Knowledge Management Practices in Hospital Management: An Integrative Review

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Abstract: This research seeks to identify the state of the art regarding knowledge management practices that have been applied in hospitals with a specific focus on how these practices improve organizational effectiveness, innovation, and performance. Using an integrative review methodology that includes problem identification, strategic literature search, rigorous data evaluation, thematic analysis, and synthetic presentation of results, the research encompassed 19 relevant studies extracted from the Scopus, EBSCOhost, and Scielo platforms. The results demonstrate a predominant use of information technologies, reinforcement of organizational culture, and strengthening of trust and organizational learning. Remarkably, leadership emerged as a critical factor, not only for facilitating the implementation of knowledge management practices but also for actively involving employees in achieving organizational goals. There is also clear demand for substantial increases in investments in training and collaboration technologies to maximize the potential for knowledge creation, retention, and sharing in hospitals.

Keywords: Knowledge Management, Organizational Practices in Hospitals, Organizational Culture and Leadership, Organizational Learning, Health Information Technologies.

1. Introduction

Managing an organization is challenging, especially when it comes to hospitals. Promoting the commitment of a team to the management of human, financial, social, and asset resources with quality, economy, sustainability, and effectiveness requires a differentiated approach to management (Cançado et al., 2020).

Hospitals, regardless of their public or private nature, constitute a business and need to adopt efficient management methods to ensure their permanence (Vilaça & Oliveira, 2008). This need has been partially met by Knowledge Management (KM), whose dissemination of knowledge is crucial in organizational strategy (Colauto & Beuren, 2003). Siddique et al. (2021, p. 04) understand that " knowledge management in a hospital requires well reputable and contributive mechanism, which enriches the main objective of serving humanity and saving a life."

Knowledge Management is considered by Barroso and Gomes (1999) as the ability to identify and map intellectual assets; generate new knowledge to offer market competitive advantages and promote accessibility of large amounts of information by sharing best practices and technology (Barroso & Gomes, 1999). It " improves the competitive advantage and enhances the performance of an organization, its role in the process of innovation and sustainable development cannot be disputed" (Popa et al., 2018, p.555).

Nonaka and Takeuchi (1997, p.01) understand "organizational knowledge creation as the ability of a company to create new knowledge, disseminate it throughout the organization, and incorporate it into products, services, and systems." Knowledge sharing improves services in organizations, elevating them to the status of learning organizations where lessons learned are made available for continuous learning by others (Alajmi et al., 2015; Shateri & Hayat, 2020).

Managers and leaders have already realized that promoting the increase and development of intellectual capital through knowledge management practices is an important action to elevate the company to the knowledge society (Popa et al., 2018).

Knowledge management practices are "the various activities, procedures, techniques and systems which are explicitly intended or utilized for creating and processing knowledge" (Casco, 2000, p. 634). They can provide support to companies in building practical measures to improve their responsiveness, breaking with innovation constraints arising from organizational culture or history (Casco, 2000).

In the health sector, KM has been considered a means to address current challenges such as the introduction of new technologies, the need to provide services to an aging population with chronic diseases, budget cuts, and

the need to redesign the system after the COVID-19 pandemic (Dal Mas et al., 2020). In this sense, the adoption of KM practices can provide health organizations with improved quality of care (Colauto & Beuren, 2003; Shateri & Hayat, 2020). Therefore, hospitals in developing countries are encouraged to develop knowledge management tools to improve hospital performance and practice in the healthcare sector (Shateri & Hayat, 2020), emphasizing KM in patient care rather than information (Tang, 2017a).

However, the application of Knowledge Management practices in hospitals has been very problematic (Alajmi et al., 2015), and the operationalization of knowledge management in different healthcare organizations is not similar, resulting in problems in adapting practices and strategies in healthcare (Siddique et al., 2021).

Considering the specificities and difficulties of applying KM practices in hospitals, this research aims to identify the state of the art regarding knowledge management practices that have been applied in hospitals with a specific focus on how these practices improve organizational effectiveness, innovation, and performance.

2. Method

This research adopts the integrative review method proposed by Whittemore and Knafl (2005), consisting of 5 phases: problem identification, literature search, data evaluation, data analysis, and presentation of results.

2.1 Problem Identification

Considering the importance of KM today and the difficulties in its development in healthcare management, the research question of this review was to investigate how knowledge management practices have been applied in hospital management.

2.2 Literature Search

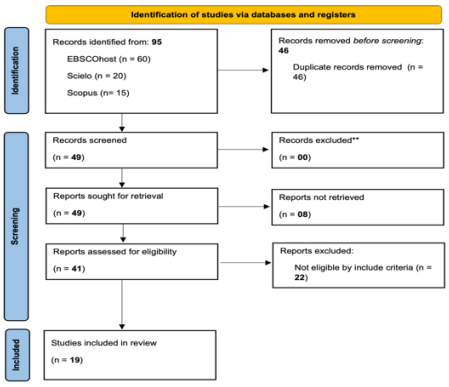
The data search was conducted in the databases of the Scopus, EBSCOhost, and Scielo platforms, using the search string: Hospital AND Knowledge Management Practice. Ninety-five articles were found, and after applying inclusion criteria and removing duplicates, 41 documents remained for analysis. After analyzing the 41 studies through full-text reading, under the lens of the guiding question of this research and the inclusion and exclusion criteria (Table 01), 19 articles remained for thematic analysis of the data. The process of capturing studies is presented in the flow diagram for integrative reviews, which included searches of databases and registers only, presented in Figure 01.

Table 1: Criteria for inclusion and exclusion of articles.

Inclusion Criteria	Exclusion Criteria
Articles referring to hospital management	Articles not related to the research question
Peer-reviewed articles	Articles published before 2017
Articles published after 2017	

Source: Developed by the authors (2024).

Figure 1: Flow diagram for integrative reviews which included searches of databases and registers only



Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. Doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

2.3 Data Evaluation

The articles included in this review were analyzed to identify emerging themes and subthemes. Table 02 presents the list of articles and some of their characteristics.

Table 2: List of articles selected for analysis

Authors	Method	Themes Identified	Conclusions
Ayanbode & Nwagwu , 2021	Quantitative	Technology	The use of collaborative technologies has a direct effect on KM processes and impacts the creation, sharing, transfer and retention of knowledge.
Zhou et al., 2021	Quantitative	Technology Organizational Learning	Improving and promoting the development of intellectual capital through KM practices, associated with technological tools, is an important action to elevate the company in the knowledge society.
Siddique et al., 2021	Quantitative	Technology Organizational culture	KM practices increase efficiency and reduce risks by optimizing resources and providing the development of organizational performance.
Rosário et al., 2021	Qualitative and quantitative	Technology	It is concluded that knowledge management (KM) has become an institution in the health sector.
Ekionea & Fillion , 2021	Qualitative	Organizational Trust	Organizational maturity is achieved when KM processes are effectively managed and applied.
Dal Mas et al., 2020	Qualitative case study	Technology	Institutions must guarantee knowledge translation mechanisms so that it is possible to alleviate differences and provide for the creation and sharing of knowledge.
Shateri et al., 2020	Quantitative	Organizational trust	The results revealed a significant and positive association between perception of organizational support, organizational trust, and knowledge sharing.
Karamitri , et al., 2020	Quantitative	Organizational culture	Leaders must encourage and form a corporate culture beneficial to knowledge sharing and must work on a KM system to enable this sharing in the medical industry.
Gao & Sun, 2020	Evolutionary game theory	Organizational trust	It is necessary to equalize the level of knowledge of groups, increase the degree of trust, reduce the cost of sharing, and increase incentives. Differences in the formation of knowledge between decision makers affect the quality of the process.
Ayatollahi & Zeraatkar , 2020	Qualitative	Technology Organizational culture	Therapy team members should focus on using technology to continually create and share knowledge.
Ouédraogo & Rinfret , 2019	Quantitative	Technology Organizational culture Organizational learning	The organizational determinants for sharing and promoting knowledge management among managers are organizational structure, leadership, organizational culture, organizational climate, technology, training, and performance guidance.
Liu & Li, 2019.	Quantitative survey	Technology Organizational culture Organizational learning	The proposed information system helps to optimize hospital organization, improve knowledge, and increase the quality and efficiency of medical services through learning and knowledge management.
Popa, et al. 2018	Quantitative survey	Technology Organizational culture	Improving and promoting increased development of intellectual capital with KM practices, associated with technological tools, is a relevant action to elevate the company in the knowledge society.

Authors	Method	Themes Identified	Conclusions
Tian et al., 2018	Quantitative and survey	Technology Organizational learning Organizational culture Organizational trust	Companies must implement actions based on promoting participatory leadership, promoting managerial knowledge, sharing, a culture of collaboration and trust, decentralized decision-making, communication, continuing education, and appropriate technologies.
Karamitri et al., 2017	Qualitative	Technology Organizational Learning	Healthcare managers must cultivate a knowledge environment, function as role models, provide the tools for KM, and reward people who act as knowledge brokers.
Bahar , et al., 2017	Qualitative	Organizational culture	The studies analyzed reinforce the relevance of the scientific search to support KM practices in health, as well as using and transforming information into practices that can be socialized to health professionals.
Tang, 2017a	Quantitative	Technology Organizational culture	Technological resources can improve efficiency and performance but may not directly improve finances. IT management capacity and knowledge plays a significant role in improving clinical performance.
Tang, 2017b	Quantitative	Organizational learning	The results of this study indicated a significantly positive correlation between KM, culture, performance, and organizational effectiveness
Alolayyan et al., 2020	Quantitative	Organizational culture of sharing	The better the KM, the greater the organizational effectiveness and organizational culture, as it influences organizational culture and improves the organization's effectiveness.

Source: Prepared by the authors (2024)

2.4 Data Analysis

The analysis of the articles eligible for this review was conducted based on thematic analysis by Braun and Clark (2012). Through thematic analysis of the selected studies, themes and subthemes related to the use of KM practices in hospitals and healthcare organizations were identified. The themes and subthemes are presented in Table 03 along with the authors who addressed them.

Table 3: Analysis Themes

Themes	Subthemes	Authors
Information Technology - IT	Improvement of clinical, organizational performance and decision making; *Strengthening knowledge management*	Ayanbode & Nwagwu , 2021; Zhou et al., 2021; Siddique et al., 2021; Rosário et al., 2021; Dal Mas et al., 2020; Ayatollahi & Zeraatkar , 2020; Ouédraogo & Rinfret , 2019; Kartawiguna et al., 2019; Liu & Li, 2019; Popa et al., 2018; Tian et al., 2018; Tang, 2017a.
Culture Organizational	Organizational performance and effectiveness Innovation	Siddique et al., 2021; Karamitri , et al., 2020; Ouédraogo & Rinfret , 2019; Liu & Li, 2019; Popa, et al. 2018; Tian et al., 2018; Bahar , et al., 2017; Tang, 2017a; Alolayyan et al., 2020.
Organizational Trust	Productivity, achieving objectives and sharing knowledge	Ekionea ; Fillion , 2021; Shateri et al., 2020; Gao & Sun, 2020; Tian et al., 2018.
Organizational Learning	Continuously improving sharing, effectiveness, and performance	Zhou et al., 2021; Ouédraogo & Rinfret , 2019; Tian et al., 2018; Karamitri et al., 2017; Tang, 2017b; Liu; & Li, 2019.

Source: Prepared by the authors (2021).

2.5 Presentation of Results

The themes and subthemes displayed in Table 03 are presented and discussed in Section 4.

3. Presentation and Discussion of Results

Based on the analysis of the selected articles, it was identified that the most applied KM practices in hospitals are technology, organizational culture, trust, and organizational learning. Such practices and the impacts of their application are further explained in the following sections.

3.1 Information Technology - IT

In the analyzed articles, it was found that technology is imperative in the development of KM in hospital institutions (Siddique et al., 2021). Its results lead to better clinical and organizational performance, driving the processes of knowledge creation, sharing, and retention, supporting decision-making processes, increasing efficiency, reducing risks, optimizing resources, and leveraging the KM process (Ayatollahi & Zeraatkar, 2020; Siddique et al., 2021; Zhou et al., 2021; Alolayyan et al., 2020; Tang, 2017; Rosário et al., 2021; Dal Mas et al., 2020; Ouédraogo & Rinfret, 2019; Liu & Li, 2019; Popa et al., 2018; Tian et al., 2018). Its impacts are discussed below.

3.1.1 Improvement of Clinical, Organizational Performance, and Decision Making

The use of collaborative technologies has a direct impact on KM processes and indirectly on the creation, sharing, transfer, and retention of knowledge (Ayatollahi & Zeraatkar, 2020). Clinical team members should focus on using technologies that effectively support the process of externalization, combination, and internalization of knowledge, improving the clinical performance of the team and the hospital (Ayatollahi & Zeraatkar, 2020).

A study conducted at the University Hospital in Pakistan pointed out that the intensive use of technological tools in the workplace increases efficiency, reduces risks, optimizes financial resources and revenues, improves organizational performance, and decision-making (Siddique et al., 2021).

The adoption of innovative technologies leads to increased intellectual capital and improvement in organizational performance, promoting market development, better brand reputation, increased organizational value, intellectual capital, and consequently, profits (Zhou et al., 2021).

3.1.2 Strengthening Knowledge Management

Information and communication technologies, when combined, facilitate cross-fertilization of ideas, intuition, skills, and experience for effective personal and collective management, professional development, and efficiency (Ayatollahi & Zeraatkar, 2020).

The study by Alolayyan et al. (2020) in Indonesian hospitals concluded that only organizations that have a constant routine of creating and disseminating new knowledge and technologies, especially in the field of medicine, will succeed.

Governments should focus on improving investments in technology, offering incentives to hospitals or healthcare organizations that have programs to improve their technological capacity, and directing their focus on the competitive advantages provided by KM (Alolayyan et al., 2020; Tang, 2017a).

3.2 Organizational Culture

Different studies have shown that the establishment of an organizational culture of knowledge sharing leads to improved organizational performance and effectiveness, as well as fostering innovation (Tang, 2017b; Alolayyan et al., 2020; Sussan, 2012; Karamitri et al., 2020; Siddique et al., 2021; Ouédraogo & Rinfret, 2019; Liu & Li, 2019; Popa et al., 2018; Tian et al., 2018; Bahar et al., 2017; Tang, 2017a).

3.2.1 Organizational Performance and Effectiveness

The purpose of Knowledge Management is the creation, accumulation, and use of knowledge. For this reason, a good capacity for knowledge creation can contribute to the increase in organizational effectiveness in the health industry (Tang, 2017b, p.1842).

In Abu Dhabi, research identified that KM influences organizational culture and improves organizational effectiveness (Alolayyan et al., 2020). It is necessary, therefore, to strengthen education and integrate channels among employees so that professionals can acquire new knowledge and exchange their skills in a timely manner (Alolayyan et al., 2020).

3.2.2 Innovation

Organizational culture is linked to the development of KM. According to Sussan (2012), the primary condition for a company to create high-quality organizational innovation is to establish a culture and corporate environment of knowledge sharing.

Considering that without innovation organizations do not survive in the market, one of the goals of KM is to contribute to organizations improving their capacities to recognize, manage, and produce successful innovations (Karamitri et al., 2020). To innovate, it is important to establish a culture of knowledge sharing because "people are willing to share information with others as long as they are motivated" (Karamitri et al., 2020; p.09).

The results found in this theme show the importance of organizational culture for Knowledge Management. Organizational culture is a set of norms and values that influence the behavior of members of an organization (Sussan, 2012) and, therefore, affects the sharing behavior of knowledge and information among its members (Allameh et al., 2012). Therefore, KM thrives more strongly in organizations where there is a culture of knowledge sharing (Allameh et al., 2012).

3.3 Organizational Trust

Among the KM practices used in healthcare management, organizational trust was identified as an effective strategy for: 1) achieving a good level of productivity; 2) effectiveness in task development and achievement of organizational objectives; and 3) leveraging knowledge sharing. Additionally, organizational trust is closely related to organizational culture and learning (Ekionea & Fillion, 2021; Shateri et al., 2020; Gao & Sun, 2020; Tian et al., 2018). Its impacts are described below.

3.3.1 Productivity and Task Effectiveness

Trust between leaders and employees is essential for organizational effectiveness (Gao & Sun, 2020). Trust is the result of repeated interactions, where individuals can predict each other's behavior with some certainty, reducing uncertainty in human relationships (Fillion, 2021).

The effectiveness of tasks depends largely on trust between organizational members (Shateri et al., 2020). Trust in colleagues and managers, when high, creates a favorable environment for knowledge sharing, which in turn improves organizational productivity (Gao & Sun, 2020).

3.3.2 Knowledge Sharing

Trust facilitates knowledge sharing between colleagues and supervisors (Ekionea & Fillion, 2021; Shateri et al., 2020; Gao & Sun, 2020). This sharing is essential for improving task performance and achieving organizational goals (Ekionea & Fillion, 2021). Trust increases employees' willingness to share their knowledge, leading to better decision making, increased innovation, and better organizational performance (Gao & Sun, 2020; Shateri et al., 2020).

3.4 Organizational Learning

From the perspective of organizational learning, KM contributes to defining the quality of knowledge and the effectiveness of an organization (Lemay et al., 2012; Pérez López et al., 2004). In general, "organizational learning is the way companies enrich and organize knowledge and the tasks around the activities and the culture and develop effectiveness for improving the competencies of their workforce" (Ekionea & Fillion, 2021, p. 398).

According to the articles in this review, organizational learning relates to culture and the KM process. It encourages knowledge sharing, enhances organizational performance and "intelligence," and increases the effectiveness of the organization and its employees (Zhou et al., 2021; Ouédraogo & Rinfret, 2019; Liu & Li, 2019; Tian et al., 2018; Karamitri et al., 2017; Tang, 2017b). The detailed impact of this KM practice is presented below.

Tian et al. (2018, p.1980) believe that "the creation of a learning climate could reinforce the intention to execute knowledge management and knowledge sharing in an organization and further enhance the continuous progress of the organization."

In the same vein, Liu and Li (2019, p.474) consider that "in an era when intangible assets have become the source of wealth and progress, knowledge management and learning organization may be the missing factors " to improve organizational performance.

Strategically, KM encourages the organization to become "intelligent" and challenges its ways of doing and thinking about things and reinventing itself, thanks to its continuous processes of human and technological learning (Ouédraogo & Rinfret, 2019) provided by knowledge sharing practices.

Furthermore, organizational learning has a significant influence on organizational culture, which is crucial for shaping the sharing culture (Tang, 2017b). For this reason, leaders should encourage a problem-solving culture in the organization based on a willingness for lifelong learning (Chang et al., 2009; Karamitri et al., 2017).

4. Final Considerations

This study investigated the application of knowledge management (KM) practices in hospital administration and healthcare organizations, revealing that technology, organizational culture, trust, and organizational learning are the most prevalent practices. These practices have shown significant improvement in clinical and organizational performance, supporting effective decision-making, increasing efficiency, fostering innovation, and achieving strategic goals. Additionally, there has been continuous improvement in knowledge sharing among healthcare professionals.

The investment in training and learning programs that foster the creation, retention, and sharing of knowledge and the adoption of advanced KM technologies has been identified as a good strategy for hospitals to overcome organizational barriers and promote a culture of continuous learning and innovation.

Furthermore, it has been found that the development of knowledge management in hospitals improves organizational performance and the quality of services provided. The more KM is embedded in the organizational culture, the better the organizational climate, the capacity for innovation, the strategic development of learning, employee satisfaction, organizational learning, and patient care.

Therefore, considering the emerging technological revolution and the continuous need for organizational improvement in the healthcare sector, knowledge management consolidates itself as one of the main pillars for the sustainability of hospitals today and in the future.

5. Future Studies

From the analyzed research, it was possible to identify some practices used and their effects on healthcare organizations, and their limited use in the healthcare industry in general was noticeable. Future research is needed on the development of tools related to the generation, retention, and sharing of knowledge to improve innovation, performance, and patient care.

Studies are also important on each aspect addressed in the data analysis of this review related to organizational sustainability in healthcare and its adaptation in post-Covid-19 hospital routines, a fundamental milestone in health management in current society. Finally, we suggest research on the role and impacts of leadership in the implementation of KM in healthcare organizations.

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