Investigating the Necessity of Knowledge Management Deployment in the Amir Al-Momenin (AS) Educational Hospital of Zabol in 2018-2019

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Abstract

Introduction: Health services in each community are the basis for the physical and mental health of individuals and the prerequisites for sustainable development. In the event of emergencies and crises, health care team members need new statistical reports and information. And there should be no delay in decision making. Therefore, it is necessary to know the full and proper people who can act quickly and correctly. Knowledge management has different models that some have to understand and some to implement knowledge management, and some also include both features. Therefore, knowledge management has become one of the most important tasks of organizations that are trying to become a learning organization. This research was carried out to investigate the necessity of establishing knowledge management in Amiralmomenin Educational Hospital of Zabol. **Methods:** The present study was descriptive and cross-sectional and applied in 2018 in the Amiralmomenin Hospital of Zabol. The statistical population was all administrative staff, physicians, and nurses, among whom 260 were selected by the sampling method. Simple randomized selection. Data were analyzed by using a closed-ended questionnaire and Pearson correlation test using SPSS18 software. **Results:** Among the participants in the study, the highest frequency was related to the age group less than 24 years and the lowest frequency was for the age group of 32 to 38 years. The most frequent participants are 143 people (55%) who have a work experience of fewer than 5 years, as well as the lowest frequency of participants in two (8.0%), who have a work experience of 21 It is 25 years and the most frequent in bachelor's degree is the frequency of 102 (2/39%) and the lowest frequency is the master's degree with frequency (4/5%) and the highest mean Organizational culture with an average of 3.4 and the factor of human resources with the mean of 3. 3 had the lowest average. **Conclusion:** A meaningful statistical relationship between organizational culture and knowledge management will be the basis for successful changes in hospitals and will help managers in systematically predicting priorities for change and better codification of strategies for the successful implementation of techniques and management processes.

Keywords: knowledge management, staff, hospital

INTRODUCTION

In recent years and the modern era, the concept of knowledge has undergone many changes that many scholars of various sciences, including management science in organizations, have started a new chapter in management with the title of "Knowledge Management". Today, information and awareness show the gap and boundary between various societies and nations. So, the main challenge many of today's organizations are facing is knowledgeable and capable human resources. Organizations have countless resources, that human resources and forces are considered as the most important, the most expensive, and the most valuable capital and source of the organization. "Human resources" is the only conscious element as the coordinator of other resources of the organization [1]. Knowledge management is an important topic because it is related to the most important organizational capital, which is intellectual capital. The goal of knowledge management is to create a continuous integration between internal and environmental knowledge to adapt to the internal and external changes of the organization in business development. Deploying knowledge management in the hospital improves the quality and services and reduces the

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dissatisfaction of the clients and increases the speed of accountability and has advantages for the employees. Some researchers consider knowledge management as a process by which organizations can transform information into data and data into knowledge, and will also be able to effectively use the acquired knowledge in their decisions [2]. Knowledge management is the process of creating, recording, refining, disseminating, and applying knowledge. These five factors in the field of knowledge management for an organization provide the background for training, feedback, retraining, which are usually used to create, record, refine, disseminate, and revive the organization's capabilities. The following steps that represent the knowledge management processes have been stated by Bassi:

• **Knowledge Creation:** Knowledge comes from employees' experiences and skills. Knowledge is created by people who specify new procedures for doing tasks or developing science. Sometimes, if there is no knowledge in an organization, external knowledge enters the organization. All organizations create knowledge in the form of organizational functions and activities and use them. Creating knowledge refers to the ability of organizations to develop new and useful ideas and solutions. Each organization creates new reality and meanings through various methods by developing and restructuring the previous and current knowledge.

• **Knowledge Registration:** The knowledge that has been created must be stored in its original form in the databases. Many organizations use a variety of resources to record and store knowledge.

•**Knowledge Dissemination:** Knowledge must be accessible to everyone in the organization to use it at any time and place he/she needs. New technologies such as group working, the internet, the intranet, and other technologies help knowledge dissemination. Dissemination of knowledge requires taking two steps: sending, dispatching, or offering knowledge to a potential recipient and absorbing it by the person. The meaning of knowledge dissemination is to increase the ability of organizations to do tasks and ultimately increasing their value. Only a change in behavior can indicate an effective transfer of knowledge. Just the knowledge being accessible does not mean disseminating it.

• **Applying Knowledge:** In general, organizational knowledge should be used for the products, services, and process of the organization. If an organization is not able to easily specify the correct form of knowledge in its proper place, it will face problems in competitive arenas. When innovation and creativity are the ways to succeed in today's world, the organization must be able to apply the proper knowledge in its proper place. Organizations have various ways of using their knowledge resources. Applying knowledge includes activities that use knowledge in business processes. To expand the application of knowledge in governmental collections, in the official organizational structure of the organization, a position can be considered for

knowledge management, which completely specifically leads the activity of sharing and using knowledge and corrects the intellectual and ideological bases of individuals in this field [3]. Knowledge management emerged with the slogan of implicit knowledge control and in less than a few decades was converted to one of the most interesting and the most attractive management topics [4]. Knowledge management as one of the important challenges of governments and today's organizations is proposed [5, 6]. Knowledge management tries to encourage the spirit of participation and integration in organizations and proposes a system of collective thinking and idea-sharing broadly [7]. Knowledge management has different models, some of which are for understanding and some are for implementing knowledge management, and some include both features. Among these models, the Nonaka, Takeuchi, Zack, the model of Probst processes, Firestone Model, and Wigg Model can be mentioned. Since the knowledge management model that is accepted by all experts has not been presented yet, it is, therefore, necessary to investigate the models presented in this field and use them following the desired topic. There are two types of model classification, one in terms of the perspective that underlies the models and the other presented according to the steps of the process models. The effectiveness of each one of the models depends on the position and status in which the organization is located [8].

The "APQ" model has a total of five levels, that from the lowest to the highest are:

1. Reaction 2. Beginning 3. Development 4. Control, and 5. Maturity

Level 1 (Reaction): The organization is not aware of knowledge management and its importance in increasing productivity and competition.

Level 2 (Beginning): The organization has begun to distinguish the need for managing knowledge, or may have begun a pilot project of knowledge management.

Level 3 (Development): Knowledge management has fully been implemented and developed.

Level 4 (Refining): The implementation of knowledge management is evaluated continuously for continuous improvement.

Level 5 (Maturity): Knowledge management is fully ongoing within the organization.

The use of knowledge-based systems in hospitals to achieve the information and knowledge is necessary and leads to integrating the knowledge gained from different sources and solving the problems [9]. The advantages of using knowledge management in the health care system include cost reduction, medical error reduction, increasing the quality of care, organizational learning, and increasing collaboration and innovation [10, 11]. Having goals such as improving patient

care, reducing medical errors, and using advanced technology in health services make it necessary to use the trained and specialized employees. Also, it is necessary to perform work in groups and around the patient issue, to share more knowledge, and to organize its management in this organization [12]. Sadeghi et al. in their study entitled "Investigating the status of knowledge management components in the selected hospital of Iranian medical sciences in 2013" have addressed the issue that knowledge management is one of the achievements of information and knowledge era and due to its characteristics, nowadays successful organizations strongly need to take advantage of it. They concluded that this feature will pave the way for successful changes in the hospital, and will help managers in predicting change prioritization system and compiling strategies better to successfully implement management techniques and processes [13].

INVESTIGATION METHOD:

To collect data, a knowledge management deployment feasibility tool was used. Among the features of this questionnaire, the low number of questions, ease of implementation, coverage of all the dimensions of knowledge management (production, acquisition, sharing and knowledge distribution, and applying) and its being general can be mentioned. Hence, this tool is not specific to the job, education, and age group and can be used for various groups of employees, and the information in this research has also been collected by the questionnaire. The first part of the questionnaire is the respondents' demographic information, which includes gender, the ratio of education, work experience, and in the second part 40 questions have been prepared. Human resource readiness, information technology, organizational culture, organizational structure, knowledge production and knowledge acquisition, each of which includes 5 questions, and the next part is knowledge sharing and distribution, which includes 4 questions, the knowledge application, knowledge quality, and knowledge storage, each of which includes 3 questions. The initial validity of this questionnaire was confirmed by its designers through exploratory analysis and for the final validity, this questionnaire was confirmed by professors related to the field. Cronbach's alpha test will be used to assess the reliability of the questionnaire. The letter of introduction was taken from the university to conduct research and the necessary measures were taken. To fill the questionnaires, the employees have been treated respectfully. In this research, all confidentiality criteria were observed, and the results obtained from the research were provided to the related organizations to perform for resolving probable issues.

FINDINGS:

The population under study is 260 people working in the job domains, including nursing, health information technology,

medical documents, and the doctors in the Amir Al-Momenin (AS) Educational Hospital of Zabol. Among the participants in the research, the highest frequency was related to the age group of fewer than 24 years, (204 people; 78.5%), and the lowest frequency was related to the age group of 32 to 38 years, (14 people; 4.5%). In this research, the highest frequency of participants was 143 people (55%) that included those with less than 5 years of work experience, and also the lowest frequency of participants was 2 people (0.8%) which included people with 21 to 25 years of work experience. In this research, out of 260 people who completed the section related to the ratio of education, people with a bachelor's degree with a frequency of 102 (88.8%) were the highest number of participants and individuals with a master degree with a frequency of 14 (5.4%) were the lowest number of participants in this research. Since the knowledge management status questionnaire was in the Likert's five-option spectrum and had 40 questions, and the scale of data measurement is ranking; hence the data will be described by the median. Therefore, the minimum possible score is 40, and the maximum score is equal to 200. To investigate the status of knowledge management deployment in the Amir Al-Momenin Hospital of Zabol, the scores obtained in this scale were classified at three levels of undesirable (40-93), relatively desirable (93-146), and desirable (146-200). To identify the key factors affecting knowledge management, exploratory factor analysis was used. The KMO statistic value was obtained at about 0.88, indicating the adequacy of the sample. The significance of Bartlett's Test of Sphericity also showed that the conditions for factor analysis were established. Using the analysis method, the main components of all research variables were summarized into 7 factors. The first factor of organizational culture with a variance ratio of 11.36 is in priority and knowledge processes with a variance of 11.19 is in the second position, the factor of information technology infrastructures with a variance of 10.86 is in the third, the fourth factor of organizational structure explains about 10.60 variances of the dependent variable, the fifth factor of background factors has a variance of 9.76, the factor of knowledge structure with a variance of 7.73, is in the sixth position, and the seventh factor of human resources with a variance of 4.33 is in the last position. Cronbach's alpha calculation for each of the factors also indicates the high validity of the enumerated factors. The importance and priority of the factors affecting the knowledge management deployment according to the respondents are an organizational culture with the mean of 4.3 (first), knowledge processes with the mean of 4.1 (second), the infrastructure of information technology system with the mean of 4.08 (third), an organizational structure with the mean of 4 (fourth), background factors with the mean of 3.8 (fifth), knowledge structure with the mean of 3.5 (sixth), and the factor of human resources with the mean of 3.3 (seventh).

Table 1: Loads; Specific Values; Variance of Each Factor

Factors	Indicators	Factors						
		1	2	3	4	5	6	7
Organizational Culture	Trust-Based Culture	0.659						
	Group Working Culture	0.643						
	Open Organizational Atmosphere	0.627						
	Learning from Failures and Mistakes	0.613						
	Innovation and Creativity Culture	0.602						
	Knowledge Sharing Culture	0.659						
Knowledge Processes	Acceptance of the Knowledge Management System		0.671					
	Knowledge Competence-Based Promotion		0.659					
	Attracting and Supporting Knowledge Employees		0.631					
	Management Support for Knowledge-Based Projects		0.618					
	Compiling a Knowledge Management Strategy in the Organization		0.597					
	Creating Knowledge Networks		0.573					
Information Technology System Infrastructure	Access to Network Infrastructures and Hardware			0.642				
	Access to Application Software			0.615				
	Access to Technology Employees			584/0				
	Virtual Topic Mechanisms			0.546				
Human Resources	Knowledge Exploration Facilitating Structure				0.623			
	Supporting Structure of Collective Behavior				0.609			
	Network Structure				0.582			
	Allocating Resources with Knowledge Dissemination Approach				0.567			
	Lack of Formalism				0.524			
	Informal Communication Channel				0.516			
	Encouraging Team Working				0.502			
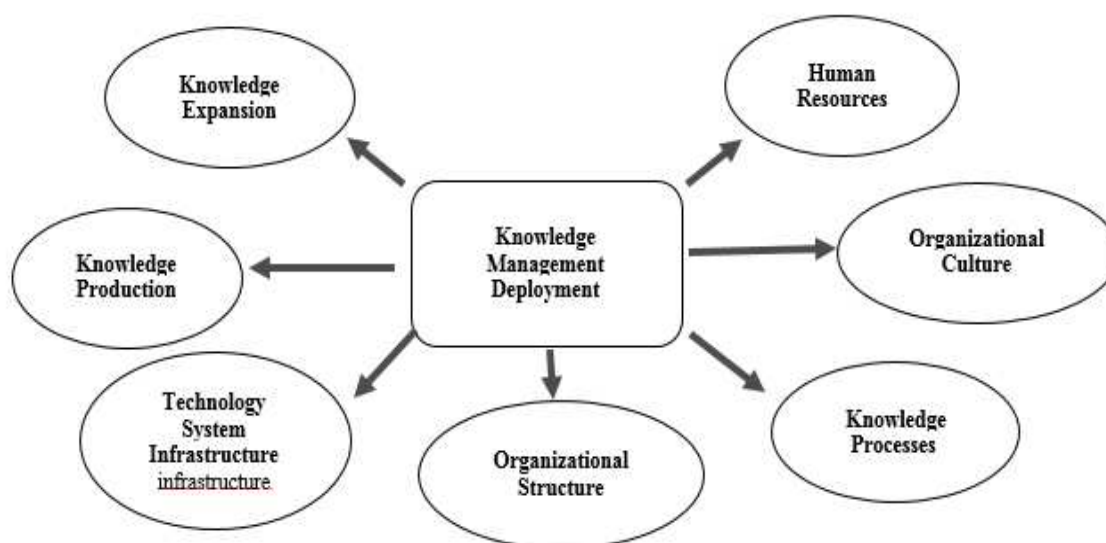
Table 2: Ranks and Ranking Factors Based on Friedman's Test

Friedman's Test		Factors Affecting Knowledge Management Deployment	Ranks Mean	Priority
Number	260	Organizational Culture	4.3	First
Chi-Square		Knowledge Processes	4.1	Second
d.f		Information Technology System Infrastructure	4.08	Third

Table 3: Determining the Ratio of Identifying and Analyzing Organizational Culture for Knowledge Management Deployment in the Amir Al-Momenin (AS) Hospital of Zabol

Ranking / Statistics	1 Score	2 Score	3 Score	4 Score	5 Score
Frequency	19	55	100	143	60
Percentage	5	14.5	26.5	38	16

The table above shows that in this research, 5% of the participants have completely disagreed with the identification and analysis ratio of organizational culture (1 score), 14.5% of the participants have disagreed (2 scores), 26.5% had no idea (3 scores), 38% of the participants have agreed (4 scores), and 16% of the participants have completely agreed (5 scores). Therefore, according to Table 4, 16% of people consider the organizational culture to be effective in implementing and deploying knowledge management.

Table 4: Determining the Ratio of Identifying and Analyzing Knowledge Processes for Knowledge Management Deployment in the Amir Al-Momenin (AS) Hospital of Zabol

Ranking / Statistics	1 Score	2 Score	3 Score	4 Score	5 Score
Frequency	33	48	133	127	52
Percentage	8	12	34	32	14

The table above shows that in this research, 8% of the participants have completely disagreed with the identification and analysis of organizational culture (1 score), 12% of the participants have disagreed (2 scores), 34% had no idea (3 scores), 32% of the participants have agreed (4 scores), and 14% of the participants have completely agree (5 scores).

Table 5: Determining the Ratio of Identification and Analysis of the Information Technology System for Knowledge Management Deployment in the Amir Al-Momenin (AS) Hospital of Zabol

Ranking / Statistics	1 Score	2 Score	3 Score	4 Score	5 Score
Frequency	38	72	82	132	69
Percentage	10	18.2	20.8	33.5	17.5

In Table 5 it has been shown that in this research, 10% of the participants have completely disagreed with the analysis ratio of information technology system (1 score), 18.2% of the participants have disagreed (2 scores), 20.8% had no idea (3 scores), 17.5% of the participants have agreed (4 scores), and 17.5% of the participants have completely agreed (5 scores).

DISCUSSION AND CONCLUSION:

Many of these variables have been introduced in scattered researches as factors influencing knowledge management readiness. In this regard, it was specified that the Amir Al-Momenin (AS) Hospital of Zabol is at a desirable level in terms of knowledge management. This result is consistent with Karami's findings entitled "Using knowledge management systems in the process of clinical coding in 2005" [14], and there is not that much difference between the present research and similar researches conducted in Iran. How is the identification and analysis ratio of information technology in the Amir Al-Momenin (AS) Educational Hospital of Zabol regarding knowledge management? In the present research, we concluded that the identification and analysis ratio of information technology with a mean of 3.76 is desirable. In research of Ahmadabadi et al. entitled "The impact of information technology tools on the implementation of knowledge management in Tejarat Bank" concluded that there is a significant relationship between information technology tool and knowledge management, and the use of information technology tools such as administrative automation, internet, suggestion systems, e-mail and video conference and so on are effective in the better implementation of knowledge management process [15], and the results of this research are consistent with the results of the present research.

How is the identification and analysis ratio of knowledge processes in the Amir Al-Momenin (AS) Educational Hospital of Zabol regarding knowledge management? In the present research, we concluded that the identification and analysis ratio of knowledge processes with the mean of 3.69 is desirable. Maleki et al. in research entitled "Evaluating the performance of Hasheminejad Hospital based on the criterion of assessment, analysis and knowledge management of education and health-treatment models" concluded that the performance of the hospital in the field of treatment was in the medium category and the field of training gained a poor score. The results of this study are consistent with the present study [16].

Suggestion:

According to the results, for knowledge management deployment, organizational culture is more important than technology and the like; so maintaining and strengthening the cultural components affecting knowledge management should be among the priorities of Zabol hospitals. Therefore, it is necessary that organizational culture and participatory management and questioning and studying are institutionalized in the hospital. Considering the importance of information technology, it is suggested as an influential and undeniable factor in the knowledge management process deployment in the hospital, and short-term and medium-term training courses should be held to teach new technologies for employees.

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