

Competency Model Promotion for the Managers of Health System in the Ministry of Health and Medical Education

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Abstract

Introduction: In the current turbulent world of business, organizations have to try and compete to identify, attract and retain the most qualified managers as a competitive advantage. One of the most significant areas of a country is its health sector. Undoubtedly, the policies of senior and middle managers of the Ministry of Health and Medical Education play a pivotal role in the health system. Therefore, it is necessary to determine the required competencies for managers to improve efficiency and quality of services. This study aimed to design a competency model for selecting and appointing qualified people in the Ministry of Health and Medical Education. A comprehensive model in this regard can be useful in selecting and appointing qualified people for the tenure of organizational positions in the realm of health.

Materials and Methods: The present study is explanatory and survey-based and employed a mixed method (qualitative and quantitative) approach. First, semi-structured interviews and content analysis were used to identify the variables. Then, structural equation modeling was measured using a quantitative questionnaire. The statistical population was all managers of the Ministry of Health and Medical Education in Tehran; fourteen of them were selected through snowball sampling.

Results: The extracted model has five levels including competency dimensions, competency approaches, competency large-scale fields, factors related to competency, and different types of competencies. The results showed that the professional-operational component had the highest ranking and effects on the achievements of managers.

Conclusion: The results showed that interactive and professional-operational skills had the highest ranking among other components.

Keywords: Competency, Competency model, Health system managers.

1. Introduction

Selecting and employing the most competent individuals for a position is one of the most important issues and decisions in the management of the Ministry of Health. The crucial point is to reach a detailed and appropriate list of competencies required by managers

at different levels in a particular organization. Unfortunately, the issue of professional competencies and competencies of experts and involved persons has been underexplored in the health system of Iran in the form of a national and native model. Therefore, given the necessity of having a standard and native model concerning the developments of cultural, political, social, and industrial environments around the

Ministry of Health and Medical Education, this study attempted to design and formulate a model of competencies to professionalize managers with the cooperation of professionals. The aim was to help the experts and involved persons in the country develop their knowledge and skills and select eligible and qualified people for important positions in the Ministry of Health and Medical Education.

Problem Statement

In recent years, exploring managers' competencies through extracting competency models for big organizations inside and outside the country have become the focus of much attention. Paying attention to the managerial competencies, especially in the human resources of the governmental sections, is vital [1]. Competency, by definition, refers to behaviors and knowledge such as professional skills, vocational guidance, feedback, and self-instrument [2]. A group of competencies specifies the superior leadership in an organization. Nowadays, human-resources experts believe that competency may provide a common language to analyze personal achievements and prepare significant criteria to evaluate performance better and more effectively [3]. Thus, organizations prepare specific competency models to attract, promote and appoint managers [4]. Shiu (1998) argues that defining and explaining competencies, especially needed for crucial occupations in an organization, has more priority than other measures for human resources management. Therefore, various companies are applying and implementing competency frameworks and models as significant resources for the success of human resources, particularly for managing talents and managers' succession planning. The competencies model supports organizational landscape and strategies and provides a framework for organizations to select, develop, and evaluate their leaders. A competency model is a descriptive instrument that specifies competencies for a specific role in a job based on the type of occupation and organizational environment [5]. Over the past two decades, competency models have been widely used by organizations. These models highlight the differences between distinguished and intermediate managers and play significant roles in the global competitive environment. Competency models are more pervasive than efficient approaches.

The current study has been conducted to fill a gap and has made an attempt to represent competency model for managers. We need new skills for ever-changing roles in organizations during this period of persistent alterations. Competency models provide an instrument to determine current and future needs.

Moreover, they lead to efficiency and cost reduction in the organizations. The present study aimed to investigate and represent the dimensions and components of managers' competency model in the Health System. Competency refers to personal knowledge, skills, abilities, and features considering the opinions of most researches and human resources experts. A competency-based approach will make human-resources processes more efficient in an organization and facilitate the achievement of objectives and landscape in an organization. Competencies approach will motivate staffs to develop their repertoire of skills. This approach can be used in different working situations and prepares individuals for organizational changes [6]. The lack of competency models highly influences the development of the workforce. Without such models, individuals may be evaluated insufficiently; operational gaps may not be measured, and educational programs may not suitably respond to real performance needs [7]. Above all, a combination of technical competencies and interactive management are fundamental as well.

The current study was conducted to fill a gap by providing a competency model for managers.

The Related Literature

1-Reviewing the related literature demonstrates three main approaches for managerial competencies as what follows:

Behavioral Approach: It defines competency based on behavioral expressions and mainly introduces behaviors related to high performance. In the Behavioral Approach, competencies are generally classified into five groups: logical-rational, leadership and management, motivational-interactive competencies, personal and individualistic, and process and product-orientation competencies [8].

2-Standard Approach: This approach introduces the minimum standards of performance to ensure the determined quality of a job and emphasizes the real standards of a job, that is the job itself and not the employee. It also shows that good performance demands specific standards. The importance of knowledge, personal characteristics, and the role of environmental situations have been ignored in this approach [9].

3-Contingency Approach: As a subset of the Behavioral Approach, this approach focuses on the effectiveness of situational factors on the personal competencies of managers and introduces a relationship between definite situational factors and

competencies needed in acceptable management performances [10].

Self and colleagues have suggested the ACHE model in their study to show competencies needed by managers in a health system. They categorized the competencies into five critical domains: relationships and communications management (including relationships management, communicational skills, and facilitation and negotiation), leadership skills (entailing leadership behavior and skills, organizational culture and atmosphere, communicational vision, and change management), professionalism (comprising personal and professional accountability, professional development and long-term education, and helping society and health system), knowledge of health environment (encompassing health systems and organizations, health personnel, patients' views, community and environment, and knowledge skills and work skills (incorporating subsets of general management, financial management, human resources management and organizational dynamism, strategic programming and marketing, information management, risk management, and quality improvement.

Shewchuk Competency Model

Shewchuk and colleagues first listed the problems of hospitals to design their model and categorized those problems into five groups. Then, they identified the necessary competencies in solving such problems and classified them into five categories, from the most important to the least important ones including: focusing on patient or customer, health operations management, economic and financial issues, ethical, legal and political issues, and physicians and personnel relationships. Then, 72 experts were asked to score each of these competencies. Unlike the first chart designed by a panel of experts, physicians and personnel relationships with 51 scores ranked as the most significant skill. Health operations management with 42 scores, ethical, legal, and political issues with 40 scores, focusing on patient or customer with 39 scores, and economic and financial issues with 34 scores were placed in the next positions, respectively.

Competency Model of Canadian College of Health Service Executive (CCHSE)

The CCHSE model was first introduced by McKinnon and colleagues, in which 31 competencies were categorized into nine groups. Then, 458 hospital managers and health experts prioritized them. Communication and perceptual skills got the most average score. The next five influential items were: coaching, listening, flexibility in changing

management, oral communications, and commitment to the customer; all of them were subsets of leadership and communications. Long-term learning was the least significant one. The five least meaningful competencies included: commitment to the profession of health service management, valuable resources management, agreement promotion on standards, teaching and coaching the staff, and monitoring environment processes to predict their effects on an organization. Commitment to the profession of health management was prioritized as the least meaningful competency. The participants answered the following open question at the end of the questionnaire: "What competencies have not been mentioned in the list?" where they then suggested the following competencies: striking a balance between family life and occupational life, valuing energy and creativity, evaluating emotional intelligence, developing cultural and interpersonal sensitivities, and appreciation

Fillerman Human Resources (HR) Competency Model

He has classified 35 competencies into three groups of human resources competencies, general management competencies, and senior management competencies. Unlike other models, skills are divided based on the level of managers in this model. In other words, the human resources department must have a competent manager with high performance and ability to select qualified people for the health system. General management skills are necessary to enable high-ranking managers to respond to the results of the operations. Senior management competencies are also applicable at the middle and senior levels of the organization. Robbins Competency Model has categorized 52 competencies into four groups through open interviews with 11 health experts and investigating extensive texts. These four groups are:

1. Technical skills like executing, financing, information resources, human resources, and strategic programming.
2. Knowledge related to the industry like medical processes and health service institutions.
3. Perceptual skills.
4. Emotional and interpersonal intelligence analysis.

Anguse Competency Model

Anguse and colleagues classified skills and abilities needed by health service managers into six groups including communications, analytical skills, leadership, human relationships, computer knowledge, and other skills titled conflict resolution, decision making, flexibility, teamwork, openness to

criticism, financial issues management, networking, efficiency management, and patient's information management.

Lane Competency Model

Lane and colleagues have also classified crucial competencies of managers into four groups: representing health services (including health programs design, management, and evaluation to promote health of the population under the coverage), financial resources management (encompassing using financial and commercial management techniques to ensure representing health services as cost-effectiveness), organizational management (managing an organization or the unit representing health services based on the rules), and ethical and financial considerations (ensuring ethical principles in health services).

2. Materials and Methods

According to Seneca (2016), Berman (2006), and Berman and Bell (2007), positivism and interpretivism are two common approaches in social studies. This study is more approximate to the principles of the interpretative paradigm employed grounded theory stressing the creation of theory from data and with no predetermined and presupposed theoretical frameworks [11]. Since it aims to prepare competency pattern and model, it will be considered a research-exploratory study. It is a developmental and qualitative study employing content analysis to extract data. There are three traditional, guided, and abridged approaches for content analysis [12].

The statistical population involved all qualified and experienced headquarter managers, thematic experts, and operational experts (the head of the fiscal affairs and provincial assistants and managers) of the Ministry of Health and Medical Education in Tehran; fourteen of them were selected as the sample through snowball sampling method. In order to achieve theoretical saturation, the interviews continued until no more new data were extracted. The archival studies, semi-structured interviews, and questionnaires were used for collecting data. Each interview took about 35 minutes for each person. The validity and reliability of a qualitative study depend on the researcher. Consequently, since the researcher used the interview method and clearly explained everything to the interviewees before the interview sessions, the current research enjoys reliability [13]. The study is valid as well since the researcher has paid enough attention while interpreting the results through benefiting from the opinions of the related professors.

In the first stage and in order to design a model for the promotion of health managers, qualitative content analysis was used in the research data analysis, which included familiarization with the data, primary codes, content search, content reviews, content definitions and naming, and report preparation.

3. Results

Describing the Process of Preparing Competencies Model

There are three adaptive, adaptive-designs, and design approaches in designing competencies model [14]. The current study has used a design approach. The process of preparing the competencies model of fiscal agents and validating them included the following stages:

Initial Programing

The subjects, the process, and the method were selected considering philosophical basics, dominating values and paradigms, organizational purposes and strategies, competencies definition, approaches, model applications, and components, and the types of competencies and criteria to extract them.

Preparing the Initial List of Competencies by Focus Groups or Personal Interviews. The initial codes of the competencies, list 1, were collected after investigating and interviewing the expert group using the content analysis method to identify personal, occupational, organizational, and other competencies. 142 descriptive codes were obtained from the results. Table (1) shows the characteristics of the interviewees

Comparing the List with the Existing Competencies Lists and Models. The initial codes of competencies were compared with the findings of the previous studies. Then, some new components were identified and added to the initial list, resulting in the development of list number 2.

Defining Competencies Concepts and Preparing List Number 3. Here, the researcher investigated the integrated competencies of lists, number 1 and 2.

Then, the draft of list number 3 was prepared, coming from the interviews and other resources, and was classified in the form of competency concepts considering conceptual proximity.

Evaluating and Monitoring Competencies List by Experts Group. List number 3 was prepared in the

Table 1. The interviewees' descriptive data

Interviewee's characteristics-Position	The extracted code	Working experience	Gender	Education
Deputy Director General for Budget of the Ministry of Health	11	27	Male	PhD
Deputy Director General for Budget of the Ministry of Health	12	30	Male	PhD
Support Manager of Shahid Beheshti University of Medical Sciences	9	22	Male	PhD
Financial Manager of Shahid Beheshti University of Medical Sciences	10	31	Male	MA
Charity Manager of Shahid Beheshti University of Medical Sciences	8	33	Male	PhD
Log man-e Hakim Hospital Manager	13	13	Male	MA
Financial Manager of Razavi Khorasan University of Medical Sciences	7	25	Male	PhD
Support Deputy Director of Emergency Department	12	28	Male	PhD
Head of performance Monitoring Group of Shahid Beheshti University of Medical Sciences	11	16	Female	PhD
Mofid Children's Hospital Manager	15	23	Male	PhD
Financial Manager of Education Assistance Faculty of Azad Islamic University Of Yazd	5	18	Male	BA
The Manager of Transplantation Office of Ministry of Health	20	14	Female	PhD
Faculty Member of University and Executive Consultation of Education Assistant	12	24	Male	PhD
	9	25	Male	PhD

form of a questionnaire containing 48 items to validate the codes and assure they were the desired ones by the experts.

The responses to the questionnaires were evaluated from the most positive effect (+5) to the most negative one (-5) on competency in the achievement and performance of health system managers. The zero column of the questionnaire meant the lack of relationship between the competency and the achievement of fiscal agents. Data collected from the questionnaires were analyzed using SPSS v21. Table (2) shows the relationship between the concepts and the achievement of health system managers.

Preparing Competencies Model

After repetitively monitoring and removing the ineffective concepts or concepts with similar effects, the achieved categories have been integrated based on constant comparison logic at a more abstract level. Diagram 1 shows the model resulting from this screening.

Friedman's nonparametric ranking test was used to compare and rank variables. Friedman test is

an ideal statistical tool to use for intra-group designs (dependent samples). This test is a generalized version of the Wilcoxon test and is known as the nonparametric equivalent of the repeated measures test. The test is used for a group of individuals or subjects assessed in at least two conditions or at two intervals. In fact, it attempts to compare score variations (median) across several situations or intervals (2 or more). The measurement level of the variable in this test must be sequential. Researchers generally use this test to rank or prioritize variables. According to the Friedman test results, in the process of competency ranking, as presented in Table [3], interactive skills (average rank: 11.34) and operational-professional skills (average rank: 10.70) have been identified as the most significant factors.

The following section includes the ranking of the extracted concepts and topics. According to the results presented in Table [4], managerial experience, continual learning, and responsibility got higher rankings and significance. The statistical significance of the variables is shown in the Table below.

According to the results, chi-square (160.7) stands lower than 0.05 error level in Table 5. The results of

Table 2. The relationship between the concepts and the achievement of health system managers

Concept	Number	Min	Max	Mean	SD	Concept	Number	Min	Max	Mean	D
Managerial experience	14	4	5	4.14	0.46	Strategic thinking	14	4	5	4.78	0.86
Observing considerations	14	1	5	3.98	0.94	Attractiveness	14	3	5	4.57	0.86
Paying attention to upstream documents and plans	14	3	5	4.20	1.1	Modeling	14	3	5	4.5	1.32
Perseverance	14	3	5	4.76	0.83	Decisiveness	14	3	5	4.5	1.43
Intra-organizational verbal communication	14	4	5	4.42	0.86	Succession	14	3	5	4.64	1.46
Inter-organizational verbal communication	14	4	5	4.71	0.54	Up-to-date information	14	4	5	4.21	0.36
Intra-organizational non-verbal communication	14	3	4	3.64	0.56	Familiarization with processes	14	4	5	4.85	0.62
Inter-organizational non-verbal communication	14	4	5	4.14	0.48	Common decision making	14	2	4	3.14	1.45
Making learning space in subsets	14	3	5	4	1.66	Systematic thinking	14	2	4	3.42	0.97
Written communications	14	3	5	4.35	0.52	Accuracy and speed in problem solving	14	4	5	4.78	0.28
Supporting spirit	14	3	5	4.57	0.82	Performance evaluation	14	3	5	4.57	0.81
Giving and taking feedbacks	14	3	5	4.78	0.76	Clarity in contacts	14	4	5	4.42	0.41
The value of thinking about oneself and one's thoughts	14	4	5	4.85	0.46	Time management	14	3	5	4.71	0.82
Solving discussions	14	4	5	4.57	0.25	Computer skill	14	3	4	3.34	0.76
Awareness of health environment (processes/subject)	14	2	5	4.85	0.66	Personal feature	14	3	5	4.71	0.88

Coaching	14	3	5	4.76	0.92	Knowledge management	14	4	5	4.84	0.34
delegation of authority	14	4	5	4.84	0.31	Motivation in achieving job	14	4	5	4.64	0.25
Criticisable	14	4	5	4.87	0.45	The ability to confront with challenges and coping with them	14	4	5	4.74	0.19
Hopefulness	14	3	5	4.45	0.67	Cultural intelligence	14	3	5	4.42	0.52
Constant learning	14	3	5	4.85	0.77	Health operations management	14	3	5	4.85	0.38
Responsible	14	3	5	3.54	0.65	Creative thinking	14	4	5	4.62	0.49
Entrepreneur	14	2	4	3.42	0.8	Relationship development	14	4	5	4.71	0.36
Awareness of international process	14	2	3	2.64	0.86	Organizational self-awareness	14	3	4	3.64	0.88
Programmer	14	3	5	4.24	0.86	Networking	14	3	5	4.54	1.22
Making team spirit and team working	14	3	4	3.64	1.21						

the Friedman test show that health managers' competencies stand at a significant interval in rankings.

Table 3. Ranking competency dimensions

Competency components	Ranking average	Competency components	Ranking average
Professional-operational skills	10.7	Research-based	4.87
Interactive skills	11.34	Environmental competency	9.12
Human skills	9.67	Managerial competency	10.29
Behavioral	5.67	Personal competency	8.38
Value	6.65	Managerial competency	9.45
Strategy	5.09	General competency	7.75
Contingency	6.45	Leadership competency	8.23
Occupational competency	7.21	Problem solving skill	6.89
Number	14	Degree of freedom	16
Chi-square	78.421	p-value	0.03

Table 4. Ranking the importance of chairman competencies concepts

Concept	Ranking average	Concept	Ranking average	Concept	Number
Managerial experience	33.46	Strategic thinking	24.78	Giving and taking feedback	21.19
Observing regulations	30.23	Attractiveness	31.76	The value of thinking about oneself and one's thoughts	15.85
Paying attention to upstream documents and plans	26.51	Modeling	21.54	Solving discussions	31.23
Following-up	18.46	Decisiveness	27.76	Awareness of health	21.49

				environment (processes/themes)	
Intra-organizational verbal communications	20.01	Succession	20.78	Time management	33.46
Inter-organizational verbal communications	19.92	Up-to-date information	18.98	Computer skill	10.18
Intra-organizational non-verbal communications	17.82	Familiarity with processes	24.78	Personal feature	29.46
Making team spirit and team working	21.96	Common decision making	29.87	Knowledge management	30.21
Inter-organizational non-verbal communications	16.98	Systematic thinking	25.45	The ability to confront with challenges and coping up with them	21.22
Making learning space in subsets	20.6	Accuracy and speed in problem solving	21.34	Cultural intelligence	18.32
Written communications	28.66	Performance evaluation	14.76	Health operations management	28.91
Supporting spirit	30.67	Clarity in contacts	29.45	Creative thinking	26.63
Coaching	29.89	Entrepreneur	31.3	Relationships development	19.67
Delegation of authority	31.98	Awareness of international process	11.34	Organizational self-awareness	21.45
Motivation in achieving job	12.67	Programmer	10.31	Networking	23.43
Critic sable	19.67	Constant learning	33.46		
Hopefulness	23.76	Responsible	33.46		

Table 5. The summary of Friedman nonparametric test results

Number	14
Hi-square	160.87
Degree of freedom	48
p-value	0.002

4. Discussion

The extracted model includes four levels of competency dimensions, competency approaches, competency in large-scale fields, and factors related to competency. The main three components of the first level include professional-operational skills, interactive skills, and human skills. The second level includes 16 competency components shown in Table (2) and diagram (1). According to the results, professional-operational skills hold the highest ranking in the achievement of managers. Managerial experience, observing regulations, paying attention to upstream documents and plans, following up on affairs to achieve results, verbal and non-verbal inter-organizational and intra-organizational communications, and the ability to interact with other parts come after [15].

The first question of this study was: What are the

competencies of health system managers? This was divided into two more sub-questions: What are the dimensions of health system managers' competencies? And what are the components of the dimensions of health system managers' competencies? The initial model was designed based on the responses to the questions, the interviews, and the content analysis. Then, it was validated using experts' opinions. The extracted model includes competency fields, competency dimensions, and competency concepts.

Generally speaking, competencies are classified based on conceptual proximity and similarity. Thus, many previous studies have represented components (dimensions) and concepts as scattered and without the same weight where competency dimensions have been juxtaposed with competency components and introduced at one level. One distinguishing feature of the current model is its three levels. Although Vecoul

and colleagues (2001), Al-Baz and Al-Saegh (2010), Zahedi and Sheikh (2010), Houshyar and Rahimnia (2013), and Farhady and colleagues (2014) have already suggested three-level models, their levels are different from those of the present model.

5. Conclusion

The results showed that interactive and professional-operational skills obtained the highest ranking.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Author's contributions

All authors have equally contributed to the preparation of this article.

Conflict of interest

The authors declared no conflicts of interests.

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