

THE COMPETENCY MOVEMENT IN PUBLIC HOSPITALS: ANALYSING THE COMPETENCIES OF HOSPITAL EXECUTIVE MANAGERS*

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Abstract

Our primary aim was to provide a quantitative snapshot relying on a self-assessment tool developed for the local healthcare environment and formal tasks for top-level executive hospital managers of public healthcare organizations. We used a cross-sectional and descriptive mixed study design that targeted the nationwide population of 701 top-level managers in public hospitals in 2015 in Turkey. As the first step, position description content analysis was conducted based on document analysis to explore their legal tasks and statements, and the job requirements for an executive management position in public hospitals. Second, before designing the data-collection instrument, we conducted four meetings and group discussions with several hospital managers – with and without medical backgrounds – and five academics who were part of healthcare management and public administration departments. Lastly, we built upon past efforts and the literature, and constructed a questionnaire.

The managers are fully responsible for the healthcare quality, medical, nursing, administrative issues and financial performance of the facility. The participants perceived that they were competent in most of the competencies. The participants' mean total competency score was 81%, and the competency gap between the required and current competency levels differed from 13% to 22%. This research provides deep insight into the competencies perceived by hospital executive managers in a developing country context. Our results have several practical implications for both healthcare policymakers and new executive hospital managers. There is an urgent need for follow-up self-assessment for competencies and ongoing management training programs.

Keywords: competency, healthcare organization, top-level manager, managerial skill, managerial role, Turkey.

1. Introduction

Hospital organizations are considered complex adaptive systems by relying on interdisciplinary interactions among healthcare professionals; the overall performance in a healthcare organization depends on the interdependent work of highly specialized clinicians and the vision of managers (Vainieri *et al.*, 2019). To address the emerging issues and challenging trends facing clinicians and healthcare managers, two broad recommendations have been prominently proposed: professionalization of health management and leadership, and employing physicians in management positions. Professionalization of health management and leadership is a key component of health policy development, health system strengthening, and performance management in health systems (Op de Beeck and Hondeghe, 2010, p. 21; Tudor Car, Kyaw and Atun, 2018; Horton, 2000). The International Hospital Federation (IHF) (2015) highlights professionalization of health management and leadership for efficient and resilient health systems as one of its capacity-building initiatives in developing countries. Another possible solution for better-performing health systems is employing physicians in management positions in healthcare organizations (Degeling *et al.*, 2003; Rivers, Woodard and Munchus, 1997). This is particularly relevant because they differentiate from their counterparts with a nonmedical background on healthcare quality and clinical processes (Clay-Williams *et al.*, 2017; LeTourneau and Wesley, 1997). Although many developed countries still push physicians into executive management positions, most countries have spurned this recommendation (Modi, Gupta and Singh, 2015; Loh, 2013; Ireri *et al.*, 2017). For example, in the US, hospitals with physician managers decreased from 35% in 1935 to 3.6% in 2008 (Gunderman and Kanter, 2009). It was due to physician managers having considerable competency gaps and difficulty at balancing their medical and managerial roles and responsibilities (McConnell, 2002). In particular, physicians face challenges regarding financial management, negotiating and teamwork skills, and health management terminology (Kumpusalo *et al.*, 2003). Despite the numerous examples of effective interprofessional education programs (Grace, 2020), the business aspects and interprofessional collaboration can be limited in medical schools, as they receive relatively little attention compared with clinical aspects of medicine (McAlearney, 2006).

Although a growing body of literature on professionalization of health management and leadership can be traced back to the US and the UK, it is an emerging field in developing countries (Horton, 2000; Wallick, 2002; Walsh, Harrington and Hines, 2020). Previous studies have not shed sufficient light on current cases in developing countries that still follow traditional approaches in employing and dismissing executive managers. Executive managers in healthcare organizations have a pivotal role in overcoming current and emerging challenges in healthcare delivery. However, very little is known about the characteristics of executive managers and their skills, capabilities, roles and responsibilities in healthcare organizations in developing countries.

1.1. The situation in Turkey

Turkey is a developing country between Europe, Asia and the Middle East, and has recently been characterized by remarkable and incremental improvements in the healthcare sector (Atun *et al.*, 2013). The Health Transformation Program (HTP) gave rise to a reorganization of healthcare providers, a purchaser-provider split in the healthcare system, redesigning service delivery, and developing capacity. As a result of this reorganization, public hospitals hold a 61% share of the total 217,771 beds; 52% of physicians and 82% of registered nurses are employed in the healthcare organizations affiliated to the Ministry of Health (The Ministry of Health, 2019). In addition, decentralization and performance measurement in these organizations have gained importance in eliminating performance problems and developing administrative capacity in hospitals (Akdag, 2018). For example, two-thirds of state-run hospitals in Turkey operate inefficiently and have excessive expenditures for medical devices and medicinal products, and inappropriate bed use (Cakmak, Oktem and Omurgonulsen, 2009), which is a piece of data-driven evidence for the lack of administrative capacity in hospital organizations. This is an indication for professionalization of management and leadership in hospitals and the healthcare system.

The government is mainly concerned with health management and leadership competency, as Turkey's healthcare system comprises large and publicly funded healthcare providers. Despite evident policy actions, management and leadership in public healthcare organizations in Turkey remains unclear. Governmental policies influence the competency-based human resource system and selection of managers in the health system and top-level managers of healthcare facilities. Moreover, 'health professions education in Turkey is based on old and traditional paternalistic values of professionalism' (Domac and Anderson, 2012, p. 83). In addition, Ministry of Health centrally supervises selecting and appointing executive managers in public health organizations. In this context, professionalization of health management and leadership in Turkey is extremely valuable.

1.2. Theoretical and conceptual background

This study applied the lens of domain theory of Kouzes and Mico (1979) to examine top-level managerial competencies and roles in hospital management. It may be a good fit for public hospitals that are run by state, perform under governmental regulations and are sensitive to political interventions (Cakmak, 2019). Top managers in hospitals ought to fulfill expectations of different stakeholders within and outside the organization. First, they meet the needs and expectations of elected politicians by developing policies. Second, they ought to allocate scarce resources efficiently and achieve organizational goals. Third, they must satisfy the patients enhancing healthcare quality. According to this theory, each domain develops relevant mechanisms to legitimize their locus. It also assumes that interactions between policy, management and service domains can result in discordance and conflict (Kouzes and Mico, 1979).

However, it says a little about integrating these domains and specific competencies for collaboration and interprofessional aspects.

Despite having distinct sub-cultures with defensive professional borders, healthcare workers continue to coexist in silos in healthcare organizations (Bate, 2000). Therefore, considerable efforts have been devoted to strengthen relationships among health professions. Over the past two decades, publications have concentrated on interprofessional education to prepare the health workforce of the future to strengthen their teamwork skills. Graduate and undergraduate health programs have incorporated interprofessional collaboration into their curricula and this has expanded to other countries. In particular, many governments have recommended that all undergraduate health professions programs ought to include a common set of core curricula that consists of ethics, communication and collaboration, scientific theory and methods (Almas and Barr, 2008). Furthermore, the World Health Organization (WHO) has also outlined a broad category for interprofessional learning outcomes such as 'teamwork and collaboration; roles and responsibilities; communication, reflection and learning; patients; and ethics'. Similarly, a very recent study on teamwork performance in healthcare management has specifically involved these core skills in their research (Banks and Toy, 2020).

A great deal of previous research has been carried out on core competencies that are strategic and powerful assets for managerial positions in healthcare. Professional organizations and researchers have developed several tools to assess competency levels of managers at different management levels. One of the most popular instruments for assessing the self-efficacy of people in management positions in healthcare was developed by the Healthcare Leadership Alliance (HLA). This is a list of competencies designed to evaluate relevant tasks typically performed by healthcare managers. The HLA designed this framework based on five key dimensions such as 'communication and relationship management, professionalism, knowledge of healthcare environment, and business skills and knowledge' (Stefl, 2008, p. 364). The International Hospital Federation (2015) revised this framework for further country-specific frameworks. The US National Centre for Healthcare Leadership also used research-based competency modelling delineating 26 competencies organized into the 'categories of transformation, execution, and people' (Herd *et al.*, 2016, p. 218). A very recent systematic review identified management competences in hospitals (Walsh, Harrington and Hines, 2020). The authors compiled nine competency subdomains organized into three categories: communication skills, conflict management, professionalism, professional development, ethics and social responsibility, time management, strategic thinking, effective planning, and scheduling of tasks and activities. However, these competency frameworks are not limited to top-level executives, but include nursing managers, medical specialists, educators, athletic trainers, graduate students, mid-level managers and hospital managers at all hierarchical levels (Walsh, Harrington and Hines, 2020). However, many have criticized these competency-based frameworks, which may 'oversimplify management by fragmenting rather than integrating'

(Spehar, Frich and Kjekshus, 2012, p. 9). Despite the variety of competency frameworks for healthcare managers, there remains a lack of agreement about key competencies required for top-level executive managers in public hospital organizations. On the other hand, developing countries are under-represented in healthcare competency literature.

With this in mind, we have opted to propose a management competency framework for the present study. Our primary aim was to provide a quantitative snapshot relying on a self-assessment tool developed for the local healthcare environment, and identify formal tasks for top-level executive hospital managers of public hospitals. Unlike other healthcare management frameworks, this is content-specific for strategic decision-making levels in public hospitals. This approach will actually expand our knowledge on strategic-level managerial roles and competences rather than fragment it.

International experience and theoretical assumptions will lead us to understand and explore the management competency levels and roles of executive managers in Turkish public hospitals. We assumed that there would be a competency gap in top-level management positions in state-run hospitals. This is because the competency level of hospital managers can be affected by knowledge, attitude, and skills which can be acquired from education, training courses, and experience (Kalhor *et al.*, 2016; Spehar, Frich and Kjekshus, 2012). However, this expectation may not be valid in a developing country context, as objective recruiting principles and sufficient body of knowledge for healthcare management are not clearly evident (Sunguya *et al.*, 2014).

Much of the available literature on managerial competences has highlighted combining experience with management education. However, there remains a lack of agreement about the exact competencies required for a hospital executive manager; in particular, evidence-based competency studies are still missing in low- and middle-income countries. Specifically, we addressed three aims: (1) we assessed essential competencies for top-level hospital management; (2) we obtained views on the perceived competency level of top-level hospital managers, and (3) we identified their competency deficiencies.

2. Methods

2.1. Participants and procedures

We used a cross-sectional and descriptive mixed research design that targeted a nationwide population of 701 top-level managers in public hospitals in 2015 in Turkey. All of these hospitals are state-run and affiliated to the Ministry of Health. As a first step, position description content analysis was conducted based on document analysis to explore the legal tasks and job requirements for an executive management position in public hospitals affiliated to the Ministry of Health. Document analysis involves analyzing material, as various materials may contain subject data of a research (Snape and Spencer, 2003). Second, before designing the data-collection in-

strument, we conducted group discussions with several hospital managers – with and without medical backgrounds – and academics from healthcare management and public administration departments. Lastly, we built upon past efforts and literature and constructed a questionnaire (Mintzberg, 1975; Official Gazette, 2011; Pillay, 2008; Pillay, 2010; Stefl, 2008).

The questionnaire comprised 68 items categorized into the following sections: socio-demographic information, list of competencies, required competency level for the item, training and development needs, statements on healthcare management and list of managerial roles. Forty-two hospital managers were pretested after we had received Hacettepe University ethical board approval. A few weeks after sending out the survey letters to public hospitals on October 22, 2014, we made phone calls to ask for a response request and discussed any questionnaire item, if required. We then visited more than 40 hospitals to collect survey letters, and discuss research questions through interviews with managers, and finalized field research on April 30, 2015.

We used central tendency/median and dispersion/interquartile range (IQR), Shapiro-Wilks test, Mann-Whitney U analysis, Kruskal Wallis variance analysis and t-test for hypotheses testing, and principal component analysis for exploratory factor analysis. Furthermore, we calculated the competency gap between required and current level for each competency item. All statistical analyses were performed using SPSS (version 21), and the threshold for statistical significance was <0.05 .

3. Results

3.1. Findings from document analysis

The Turkish government has taken some measures to improve performance management and increase output in hospital organizations. First, the Ministry of Health has established standards and regulations that would drive managers to perform better and improve patient and staff-related results. The new managerialism idea behind these regulatory-based policy interventions was to enhance competition among public bureaucratic institutions and spur them to become independently operating autonomous entities. Furthermore, the Ministry of Health has initiated monitoring performance of top-level managers in public hospitals. They are regularly assessed to follow-up government-driven organizational/individual objectives during the period they are subject to two-year contracts with the Ministry of Health, which is a recent phenomenon in the public sector but that is common in the private sector. In addition, top-level managers in public hospitals have significant responsibilities for service quality, medical, nursing, administrative issues, and financial performance of the facility. More precisely, their tasks involve healthcare quality, efficiency, human resources, process control, utilization management, financial management, operational management, patient satisfaction management, and budgeting.

3.2. Descriptive findings

Two hundred and sixty-nine managers agreed to participate in the questionnaire. Most of the managers were men (93.3%). All of the participants were physicians; the majority (60%) had completed specialist training in medicine. While 53.9% reported that they had no formal training in management, 60.8% intended to pursue further management education (Table 1). The median age was 41 years. The participants had a three years organizational tenure (range, 0-32 years) in managing hospital settings. The participants spent between 10% and 90% of their median daily working hours on healthcare-related issues and managerial topics, respectively (Table 2).

Table 1: Descriptive findings

Variables	Count (n)	Valid percentages (%)
Gender		
Female	18	6.7
Male	251	93.3
Task and title		
Medical doctor	269	100.0
Education background		
Medical School	93	34.6
Master of Science	13	4.8
Specialization education in medicine	161	59.9
Dentistry School	2	0.7
Formal training in management		
No	145	53.9
Certificate	56	20.8
Minor	14	5.2
BA	11	4.1
MS	42	15.6
PhD	1	0.4
Intention for further management education		
Yes	121	60.8
No	78	39.2

Source: The authors

Table 2: Characteristics of hospital top-level managers

Variables	Median	Interquartile range (IQR)	Minimum-Maximum
Age	41.0	8.0	27-64
Organizational tenure (year)	3.0	5.0	0-32
Daily working hours on health-related issues (%)	10.0	20.0	0-90
Daily working hours on managerial topics (%)	90.0	20.0	10-100

Source: The authors

3.3. Competencies of executives in Turkey

Participants perceived that they were competent in most of the competencies (24/39). Their strongest area was integrity and ethical conduct (4.53); the weakest areas were information technology (IT) (3.65), budgeting and resource allocation (3.70), epidemiological analysis (3.70), health economics (3.75), and computing skills (3.75). Furthermore, the participants rated required competencies much higher for a strategic level management position such as integrity and ethical conduct (4.67), managing people and teams (4.62), communication skills (4.60), strategic thinking (4.57), and motivating people (4.52), and they rated the competencies of analyzing government programs (4.05), health marketing (4.20), and epidemiological analysis (4.21) much lower (Table 3).

3.4. Factor structure of competency items

The Kaiser-Meyer-Olkin measure and Bartlett's sphericity significance test values were 0.922 and 0.000, respectively. The reliability of the scale, which presents internal consistency, was estimated using Cronbach's alpha coefficient for each factor group. Factors and items accounting for 68.84% of the total variance were extracted using principal component analysis. Then, exploratory factor analysis (EFA) was combined with item selection approach based on conceptual appropriateness (Henson and Roberts, 2006; Tabachnick and Fidell, 2007). Further, EFA led to a six-dimensional construct of competencies, all with Cronbach's alpha of >0.75 (Table 4). These domains were termed based on competency outcomes included in each cluster: business management skills, healthcare context-related skills, analytical skills, financial skills, self-management skills, and IT skills.

The participants' mean total competency score was 81%, and the competency gap between the required and current competency levels differed from 13% to 22%. Self-assessment indicated that the participants perceived that they had higher competency levels. The participants felt mostly competent in self-management (83.324), business management (82.128), analytical skills (81.180), healthcare context-related skills (80.253), financial skills (74.797), and lastly, IT skills (74.015). The biggest competency gap was for IT skills and financial skills. However, our findings revealed that deficient areas existed for all competency domains (Table 5).

Table 3: List of competencies

Competencies	Perceived rate	Importance rate	Competencies	Perceived rate	Importance rate
Integrity and ethical conduct	4.53	4.67	Quality control and improvement in healthcare	4.04	4.31
Learning from experience	4.33	4.44	Health promotion	4.03	4.38
Communication skills	4.29	4.60	Structuring of healthcare organizations	4.01	4.45
Managing healthcare service delivery	4.23	4.44	Time management	4.00	4.40
Strategic thinking	4.22	4.57	Analysis of legal issues	3.98	4.41
Managing people and teams	4.20	4.62	Analysis of national health system	3.97	4.26
Labor relations	4.20	4.46	Change management	3.96	4.38
Understanding rural health system	4.20	4.28	Evidence-based medicine	3.96	4.23
Self-awareness	4.18	4.38	Analysis of government programs	3.91	4.05
Bioethics	4.17	4.46	Health technology assessment	3.87	4.33
Managing conflict	4.16	4.49	Medical informatics	3.82	4.22
Measuring performance of healthcare organizations	4.16	4.41	Balancing work and life issues	3.80	4.24
Self-development	4.15	4.45	Marketing	3.78	4.20
Motivating staff	4.15	4.52	Financial performance evaluation	3.77	4.35
Planning	4.10	4.45	Computing skills	3.75	4.24
Human resources management	4.10	4.49	Health economics	3.75	4.28
Clinical expertise	4.07	4.28	Epidemiological analysis	3.70	4.21
Clinical audit	4.06	4.29	Budgeting and resource allocation	3.70	4.37
Lean principles in healthcare organizations	4.06	4.35			
Analysis of internal and external environment of healthcare organizations	4.04	4.29	IT management	3.65	4.25

Source: The authors

Table 4: Competency domains

Factor	Item	If item deleted internal consistency	Internal consistency	Factor	Item	If item deleted internal consistency	Internal consistency
Factor 1 (Business management skills)	Marketing	0.900	0.898	Factor 3 (Analytical skills)	Structuring of healthcare organizations	0.873	0.886
	Change management	0.886			Analysis of legal issues	0.886	
	Motivating staff	0.882			Strategic thinking	0.868	
	Managing people and teams	0.879			Planning	0.869	
	Communication skills	0.880			Analysis of internal and external environment of healthcare organizations	0.865	
	Managing conflict	0.885			Analysis of national health system	0.870	
	Human resources management	0.886			Analysis of government programs	0.875	
	Labor relations	0.884			Managing healthcare service delivery	0.870	
	IT management	0.912			Financial performance evaluation	0.875	
	Bioethics	0.900			Budgeting and resource allocation	0.784	
Factor 2 (Health-care context-related skills)	Health technology assessment	0.904	0.910	Factor 4 (Financial skills)	Health economics	0.833	0.835
	Clinical expertise	0.901			Learning from experience	0.818	
	Clinical audit	0.897			Time management	0.815	
	Health promotion	0.899			Balancing work and life issues	0.809	
	Epidemiologic analysis	0.901			Self-awareness	0.787	
	Quality control and improvement in healthcare	0.904			Self-development	0.807	
	Lean principles in healthcare organizations	0.899			Integrity and ethical conduct	0.810	
	Understanding rural health system	0.906			Computing skills	-	
	Measuring performance of healthcare organizations	0.902			Medical informatics	0.777	
	Evidence-based medicine	0.901					

Source: The authors

Table 5: Competency scores

	Business management skills	Healthcare context-related skills	Analytical skills	Financial skills	Self-management skills	IT skills
Count (n)	269	269	269	269	269	269
Mean	82.128	80.253	81.180	74.797	83.324	74.015
Median	82.500	80.000	80.000	80.000	83.300	70.000
Standard deviation	10.757	10.641	10.817	14.327	10.872	13.965

Source: The authors

3.5. Hypotheses testing

3.5.1. Hypothesis 1

Considering the research question, we decided to test the null hypothesis which claims that the average perceived total competency score for a hospital top-level manager who seeks further training and development opportunities in the management discipline is equal to the average perceived total competency score for a top-level hospital manager who does not seek further training and development opportunities in the management discipline. Mann-Whitney U analysis was used to test the proposed hypothesis.

H_0 : The average perceived total competency score for a hospital top-level manager who seeks further training and development in the management discipline is equal to the average perceived total competency score for a hospital top-level manager who does not seek further training and development in the management discipline.

H_A : The average perceived total competency score for a hospital top-level manager who seeks further training and development in the management discipline is not equal to the average perceived total competency score for a hospital top-level manager who does not seek further training and development in the management discipline.

Nearly half of participants indicated that they needed further training and development in the management discipline. Most of the participants preferred to seek management education via short-term courses and graduate degrees. Hospital top-level managers believed that they spend 90% of their day on managerial activities. On the contrary, they considered that all hospital top-level managers should have a medical background. However, most of the participants stated that physicians were educated on handling medical issues, and not managerial issues. The *t*-test results imply that the average perceived total competency score for a hospital top-level manager who seeks to have management education and training is greater than the average perceived total competency score for a hospital top-level manager who does not seek to have management education and training ($U= 3909$; $p = 0.041$). Thus, taking into consideration the level of statistical significance threshold value is 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted.

3.5.2. Hypothesis 2

Considering the research question, we decided to test the alternative hypothesis which claims that the average perceived total competency score for a more experienced hospital top-level manager will not be equal to the average perceived total competency score for a less experienced hospital top-level manager. The Kruskal Wallis variance analysis was used to test the proposed hypothesis.

H_0 : The average perceived total competency score for a more experienced hospital top-level manager will be equal to the average perceived total competency score for a less experienced hospital top-level manager.

H_A : The average perceived total competency score for a more experienced hospital top-level manager will not be equal to the average perceived total competency score for a less experienced hospital top-level manager.

Hospital top-level managers who had a management tenure for 15-19 years rated a greater total competency score than those in the group of >20 years and other organizational tenure duration periods. However, no significant difference was statistically found among the groups in terms of total competency scores (9.322; $p > 0.05$). Therefore, the null hypothesis was accepted.

3.5.3. Hypothesis 3

Considering the research question, we decided to test the alternative hypothesis which claims that a hospital top-level manager with management education and training background will perform leadership roles more frequently than a hospital top-level manager without management education and training background. The Kruskal Wallis variance analysis was used to test the proposed hypothesis.

H_0 : A hospital top-level manager with a management education and training background will not perform leadership roles more frequently than a hospital top-level manager without a management education and training background.

H_A : A hospital top-level manager with a management education and training background will perform leadership roles more frequently than a hospital top-level manager without a management education and training background.

Our results indicated that the participants mainly had informational roles (disseminator) and interpersonal roles (liaison), and the least performed role was conflict resolution (Table 6). The t -test showed that there was a significant difference among the managerial roles of the participants with management education and those who did not ($p = 0.005$). Top-level hospital managers with a management education and training background performed leadership roles more frequently than the top-level hospital managers without a management education and training background ($\chi^2 = 10.653$, $p < 0.05$). Therefore, taking into consideration the level of statistical significance threshold value is 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted.

Table 6: Managerial roles

Managerial roles	Mean	Percentages %
Figurehead	3.16	78.903
Leader	3.26	81.599
Liaison	3.28	82.063
Interpersonal roles	3.23	80.75
Monitor	3.24	80.970
Disseminator	3.40	85.075
Spokesperson	3.17	79.135
Informational roles	3.27	81.75
Entrepreneur	3.16	78.933
Disturbance handler	3.11	77.799
Resource allocator	3.33	83.270
Negotiator	3.16	78.903
Decisional roles	3.19	79.75

Source: The authors

4. Discussion

In the present study, we measured the competency levels of executive managers in Turkish public hospitals. The main results indicate a high level of self-perception in top-level management positions in public hospitals. Furthermore, our findings reveal that several policy implications for a deeper understanding of healthcare management education. As consistent with previous studies, our findings indicate that undergraduate and graduate level education and lifelong training increase healthcare management and leadership competency in a top-level position.

First, the hospital executive managers from 269 public hospitals in both urban and rural parts of Turkey indicated higher self-perceived management competency in spite of lacking adequate educational background. Although this result contradicts that of similar studies in developed countries, where professional managers are recruited for hospital management, it validates the importance of readiness for managerial positions in healthcare organizations. Competent managers with crucial healthcare skills are increasingly gaining importance for eliminating the challenges in healthcare environment. Emerging issues require innovative and professional approaches in hospital management. For example, the clinical workforce has been experiencing prominent technological skills that have been shaping the provision of healthcare (Winkler-Schwartz *et al.*, 2019). Besides, technological developments such as artificial intelligence (AI) affect the healthcare environment and delivery. Furthermore, it fosters educational opportunities, with developments in virtual reality simulation during graduate and ongoing education programs.

The rapidly changing environment in and outside of hospital organizations requires highly competent executive managers who can meet the challenges effectively.

Numerous crucial questions can be proposed for creating the main picture of the current status of the healthcare sector, in which executive managers should make strategic decisions: Should executive managers be responsible for decisions suggested by AI algorithms that support the prediction of future events, unless they have adequate skills and knowledge? How can executive managers use a performance evaluation system for surgeons who will operate with remote control medical devices? How will executive managers and their profession deal with the transition to new roles in establishing and restating the interprofessional network being supported by machine learning simulations regardless of adequate competence in emerging skills? How will executive managers find a balance between the health professions in the adoption of shared decision-making and healthcare delivery, which will likely be more life-based rather than episodic and diagnostic? The increased adoption of AI-enabled applications by healthcare providers holds practical implications for managers. This change in responsibilities will require them to have technical knowledge and skills in AI-enabled healthcare management to enhance business intelligence (Stanfilii and Marc, 2019).

Second, women are less involved in public hospital management, and all of the top managers were physicians. Consistent with our findings, previous studies have revealed that women are under-represented in healthcare management and leadership positions (Mathad *et al.*, 2019; Rivera-Romano *et al.*, 2020). This could be due to a preference for roles such as care-giving, nursing and/or the existence of the glass ceiling, which is another research topic. Moreover, as the medical profession is a patriarchal profession (Witz, 1990), gender imbalances may be related to the physicians' training levels for carrying out administrative functions in hospitals. All of the top managers were aged >41 years and most of them had been in their positions for <2 years. This result emphasizes that there is a high turnover rate of hospital executive managers in public hospitals. This result is particularly interesting, as a greater turnover rate will reduce organizational tenure and also organizational performance. Furthermore, hospital location, organizational climate and dominant domain in the hospital could be more conducive to turnover, which is worth exploring in the future. There is more likely to be turnover of chief executive officer when the hospital does not achieve its objectives (Eldenburger *et al.*, 2004). These results indicate that more experienced men with a medical background are promoted to hospital top management positions. This can be explained by the glass elevator phenomenon, which states that 'men in female-dominated professions are usually guided towards administration and management departments or encounter pressure and opportunities to advance towards the upper levels of an organization' even they are at the beginning of their career path, mostly due to informal mechanisms (Macarie and Moldovan, 2012, p. 167). On the other hand, promoting informal mechanisms and appointing clinically skilled but managerially unskilled physicians as executive managers without specific management education and training background could lead to performance failures in an organization (Satiani *et al.*, 2014). For this reason, the development, acquisition, assessment and measurement of management competencies should be supported by

adequately tailored undergraduate educational programs, postgraduate education on management, and continuous professional development through recent systems such as virtual reality simulators for improving competency effectiveness (Czabanowska *et al.*, 2013).

Third, the participants possessed a good level of competencies. They perceived themselves as good at 39 items, with competency ranging between 73% and 91%. Here, the mean competency score was 81%, while hospital executives perceived 71% competence in Canada, 68% in the Netherlands, 69% in Australia, and 84% in South Africa (Berkenbosch, 2014; Pillay, 2008). The differences in the findings of the other studies can be outlined by several factors, including the use of different measurement tools and methods. However, our participants indicated their willingness to attend self-development programs on hospital management; they were aware of their competency gaps. Initially, this finding seems to be a feasible expectation, but the participants reported that all hospital executive managers should have a medicine background. However, they also conceded that physicians were educated to handle medical issues, not management challenges.

Fourth, we propose using six core competency domains for hospital executive managers: business management skills, healthcare context-related skills, analytical skills, financial skills, self-management skills and IT skills. These competency items are somewhat in line with the existent literature. Public hospital executive managers should have emotional intelligence and a commitment to continuous health management learning, problem-solving skills, communication and technical issues (Walsh, Harrington and Hines, 2020). Somewhat consistent with our results, physicians lack most managerial skills such as 'strategic and tactical planning, persuasive communication, negotiation, financial decision-making, team-building, conflict resolution, and interviewing' (Schwartz and Pogge, 2000, p. 189). Moreover, physician managers lack financial skills, team management skills, understanding of the healthcare system, and management language (Kumpusalo *et al.*, 2003). The identification of competencies is a means of better preparing healthcare providers to deliver quality healthcare (Wood *et al.*, 2009). In 2015, the National Medical Education Accreditation Board in Turkey introduced the implementation of interprofessional competencies into the accreditation standards of the undergraduate medicine programs (National Medical Education Accreditation Board, 2020). It is hoped that this framework will provide a functional basis for future curriculum and public hospital management policy reform, and also throughout the continuous learning and professional development. Further, we assume that our findings are transferrable to other developing countries without explicit employing and dismissing policies and human resources management systems in hospital management.

Finally, our results show that hospital management executives in Turkey mainly played informational roles (disseminator) and interpersonal roles (liaison), and the least performed role was conflict resolution. This is consistent with a study, indicating that physicians lack a conflict management role (Kumpusalo *et al.*, 2003). How-

ever, executive managers' informational roles regarding organizational goals and positive outcomes are a key mechanism for organizational performance, supporting the flow of strategic and operational vision and engaging healthcare professionals in fulfilling their role (Vainieri *et al.*, 2019). On the other hand, despite managers finding themselves in more informational and interpersonal roles that govern healthcare professionals more and needing to strengthen the interprofessional network, the profession will likely evolve into more diverse roles with technological advances in healthcare. In particular, the conflict resolution role is increasingly important in today's complex healthcare environment, as it is directly linked to problem-solving. Some tools are used for training and education purposes for developing both technical and non-technical skills such as interprofessional skills, teamwork and communication, and conflict resolution skills. With the development of technology, 'virtual reality simulators are being used more widely' as a prominent training tool in both professional practice and healthcare education programs to develop non-technical skills and to allow the delivery of interactive 3D virtual learning environments for the continuing education of healthcare professions and management training (Bracq, Michinov and Jannin, 2019, p. 188).

5. Theoretical and practical implications

Our results have several practical implications for both healthcare policymakers and new executive hospital managers, while also making theoretical contributions to research studies on managerial competencies and the roles of top-level executive positions in hospital management. The managerial framework could be used as a self-assessment tool for hospital managers at the top levels of healthcare organizations to ensure ongoing healthcare management. Also, first-line and middle hospital managers could use this tool to prepare for their future career positions, as moving to a top-level management position is a major expansion of physician managers' competencies and roles. Second, we attempted to develop the concept of domain theory, suggesting the integrational domain that refers to the mediating interprofessional role. This provides an opportunity for physician managers to integrate the service-clinical, management, and political domains in hospitals, using leadership, collaboration and teamwork skills competently.

Developing executive managers in healthcare is crucial for better health outcomes, healthcare quality and building management capacity in public sector organizations. On the other hand, top-level hospital managers have strategic tasks and face unpredictable challenges in a steadily changing environment. From financial shortages to AI, they should have further competencies that are flexible for gaining the accorded understanding. Thus, this research was an attempt to fill this gap by adding an integrating core for executives in the intersecting core of the political, service, and management domains in hospital organizations. Curtailing the competency scores of hospital top managers could be a sign of the reduced integrating core, which can be defined as lacking the normally desirable degree of abilities. This is especially import-

ant for gaining deeper understanding of the requirement for problem-solving skills and finding a balance between group dynamics and team management. From this perspective, the description of the competencies supports the curriculum design and can be used as a self-assessment instrument for manager candidates, and supports them in identifying and recognizing gaps in their knowledge, skills and competencies (Caushaj *et al.*, 2019). Therefore, there is an urgent need for follow-up self-assessment for competencies and ongoing management training programs.

Healthcare management requires multidimensional and multisectoral efforts, and its complex structure requires innovative, collaborative and inclusive coordination beyond traditional management-organizing activities. Health services management requires the implementation of policies towards health determinants, with a collaborative approach beyond the provision, organization and financing of the classics. On the other hand, healthcare and health services are important components of local, regional and national development. That is, the United Nations Millennium Development Goals and sustainable development objectives included in the 2030 Agenda for Sustainable Development document are directly or indirectly related to health (United Nations, 2020). Therefore, healthcare and health services are seen as the key to development for countries. On the other hand, according to the Sustainable Development Goals, gender equality and women empowerment is an important element. Furthermore, a recent study indicates that female representation in healthcare management positions in Turkey is remarkably low, which may constitute a sign of gender imbalance in the policy-making process in developing countries (Kutlu and Akbulut, 2018). That there is a significant difference in the proportion of women with access to management positions in healthcare organizations with respect to their male counterparts is also a relevant issue worldwide (Rivera-Romano *et al.*, 2020).

6. Conclusion

This research provides deep insight into the competencies perceived by hospital executive managers in a developing country; study results also have relevance in other developing countries. The issues discussed in this study are common for a variety of other low- and middle-income countries, where there are major similarities between their policies on selecting managers in public healthcare organizations. Moreover, some challenging trends facing developing countries' healthcare systems are related to performance management in healthcare organizations. Although dominance of medicine, tribal-specific policies, competency gaps of top-level clinician managers and their potential contribution to negative health outcomes are highlighted by numerous studies and reports, healthcare management science is undervalued in developing countries. Hence, a management position for clinicians is considered as a secondary career opportunity, although the strategic apex in healthcare organizations is a crucial position responsible for achieving performance results, vision, mission and other strategic goals of the organization. Therefore, it is important to discuss education in healthcare management and leadership, considering a revision

of the traditional management training programs for fostering better policy and practical implications.

This article also emphasizes the importance of the local context for a competence-based approach in healthcare rather than representing it as a ready-recipe for developing countries. The healthcare sector in developing countries is characterized by challenging trends different from those that are highly prevalent in developed countries. For this reason, healthcare management and leadership competencies should be identified as an integrated whole.

The strength of the study is its focus on the strategic level in hierarchical position in public health organizations. Despite this article's strengths in investigating physician managers' competencies and roles relying on data from hospital executive managers, it has weaknesses and limitations that need to be discussed and clarified. First, there is the probability that self-selection was involved in the survey responses, which could be associated with already having high levels of competency scores. Self-assessment has the drawbacks of probable understated or overstated item results and may not reflect actual performance, unless it is externally validated.

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