



Practices of knowledge management in health organizations

Práticas de gestão do conhecimento em organizações de saúde

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ABSTRACT:

The aim of this article was to identify knowledge management practices in health organizations. Three different studies were conducted with 43 professionals through interviews. Only the practices of knowledge management do not guarantee an effective management, in addition, the appropriate technology and a culture of cooperation and union, as well as effective communication, favors the flow of knowledge among professionals who, in turn, develop their knowledge in an intense way and consequently optimize the production of the work.

Keywords: Knowledge management. Practices. Health organizations

RESUMO:

O objetivo deste artigo foi identificar práticas de gestão do conhecimento em organizações de saúde. Realizaram-se três estudos diferentes com 43 profissionais por meio de entrevistas. Somente as práticas de gestão do conhecimento não garantem uma efetiva gestão, além disso, a tecnologia adequada e uma cultura de cooperação e união, bem como uma comunicação efetiva, favorece o fluxo de conhecimento entre os profissionais que, por sua vez, desenvolvem seus conhecimentos de maneira intensa e conseqüentemente otimizam a produção do trabalho.

Palavras chave: Gestão do conhecimento; Práticas; Organizações de saúde.

1. Introduction

One of the reasons organizations use their knowledge in the most efficient way is that it is part of their competitive advantage (Persson et al., 2008). In the case of a health organization, knowledge is at the core of its services and, therefore, efficiency gains can not be achieved without improving the knowledge flows in the organization (Kruskal et al., 2009). In this way, the management of experience, competence and knowledge in relation to work processes and best practices are important.

In several health areas, knowledge management enhances gains, quality of patient care, safety, cost, effectiveness, competition, and is key to surviving and thriving in a competitive

environment (Gider et al., 2015) it is of utmost importance to consider how to carry out knowledge management in health organizations.

Knowledge management is complex and, specifically in the area of health, is critical because it involves diverse technologies, professionals with varied backgrounds and processes that demand a lot of attention. Often, individual and corporate interests are not convergent (Leeyer et al., 2013).

Another feature of the health area is its knowledge intensity, since these are highly specialized (Miles, 2005), have a strong dependence on professional knowledge, complexity of operation and difficulty in automation (Isik et al., 2013).

Coombs and Ersser (2004) and Littlejohn and Foss (2009) also consider that the understanding of different knowledge among professionals promotes teamwork in the health area. As a result, to improve knowledge management and consequently to perform quality diagnoses and treatments, there are practices that can assist in the preparation of clinical experience, where problem solving requires cooperation and coordination among the various team members (Blanquer et al., 2005). Thus, knowledge management becomes a key organizational capacity for health organizations and practices can assist in improving the efficiency involved in this process (Kane, Meaney & Luz, 2011). Given this context the general objective of this article is to identify knowledge management practices in health organizations.

2. Methodology

The present study is qualitative, descriptive in nature. An interpretive perspective was used, which according to Grbisch (2007, p.8) "knowledge is subjective constructed and based on shared meanings and symbols recognized by the members of a culture." This type of study was proposed by this type of (empirical) investigation, because it allows richer understandings. In this way, it was possible to deepen and search for elements present in the practical context of health environments.

The study was multiple cases, since it allows the analysis of information from different organizations to obtain more comprehensive results (Yin, 2005). The locus of application of this study covered three small groups of health professionals belonging to health organizations in Southern Brazil. Such organizations are identified in this article as O1 (Organization 1), O2 (Organization 2) and O3 (Organization 3). Followed by the identification of the respondent's number that can vary from (E1 to E43).

The research population was made up of health professionals such as physicians, nurses, physicists and radiology technologists. Data were collected through semi-structured interviews. There were forty-three individual semi-structured interviews. All interviews were recorded and transcribed in full. From its transcription was performed a thematic analysis that is configured as a form of content analysis used to identify, analyze and expose patterns in the data collected.

For the analysis of the interviews, the content analysis technique of Segundo Bardin (2016) was used to recommend three stages: a) pre-analysis; b) exploitation of the material; c) interpretation and discussion of results.

The categories of the research emerged after reading and re-reading the theme, where the guiding themes (categories) emerged from the repetition of the same information by different participants.

3. Results

Knowledge management has received attention from several researchers (Kane, Meaney & Luz, 2011). In this way, several systems have been developed that help in knowledge management (Gardner et al., 2001). Fox and Thomson (1998) proposed a unified technology to support clinical decision and disease management that emphasizes integrated methodologies for the development of clinical applications. Gardner et al. (2001) created a framework, using schemas derived from XML, which defines an interoperability standard for

neuroscience computing resources. Kindberg et al. (1999) developed a knowledge exchange framework that addressed the issue of communication through networks, as well as methods of data facilitation and knowledge management. Economou et al. (2009) proposed a computer-assisted medical system to support the medical diagnosis. Jakobovits et al. (2002) presented a set of software tools that allows the creation of web applications that facilitate the acquisition, integration and dissemination of multimedia biomedical data through the web, thus reducing the cost of knowledge sharing. Barb, Shyu and Sethi (2005) proposed a knowledge repository and exchange framework for diagnostic image databases for the exchange of information semantics in collaborative environments.

In this way, health services around the world are confronted with the need to provide high quality care in environments with financial difficulties. Improving productivity in the health sector means adding value to the way resources are used to deliver high quality and effective health care (Gider et al., 2015). To meet the need, the industry has looked at the strategies of other types of organizations and knowledge management practices are part of these strategies that help improve organizational performance (Yiu & Law, 2014).

Despite its importance, implementing knowledge management is not easy. In addition, knowledge is often regarded as a valuable resource that is perceived as a source of power and reputation within a social environment (Wasko & Faraj, 2005). Managing knowledge also brings some additional costs, as surplus resources (time, money, etc.) and the means to share knowledge (IT infrastructure, meetings, etc.) are needed (Nambisan, 2002).

Among the ways that facilitate knowledge management are the management practices in knowledge, but, alone, they are not effective, they need human interaction (Servin, 2005). McDermott and O'Dell (2001), for example, have observed a number of organizations, such as Price Water House Coopers, Ford and IBM, which share knowledge sharing practices that are successfully integrated into their corporate culture. Thus, the primary reason why organizations fail to achieve their management goals seems to be due to the lack of a clear link between the organization's knowledge management strategy and its overall goals.

Thus, there are ways to stimulate knowledge management, such as practices planned and supported by a management that stimulates the flow of knowledge between individuals, or teams, in an organization (Egbu, 2013). These knowledge management practices enhance the work process of organizations. Some environments may also favor this process. Knowledge management practices are observable routines directly involved in the development and use of knowledge (Coombs et al., 1998).

For this research, the definition of knowledge management practices by Kianto and Andreeva (2014, p. 222) will be used: "the set of activities or intentional routines conducted by the organization with the aim of improving the effectiveness and efficiency of the resources of organizational knowledge ". Thus, knowledge management practices refer to aspects of the organization that can be manipulated and controlled by conscious and intentional management activities, which may be formal or informal (Andreeva & Kianto 2014).

Knowledge management practices, total practice numbers and their dimensions will be presented, and the details of the practices will not be presented.

The practices presented by Batista (2006) were classified into three categories:

a) Practices related to aspects of human resources management that promote information and knowledge sharing, for example, forums (face-to-face and virtual), discussion lists (to discuss, homogenize and share knowledge that will contribute to the development of skills and for the improvement of processes and activities of the organization), narratives (used to describe complicated subjects, expose situations and / or communicate lessons learned or even explain cultural changes); mentoring (a specialist - mentor - participant models the competencies of an individual, or a group, observes, analyzes performance and provides feedback on individual or group activities); coaching (similar to mentoring, however, the coach does not guide or participate in the execution of the activities). Communities of practice, on the other hand, are informal and interdisciplinary groups of people who have a common interest, are self-organized, allow internal or external collaboration with the organization, facilitate the transfer of best practices and access to specialists, as well as

reuse of examples of lessons learned - reports of experiences recording what happened, what was expected to happen, analyzing the causes of differences and what was learned during the process.

b) Practices linked to the structuring of organizational processes that act as facilitators of the generation, retention, organization and sharing of organizational knowledge. Benchmarking is a practice related to finding the best references for comparison to the organization's processes, products and services. Best practices can be defined as a validated procedure for performing a task or for solving a problem. They can be documented through databases, manuals or guidelines.

c) Technological and functional practices that support the management of organizational knowledge, including information and communication technology for capture, diffusion and collaboration (Batista, 2006). Electronic Document Management is a management practice that suggests the adoption of computerized emission control, editing and monitoring procedures for the processing, distribution, archiving and disposal of documents. Collaboration tools, such as portals, intranets, and extranets, for other computerized systems that capture and impart knowledge and experience among employees and departments. Data mining (data mining - instruments with high capacity of association of terms, which makes it possible to "pan" specific subjects or themes. It is an information technology tool.

For Mckeen et al. (2006, p. 2), knowledge management practices are "observable activities related to knowledge management, executed by an organization". The authors identified 12 knowledge management practices in four dimensions: a) the ability to locate and share existing knowledge, b) the ability to experiment and create new knowledge, c) the culture that permeates the creation and sharing of knowledge, and d) the strategic value of knowledge and learning.

Some dimensions are similar in the practices presented by the Oecd (2003) and by Mckeen et al. (2006). The elements of leadership, strategic value of knowledge, and capture and acquisition capabilities are visibly analyzed in both instruments.

Darroch (2003) created and deployed an instrument in a survey of more than 400 New Zealand firms (Darroch, 2005). The author has grouped 16 practices in three dimensions: a) knowledge acquisition, b) dissemination of knowledge and c) ability to respond to knowledge. Darroch's (2003) view is more geared towards agglutination by knowledge processes. Tranfield et al. (2003) present a list of KM practices for the context of innovation projects in organizations. There are 19 practices gathered in three dimensions: discover, accomplish and nourish. It is important to emphasize that, similarly to Darroch (2003), the dimensions, or agglutination criterion used, were / were grounded in processes of knowledge.

The additional practices suggested by Mckeen et al. (2006) were incorporated into another instrument, which adds the organizational structure and the ICTs as relevant dimensions to evaluate the practices. In addition to being more complete with regard to the number of practices, the Kianto and Andreeva (2014) instrument has a simpler language and is more suitable for an application - therefore, it meets the objectives of the present research - considers 27 grouped practices in five dimensions: strategic management of knowledge (6), organizational culture (6), human resource management (5), organizational structure (5) and information and communication technologies (5).

As far as practices are concerned, there are similarities in the following items: recognition of knowledge as a key factor of production, written and formal strategies for managing knowledge, methods and rewards for creation and sharing, use of internal sources and identify and disseminate best practices, among others.

Considering the different practices of knowledge management found in the literature, divergent in number and grouped using different dimensions, it is possible to conclude, in agreement with Kianto and Andreeva (2014), that there is no list, unified and with consensus in academia, of knowledge management. It is worth recalling that the work of these authors collects most of the knowledge management practices identified by the

academy and groups them into a set of dimensions generally accepted by the authors of reference in the area (Ocote, 2003, Darroch, 2003, Tranfield et al. 2003 & Mckeen et al., 2006).

3.1. Practices of knowledge management in health practice

The sharing practices, according to Egbu (2013), stimulate and support the flow of knowledge among the individuals of the organization. To complement, Kianto and Andreeva (2014) define a set of activities or intentional routines conducted by the organization with the objective of maximizing the conversion of knowledge into generated value.

The following theoretical bases were used to create the questions: Kianto and Andreeva (2014), Foss and Michailova (2009), Batista (2006), Mckeen et al. (2006), Ocde (2003), Darroch (2005), Tranfield et al. (2003) and Orofino (2011). Table 1 presents the practices identified in each health organization for knowledge management.

Table 1
Knowledge management practices identified

| Practices | O1 | O2 | O3 |
|--------------------------------|----|----|----|
| a) Virtual Discussion Forums | X | X | X |
| b) Collaborative virtual space | X | X | X |
| c) Storytelling or narratives | X | X | X |
| d) Mentoring | X | X | |
| e) Best Practices | X | X | X |
| f) Benchmarking | X | X | X |
| g) Peer review | X | | X |
| h) Lessons learned | X | | |
| i) Organizational memory | X | | |
| j) Knowledge map | X | | X |

Source: authors based on interviews (2017)

a) Virtual discussion forums: groups created among the members of each organization that use mobile messenger technology with the purpose of making quick discussions, indicating a specific source of knowledge and validating points of view with colleagues. According to the leader of the first group, this type of practice is useful for quick questions: "We have a group in WhatsApp works very well, replaced the phone calls and we found solutions." O1E8

This practice works great because all individuals have a cell phone with this built-in technology. The shared contents in this type of virtual interaction are little complex, usually with an assertive character. Its use occurs when any or all member (s) of the group are not physically close and need to take some questions or even share something interesting. Among the organizations studied it is used in a similar way.

b) Collaborative virtual space (PACS): this type of environment refers to the PACS system

that allows radiologists to communicate in a collaborative way (so they can perform their work independently of where they are), as you say:

"Our workflow has gotten much better with PACS, not to mention time reduction, the system offers simple tools to control the productivity of radiologists and organize priorities." O2E5

PACS is supported over the internet and allows you to upload images and share opinions with competent professionals anywhere in the world. This practice proved to be important, since it allows patient benefits (agility in the delivery of the exam and greater safety), diagnosis (support decision making and second opinion) and organization of radiology (financial aspects and differentiation of the service provided) (Dorow, 2017).

c) Storytelling or narratives: it is a strategic practice based on the memories and experiences that individuals possess and that they use to share knowledge in a more attractive way. It can be used to share rich context-learned lessons. It is a significant and often used practice to share face-to-face knowledge, as the interviewee explains: "This is very common here, the elders then love to explain things by linking their experiences, when you put emotion everything gets attractive." O1E16

Narratives shape best practices through individual experience. They help in the creation of the organization's culture and in the understanding of patterns, allowing the knowledge holder to give meaning to their experiences. It also facilitates the sharing of tacit knowledge, memorization, and allows group members to know the stories that were part of their peers' trajectory, which creates a common collective meaning. These evidences of common understanding reinforce the result of Tsoukas and Chia (2002), who argued that individuals must externalize their implicit knowledge through language and dialogue, which allows them to create meaning and interpretation to define the context.

The study by Macintosh et al. (2012) explored communication among medical professionals who argued that productive dialogue allowed individuals to explain the implicit meaning to others through social pragmatics. Collaborating, sharing, explaining, clarifying and justifying their decisions, providing a practical insight into the conditions and possible side effects to create awareness and share experiences.

d) Mentoring: this practice offers support and encouragement to the novice. However, in the organizations where it was identified, it occurred voluntarily, with no incentive from the organization to create mentoring relationships. Some of the articulate speeches highlight what makes a specialist want to be a beginner's tutor:

"I've even changed my way of thinking. I've always been linear, if there are two lines, I go from there to that; if there is no line I do not know how to walk, I'm learning this from these new people, trying to do things in a different way, that's cool." O1E7

Health professionals recognized the potential of mentoring by revealing the motives that make them mentors and the benefit of relating to younger people, or changing the way they act. It is considered that, although little evidenced in the studied places, this practice is extremely rich, it demands time and motivation to be effective and it is used when empathy and recognition between two individuals occurs.

e) Best practices: the ability of the organization to capture good practices and share them with all. Avoid wasting time reinventing the wheel, as they reveal:

"It's important to know what's working for others, this can not always work here, either by different technology or by different competencies, but it directs action and saves time." O2E4

Thus, best practices consisted of successful activities that produced great results for the organization, but leaders emphasized that best practices were directly linked to the type of organization. This evidence agrees with the authors Søndergaard et al. (2007), Anantatmula and Kanungo (2010), who believe that leadership is a facilitator to share knowledge, acting in the dissemination of best practices and stimulating a cooperative environment. This is considered a very important practice, as it improves performance and avoids reinventing the

wheel, helping to improve productivity and reduce costs.

f) Benchmarking: this practice consists of sharing best practices with other organizations, be it a technology, a system or a know-how that can improve performance:

"We are always in touch with clinics in our branch, but often, what works in one place does not work here, this is quite complex, I see the biggest benefit to know that there are other ways to do the work and take this to the whether or not it is feasible to deploy." O3E4

Learning from other organizations is common among the organizations studied and is one way to deal with the speed of changes in the health area. It also allows comparing efficiency with other health organizations and learning how to make use of other groups. It consists of a continuous process of understanding the best practices used by the health area and incorporating transformations. Organization 1 was the one that was most active in the use of this practice.

g) Peer review: Feedback and safer diagnosis and treatment are the two greatest benefits perceived by health professionals who perform this practice, according to the interviewees:

"We do not have a culture of guilt, this could generate fear and mistrust among the group, but rather a way to promote learning and self-improvement of group members, which ultimately creates a voluntary commitment." O3E1

According to Lee Endres et al. (2007), individuals should perceive leadership as trustworthy and feel comfortable sharing personal experiences with colleagues. During the interviews, leaders emphasized the importance of recognizing a culture of security (instead of a culture of guilt). In this study, group leaders took initiatives to promote a safety culture among the working group.

h) Lessons learned: this practice consists of meetings aimed specifically at the exchange of knowledge aimed at facilitating open discourse and promoting an environment of trust, which helps to promote and sustain an organizational culture.

The types of subjects shared in the "discussion meeting" clearly justify the realization of this practice instituted in organizations 1 and 3. This was a time of rich learning, where critical knowledge was raised and discussed by the whole team; those involved showed interest in the debates and during interviews said:

"This is a time for us to know how colleagues think, or how they would act on a particular issue, I think this helps us create a group identity." O3E5

In these encounters, the sharing of knowledge was perceived as both a way of asserting one's own skills before the group, meeting other points of view, and building relationships of trust. The practical experiences that practitioners reported during these encounters showed a way to develop analysis and critical thinking.

It is important to emphasize that since this is an environment that involves rich knowledge exchange, it is fundamental that the organization has a way of storing this new knowledge so that it can be applied in the future to the benefit of the organization itself.

i) Organizational memory: this practice is supported through the database. This knowledge can then be reused at any time.

The results of the research coincide with the research by Cyert and March, who in 1963 coined the term "organizational learning" and suggested that organizations are rational adaptive systems that basically learn from experience. In addition, Mauchet's (2011) study evaluated the importance of organizational memory in health organizations and recognizes that memory allows recognizing valuable knowledge and also understanding how it is interpreted. The new knowledge, as interpreted, is added to the organization's memory (Walsh, Ungson, 1991). The organization is then challenged by its history, which changes the perception of the meaning of new knowledge. In general, each subsystem provides output to all other subsystems, thus facilitating the way the organization learns and executes.

j) Map of knowledge: this practice consists of identifying the knowledge of each professional,

his subspecialty. According to one leader:

"Knowing who knows what is basic, I can tell you who can solve each specific problem, but I take a vacation, I get sick, anyway, so we have it registered." O1E17

The map created through the identification of knowledge allows the organization to know its key knowledge, act with coordinated actions. The advantages that the participants perceived from this practice were: the routing of each image to the radiologist who has the necessary competence for evaluation and agility in the identification of the professional capable of contributing to the resolution of critical images.

Of the 10 practices identified, 4 are related to the strategic management of knowledge, 4 represent the organizational culture and 2 are supported by the TICs. The organizational structure and human resources management dimensions had no identified practices.

The practices according to Kianto and Andreeva (2014) are divided into five dimensions, it is observed that the dimensions: strategic management of knowledge - knowledge map, peer review, benchmarking and organizational memory - and organizational culture - storytelling or narratives and lessons learned - are at a higher level when compared to the other dimensions (Davila, 2016).

4. Conclusions

This article has identified the practices of knowledge management in health organizations through a multiple case study. Through semi-structured interviews with professionals in three groups belonging to different health organizations. It was sought to acquire the perception of the interviewees as to the practices most favorable to knowledge management in the researched organizations.

In this way, more than routines, they perceive that actions are aimed at improving the management of critical knowledge and transforming culture in the medium or long term. For example, when it comes to strategic management practices, it can be observed that while mapping the knowledge of health professionals can be a process that demands many routines, other practices, such as benchmarking knowledge or systematically analyzing updated knowledge, they are intentional routines. On the other hand, culture can usually only be changed in the medium or long term. Thus, the aforementioned practices of the dimensions of strategic management and organizational culture add value to organizational knowledge assets.

We present here the knowledge management practices and their form (s) of realization (s), identified in each of the three organizations studied. It is noticed that the success of the practices identified is the result of environments conducive to knowledge management that allow the creation of an organizational culture that encourages group relations, creating a reciprocal behavior of cooperation and belonging.

Using multiple case research in contexts of knowledge-intensive organizations the findings of this study bring significant contributions. In addition to contributing to the theory, the results of the study also provide guidelines for practice in developing practices that are conducive to knowledge management in health organizations.

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5. Academic Department of Health and Services. Professors of the Federal Institute of Santa Catarina

6. Academic Department of Health and Services. Students of the Academic Master's Degree in Radiological Protection of the Federal Institute of Santa Catarina

7. Academic Department of Health and Services. Professors of the Federal Institute of Santa Catarina

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