



Impact of Knowledge Management and Organizational Learning on Performance in Healthcare Sector

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ABSTRACT: Healthcare sector is knowledge intensive and for any organization to be efficient in healthcare, latest and readily available knowledge is vital. Knowledge Management research can provide insights and immense competitive advantage to the organizations. Even though the healthcare sector is knowledge centric but it has been observed that effective and efficient utilization of available knowledge does not take place. The application of knowledge management presents challenges such as awareness about knowledge management, usability and establishing trust. With the growing competitive environment, uncertainties and complexities in the healthcare sector, managing the internal as well as external knowledge effectively is very important so as to be able to provide the best possible healthcare facilities. Knowledge management in the healthcare sector is improving and adopting suitable knowledge management practices will not only help us in facing the challenges and complexities that the healthcare sector faces but will also enable in delivery of quality healthcare to patients. Thus, it becomes vital for organizations to understand and efficiently implement the various constituents of knowledge management such that there is seamless integration and smooth flow from one element of knowledge management to the other. It has been observed that encouragement of staff and involvement of higher management plays a vital role in successful implementation of knowledge management practice in the organization. Knowledge management can help organizations overcome critical situations and prepare them to face similar issues in future. To thrive the competitive scenarios, sharing knowledge within hospitals is critical. The present study aims to study the impact of knowledge management and organizational learning on the performance of the organizations. A five point Likert scale questionnaire was used and it contained 47 items on knowledge management, organizational learning and performance. Around 500 doctors, team leaders, pharmacovigilance scientists and functional division executives were randomly chosen and administered the questionnaire. We received 420 responses. The responses received were then statistically analyzed using SPSS software. The results show that Performance is thus a function of knowledge management and organizational learning (using regression analysis).

Keywords: Healthcare, Importance, Knowledge Management, Knowledge management practices, Knowledge Management strategies, Organizational learning, Performance.

I. INTRODUCTION

Solving problems and making effective decisions in the healthcare sector is highly dependent on knowledge management. The process of knowledge management constitutes of knowledge acquisition, storage, sharing and utilization. The multidisciplinary approach which by effectively and efficiently using the knowledge, helps in achieving the set objectives of organization may also be termed as knowledge management.

Using knowledge management not only enhances the efficiency, performance and learning of the organizations [1], but also plays a vital role in enhancing creativity, and building entrepreneurship during change management, and staff empowerment [2]. The promise of increased organizational performance has been contributed to the development of various aspects of knowledge management [25]. The healthcare sector is growing at a fast pace both in terms of revenue as well as employment and has become one of the leading sectors in India. Hospitals, medical equipment providers, clinics, telemedicine organizations and health

insurance organizations are all part of the healthcare sector. With huge area of application and increased expenditure by both public and private players has resulted in an exponential surge of the Indian healthcare sector. Healthcare Knowledge Management intends to offer optimum, effective and practical knowledge to the healthcare professionals thus enabling them to make well-informed and cost-effective decisions.

Healthcare systems in India constitute of two major components - public and private. The focus of the public healthcare system is to provide basic healthcare facilities to the people in the rural areas. This is being accomplished by setting up of the primary healthcare centers also known as the PHCs. In metros, tier I and tier II cities, the secondary, tertiary and quaternary-care are primarily provided by the private sector. According to the reports of India brand equity foundation (2018) it is estimated that the Indian healthcare market will increase three-folds to INR 8.6 trillion (i.e. US\$ 132.84 billion) by the year 2023.

"The rate at which knowledge is growing is not in congruence with our ability to effectively disseminate, translate and apply the current healthcare knowledge into clinical practice" [3]. Healthcare knowledge is being circulated in huge volumes. With sudden upsurge in the way diseases are understood, treated and preventive measures are applied, the healthcare sector is experiencing an epidemic growth and it results in the instability of the healthcare knowledge and this adversely affects the patient's wellbeing. As generation and dissemination of knowledge is taking place at a very fast pace the effective usage of this knowledge becomes challenging.

To ensure that the "best" decisions pertaining to patient care are being taken, requires conscious efforts on the part of the healthcare professionals to ensure that appropriate knowledge has been applied. Therefore knowledge management in healthcare sector is essential. Application of knowledge management in the healthcare sector has its own set of advantages and disadvantages. Reduced cost, providing quality care, reduction in medical errors, cooperation and innovation, are a few are advantages associated with the implementation of knowledge management in the healthcare sector. Providing adequate confidentiality and security measures pose concerns in the implementation of knowledge management in the health care sector. It has been observed by researchers,[19], due to constant changes in factors such as improved treatment methods, awareness about being accountable and transparent, advanced medical equipments signify that the healthcare delivery is rapidly changing and this emphasis on collection, collaboration and sharing of information and knowledge. Previously knowledge management and organizational learning in Indian healthcare sector has not been extensively researched, and it was felt that due to the rapidly changing healthcare sector, the impact of knowledge management and organizational learning on performance of healthcare sector needs to be assessed. The study will help in "Optimum utilization of knowledge and resources for improvement of Indian healthcare sector".

II. KNOWLEDGE MANAGEMENT IN HEALTHCARE

The healthcare sector is knowledge driven, improving R & D productivity and decreasing the product cycle time is essential. Working in multidisciplinary teams helps us acquire multiple skills which would enable us to achieve the set goals effectively and efficiently. The information acquired from multiple sources should be properly organized and should cater to each researcher's personal needs, only then successful results would be yielded.

The use of information technology in managing knowledge has turned out to be advantageous, contrary to this is the use of knowledge management in healthcare sector, which has been challenging.

The pharmaceutical industry faces challenges in updating large volume of information and meanwhile also competing on the quality and efficacy of its products with rivals [4]. "Knowledge is at the core of drug development" [5]. Knowledge being the key asset of an organization is essential for innovation and drug discovery processes. With intent to deliver care to a

human being, it is essential for the numerous associates who are working in varied domains, to come together and cater to the needs of the individual. Healthcare professionals such as physicians, technicians, nurses, counselors, specialists, psychologists etc. are involved in the healthcare systems. Hospital and clinic administrators, finance managers, human resource personals, ministry of the healthcare, pharmaceutical companies, insurance companies related to healthcare all together constitute the healthcare system. While performing on the same patient, the healthcare delivery associates are spread across various geographical areas. The amount of knowledge thus created by all healthcare associates is incredible. To deliver quality care, knowledge generated by each individual is essential.

The focus of activity is solely on the patient. Incomplete diagnosis or wrong treatment may have serious consequences on the health of the patients and in extreme conditions may even result in the death of the patient. A study conducted within US alone has estimated that medical errors have caused millions of injuries and thousands of deaths each year [6, 7] and nearly 770,000 people have either died or are injured from adverse drug events (ADEs) [8, 9]. In a study conducted in South India it was observed that nearly 0.7% admissions in the hospital were due to the adverse drug reactions. 3.7% of the patients experienced adverse drug reactions and nearly 1.3% turned out to be fatal [20]. Nearly 3.7% of the adverse drug reactions has been as a result of the patients stay at the hospital and nearly 3.4 % of adverse drug reactions has resulted in the patients getting admitted in the hospitals [21]. In India the case of serious adverse drug reactions are nearly about 6.7% [22].

In the present scenario, the healthcare sector has become a knowledge-based community. It aims at connecting the hospitals, clinics, pharmacies, physicians, and customers with an intent of for sharing knowledge, reducing administrative costs, and improving the quality of care [23]. Collecting, analyzing and exchanging knowledge within and across organizations is a critical factor that determines the success of healthcare sector [24].

Knowledge management thus plays a vital role in the healthcare sector.

Application of knowledge management has influenced the working of the healthcare sector considerably. Implementing it in the healthcare sector would result in reduced number of medical errors, promote innovation, and ensure reduced cost and quality care to the patients.

III. FRAMEWORK FOR KNOWLEDGE MANAGEMENT IN HEALTHCARE SECTOR

The various tools and methods for implementing knowledge management in the healthcare sector constitute the framework [10]:

– **Acquisition of knowledge:** Capturing of existing specialized knowledge, providing guidelines for creation of new knowledge base.

– **Storage:** Standardization of documentation and procedures, indexing and making the information easily accessible to all authorized users.

- **Dissemination:** Use of digital platform and web technology such as publishing information through social networking, peer collaboration, work group and communities of experts.
- **Usage:** Optimizing the services to the patients so that the patients have access to the best quality at an optimum cost, ensuring the availability of quality information to the health care delivery experts for planning the patient care at the time of Clinical assessment decision making at the point of delivery as well as during the monitoring of patient health.
- **Transformation:** Knowledge that has been captured, stored and used can further be used in new researches, improving quality, updating existing knowledge and improvement in policy formation which can be utilized for transforming the health care sector for the benefit of patients, service providers, hospitals and ultimately the society [10].

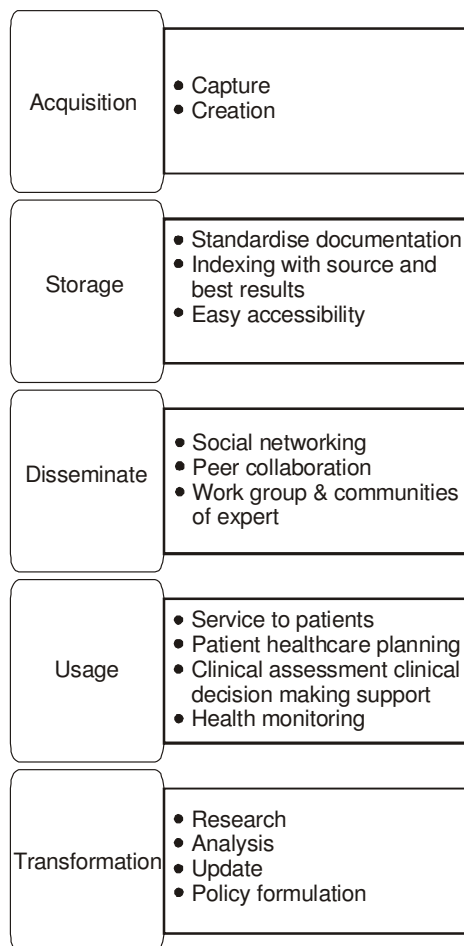


Fig. 1. Framework of knowledge management for Healthcare Sector.

IV. LITERATURE REVIEW

A review study was conducted for analysis of various knowledge management implementation tools being used for informed decision making in the healthcare sector. The study comprised of extensive literature review for over a period of 10 years. The reviewed literature revealed, implementation of knowledge management in healthcare sector was encouraging.

There continue to be many opportunities and hindrances in the implementation of knowledge management. Improvement of health information, communication technology, clinical decision-support-systems, and e-health record systems are a few contingencies that can transform the healthcare sector. The study also revealed that providing the relevant knowledge at the right time is paramount and using appropriate tools for knowledge management is critical and can considerably improve the quality & safety of care provided for patients [11]. Researchers in their study concluded that the knowledge management practices need to be followed in the Pharmaceutical industry for enhanced performance and preserving of knowledge which is critical for the pharma-industry [12]. Explicit and tacit knowledge is vital for the pharmaceutical industry to sustain and grow in today's competitive scenario. In another study conducted the researchers in their study emphasized on contributions of Knowledge Management in healthcare enterprises. It was asserted that by acquiring the varied knowledge, from repositories in the healthcare and then introducing the derived knowledge to Strategic Healthcare Decision-Support Services can enhance the response and assist the healthcare professional in efficient decision making. The 'knowledge quotient' in healthcare enterprises would be enhanced by the planning and management of the healthcare enterprises.

From the study it was concluded that the proposed Healthcare Enterprise Memory was aimed at analysis of issues that can prove to be a hindrance to the healthcare industry and knowledge management systems will eventually lead to improved healthcare delivery [13]. Also a study conducted in Indonesia aimed to study the effect of intellectual capital and knowledge management on the performance of the firm. The results of the study showed that intellectual capital and knowledge management have a positive and significant impact on firm performance [16]. Another study conducted in UAE, aimed to study the intricate relationship between knowledge management (KM) processes and public sector firm performance in terms of operational, quality and innovation performance. The results of the study revealed that all four KM processes (knowledge creation, knowledge capture and storage, knowledge sharing, and knowledge application and use) had a positive and significant impact on operational, quality and innovation performance of public sector in the UAE [26].

V. RESEARCH METHODOLOGY

Research Objective: The main objective of the present study is to evaluate the impact of Knowledge Management and Organizational Learning on the performance of the selected healthcare organizations.

Hypothesis

H1: Organizational Performance is a function of Knowledge Management and Organizational Learning.

Research Design: The study is descriptive in nature. 39 hospitals from the list of ADR Monitoring Centre's of pharmacovigilance programme of India and 10 companies were selected from the list of pharmaceutical manufacturing units in North India.

Methodology: A five point Likert scale questionnaire was used and it contains 47 items on knowledge

management, organizational learning and performance. The cronbach alpha value (which is a measure of internal consistency, based on the average inter-item correlation) was 0.964 signifying a good fit.

Around 500 doctors, team leaders, pharmacovigilance scientists and functional division executives were randomly chosen and administered the questionnaire. We received 420 responses. The responses received were then statistically analyzed using SPSS software.

VI. ANALYSIS AND FINDINGS

Although Knowledge Management is not officially implemented in the selected healthcare organizations but there are many practices which can be qualified as KM practices and are being practiced by the medical professionals. These knowledge sharing practices received a mean response of 2.36, while Organizational

Learning received 2.43 and performance received the response of 2.436.

As seen from Table 2 above, the R value is 0.919. R is defined as the multiple correlation coefficients between the predictors and the outcome. R^2 represents the proportion of the variance for the dependent variable i.e. performance that's explained by the independent variables, knowledge management and organizational learning in the present study. The value of R^2 is 0.845. The Durbin-Watson statistic value is 1.649 which is closer to 2. This indicates that the assumption of independent variables is acceptable. The closer the value is to 2, the better it is. The Table 4 gives the model of relationship between KM, OL and Performance. As the t values are higher, sig. values are less than 0.05, the model is a good fit, and it shows that Performance is a function of Knowledge Management and Organizational Learning. Thus the stated hypothesis is accepted.

Table 1: Descriptive Statistics.

Descriptive Statistics					
	N	Min	Max	Mean	Sd
Km	420	1.00	4.00	2.3653	0.67100
Orglrn	420	1.05	4.00	2.4326	0.58111
Perf	420	1.00	4.00	2.4361	0.56327

H1: Organizational Performance is a function of Knowledge Management and Organizational Learning.

Table 2: Model summary.

Model Summary ^c					
Model	R	R square	Adjusted R square	Std. Error of the estimate	Durbin-Watson
2	0.919 ^b	0.845	0.844	0.22188	1.649
a. Predictors: (Constant), KM					
b. Predictors: (Constant), KM, ORGLRN					
c. Dependent Variable: PERF					

Table 3: ANNOVA.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	111.982	2	55.991	1137.366	0.000 ^c
	Residual	20.528	417	0.049		
	Total	132.511	419			
a. Dependent Variable: PERF						
b. Predictors: (Constant), KM						
c. Predictors: (Constant), KM, ORGLRN						

Table 4: Coefficients.

Coefficients ^a						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	0.391	0.047		8.371	0.000
	KM	0.463	0.030	0.552	15.304	0.000
	ORGLRN	0.391	0.035	0.404	11.207	0.000
a. Dependent Variable: PERF						

VII. DISCUSSION AND CONCLUSION

The paper aims to study the impact of knowledge management and organizational learning on the performance with reference to the healthcare sector.

The results of the present study reveal that both knowledge management and organizational learning positively impact the performance. The results of the present study are in line with the earlier studies conducted that show knowledge management affected performance measures by enhancing learning, decision making, and task execution [14, 15].

The results of the present study are also similar to the results of a study that was conducted with intellectual capital and knowledge management as variables that were used to test the effect on firm performance. The results showed that intellectual capital and knowledge management have a positive and significant impact on firm performance [16]. A study conducted on the insurance firms in Kenya revealed that the organizational learning had a positive and significant influence on the firms performance [17].

The results of the present study are in line with the results of the study conducted in UAE [26].

Knowledge management and organizational learning do significantly impact the performance of the firms and the same has been highlighted by a number of studies. The results of the present study are therefore in sync with the results of the previously conducted studies.

The concept of knowledge management is gaining momentum at a rapid pace. Its applicability in the healthcare sector when properly planned and executed Implementation of knowledge management will change the way hospitals, doctors or patients interact and it would also ensure to enhance the quality of care along with continuity in the care. To thrive the competitive scenarios, sharing knowledge within hospitals is critical [18]. Adopting the knowledge management strategies will help the healthcare sector to face the complexities and challenges faced by them. Accepting and implementing knowledge management with a positive mindset will enable maximum utilization of available knowledge and would also encourage knowledge sharing across organizations and individuals. Implementing knowledge management would lead to organizational learning and together both will be able to improve performance of the organizations.

VIII. FUTURE SCOPE

The study can be further carried out in other states as well and if similar results are found then the study can be generalized. Also the present study has been carried out on the healthcare sector similar study can be conducted on other industries/sectors.

Conflict of Interest. The authors declare no conflict of interest.

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