The health headquarters should be able to manage performance, given the nature of their duties and being in touch with other health-related departments. This issue has been considered in many developed countries and the need to provide the prerequisites for creating this competency in health organizations has been mentioned (47, 48). Knowledge management in the health sector is of undeniable importance. The health sector is increasingly becoming a knowledge-based community. Therefore, considering the role and position of the health headquarters, the existence of this ability in this group of experts seems necessary. This has been emphasized in many studies (49–51).

Competencies related to analysis, interpretation, and reporting are used to analyze simple or complex, structured or unstructured, and quantitative or qualitative data for specific purposes of understanding, forecasting, and optimization (52). In other words, the analysis process creates a data product - large or small - that provides input to another process (53). The existence of structural complexity has faced health systems with a multitude of management challenges and issues. Meanwhile, research can play an important role in generating knowledge, information, and guidelines to solve the problems of the health system. In confirmation of this issue, a study has emphasized the role of research and related competencies in the performance of health headquarters and the need for education and learning in universities and before entering the system (54). Finding problems in the organization by employees requires some skills. Therefore, if they have those skills and have sufficient knowledge in this field, the existing problems will be better identified. In this regard, a study while explaining the importance of

problem-solving and research skills, has emphasized the need to learn and apply these skills by health headquarters (55). Today, much information is produced in the health headquarters organizations, which is used without organization and with low quality due to the weakness of the skills of the experts in this sector. Therefore, developing skills related to information management is of considerable importance (56). Experts should be able to use a systematic and step-by-step approach to making decisions tailored to the circumstances of the sector. The existence of this set of skills is important to face different issues of the advancement of health headquarters, which have been mentioned in various studies (57, 58). Reporting is one of the most important skills in content production and mastering or not mastering it can change the fate of content production activities. The preparation of the smallest organizational documents is also an example of reporting. Almost any written activity in the business environment can be considered as reporting. regarding the nature of the duties of health headquarters, this skill is required for all levels of expertise.

Another category of competencies is related to interpersonal skills. The proper functioning of health-related organizations requires the establishment of effective communication with people in the community and the use of social interactions to improve health indicators. The combination of these skills helps the health headquarters to be able to create a common sense with people in the community, to communicate with them, and to take steps to meet their health needs. This skill has also been emphasized in many studies and has been mentioned as a prerequisite for performing tasks for experts (59, 60). Therefore, another skill required by health headquarters at all levels is teamwork skills. Teamwork skills help the members to work collaboratively with each other to achieve goals without relying on formal organizational relationships and individual positions on formal charts. Besides, considering the nature of activity in the health sector, which requires a high ability to work in groups, as well as the existence of different and interdisciplinary specialties, various studies have pointed to the importance of this competence (61, 62). Today, one of the work strategies is networking skills that are achieved by developing and maintaining relationships with people who can create work or resources. In a study, while emphasizing the importance of this skill in experts, its role in creating social support and advocacy, accelerating the receipt of the required information at the organizational level, and creating more desirable job opportunities at the individual level (63). Another category of competencies required is individual skills. These skills are not inherent, so they can be acquired and expanded through acquisition. One of the competencies obtained in these studies is self-awareness skills. The familiarity of experts with their characteristics, strengths and weaknesses, desires, and other personal characteristics is a skill that experts at this level should have. This skill acts as part of an individual's emotional intelligence along with other components such as self-control, and social skills (64). Also, some studies have shown the relationship between the performance of individuals and this skill in the organization. (65) The existence of creativity and innovation is also of great importance for high-level experts. Attention to creativity and innovation skills in health headquarters has been emphasized in various studies (66, 67). The healthcare environment contains a variety of social and cultural subsystems that operate in an environment full of chaos and complexity. Paying attention to the components and details of the health system cannot guide health headquarters on how the components interact with each other and with other factors in the health

environment. Therefore, the need for system thinking skills in high-level health headquarters is undeniable. The development of system thinking to better understand the health system is one of the cases mentioned in studies (68). Also, having the skill of critical thinking - the existence of rational thinking along with rethinking - that influences decision-making about beliefs and practices is one of the competencies required by health headquarters. The results of a study show that this skill requires knowledge and development that a person must have acquired before entering the system (69). Another important skill is ethics and related skills. Since all the decisions and actions taken in this system have consequences related to the health of each member of the community, the attention and familiarity with the issues are required by the health headquarters. A study points to the importance of observing ethical principles and standards in various sectors of health, as a factor to improve the services and quality of work of human resources working in this sector (70). The ability to develop individual capabilities is one of the individual competencies required at all levels. The occurrence of many conflicts and job stresses at this level of experts makes essential the existence of a set of individual management skills such as conflict, stress, and anger management at all levels of expertise. According to the results of a study, experts in health care organizations due to the nature of work, lack of resources, demand, and high expectations of their clients, should have an appropriate level of personal management. (71).

Another category is cultural and community competencies. Since culture affects many aspects of human life, there is no doubt that it also plays an important role in shaping people's behaviors, beliefs, and health values. Therefore, health headquarters should be able to communicate effectively with different cultures to be aware of the needs of their community (72). Besides, the existence of basic knowledge of public health is essential to better understand the conditions governing this system. The health headquarters should be familiar with existing goals, strategies, structures, and procedures to help the health system achieve its overall goals by combining this knowledge with other skills (72). Also, the health system of a country or region cannot be considered a separate part and without being affected by the global health system. Therefore, these experts should have a broad insight into global health and the factors involved (52). Also, many programs designed in the field of health cannot be done without modifying the views of decision-makers. The success of the above projects requires the full support of individuals, organizations, and key sectors of society in health programs. Therefore, advocacy skills are among the important needs of high-level experts. The issue of advocacy in health has been mentioned as one of the important skills for health headquarters in studies (73, 74). Also, gaining social participation as an effective strategy in promoting health is another required competency in this field. Studies have emphasized social participation in the development of their health (75, 76).

There are some obvious skills that experts should have regardless of where they work. Familiarity with administrative rules and regulations and its observance facilitates and accelerates the circulation of administrative affairs of the experts and the administrative activities of the organization (77). Also, in organizations, if the experts are not familiar with the basics of computers, and do not have the knowledge to use general software and operating systems, they will create many problems for their organization over time. Another skill required by health headquarters at all levels is customer orientation. According to the results of a study, customer-oriented organizations are more satisfied with their customers than

organizations that do not have this type of orientation. This competency will have long-term material and immaterial consequences for the organization (78).

Limitations

The main limitation regarding the application of the findings of this research is that the use of competencies obtained from this research requires the existence of a comprehensive competency-based management system in countries. Despite the efforts made by the researcher, this system is not used coherently in the health sector of many countries, which may limit the use of the results of this study.

Conclusion

The dimensions and components of the competencies extracted based on the levels of experts, as well as the level of competencies required by each group of experts, can act as a guide for policy-makers and managers related to human resources in the health sector, and help them adopt appropriate strategies for employing and training health headquarters. Health headquarters play a major role in supervising and guiding human resources and improving the efficiency and effectiveness of activities of health-related organizations. Therefore, taking the necessary measures to recruit high-level experts with the optimal level of competencies related to leadership and management is very important. However, since this category of abilities in individuals is greatly influenced by the level of their skills in individual abilities, interpersonal relationships, and other skills, it is important to pay attention to other dimensions related to employee competence. Another issue is that the duties of health headquarters who are recruited to work at the highest level of the organization are influential. Therefore, this group of experts must have high-level competencies to achieve the goals of the health system. However, according to experts, having these high-level skills and competencies requires knowledge and work experience in other units of the relevant health sector. In other words, these experts must have experience working in related departments and also have the necessary knowledge in their field of activity when are recruited at headquarters.

Abbreviations

HRH: Human resources for health

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

SRQR: Critical appraisal tool results for qualitative studies

SDGs: Sustainable development goals

Declarations

Ethics approval and consent to participate

This article was undertaken as part of Ph.D. research. The project has been approved by Iran University of medical sciences Ethics Committee, No: IR.IUMS.REC 1397.441.

Consent for Publication

“Not applicable”

Availability of data and material

The datasets used during the current study are available from the corresponding author on reasonable request.

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Authors' Contributions

Data gathering+interviews: HF, MB. Analysis: HF, MB, and HG. Methodology: HF, HG and FG. Writing + original draft: HF, MB, AF, FG. Writing + review & editing: HF, MB,AF, and HG. Supervision: HG. Also, all the authors reviewed the draft and approved the final version of the manuscript. All researchers had experiences in field of HRH.

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