Role of Knowledge Management in Providing Quality Care: A Conceptual Model

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Abstract The purpose of the paper is to signify the effect of factors relating to knowledge management on quality care to patients. A theoretical framework is proposed linking healthcare practitioners' motivation, knowledge adoption, adaption to web technologies and knowledge friendly culture on quality of care given to patients. The study includes two levels of variables to impart quality care, one is at the level of healthcare practitioner and another is at the organizational level. The factors regarding healthcare practitioner include the motivation to use knowledge management system, knowledge adoption and adaption to web technologies. The factor relating to organization includes the knowledge friendly culture. The conceptual model could be empirically tested using data from healthcare organizations. Propositions are posited for further research. The paper provides value to academicians and practitioners. The outcomes of the empirical study would identify the key factors that pushes healthcare practitioner to contribute to knowledge management system and the policy level modifications could be made to develop, alter and sustain knowledge friendly culture.

Keywords: Healthcare practitioner; knowledge management; healthcare organizations; conceptual framework; motivation; knowledge adoption; knowledge friendly culture

1. INTRODUCTION

Organizations adopt knowledge management system (KMS) to gain competitive advantage through organizational learning [31] and organizational performance [27]. KMS is critical for healthcare organizations as its performance costs

peoples' life. The success of KMS depends on the collection, sharing and utilization of knowledge within and outside the organization. The role of information technology in healthcare sector is advancing with the developments in web technologies and decision support technologies [33]. The adoption of KMS in healthcare organization is critical in providing quality care to patients [25]. KM capture signals from healthcare members that help practitioners to interpret things better than doing on their own. It helps in the implementation of six sigma process in hospitals [15]. Organizations need to support healthcare practitioners in the utilization of KMS due to tremendous complexity in the healthcare system. Knowledge created by various stakeholders inclusive of physicians, specialists, nurses, radiologists, lab technicians, health workers, psychologists, counsellors, hospital administrators, managers, healthcare ministry, drug companies, health insurance companies etc. need to be utilized to deliver quality care to patients. With the growth of evidence based medicine, knowledge sharing becomes a necessity to avoid reinventing the wheel. It utilizes the reuse of medical decisions of experienced peer group and integrates individual clinical expertise. The access to biomedical literature although becomes cheaper and easier with web technologies, the information overload is a real crisis. Now the present challenge to healthcare practitioners is to acquaint with the trends and developments in the medical field. The role of knowledge management becomes critical to provide right information, at right time, in the right format to the right person. It minimizes long waiting times of patients which is identified as one of the reason for inefficiencies in Canadian healthcare system [4]. KM reduces medical errors due to slips, lapses and mistakes [30] and wrong drug prescription. Therefore the present study proposes that i) healthcare practitioner's motivation to use KMS will improve the quality care to patients, ii) healthcare practitioner's knowledge adoption will improve the quality care to patients, iii) healthcare practitioner's adaption to use web technologies for knowledge management will improve the quality care to patients and iv) healthcare practitioner's perception about knowledge friendly culture will improve the quality care to patients.

2. REVIEW OF LITERATURE

Knowledge management is a process in which organizations are able to detect, select, organize, distribute and transmit vital information and experiences which would be used in activities like problem resolution, dynamic learning, strategic programming and decision making [16]. Knowledge types include explicit and tacit. Explicit knowledge is knowledge that is articulable and transmittable in formal, systematic language including grammatical

statements, mathematical expressions, specifications and manuals. It can be transmitted formally among individuals with ease. Tacit knowledge is personal and context-specific, and is therefore difficult to formalize and communicate. It is embedded in individual experience and involves intangible factors such as personal belief, perspectives and value systems. It is difficult to communicate and share in an organization and thus must be converted into words or other forms of explicit knowledge [28]. Wiig (1993) detailed four phases in knowledge management cycle such as i) creation and sourcing, ii) compilation and transformation, iii) dissemination and iv) application and value), while [26] grouped the phases into i) knowledge acquisition, ii) knowledge organization, iii) knowledge dissemination and iv) knowledge application. [18] described five phases such as i) create knowledge, ii) capture knowledge, iii) organize knowledge, iv) transfer knowledge and v) use knowledge. Organizations require KM capabilities including technical, structural and cultural capability as part of infrastructure capacities [13] in order to store, transform and transport knowledge throughout the organization. The KM implementation in the organization adopt prescriptive, descriptive and hybrid frameworks. The prescriptive frameworks give the procedures to implement KMS in the organization, with no focus on the knowledge content. Whereas the descriptive framework describes the key factors for the success/ failure of KMS [17] and the hybrid framework considers prescriptive and descriptive methods.

The integration of information technology and KM capabilities of the healthcare organization are important to create healthcare KMS [3]. Openclinical.net creates and maintains a sharable knowledge base for open access and open source repository. It operates based on four principles such as supporting community to create and share models of clinical expertise, providing open access to the content, ensuring fairness in recognition of efforts and empowering authors to disseminate their expert knowledge. Ontology driven solutions helps in understanding, capturing and organizing knowledge regarding item management of medical items used in hospitals [21]. In addition, social networks and gamification also engages healthcare practitioners in writing, contributing and getting feedback about KM in healthcare [7]. Technical infrastructure, people to facilitate and drive the process, system that supports and rewards sharing and the team leader form four pillars of KM program at Spanish hospital -in-the-home units [5]. In addition, organizational culture, leadership, organization structure, management support and training facilitate KM process [20]. The integration of technology, people, storage and pediatric knowledge determines the successful implementation of KM in pediatric practice [24].

The knowledge management environment and healthcare enterprise memory synergies the knowledge procurement and knowledge operationalization techniques to suite strategic knowledge-driven decision-support services [1]. Beyond this, the willingness of employees in adopting the knowledge management in the healthcare organization is important. The hospital resource support, colleagues' attitude and user participation impacts the infection control professionals' willingness for adopting knowledge management in infection control departments of Taiwanese hospitals [6]. The cultural differences such as individualism/collectivism, power distance, and high-context/low-context cultural characteristics show significant difference between U.S and Taiwan's physicians' acceptance of KM system [23].

The information seeking behavior of physicians is important for knowledge creation and knowledge sharing. Although the text sources, asking a colleagues and electronic databases become the sources of information for physicians, the convenience of access, habit, reliability, high quality, speed of use and applicability determines the success of information seeking [9]. Organizations use various KM strategies including training sessions, workshops, seminars, mentoring/ apprenticeship, concept mapping and communities of practice [20] to gather knowledge. The sharing of explicit knowledge in electronic form is more common than sharing tactic knowledge with the extensive use of teleconferencing and video conferencing. Virtual communities of practice support knowledge sharing behavior among health practitioners. The health practitioners' satisfaction of virtual communities of practice regarding its quality of shared knowledge, system, service and perceived use influences satisfaction of healthcare practitioners [2]. The interaction between patients and healthcare professionals and the organizational behavior regarding patients' experience enables knowledge creation and knowledge transfer in knowledge intensive health services [14].

Based on the above literature, a conceptual framework is presented in the Figure 1. The independent variables are the individual level variables pertaining to healthcare practitioner and the organizational level variable. The healthcare practitioner level variables are his motivation level to use KMS, his level of knowledge adoption and his adaption level to web technologies. The organization level variable is the knowledge friendly culture prevailing in the healthcare organization. The dependent variable of the study is quality care to patients.

3. PROPOSITIONS OF THE STUDY

The organizations need to motivate healthcare practitioners to use the KMS. The motivation in the form of financial rewards and non-financial benefits in
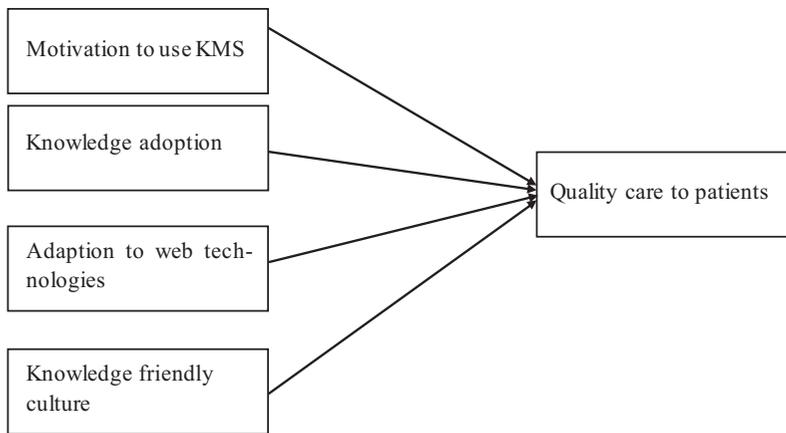
KMS- Knowledge Management System

Figure 1: Conceptual framework linking factors.

the form of air travel allowance, a day off etc. act as greatest source to share and create knowledge. Beyond it creates a mutual benefit for the knowledge provider and seeker when individual incentives are linked to knowledge sharing process [34]. The top management intensifies the use of KMS when high level implications are shared with healthcare practitioners [22]. According to Vroom's (1964) expectancy theory, the outcome for utilizing KM needs to be attractive for the practitioners. Therefore, it is proposed that,

Proposition 1: Healthcare practitioner's motivation to use KMS will influence the quality care to patients

The healthcare practitioners need to understand the role of information technology to adopt knowledge available in the KMS. Irrespective of many challenges and issues in applying knowledge used by others, credibility of the source may convince people of the usefulness of the acquired knowledge [29]. Adopting the right quality of the acquired knowledge helps in the medical diagnostic process and enables to provide quality service to patients. The sharing of medical lessons among the peer group and adopting the similar medical treatment when the patient medical history repeats reduces the diagnostic time and fastens the patient medical recovery. Hence, it is proposed that,

Proposition 2: Healthcare practitioner's knowledge adoption will influence the quality care to patients.

The shift from using Lotus Notes to web technologies such as wiki platforms, semantic widgets and tagging enables the transfer of explicit knowledge easier.

Ontological representations help healthcare practitioners to retrieve answers for powerful queries, knowledge manipulation and retrieval and discovery. Moreover the virtual knowledge communities used for business and healthcare purposes [12] insists a greater adaption to web technologies. Therefore, it is proposed that

Proposition 3: Healthcare practitioner's adaption to use web technologies for knowledge management will influence the quality care to patients

Healthcare practitioner need encouragement and has to be open minded without any fear to share knowledge. Such type of culture needs to be developed for the functioning of KMS. Knowledge friendly culture is imperative for the success of knowledge management projects [8]. The level of cooperative learning among healthcare practitioners has to be part of knowledge friendly culture [19]. Hence it is proposed that,

Proposition 4: Healthcare practitioner's perception about knowledge friendly culture will influence the quality care to patients.

4. PROPOSED RESEARCH METHODOLOGY

A cross-sectional survey shall be conducted among healthcare practitioners working in different parts of the country. The sample shall include doctors and nurses working in public, private and trust hospitals. A purposive sampling technique shall be adopted to select the respondents for the study. The scales to measure the study variables would be adapted from the existing literature. After testing for the validity and the reliability of the scale, the data collected shall be analysed. Descriptive statistics, correlation analysis and multiple regression analysis shall be carried to examine the influence of healthcare practitioner's motivation, knowledge adoption, adaption to web technologies and knowledge friendly culture on quality of care delivered to patients.

5. CONCLUSION

The present study posited different propositions, bringing out the influence of individual level variables such as motivation to use the KMS, knowledge adoption, adaption to web technologies and the perception about knowledge friendly culture in the organization on quality of care provided to patients. As the extension of this paper, an empirical study shall be carried. This paper has highlighted the interplay of individual variables of healthcare practitioners in providing better patient service. More of psychological aspects of the healthcare practitioner need to be accounted in bringing the positive mindset

among the service providers. The positive mindset in utilizing the KMS brings the maximum use of knowledge available within the organization, further extend to share knowledge across organizations making the boundary lines diminished. The utilization of KMS in the public sector although requires impending role of information technology, with the developments in the primary health centres and community health centres it is possible. The targets to meet Millennium development health goals are at our hands with the implementation and utilization of KMS.

Although there are other factors influencing the quality of care provided to patients, this study has considered only individual level and perceptual variables in usage of KMS. The study shall contribute to the literature on knowledge management examining from the micro organizational level and to the literature on quality care to patients in the healthcare sector. The empirical outcomes emerging as the extension of this study shall bring in policy amendments at the organizational level and at the ministry level. The integration of information technology with the existing KMS or the new KMS demands the organization to set mission to utilize the benefits of the KMS. The government needs to allocate sufficient funds in incorporating such change in the existing system and bring in amendments or new policies for the sustenance of KMS at the health centre level, hospital level and at higher institutional levels.

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