

Core competencies for academic leaders in Iran University of Medical Sciences

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Introduction: Integrated educational, health, and medical services necessitate the development of high-competent academic leaders in medical universities of Iran. Most organizations attempt to limit the total number of competencies to a rational number and consider the most important competencies. Therefore, the purpose of this study was to determine core competencies which can be improved through development programs for the academic leaders in Iran University of Medical Sciences.

Methods: This study was conducted in two phases. The first phase was the critical review based on Carnwell and Daly's approach. The search time was from 2000 to 2017. The searches were conducted in PubMed, Emerald, ERIC, ProQuest, Web of Science, Scopus, SID, and nor gram. The second phase was modified Delphi in three rounds. The purposive sampling was used to employ appropriate participants.

Result: According to the critical review results, competencies were categorized in two groups, including 62 personal competencies and 19 functional competencies. Also, according to modified Delphi results, 19 competencies, including 12 personal competencies and 7 functional competencies were selected as trainable core competencies.

Conclusion: In order to design a development program for academic leaders in the integrated educational system in Iran University of Medical Sciences, both personal and functional competencies need to be considered together.

Keywords: core competencies, academic leader, integrated educational system

Introduction

In a medical university, academic leaders work at the same time in complicated system, including the campus environment, health care, and other legal and professional organizations.¹ They must manage and lead universities in a fast and changing global environment meanwhile they also work close to a number of health care delivery partners with their financial and service programs.² However, many persons who hold managerial positions in medical universities are physicians or medical professionals without any preparation for academic leadership.³⁻⁵ They are promoted without prior training and clearer understanding of their new needs at the universities.⁴

Academic leaders in medical universities of Iran

Since the foundation of Health and Medical Education Ministry in 1985, many reforms have occurred in the medical education of Iran, and the number of medical and other health sciences-related schools, teaching staff, teaching-hospital beds, student admis-

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sions, and health workers, has been increased significantly.³ Along with other universities, such as McMaster in Canada, Maastricht in Netherland, and Glasgow in England, which carried out different degrees of integration of medical education in their medical and health care services, Iran also carried out the integration system as the basis of providing medical, educational, and health services.⁶ At present, the Ministry of Health and Medical Education is responsible for medical education and providing health and medical services.³

The system providing integrated services has brought gains in the treatment and education part, but it has also brought challenges for managers, especially in the medical education part. Nevertheless, integration should be managed as a fundamental change.⁶ Therefore, high-competent academic leaders are needed in this type of academic system. Bikmoradi et al stated that one of the shortages of the Iranian academic system is the lack of meritocracy.³ Thus, academic leader development plan is one of the vital requirements of Iranian medical education system.⁷

When we think about the training model for academic leaders, two major points must to be considered: what does learning emphasize on and how the learning process is carried out?¹⁰ Spendlove claimed “over the past ten years-research in effective leadership has moved towards recognize the leadership competencies”.⁹ Competency is an observable or measurable part of a skill, a portion of knowledge, or an attitude.¹⁰ Although some of them are acquired during the work experience, the others are harder to learn in comparison to the others.^{11,12} Improvement of managerial competencies will be done through appropriate training in a systematic framework.¹³

Nowadays, the competency approach seems to quickly become one of the predominant models for developing leadership and management in some countries, such as England.¹⁴ To use competencies for development programs, the competencies must be developed and defined based on the needs and objectives of the organization, the client, and the community.¹⁵

The aim of this study was to determine core competencies that can be improved through development program (trainable) for academic leaders in Iran University of Medical Sciences.

Methods

This study was conducted in two phases. First phase, critical review method was used to collect the results of the previous research on the competencies required for academic leaders. The second phase, modified Delphi as a consensus method, was used to determine trainable core competencies

of academic leaders in Iran University of Medical Sciences. Trainable is referred to as the competencies that can be improved by the development program. Data generated from completing the questionnaires were extracted by SPSS (version 21). The main statistics used are measurements of central tendency, mean, mode, and percentage frequency to determine competency agreement percentage. Ethical approval was received from the Research Ethics Committee of the Iran University of Medical Sciences.

First phase: review

In this phase, based on Carnwell and Daly’s approach, the following steps were taken to conduct a critical review: definition of the review scope, identification and selection of the relevant information resources, and literature review.¹⁶ The review was focused on articles available in scientific journals, book chapters, theses, along with gray sources available, such as academic project, for developing academic leader. The search was conducted from 2000–2017. We searched in PubMed, Emerald, ERIC, ProQuest, Web of Science, and Scopus for English language studies and SID, nor gram for Persian language studies. The keywords for search were academic leader, educational manager, head of department, vice chancellor, and vice chairman, dean, department chairs, in combination with competency, competence, trait, and qualification. Explicit methodology, English language, credible reference, and main focus on academic leader competencies were inclusion criteria. Articles that did not answer the two questions (who is the competent academic leader and what he does?) were excluded from the study. We used two independent reviewers who were expert in medical education and management for reading the selected articles. At first, abstract and the main body of the article were skimmed. Full articles were screened after verifying eligibility for having the inclusion criteria. After studying, the selected article, the list of the academic leader competencies was developed. Competencies extracted from the articles were reduced by sharing similarities to the one item and duplicates were deleted. The remaining competencies were divided into two major categories: competencies that addressed what an academic leader should do were classified in the category of functional competencies and the competencies that addressed who would be the academic leader were classified in the category of personal competencies.

Second phase: modified Delphi

Consensus group techniques such as Delphi were used to determine components of a new or revised curriculum, develop items for assessment tools, describe competencies,

and develop educational resources in medical education.¹⁷ In a modified Delphi, the open-ended round of a classical Delphi is replaced with statements obtained from either the existing literature in the field or focus groups or by undertaking one-to-one interviews.¹⁸

First round

The purpose of this round was to use the opinion of medical and management education specialists in approving and completing the list of competencies extracted from the previous stage and determining competencies to be trained.

First-round questionnaire was developed based on the results of the critical review and consisted of three parts. Part 1 elicited the participants' demographic information (sex and management experience), part 2 contained personal competencies, and part 3 contained functional competencies. Ten participants were selected based on two criteria: one was being familiar with medical education science and other inclusion criterion was to have managerial expertise. Participants were 39–64 years old, and mean and SD of management experience was 18 ± 4.2 years. Each expert was asked to select “agree” or “disagree” options in addition to trainable potency of each competency. In the instructions for the questionnaire, the purpose of the trainable competencies was explained to the participants that competencies can be improved by the development program. In this round, level of agreement percentage with competencies and frequency of trainable competencies were determined for analysis data.

Second round

The results of the first round formed the basis of second-round questionnaire. The purpose of this round was to use the views of key stakeholders to determine the priorities of competencies of academic leaders in Iran University of Medical Sciences. Fifty participants were selected based on whether the faculty member had managerial experience. Thirty-three participants completed and returned the questionnaire and determined the importance of each competency. The response rate was 66%. Participants included 20 females (60.6%) and 13 males (39.4%). The minimum management experience was 1 year and maximum 25 years, and the mean management experience \pm standard deviation was 8.9 ± 7.9 .

In the second round, each participant rated the competencies on a scale 1–10, where 1 means that competency is not important and 10 means that competency is very important. In this round, mean, mode, and the frequency of the individuals selecting “very important” option were determined.

Third round

The data from the second round (mean, frequency) formed a pattern for the questionnaire with controlled feedback used in third round of the Delphi. The controlled feedback process consisted of a well-organized summary of the previous round, allows each member an opportunity to make additional insights, and more thoroughly clarifies the data established by previous iterations. In this round, participants selected the core competencies of the academic leader.

The results of second round provided feedback to the expert panel member on important competencies and provided an opportunity for panel member to select the core competencies of an academic leader. To obtain the final results, it was necessary to use knowledgeable people; hence, the participants in this round were the same experts who participated in the first round. The response rate was 100%. For final results, agreement percentages with competencies were determined.

Participant selection

In all Delphi rounds, the selection of expert panel members as participants was critical because it directly related to the quality of the results.¹⁹ We used purposive sampling to employ appropriate participants.

In Delphi process, the participant might be the same for each round, or different,¹⁷ because key stakeholders are academic leaders who do not receive formal training in management. In order to obtain valid results, two groups of participants were used. Experienced experts in management and medical education in the first and third rounds were invited to study. On the other hand, people in managerial positions should also be considered to determine the competencies required by the academic leaders. In the second round, the participants comprised vice-chancellors of education, deans of medical school, and head of department in Iran University of Medical Sciences. The consent form and the Delphi questionnaire were sent to the participants. All participants filled written informed consent. The objectives of each round and instructions for completing the questionnaire were described in the first page of the questionnaires. A 3-week deadline was given for completion and return of each questionnaire.

Results

Review results

At first phase, academic leader competencies were extracted from the literature. Six hundred twenty-one articles were obtained using selected keywords in databases and gray

literature. After removing duplicates and unrelated titles and applying inclusion and exclusion criteria, 72 articles were selected for competency extraction. After reviewing the full text of the articles, of 345 extracted competencies,

246 competencies were eliminated from competency list due to duplication or similarity with other competencies and the final list included 81 competencies in two categories (Figure 1).

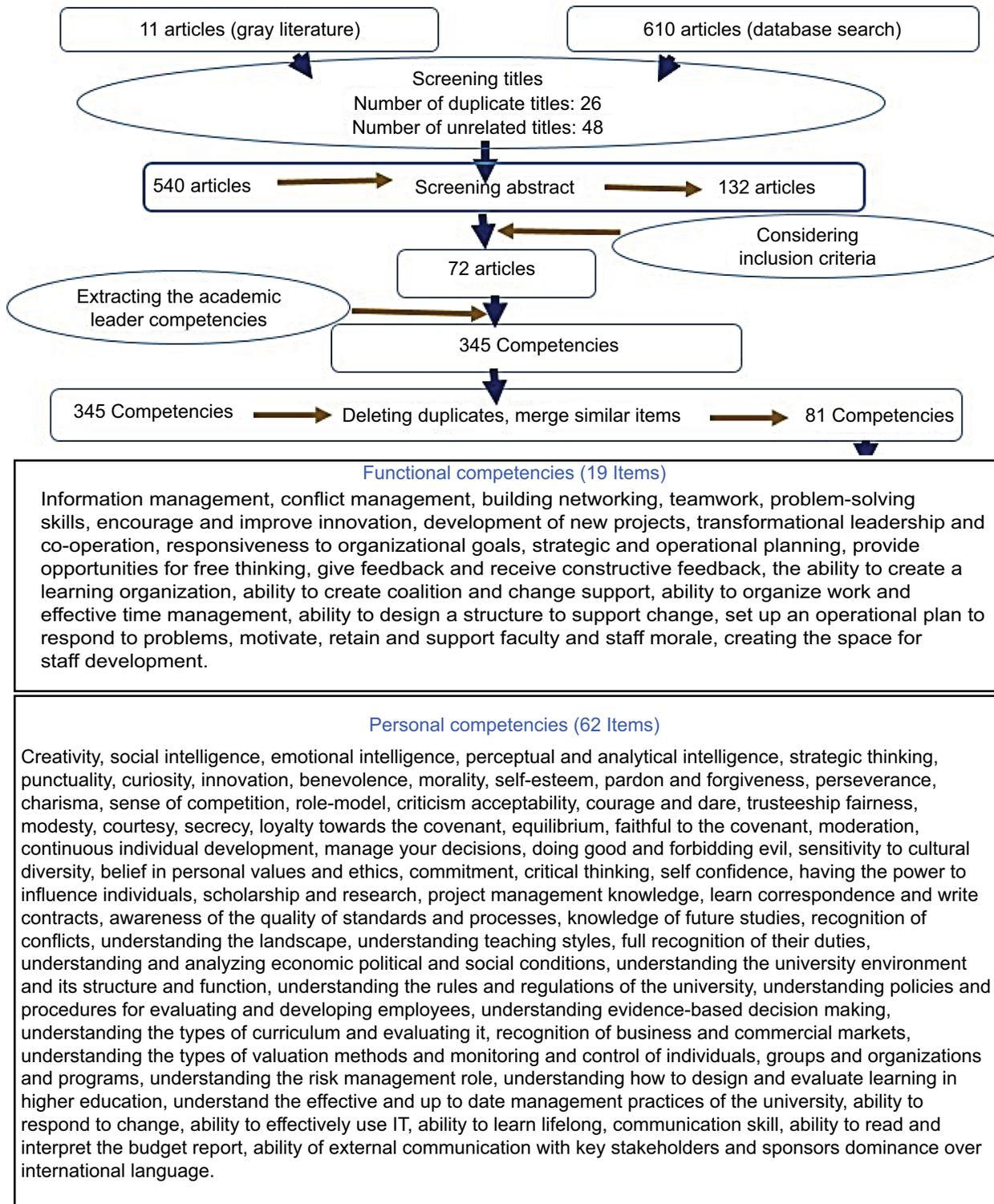


Figure 1 Critical review process and result.

Modified Delphi results

First round

According to experts from first round Delphi, the following competencies could not be trained. Curiosity, benevolence, self-esteem, pardon and forgiveness, perseverance, charisma, sense of competition, courage and dare, trusteeship fairness, modesty, courtesy, secrecy, loyalty towards the covenant, equilibrium, faithful to the covenant, moderation, doing good and forbidding evil, belief in personal values and ethics, self-confidence, and understanding the landscape. According to the results, five competencies were eliminated due to similarity with other competencies and system thinking added to the list of competencies. Item recognition of teaching styles was deleted because 62% of the specialists disagreed. There was an agreement of over 75% with other personal and functional competencies.

Second and third rounds

According to the results, more than 50% of the participants recognized five personal competencies (Table 1) and four functional competencies (Table 2) as very important. According to the third round results, over 75% participants agreed with 19 items, 12 personal competencies, and 7 functional competencies as trainable core competencies. Table 3 shows the results of each three rounds of the trainable core competencies to be selected.

Table 1 Frequency, mode, and mean, personal competencies over 50% agreement

Item	Frequency very important (10) N=33	Mode	Mean (1-10)
System thinking	19	10	9.24
Strategic thinking	20	10	9.45
Punctuality	22	10	9.56
Role-model	17	10	9.09
Communication skill	18	10	9.27

Table 2 Frequency, mode, and mean, functional competencies over 50% agreement

Item	Frequency very important N=33	Mode	Mean (1-10)
Teamwork	21	10	9.51
Problem-solving skills	19	10	9.51
Responsiveness to organizational goals	17	10	9.12
Motivate, maintain morale, and support the faculty and staff	19	10	9.36

Discussion

The fundamental issue regarding whether management and leadership can be trained or not is controversial. Generally, supporters of the personality trait theories consider management to be inherent, while behavioral movements express competency-based development. Boyatzis in his study conducted in 1996 found that the acquisition of managerial competencies required program design.²⁰ One of the attributes of competency depends on its context.¹⁵ Therefore, in order to develop academic leader-based competencies, each educational organization must identify its competencies.

In this study, a critical review and modified Delphi was used to determine personal and functional core competencies that can be improved by conducting a development program (trainable) for academic leaders in Iran University of Medical Sciences.

The results showed that 12 personal competencies and 7 functional competencies were selected as trainable core competencies. Based on the result, among functional category, teamwork, problem-solving skills, ability to create coalition and change support, motivate/retain and support faculty and staff morale, giving feedback and receiving constructive feedback, encouraging and improving the innovation, and conflict management also are core competencies required for academic leaders. Ability to respond to the change, understanding the effective and up-to-date management practices of the university, system thinking, critical thinking, continuous individual development, ethics, emotional intelligence, social intelligence, full recognition of their duties, understanding the university environment and its structure and function, the ability to effectively use information technology, and communication skill are selected among personal category as core competencies required for academic leaders. Research that does not refer to these items specifically has not been considered as studies focusing on trainable core competencies to academic leaders. Considering the competencies that were introduced, most of articles have proposed a similar framework of competencies required for academic leader.²¹

In Australia, college survey identified communications, personal leadership skills, ability to recruit employees, strategic thinking, and analytical skills as important competencies for the doctor's managers.²¹

In the United States, a study carried out by McKenna et al on the development of leadership competencies for doctors identified nine important competencies for physician leaders, including interpersonal and communication skills; professional ethics and social responsibility; continuous learning and improvement; ability to build coalitions;

Table 3 Trainable core competencies selected

Item	Agreement % Round 1	Mean (1–10) Round 2	Agreement % Round 3
Social intelligence (P)	87.5	8.81	75
Emotional Intelligence (P)	100	8.46	75
System thinking (P)	It was added according to the expert's opinion in this round	9.24	75
Ethical (P)	87.5	9.72	75
Continuous individual development (P)	100	8.96	75
Critical thinking (P)	100	8.93	75
Full recognition of their duties (P)	100	9.39	75
Understanding the university environment and its structure and function (P)	100	9.03	87.5
Understand the effective and up-to-date management practices of the university (P)	87.5	8.69	100
Ability to respond to the change (P)	100	8.30	75
The ability to effectively use information technology (P)	87.5	8.69	100
Communication skill (P)	87.5	9.27	100
Teamwork (F)	100	9.51	75
Conflict management (F)	100	8.60	75
Problem-solving skills (F)	100	9.51	75
Encouraging and improving the innovation (F)	100	9.06	75
Giving feedback and receiving constructive feedback (F)	100	9.18	75
Motivating maintaining morale and supporting the faculty and staff (F)	100	9.36	100
Ability to create coalition and change support (F)	87.5	8.30	75

Abbreviations: P, personal competencies category; F, functional competencies category.

tions and support the change; clinical excellence; ability to convey a clear compelling vision; system based decision making/problem solving; ability to address needs of multiple stakeholders; and financial acumen and resource management.²²

Functional competencies

Among functional competencies, problem-solving and teamwork have been widely used and many researchers have emphasized on these competencies.²³

Rodriguez et al (2016) have developed the professional needs required for the department chairs in US and Canadian Dental Schools. Developmental professional needs were grouped into three categories including leadership, management, and individual competency.¹³ Except managerial competencies related to technical skills, the role of the department chairs, individual and leadership competencies such as change management, conflict resolution, and feedback are similar to those of the present study. The American Association of Colleges of Pharmacy (2016) reported the professional needs required for the department chairs.

Managing the change, managing or resolving conflicts, giving and receiving feedback are also included in the list of competencies.²⁴ Of course, the importance of some items, such as problem-solving at different levels of management, is different. Kalargyrou et al (2012) have stated that, in senior management positions, the leader is asked to solve the new and ambiguous issues that arise from continuous changes in the environment.²¹ Therefore, the leader at higher levels needs more problem-solving skills.

The ability to use information technology was another selected item. With the arrival of the era of technology, this competency has been taken into consideration by other researchers. Scott et al have considered the ability to use information technology effectively in communication and performance as one of the, in particular, key tasks to be included in academic leadership capabilities which are required in the field of Australian higher education.²⁵ Rodriguez et al and Schwinghammer et al have shown synchronization with the use of technology in the classroom and office environment as professional development needs that are required for the department chairs.^{13–24}

Based on the result, recognition of teaching styles was deleted because 62% of the specialists disagreed with it. It seems the important and necessary competencies related to technical skills are not similar in different levels of management at the university. For example, Bordage et al have described technical skills, such as setting educational goals, instructional design, as the desirable characteristics of an educational program director.²³

Personal competencies

In other respects, the personal competencies identified in this research are also mentioned. Communication skills, role modeling, and punctuality are selected as core competencies required for academic leaders which have been emphasized most frequently in other papers.^{4,26,28} Nevertheless, personal competencies seem to be more specific than functional competencies, and they are influenced by the type of the context.

The system thinking was one of the personal competencies – selected as the core competency. System thinking is a kind of unique approach used for problem solving and it is particularly important in leadership.²⁹ Although Spendlove has expressed the understanding of how the university system works as an effective behavior for higher education leaders,⁹ system thinking has not been emphasized directly in literature, and in this study, it was added to the list of competencies of the academic leader according to the expert opinion and was selected eventually as the core competency for academic leader in Iran University of Medical Sciences.

There are also some other unique issues in the research regarding the Iranian academic leaders based on the ideological and political viewpoint of the Iranian society. Zahedi and Abbasadeh have studied the kind of leadership attributing to the educational managers as prescribed in Imam Khomeini's speeches.³⁰ He was an Iranian Shia Islamic religious leader and politician. Along with the competencies such as, considering criticism as suggestion, emphasizing on discussion and dialog, promoting employee development, creating self-belief, providing free speech opportunities, which have also been referred to in other articles, promoting virtue and preventing vice item can also be mentioned.³⁰

Limitation of study

A limitation of this study is the second round response rate of Delphi participants (66%). It is recommended that, to obtain robust results, the response rate higher than 70% is needed.³¹ Another limitation is that key stakeholders were not knowledgeable in management and leadership.

Conclusion

The expert panel in the modified Delphi technique achieved agreement of 19 trainable core competencies for academic leader in Iran University of Medical Sciences. The results included both functional and personal competency categories. One of the newest management aspects of higher education is the professional universities and the managers.³¹ Thus, it seems that, in addition to the work-related aspects in the development academic leader programs in Iran Medical University, personal aspects should also be considered.

Acknowledgment

We would like to express our gratitude to the expert panel for sharing their experience and comments during the Delphi rounds, which greatly improved the study.

Disclosure

The authors report no conflicts of interest in this work.

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