



## A RESEARCH ON DETERMINATION OF MID-LEVEL HOSPITAL MANAGERS' COMPETENCE TYPES BY AHP METHOD

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### **Abstract**

The purpose of this study is to determine which managerial competencies are more important in middle level hospital management. In the study, the Analytic Hierarchy Process (AHP) method was used to determine that the first and second level competence types are more important. In the determination of the criteria in the study, the competencies included in the NCHL Health Leadership Competency Model 3.0 were used. In this context, 7 main criteria and 28 sub-criteria were determined for mid-level competency types. The data were obtained using the AHP interview form. As a result of the research, it was determined that the most important competencies of a hospital managers are human resources management, financial skills, analytical thinking, change leadership and communication skills. Hospital managers must have the necessary competencies in order for the organizations of health institutions to achieve their goals and objectives. It is thought that success in hospital management is possible not only with management functions. but also, through the execution of all the competencies specified in HCLM 3.0.

**Key Words:** Hospital Manager, Competence, AHP Method

## INTRODUCTION

Healthcare organizations must constantly strive to innovate and change in order to remain active and up-to-date in a dynamic and competitive world. Without innovation and change, organizations are vulnerable to decline and failure (Rahman et al., 2014, p. 91). Healthcare organizations are a rapidly growing industry with an increasing need for highly skilled and competent managers (Porter et al., 2016, p. 355). According to Gulick (1935), management functions are planning, organizing, staffing, directing, coordinating, reporting, and budgeting. Managers should perform these functions effectively. However, healthcare managers must have a different set of management skills and competencies. Managers need to have a number of competencies that will enable them to perform these management functions effectively and efficiently (Pillay, 2008, p. 2).

Mid-level managers are responsible for transforming the general goals and plans developed by senior managers into activities, and supervising and coordinating the activities of lower-level managers. In other words, they are responsible for fulfilling all strategies and policies determined by senior managers (Draft, 1994, p.17). Managers work in a wide range of areas depending on their own business, organization, and individual abilities. In order to fulfill these tasks, the manager must be a decision-maker, planning, organizing, leadership and motivating, change agent, audience and controller, boundary spanner, information method, and entrepreneur (Hitt et al., 1989, p.17).

Mid-level hospital managers are responsible for a specific part of the organization. The roles of mid-level managers include strategist, designer, communicator, delegator, mentor, liaison, facilitator, leader, innovator, monitor, broker, spokesperson, producer, disseminator, director, negotiator, monitor, disturbance handler, resource allocator, entrepreneur (Guo, 2001, Quinn et al, 2020, Mintzberg, 1973). With these specified roles, skills, and competencies, mid-level managers must be able to develop their organization's mission, support their employees, and successfully navigate the competitive and ever-changing healthcare environment (Guo, 2003). Effective hospital managers need an appropriate knowledge base, experience in the healthcare industry, compatibility with members of the management team, and the personal qualities and behaviors that enable them to do the job. In addition, management education has a key role to play in the learning of these skills (Glass, 1990, p. 24).

Over the past decade, there has been an increasing interest in competency-based performance systems to improve both individual and organizational performance in health professions education and in various health sectors (Calhoun et al., 2008). Hospitals are matrix organizations, and hospital managers require adequate management skills to coordinate services in the hospital (Dadgar et al., 2012).

### Health Leadership Competency Model

Competence is referred to as the knowledge, skills, and abilities required to meet changing business and healthcare organizations (Shewchuk et al., 2005; Stowe, Michael; Haefner, James; Behling, 2010). Managerial competence can be defined as a set of knowledge, skills, behaviors, abilities, and attitudes that contribute to an individual acting in a management position (Rahman et al., 2014, p. 91). According to Spencer and Spencer (1993) competencies in the workplace consist of six components:

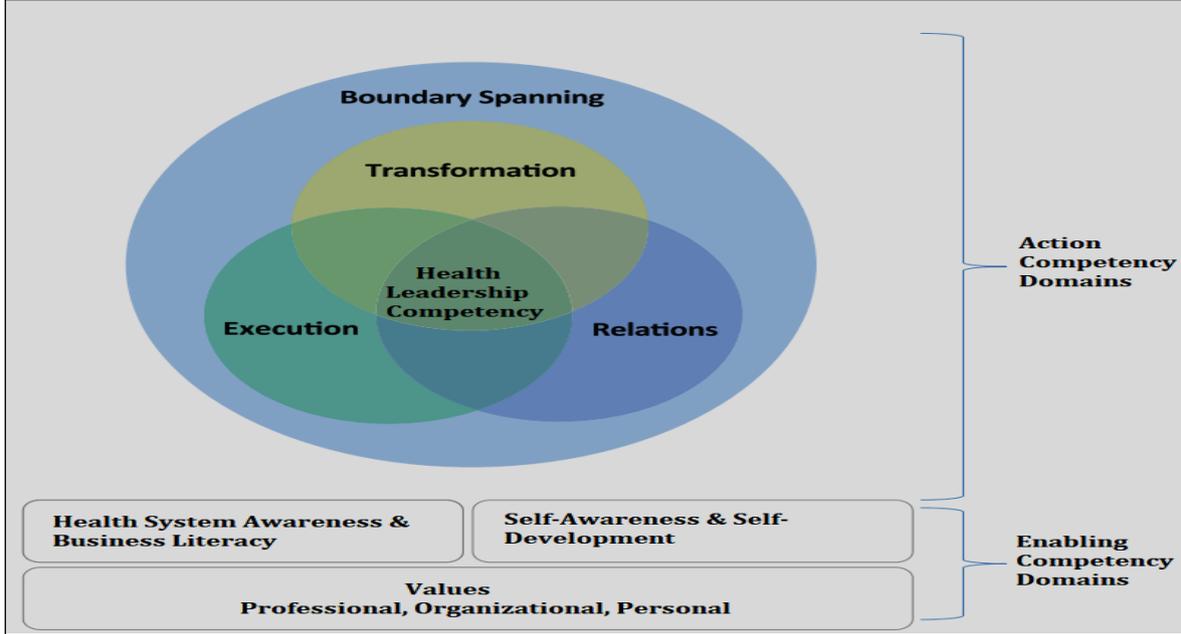
1. The ability to be successful, to take initiative, and to seek information.
2. Interpersonal understanding, competence to help.
3. The ability to build relationships and create incentives in organizations.
4. Management competence to work as a team and in collaboration with others.

5. Cognitive competence that reflects the analytical and conceptual thinking ability of managers.
6. Personnel efficiency competence such as self-control, self-confidence, flexibility, and organizational commitment.

Competence models are widely used in most organizations today. It provides a competitive advantage to organizations and contributes significantly to the development of human resources. For the first time, interest in competence management has grown since David Mc Clelland wrote his groundbreaking article in 1973 (Vazirani, 2010, p. 121). Human resources managers can have a major impact on the globalization of businesses by adopting a systematic approach to structuring a global leadership competence model (Morrison, 2000, p. 117). There has been an increasing interest in competency-based performance systems to improve both individual and organizational performance in health professions education and in various health sector sectors (Calhoun et al., 2008, pp. 375–376). The competencies are to summarize the experiences and insights of experienced leaders, identify a set of useful leader behaviors, provide a tool that individuals can use to improve themselves (Hollenbeck et al., 2006, p. 398). In terms of developing current and future managers, competence models are particularly useful for identifying areas where further development can generate the greatest relative return (Garman & Scribner, 2011, p. 381).

The National Center for Healthcare Leadership competency model was developed as a benchmark model of core competencies for the health profession (Calhoun et al., 2002). The current version of the Health Leadership Competency Model (HLCM), version 3.0, is graphically displayed in the Venn diagram in Figure 1. The model is organized around four "action" areas and three "enabling" areas. The areas of "action" are "execution, relationships, transformation, and boundary spanning", which includes competencies related to the direct work of leaders at work. The "enabling" areas include core professional knowledge and self-awareness competencies that strengthen the effectiveness of the "action" areas. These include "health system awareness and business literacy, self-awareness and self-development and values". These areas include 28 competencies that represent the leader in preparation and development to lead effectively in their health organizations (Health Leadership Competency Model 3.0., 2018).

**Figure 1.** Health Leadership Competency Model 3.0



**Source:** Health Leadership Competency Model 3.0., 2018;Calhoun et al., 2008, p. 378

HLCM version 3.0 is a very useful tool for management candidates who are looking for a successful career in health management, training programs that help them, and health organizations that identify and develop an effective staff in this field. The model has been developed by paying attention to psychometric principles. Considerable efforts have been made to identify competencies for the health sector. HLCM, can be used in hospital management postgraduate education, nurse-team leadership, health institution management, and various executive training programs (Calhoun et al., 2008, p. 387).

There is a need for management competencies of hospital managers at various levels in hospital organizations (Pihlainen, 2016; Lin et al., 2005). However, although clinically competent, chief physicians' management and leadership competencies are often lacking (Dickinson et al., 2013; Kuhlman & von Knorring, 2014). According to Grossman (2007), management skills are as important as patient care and treatment skills in hospitals. Therefore, comprehensive competence-based training should be used to train and develop managers in hospitals (Liang et al., 2018; Lin et al., 2005; Sutto et al., 2008). However, according to Mintzberg (2004), manager development occurs abundantly through experience and practice, which refers to learning by doing management work.

## MATERIALS AND METHODS

In this study, the Analytic Hierarchy Process (AHP) method was used to determine which competence types are more important. The AHP method and research methodology are briefly described below.

AHP is a method developed by Thomas L. Saaty for the solution of problems in complex and economic social and technical fields (Saaty, 1987). The AHP method, which is widely used and

reliable in decision making in health services, is an objective and scientific method in determining the importance of sub-factors.

AHP is a kind of multi-criteria decision-maker technique. In multi-criteria decision making, AHP is often used to deal with several evaluation criteria and a decision-making problem in an uncertain situation. AHP systematizes a complex problem by determining the factors that require priority (Saaty, 1990; Saaty and Vargas,1980). Faced with a problem, the decision maker will first set an overall goal and then develop the lowest level criteria, sub-criteria, and criteria. After this step, a binary comparison is made on a scale from 1 to 9, and then calculated as the weighted values of the criteria, and finally, the overall priority vector is determined. With this scale, the importance of one criterion compared to another is determined. In the scale, the equal value is 1, the highest value is 9, and the lowest value is 1/9 (Saaty, 1990, p. 9; Saaty, 2001, p. 397).

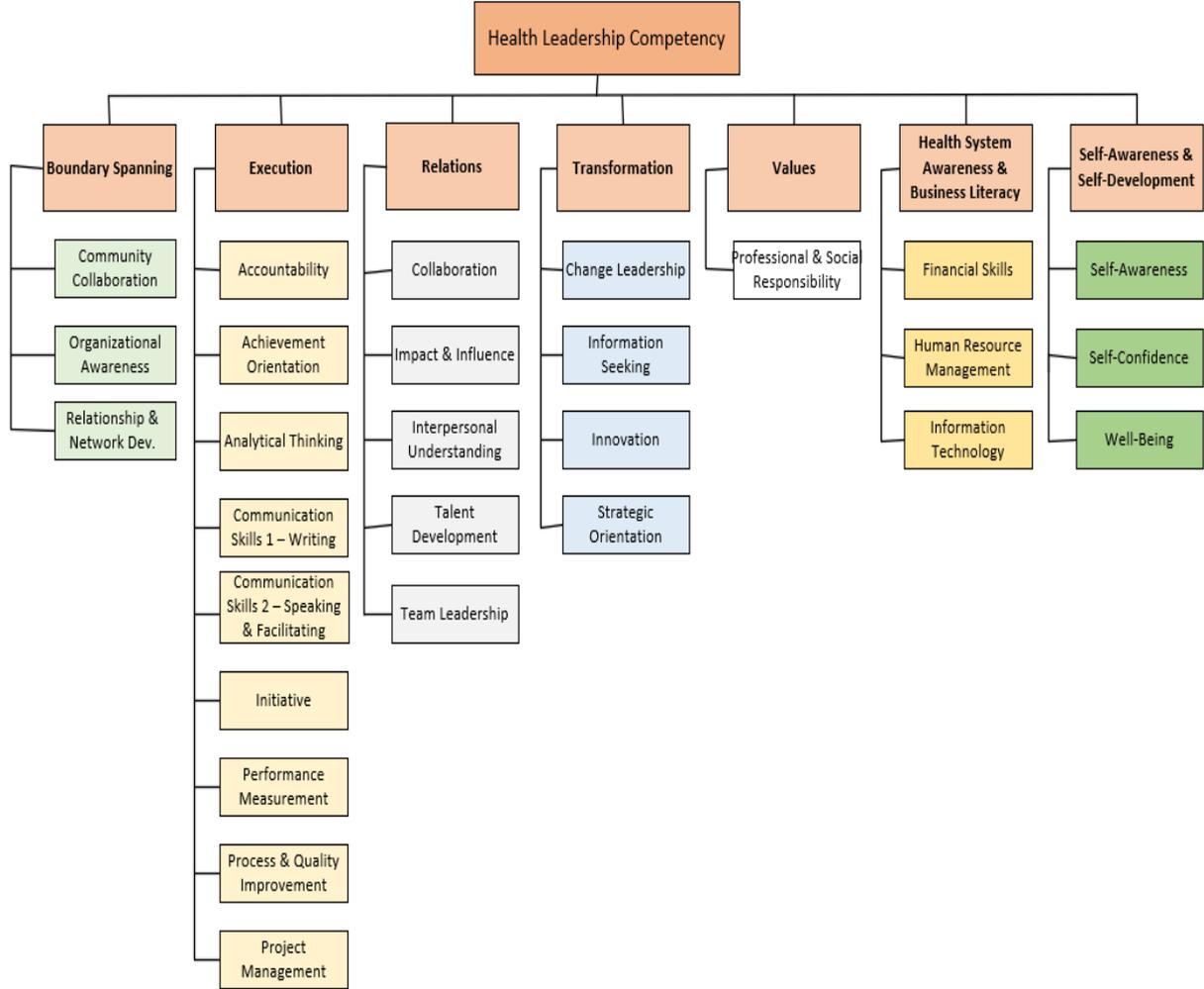
The research data were obtained using the AHP interview form. The research was conducted on 10 public and private hospital managers. This study, which was carried out to determine which managerial competencies are more important for a hospital manager. AHP implementation steps are given below (Çelikkilek, 2018, p. 44; Ömürbek and Şimşek 2014, p. 309; Saaty, 1990, p.14; Saaty, 2001, p.397);

- Determining the purpose, criteria, decision alternatives, and creating a hierarchy.
- Pair comparisons of criteria,
- Pair comparisons of alternatives for each criterion.
- Creation of normalized binary comparison matrices
- Determining criterion weights and determining alternative scores according to that criterion
- Testing for consistency.
- Creating AHP scores

Briefly, an AHP process consists of three steps: creating the hierarchy, determining the pairwise comparison and superiority, and calculating the consistency. Microsoft Excel 2016 was used for the calculations of the steps of the AHP method. AHP method was used to determine the importance of the criteria in the study.

In this study, after determining the purpose of the AHP method, a hierarchical structure in Figure 2 was created for this purpose. NCHL Health Leadership Competency Model was used to determine the criteria in the study. In this context, 7 main criteria and 28 sub-criteria were determined for the competency types of hospital managers (Figure 2). Competence in this study signifies knowledge, skills, abilities, and attitudes that are necessary for managerial levels and tasks in hospitals.

Figure 2. Hierarchy Structure



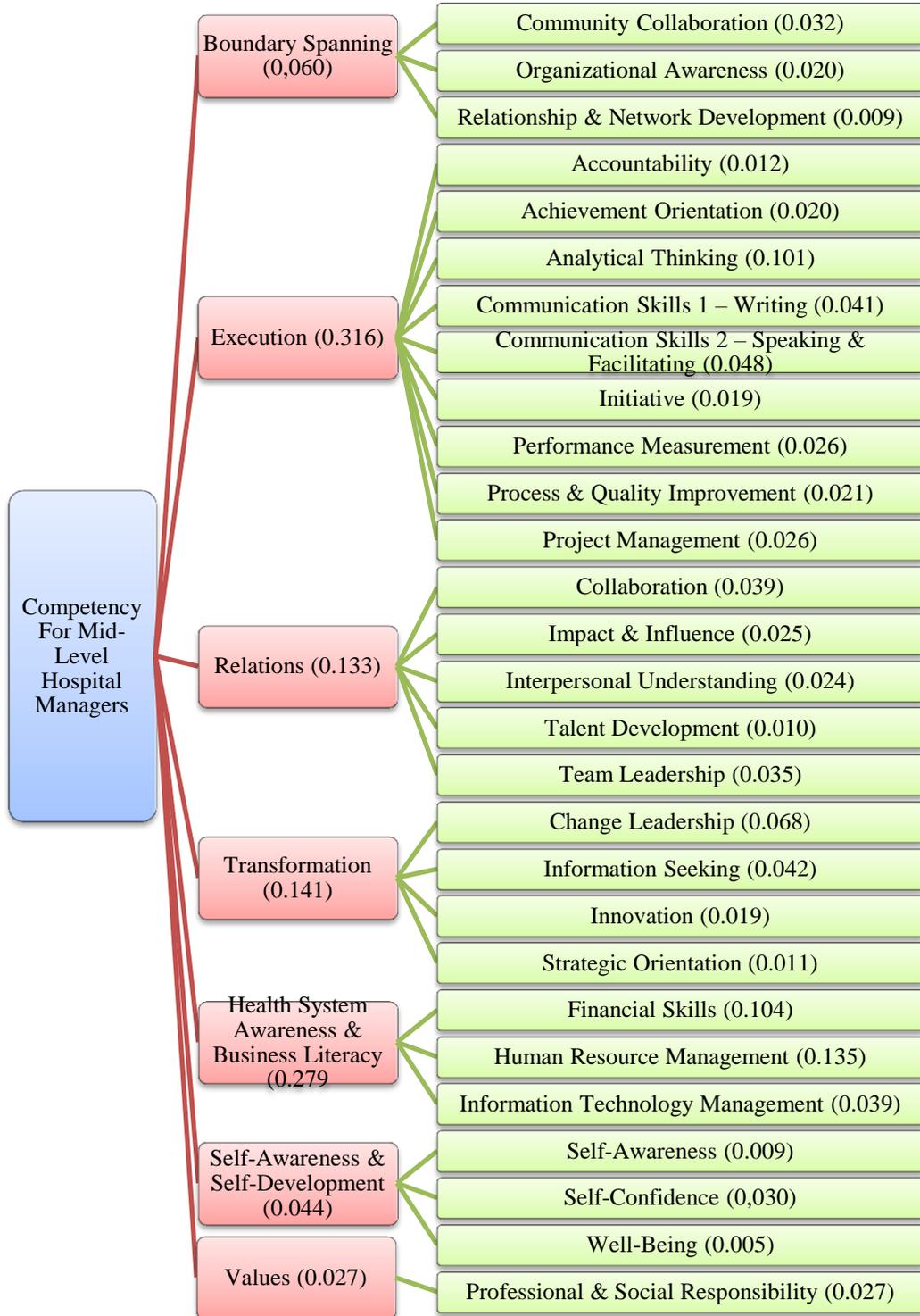
## RESULTS

This study was conducted to determine the first and second level competency types of mid-level hospital managers. Hospital manager competencies were determined at two levels with the AHP method. The first level consists of seven evaluation criteria: boundary spanning, execution, relations, transformation, health system awareness & business literacy, self-awareness & self-development, values, and the second level has 28 evaluation criteria. After the hierarchical structure was determined, paired comparisons and consistency analysis were made for the main and sub-criteria. After the normalization process of the main and sub-criteria and the calculation of the consistency rates, the relative importance weights of each criterion were calculated as shown in Table 1. In this study, the expert selection was used for AHP analysis, and the inconsistency index was taken as the standard. This value was accepted to be less than 0.1. The overall discrepancy in this study was 0.06, indicating that the consistency was acceptable. The results are shown in Table 1 and Figure 3.

**Table 1.** First and Second Competency Domains for Mid-Level Hospital Managers

The Action (1) and Enabling (2) Competency			Competencies				
First Domains	Weight	Rank	Second Domains Indicator	Weight	Relative Weight	Rank	
A C T I O N	Boundary Spanning	5	Community Collaboration	0.525	0.032	11	
			Organizational Awareness	0.334	0.020	20	
			Relationship & Network Development	0.142	0.009	27	
	Execution	0.316	2	Accountability	0.038	0.012	23
				Achievement Orientation	0.065	0.020	19
				Analytical Thinking	0.321	0.101	3
				Communication Skills 1 – Writing	0.131	0.041	7
				Communication Skills 2 – Speaking & Facilitating	0.153	0.048	5
				Initiative	0.060	0.019	22
				Performance Measurement	0.082	0.026	15
				Process & Quality Improvement	0.068	0.021	18
				Project Management	0.083	0.026	14
				Collaboration	0.291	0.039	9
				Impact & Influence	0.189	0.025	16
				Relations	0.133		Interpersonal Understanding
			Talent Development	0.079	0.010	25	
			Team Leadership	0.262	0.035	10	
Transformation	0.141	5	Change Leadership	0.485	0.068	4	
			Information Seeking	0.298	0.042	6	
			Innovation	0.138	0.019	21	
			Strategic Orientation	0.079	0.011	24	
E N A B L I N G	Values	0.027	7	Professional & Social Responsibility	1.000	0.027	13
	Health System Awareness & Business Literacy	0.279	1	Financial Skills	0.373	0.104	2
				Human Resource Management	0.486	0.135	1
				Information Technology Management	0.141	0.039	8
	Self-Awareness & Self-Development	0.044	5	Self-Awareness	0.201	0.009	26
				Self-Confidence	0.681	0.030	12
Well-Being				0.118	0.005	28	
				1.000		1.000	

**Figure 3.** Competency Domains for Middle Hospital Managers



### First Level Competencies

The first level competencies that middle-level managers should have in hospitals are shown in Figure 4 in the pie chart. Accordingly, it was determined that boundary spanning (6%), execution (32%), relations (13%), transformation (4%), health system awareness & business literacy (28%), self-awareness & self-development (4%) and values (3%).

The most important competence of a hospital manager has been identified as an executive. Execution is a concept that expresses transforming vision and strategy into actions that support optimum corporate performance.

The second important competence of a hospital manager is determined as health system awareness & business literacy. This competence refers to understanding technical issues such as human resources, finance, law, policy, information systems related to the fields of activity, as well as the current business and operating frameworks of the health system.

The third important competence of a hospital manager has been identified as transformation. Transformation refers to determining and strictly implementing compelling and inclusive change processes to support the improvement of healthcare quality, efficiency, and access in hospitals.

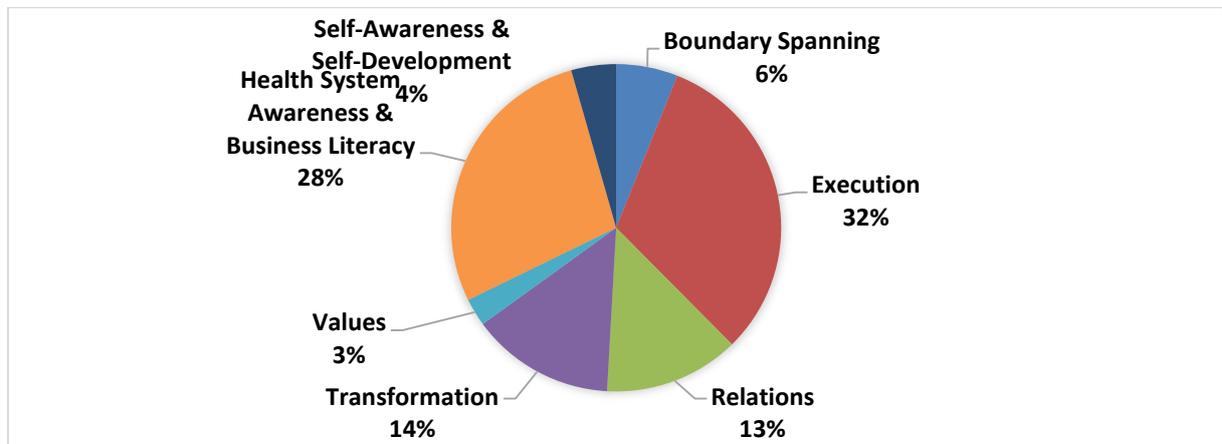
The fourth important competence of a hospital manager has been identified as relations. Relations refers to leading the way in creating a perfect organizational climate that values employees, provides a working environment with high job and life satisfaction, and encourages the development of employees.

The fifth important competence that a hospital manager should have has been identified as boundary spanning. This competence explains the development in good relations with the units where a hospital manager is assigned with Social Security Institution, Ministry of Finance, Ministry of Health, supplier companies, and other stakeholders.

The sixth important competence that a hospital manager should have is self-awareness & self-development. This competence refers to a hospital administrator's self-knowledge, strengths and weaknesses, high self-confidence, and high social well-being.

Finally, the seventh competence that a hospital manager should have has been determined as values. This last competence explains understanding personal, professional, and organizational values to guide effective decision making.

**Figure 4.** First level competencies for mid-level managers in hospitals



## Second Level Competencies

The second-level competencies that middle-level managers in hospitals should have been shown in Figure 5. Accordingly, the most important competence of middle-level managers is human resources management (13.5%). Since hospitals are a service business, human resources are among the most important management activities. Approximately half of hospitals budgets are personnel expenses. For this reason, human resources must be managed effectively in a hospital enterprise. Hospital managers must have the competence to develop and empower staff, staff planning, to master legal and regulatory legislation, performance-based additional payment, and to optimize the performance of the workforce.

**Figure 5.** Second level competencies for mid-level managers in hospitals



In this research, it was determined that financial skill (10.4 %) is the second most important competence of hospital management. Hospitals are high budget businesses and their costs are quite high. Hospital managers at all levels have a financial aspect in their decision making. In this case, hospital managers must have very good financial skills. Therefore, a hospital manager must have the ability to understand and explain financial and accounting information, prepare and manage budgets, and make long-term investment decisions.

It has been determined that the third most important competence of hospital management is the ability of analytical thinking (10.1%). Hospital organizations have a matrix organization structure. Therefore, hospital managers need to solve complex problems with analytical thinking skills. In this context, it is necessary to find a solution by breaking down a problem step by step or monitoring its effects. In this context, in the solution of a problem; It is necessary to determine priorities on a rational basis, to analyze causal relationships, and to analyze problems in a systematic framework.

It has been found that a hospital manager must also have the ability to community collaboration (3.2%) in order to align the hospital's priorities with the needs and values of the community, including its culture and values. The hospital manager should have organizational awareness competence (2.0%), which expresses the ability to understand and learn the formal and informal decision-making structures and power relations of the hospital. In addition, hospital managers should have the ability to establish and maintain professional connections by creating networks with hospital managers of similar structures with the competence of relationship & network development (0.9%).

One of the competencies of a hospital manager is to transform corporate vision and strategy into actions that support corporate performance. In this context, execution competence has been determined as follows; accountability, (1.2%), achievement orientation (2.0 %), communication skills 1-writing (4.15), communication skills 2 - speaking and facilitation (4.8%), initiative (1.95), performance measurement (2.6%), process and quality, improvement (82.1%) "and project management (2.6%).

The relations competence of a hospital manager is expressed as creating a positive culture in the organization that values the employees, provides a healthy and energizing environment for the employees and enables everyone to continue their work. In this context, the results of the hospital manager relations competence are given in figure 4. The priority weights of the competencies are determined as: collaboration (3.9%), impact & influence (2.5%), interpersonal understanding (2.4%), talent development (1.0%), team leadership (3.5%).

In the research, other competencies of hospital managers were weighted as follows; change leadership (6.8%), information seeking (4.2%), innovation (1.9%), strategic orientation (1.1%), professional & social responsibility (2.7%), information technology management (3.9%), self-awareness (0.9 %), self-confidence (3.0 %), well-being (0.5 %).

## DISCUSSION

The most important task of hospital managers is to manage resources effectively and efficiently. As a result of this research, it was determined that hospital managers should have the knowledge and skills to manage these resources among their basic competencies. In this context, the results of similar studies in the literature are discussed below.

In a study conducted in Iran, hospital performance evaluation criteria were determined from the manager's point of view. As a result of the research, they were classified into 7 main and 41 sub-themes. Major themes include planning, organization and personnel management, performance management, leadership, knowledge management and competency in clinical governance and performance indicators (Dadgar et al., 2012, p. 223). In a study conducted to determine the managerial competencies of hospital managers in South Africa, they reported that public hospital managers felt the most competent in planning, self-management and leadership, legal/ethical competence, and the least competent in terms of private health care competencies. Private hospital managers stated that they are the most competent in planning, organizing, leadership, self-management, and control, and the least competent in legal/ethical and private health care competencies (Pillay, 2008, p. 1).

A study was conducted to determine managerial competence levels for state hospital managers in Vietnam. Key leadership and managerial competencies for hospital managers include policy development and implementation, strategy development and direction, planning, human resource management, financial management, equipment and infrastructure management, information management, risk and disaster management, self-management, quality management, investigation, surveillance, monitoring and evaluation, and ethical knowledge. These are the necessary competencies for hospital managers to fulfill their duties effectively (Van Tuong & Duc Thanh, 2017, pp. 418–427). The qualification category in healthcare is divided into four subcategories: social, organizational, commercial, and financial competence. Social competence includes knowledge and understanding of the laws, roles, and different functions of political, social, and legislative systems. Characterized by varying degrees of rigor and scope in the organization, the level of a manager or leader determines whether any of these systems are part of managerial operations (Pihlainen et al., 2016, p. 99).

The competencies that hospital managers should have been investigated in a multi-study. In a study conducted in Lebanon, the top five skills hospital managers should have; professionalism, ethics, quality management and improvement, strategic planning, and communication (Jaana et al., 2018, p. 885).

## CONCLUSION

As a result of the research, the most important competence of a hospital manager has been identified as an executive, health system awareness & business literacy, transformation, relations, boundary spanning, self-awareness & self-development, and values. The most important competencies of middle-level managers are human resources management, financial skill, the ability of analytical thinking, the ability to community collaboration, organizational awareness, and relationship & network development. As a result, it was determined that the most important competencies of a hospital manager are human resources management, financial skills, analytical thinking, change leadership, and communication skills.

Hospital managers must have the necessary competencies in order for the organizations of health institutions to achieve their goals and objectives. It is thought that success in hospital management is possible not only with management functions, but also through the execution of all the competencies specified in HCLM 3.0. Therefore, managers should receive hospital management training, courses and seminars, and continuous training should be provided. In addition, trainings should be given to gain the HCLM 3.0 application to the fourth-grade students in health management.

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## ULUSLARARASI SAĞLIK YÖNETİMİ VE STRATEJİLERİ ARAŞTIRMA DERGİSİ

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