

Factors Affecting Knowledge Management & Knowledge Use A Case Study

Leila Shahmoradi¹, Maryam Zahmatkeshan¹ and Mahtab Karami²

¹Tehran University of Medical Sciences, Department of Health Information Management, 5th Floor- School, Tehran, Iran

²Kashan University of Medical Sciences, Kashan, Iran

Keywords: Knowledge Management, Organization, Administration, Knowledge Use, Knowledge.

Abstract: Knowledge management (KM) is the process of capturing, storing, organizing, using, and creating Knowledge. Ample attention and insight into such processes result in optimal performance in management approaches. We investigated the level of awareness of managers about KM programs and the mechanism of creation and usage of knowledge within the Iranian Ministry of Health and Medical Education (MOHME). After a systematic review, we identified the necessary tools for the measurement, usage, and creation of knowledge in the MOHME. Such tools were reviewed and verified by a subject expert panel. We incorporated such tools to measure the level of awareness, among the MOHME employees, toward knowledge and knowledge management. The results of our study were reviewed by subject matter experts and analysed using IBM SPSS software. The level of awareness toward KM programs and Knowledge usage and knowledge creation are relatively at an acceptable level at the MOHME. Although most of the managers at the MOHME were aware of the knowledge management tools, knowledge creation and usage were remain relatively at low levels. The lack of active sponsors and transparency programs for supporting knowledge creation and usage within the MOHME are among the main reasons for such low activities.

1 INTRODUCTION

Knowledge is the most valuable resource in the information age and active management of knowledge is important to an organization's success. The primary focus of knowledge management (KM) is the development of a knowledge-friendly culture in a social environment that must be supported by appropriate methods and technologies. KM framework is based on the idea that the most valuable resource of an organization is the knowledge itself that is created by the people themselves (Dubois and Wilkerson, 2008, Hulse et al., 2012).

Managers of an organization usually consider knowledge as a great leverage in market competitions (Jasinskas et al., 2015). Seidler and Hartmann (2008) stated that knowledge & information management have two clear objectives: to facilitate the creation of new knowledge and to manage the way in which people share and use knowledge (Seidler-de Alwis and Hartmann, 2008).

By understanding the principles and ideas behind KM frameworks, executives can better

employ the development of the infrastructure and knowledge sharing culture that is required in their environments. If KM is done correctly it can be a great value-added tool with numerous benefits for any organization. A key element in creating a successful KM system is the proper use of "change management" cycle (Liebowitz et al., 2000). The lack of a mechanism for knowledge sharing is the main obstacles in managing knowledge effectively (Liu et al., 2012). Advocating for a culture of knowledge sharing behaviors should be the main focus of a change management executive in any organization. If the change management cycle is implemented and executed correctly and the potential pitfalls of KM utilization are avoided, the resultant intelligence can secure a bright future for the organizational growth.

Absence of a KM strategy as an integral part of the mission of an organization, lack of support and active participation in the management system at higher organizational levels, and poorly designed KM tools are among the main reasons for the failure of knowledge management (Liebowitz et al., 2000).

Governments may find themselves in situations

where KM initiatives become necessary for improving management plans more efficiently, providing more accurate and timely information flow to the individuals, and raising the satisfaction levels from governmental policies & procedures. By design, KM frameworks can transfer tacit knowledge, convey practical or experimental knowledge in the methods and workflow designs, promote standardization and analysis of document contents, and establish a basis for creating competencies, competitive environment and sustainable developmental frameworks within an organization (Chang et al., 2009)

Today, the theoretical knowledge in healthcare organizations is considered as a "high-value informational asset" that acts as a core operational engine for data transactions. For all practical purposes, the modern healthcare system has massive amounts of data that is "rich in knowledge"; however, such assets are not fully utilized for management improvement and the delivery of healthcare services (Abidi, 2001). Knowledge management techniques not only use information technologies but also emphasize on knowledge sharing mechanisms (Ogiela, 2015). Several studies have shown that KM and data mining techniques can create a foundation for the development of clinical decision support tools within electronic medical record systems (Abidi, 2001).

Since the Ministry of Health and Medical Education (MOHME) is a major national decision maker organization in Iran, the huge amount of knowledge generated in this organization is required to be managed effectively. All academic and teaching hospitals, as well as medical schools, in Iran fall under the supervision of MOHME. A survey by the authors of this article shows there is no coherent plan for knowledge management at MOHME yet. Due to the lack of knowledge management programs at MOHME many duplicate projects currently run in parallel in different departments at MOHME. Therefore, in the absence of KM systems, to be utilized by high-level managers, there is no transparency and exposure of projects' information; hence, valuable resources are being wasted at MOHME.

It has been shown that the use of KM systems can create opportunities for improving the management and decision-making processes (Abidi, 2001, Sibbald and Kothari, 2015). Therefore, the main objectives of this research are to study how knowledge is being generated and used at MOHME as well as to evaluate the awareness of managers about KM programs.

2 MATERIAL AND METHODS

Our research is a descriptive cross sectional study where we first reviewed all previous studies in the field of KM and then established an expert panel with tools required for content validity and reliability tests with Cranach's alpha (0.91) standard. The panel originally included 21 expert invitees; however, due to the absence of 6 experts during orientation meetings we finalized the number of panel to 15 people. Without reaching an agreement in the first panel discussion that took 45 minutes we held another 35 minutes long meeting. Experts who participated in the two panels were divided into two groups: experts with the necessary theoretical background in the KM area and experts with fieldwork and familiarity with the history and details of KM field projects.

Our survey included 8 questions in the field of KM and comprised of 4 questions about the status of usage of KM products and 4 questions about the status of knowledge creation in the MOHME. The MOHME is the highest-level organization for decision-making in the health sector in Iran. The study population consisted of 15 senior managers as well as policy makers from the Policy Council, Center for KM & Organizational Learning, International Affairs, Center for Management and Development Administrative Reform, and the Center for Statistics and Information Technology departments within the MOHME. We conducted a structured interview with above-mentioned senior managers to collect the information we needed for our survey. Some of the questions had more than one answers. IBM SPSS software is used to analyze the results in the form of descriptive statistics.

3 RESULTS

Most of the managers who participated in this study were males (60%) and aged between 35 to 40 years (46.6%). Also, 66.7% of them had fieldwork experience between 6 to 9 years. Sixty percent of the participants have a PhD degree in various fields such as health services management, social medicine, and executive management. Forty percent of the expert participants work in the Center for Management and Development Administrative Reform.

Our findings are presented in the two following sections:

1. Level of awareness about KM programs among MOHME employees.
 2. Status of knowledge usage in the MOHME.
- 1. Level of Awareness about KM Programs among MOHME Employee**

Table 1: Level of employee’s awareness about KM in MOHME.

Item	Answers	Frequency	Percent
Benefits of implementing KM for organizations	yes	13	86.7
	No	1	6.7
	I Don't know	-	-
	No response	1	66.6
Clear understanding about the purpose of KM for you	yes	9	60
	No	5	33.3
	I Don't know	-	-
	No response	1	6.7
Opportunities to increase your knowledge about strategic management, information and knowledge by the organization.	yes	8	53.3
	No	5	33.3
	I Don't know	-	-
	No response	2	13.3
Business opportunities through the development of knowledge processes	yes	8	53.3
	No	6	40
	I Don't know	-	-
	No response	1	6.7
Awareness of the existing & potential values of knowledge in the organization	yes	14	93.3
	No	1	6.7
	I Don't know	-	-
	No response	-	-
Awareness of the availability of knowledge and resources	yes	11	73.3
	No	3	20
	I Don't know	-	-
	No response	1	6.7
Information on how the current knowledge flows	yes	9	60
	No	4	26.7
	I Don't know	-	-
	No response	2	13.3
The person who is responsible for KM programs	center of KM and organizational learning	1	6.7
	yourself Deputy	1	6.7
	Others	11	73.3
	No response	2	13.3
The person who is responsible for creating opportunities for increasing your knowledge about strategic management, knowledge, and information	center of KM and organizational learning	2	13.3
	yourself Deputy	3	20
	Other	7	46.7
	No response	3	20
Awareness about the type of knowledge flow among individuals	Technical	1	6.7
	Commercial	1	6.7
	Management	14	93.7
	Information on services	9	60
	Information about other organizations	7	46.7
	Latest News	10	66.7
	Other	1	6.7
	I Don't know	4	26.7
	No response	3	20
Flow of available information and knowledge in the organization from bottom to top	Face to face and one to one	8	53.3
	Meetings	14	93.3
	Seminars	12	80
	Workshops	12	80
	Training courses	8	53.3
	Conference	6	40
	Journals	10	66.7
	Bulletin	11	73.3
	Other	1	6.7
Flow of existing knowledge & information within the organization (top to bottom)	Face to face and one to one	4	26.7
	Meetings	15	100
	Seminars	14	93.3
	Workshops	8	53.3
	Training courses	7	46.7
	Conference	8	53.3
	Journals	6	40
	Bulletin	8	53.3
Other	1	6.7	

According to Table 1, over 80% of employees were aware of the benefits of KM for the organization. Despite the fact that the MOHME occasionally runs workshops and educational programs about the importance of KM for managers there is still room for improvement in this area. Statistical data in Table 1 indicates that the goal of a KM system has been clearly explained to only 60% of the study population. Fifty-three percent of the respondents mentioned that the organization provided some opportunities for them to enhance their knowledge about strategic management, knowledge, and information. The Lack of such opportunities for other employees could be the cause of their unawareness toward the benefits of a KM system. While more than 90% of the respondents recognized that value of knowledge itself, only 60% of the participants understood how knowledge actually flows within the organization. Most managers acknowledged the importance of knowledge but did not know how to manage it (Table 1).

Only two people responded that the department

of KM & Organizational Learning is responsible for explaining the importance and purpose of KM and increasing employee's awareness about KM.

Most people believed that no one is currently taking the responsibility of KM tasks and the department of KM and organizational learning is no longer active in this area.

Table 1 shows 26.7% of the respondent did not know what knowledge flow is and how it works in their organization. About 66.7% of the participants believed that news access in their organization are possible only through the intranet portal of the MOHME. The majority convinced that the managerial knowledge in the organization is constantly flowing while everybody believed that existing knowledge & information only flows through the high level meetings in the Ministry of Health and Medical Education.

2. Status of Knowledge Usage in the MOHME

Table 2 shows the majority of the managers agreed that knowledge sharing could expedite scientific publications and facilitate innovative movements in

Table 2: Survey results about the status of knowledge in MOHME.

Items	Options	Frequency	Percent
When you share knowledge with others, What would you expect of them to apply it?	Production of scientific papers	14	93.3
	For projects	14	93.3
	Provide innovation in products and service	14	93.3
	All of the above	14	93.3
	Other	2	13.3
	No response	1	6.7
What is the reason for the lack use of available knowledge?	Not enough time	2	13.3
	Being busy with daily activities	8	53.3
	Not valid available knowledge	6	40
	Not up to date available knowledge	11	73.3
	Adequate use of available knowledge	14	93.3
	Other	1	6.7
	No response	2	13.3
Permanent documentation of yourself knowledge for reuse.	Always	-	-
	Often	1	6.7
	Sometimes	8	53.3
	Rarely	3	20
	Never	1	6.7
	No response	2	13.3
Innovation in products and service, due to the acquisition of knowledge.	Yes	12	80
	No	2	13.3
	No response	1	6.7
Creation of knowledge due to continuous education in relation to your job	Yes	10	66.6
	No	3	20
	No response	2	13.3
Creation of knowledge resulting from Passing the training courses abroad	Yes	9	60
	No	3	20
	No response	3	20
Creation of knowledge resulting from publication of articles, researches, reports, and operation instructions by the organization	Yes	10	66.6
	No	2	13.3
	No response	3	20
Creation of knowledge resulting from the publication of material in the context of meetings, seminars, workshops, presentations and conferences	Yes	10	66.6
	No	2	13.3
	No response	3	20

the delivering projects, products and services. Similarly, it was believed that using shared knowledge in the workflow could improve established organizational and functional processes.

Many managers mentioned existing knowledge within the organization is suffice enough; however, busy schedule, not being up-to-date with the latest project information, insufficient use of the existing knowledge, and the lack of interest, were among the major reasons for inadequate usage of knowledge within the MOHME. Furthermore, documentation about included knowledge in a given project has not been consistently done among managers.

4 CONCLUSION

KM is a complex process that goes beyond simple electronic documentation. Formal frameworks are essential for creating and managing knowledge repositories. It has been shown that KM programs have many benefits such as advancing organizational strategies, solving problems quickly, disseminating best practices, improving knowledge in products & services, increasing opportunities for innovation, enabling organizations for a better competition, decreasing redundancy, improving internal processes, reducing errors, enhancing participation levels of personnel in decision-making, and retaining organizational intellectual capitals (Dubois and Wilkerson, 2008; Lee et al., 2014).

Our study findings showed that 66.6% of managers of the MOHME were actively participated in continuing education about KM in their domain. However, only 60% of them passed the training courses. Most of the managers stated the pamphlets, reports and the operating instructions that have been published by the organization were useful for KM activities. We also found out the release of information about meetings, seminars, workshops, presentations, and conferences had a major effect on knowledge generation practices by managers. As other researchers have suggested, the design and implementation of a KM system with continuous training could lead to the creation of knowledge itself by individuals. Similarly, institutions that did not invest in KM systems have generated more duplicate knowledge compared to other institutions with heavy investments in KM systems (Cheung et al., 2007; Hourcade-Bellocq et al., 2008).

Although the majority of the managers from the Department of KM at MOHME were aware of KM benefits, they didn't have much information about

the methods for implementing a KM framework. The findings of this study showed only half of the managers at MOHME were aware of the existence of available knowledge and resources within the organization. It was also apparent that the majority of managers who participated in our study kept their knowledge in their head versus recording it on a piece of paper or storing the knowledge in electronic databases. Such findings are in accordance with other studies like (Cheung et al., 2007; Choy et al., 2004; Handzic et al., 2008; Hourcade-Bellocq et al., 2008 and Liebowitz et al., 2000).

In terms of opportunities for knowledge sharing for managers and staff, our finding suggests that only a small portion of the participant (24%) indicated knowledge sharing meetings were actually useful. On the other hand, almost half of the participant in our study agreed that work group meetings created more opportunities for them for knowledge sharing purposes. In terms of knowledge transfer from more experienced employees to others, almost half of the participants in our study believed that such transfer culture does not exist today at the MOHME. The other half, however, believed that such knowledge exchange happens regularly throughout the project team meetings only (Hourcade-Bellocq et al., 2008). Asemahagn (2014) shown that the more participants emphasized need to share knowledge and experience in their activities. 49% of people had sharing knowledge and experience and 70% of people were eager to share their knowledge and experiences. This study also demonstrated although, respondents know the importance of sharing knowledge and experiences just a few of people do that. Those people who awarded of knowledge sharing, they performed it just about 4 fold further than other people and around 70% of health professionals satisfied with knowledge sharing in hospital (Asemahagn, 2014). LEE and HONG (2014) study on nursing staff shows working in a environment with a culture of knowledge sharing can actually improve knowledge management principles as well as employee's performance (Lee et al., 2014).

Hussein and Wahba (2003) studied the readiness of the members of the Egyptian Information Decision Support Center in 2003 for adoption of a KM program. Their analysis showed the cabinet members were tackling their tasks by referring to the data (knowledge) obtained from previous projects. Telephone and fax line, electronic emails, internet & intranets, pamphlets, and fact sheets were among the main methods of capturing the required information

(Hussein and Wahba, 2003).

Our findings show that more than half of the managers are aware of the existing knowledge and resources at the MOHME; however, they may not necessarily use it. Hourcade-Bellocq et al., (2008) showed that the majority of the respondents in their study had access to the information about HIV but the data was limited, out of date, inaccurate, and in general, were not useful at all (Hourcade-Bellocq et al., 2008).

We also found that many managers believe the existing knowledge within the organization is both adequate and in active use. Busy schedule (53.3%), not being up-to-date with the latest project information (73.3%), insufficient use of the existing knowledge (93.3%), and the lack of interest (6.7%), were among the major motives for inadequate use of knowledge within MOHME.

Many researcher indicated the required knowledge in most cases (>70%) is adequate and applicable to the situation, while others believe that a busy schedule (40%) and out of date information (61%) make it difficult to use knowledge and knowledge tools in a given organization (Cheung et al., 2007; Choy et al., 2004; Handzic et al., 2008; Hourcade-Bellocq et al., 2008; Liebowitz et al., 2000). In another study conducted in Latin America and Caribbean (2008) showed that the existing knowledge within an organization was not usable due to the lack of the satisfactory results from knowledge based decision making systems and change in people's behavior toward KM. They also found that the lack of a reliable knowledge source, inadequate time, and busy schedule were among the main reasons for managers not to participate in KM activities. Building a team of managers is essential for the purpose of updating accurate information and transferring it to others (Hourcade-Bellocq et al., 2008). Karamitri et al (2015) suggested holding training courses, meetings and workshops about KM and knowledge sharing can be useful in this and similar cases (Karamitri et al., 2015).

Organizational culture, leadership, knowledge flow & process, technology infrastructure and organizational structure & mission, are all among important factors in influencing a KM system (Albers, 2009; Lee et al., 2014). In order to establish a successful knowledge management and integration framework, appropriate strategies for KM implementation should be adopted so that accessing and sharing knowledge become easily available within the working environment. Having strong leadership support is essential for a successful

implementation of a KM system. KM is a systematic process for creating, maintaining and using organizational knowledge for optimal usage of knowledge, achieving a sustainable competitive state, and increasing organizational performance and output. In simple terms, KM is the integration of people, processes, and technologies all together (Albers, 2009).

Healthcare organizations lay special emphasis on knowledge management and knowledge sharing in order to improve the quality of clinical care, shrink costs, and reduce medical errors (Gider et al., 2015; Platt and Kardia, 2015, Yun, 2013). In the healthcare domain, KM frameworks can be used for applying formal methods and techniques to facilitate the generation, acquiring, maintaining, and disseminating knowledge. The healthcare industry is comprised of organizations with gigantic investments empowered by knowledge and complex information resources (Abidi, 2001).

In general, the use of KM in the MOHME in Iran is currently at acceptable levels.

We concluded that people who are involved in the KM process should go under appropriate and rigorous trainings that are compatible with the mission and vision of the organizations they work for.

Although encouraging employees of an organization to share organizational knowledge is a challenging task, it can be achieved by thoughtful incentives for the purpose of motivating employees.

We propose to change the current practices of knowledge storage and fragmented KM methods at the MOHME so that a comprehensive and global KM framework can be designed and implemented. Such action warrants a deeper analysis of the requirements so that a customized KM framework can be developed that is entirely based on the mission and vision of the MOHME. We also recommend including public awareness courses, especially at the manager level, about KM as one of the main items in any KM training programs.

REFERENCES

- Abidi, S. S. R. 2001. *Knowledge management in healthcare: towards 'knowledge-driven' decision-support services*. International journal of medical informatics, 63, 5-18.
- Albers, J. A. 2009. *A practical approach to implementing knowledge management*. Journal of Knowledge Management Practice, 10, 1-14.

- Asemahagn, M. A. 2014. *Knowledge and experience sharing practices among health professionals in hospitals under the Addis Ababa health bureau, Ethiopia*. BMC health services research, 14, 431.
- Chang, M.-Y., Hung, Y.-C., Yen, D. C. and Tseng, P. T. 2009. *The research on the critical success factors of knowledge management and classification framework project in the Executive Yuan of Taiwan Government*. Expert Systems with Applications, 36, 5376-5386.
- Cheung, C. F., Li, M., Shek, W., Lee, W. and Tsang, T. 2007. *A systematic approach for knowledge auditing: a case study in transportation sector*. Journal of Knowledge Management, 11, 140-158.
- Choy, S.-Y., Lee, W. and Cheung, C. F. 2004. *A Systematic Approach for Knowledge Audit Analysis: Integration of Knowledge Inventory, Mapping and Knowledge Flow Analysis*. J. UCS, 10, 674-682.
- Dubois, N. and Wilkerson, T. 2008. *Knowledge management: background paper for the development of a knowledge management strategy for public health in Canada*, National Collaborating Centre for Healthy Public Policy.
- Gider, Ö., Ocak, S. and Top, M. 2015. *Perceptions of Physicians About Knowledge Sharing Barriers in Turkish Health Care System*. Journal of medical systems, 39, 1-13.
- Handzic, M., Lagumdžija, A. and Celjo, A. 2008. *Auditing knowledge management practices: model and application*. Knowledge Management Research and Practice, 6, 90-99.
- Hourcade-Bellocq, J., Haytayan, T. and Tuckermann, B. C. 2008. *Developing a regional knowledge centre in HIV/AIDS in Latin America and the Caribbean: a knowledge audit*. Knowledge Management for Development Journal, 4, 1.
- Hulse, N. C., Galland, J. and Borsato, E. P. 2012. *Evolution in Clinical Knowledge Management Strategy at Intermountain Healthcare*. In: AMIA Annual Symposium Proceedings, American Medical Informatics Association, 390.
- Hussein, A. A. K. and Wahba, K. 2003. *The readiness of IDSC to adopt knowledge management*. Knowledge Management: Current Issues And Challenges. Hershey, PA, USA: Idea Group Inc, 239-262.
- Jasinskas, E., Svagzdiene, B. and Simanavicius, A. 2015. *The Influence of Knowledge Management on the Competitive Ability of Lithuanian Enterprises*. Procedia-Social and Behavioral Sciences, 191, 2469-2475.
- Karamitri, I., Talias, M. A. and Bellali, T. 2015. *Knowledge management practices in healthcare settings: a systematic review*. The International journal of health planning and management.
- Lee, E. J., Kim, H. S. and Kim, H. Y. 2014. *Relationships between core factors of knowledge management in hospital nursing organisations and outcomes of nursing performance*. Journal of clinical nursing, 23, 3513-3524.
- Lee, H. S. and Hong, S. A. 2014. *Factors Affecting Hospital Employees' Knowledge Sharing Intention and Behavior, and Innovation Behavior*. Osong public health and research perspectives, 5, 148-155.
- Liebowitz, J., Rubenstein-Montano, B., Mccaw, D., Buchwalter, J., Browning, C., Newman, B. and Rebeck, K. 2000. *The knowledge audit*. Knowledge and process management, 7, 3-10.
- Liu, F.-C., Cheng, K., Chao, M. and Tseng, H.-M. 2012. *Team innovation climate and knowledge sharing among healthcare managers: mediating effects of altruistic intentions*. Chang Gung Med J, 35, 408-419.
- Ogiela, L. 2015. *Advanced techniques for knowledge management and access to strategic information*. International Journal of Information Management, 35, 154-159.
- Platt, J. and Kardia, S. 2015. *Public trust in health information sharing: implications for biobanking and electronic health record systems*. Journal of personalized medicine, 5, 3-21.
- Seidler-De Alwis, R. and Hartmann, E. 2008. *The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises*. Journal of Knowledge Management, 12, 133-147.
- Sibbald, S. L. and Kothari, A. 2015. *Creating, Synthesizing, and Sharing: The Management of Knowledge in Public Health*. Public Health Nursing.
- Yun, E. K. 2013. *Predictors of attitude and intention to use knowledge management system among Korean nurses*. Nurse education today, 33, 1477-1481.