Knowledge Management Capability in Nursing care Performance in Selected Teaching Hospitals in Southwest Nigeria

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ABSTRACT
The purpose of this study is to investigate the elements of knowledge management capability influencing nursing care performance. The organization of nursing resources is critical to health care organizations for providing safe and high quality care for patients. So it is necessary to study the role of knowledge management capability in clinical nursing roles and the outcomes on performance. A review accompanied by an extensive literature search in databases and a library search focused on the keywords were used for selecting studies primarily focused on knowledge management and the importance of expertise in the effective knowledge management in all aspects of the nursing profession. Despite the critical role of nursing care in defining high-performing health care delivery, knowledge management in this area is still at an early stage of development. Based on organizational capability theory and employing mixed-method research approach, this study seeks to identify the major knowledge processes and organizational enabling factors that influence the efficiency of knowledge management in clinical floor nursing of selected teaching hospitals in Nigeria, a developing country in Africa. The output from the research is expected to contribute to the domain of literature/knowledge; provide awareness of the knowledge management strategies and practices in nursing care in Nigeria; assist nursing administrators, health policy makers and hospital management to exploit and make effective use of knowledge-based resources to enhance nursing care which can improve the productivity of health care organizations.

KEYWORDS
Knowledge management capability, nursing care, health care, teaching hospitals

1. INTRODUCTION
The field of knowledge management has progressed from a prominent topic to an increasingly common function within organizations [1]. Knowledge management (KM) as centers on developing an organization's ability to acquire, organize, and disseminate knowledge throughout the organization for the purposes of improving effectiveness, efficiency, and competitiveness [3]. The goal of knowledge management is to provide appropriate tools, technologies, strategies and processes to turn data and information into valuable knowledge assets [2]. The discipline of knowledge management has three major components-people, processes and technologies-to enable the organization to create and share, transfer, store, protect knowledge [3]. In essence, knowledge management not only involves the production of information but also the capture of data at the source, the transmission and analysis of this data as well as the communication of information based on or derived from the data to those who can act on it [2].

According to Chuang, [4] knowledge management capability of a firm refers to "its ability to mobilize and deploy KM-based resources in combination with other resources and capabilities". For superior performance, organizations must develop the ability to use prior knowledge to recognize the value of new information, assimilate it, and apply it to create new knowledge and capabilities [5]. The KM capability of a firm includes two key components: KM infrastructure and KM process capability [6]; [7]; [8]. KM infrastructure consists of technology, structure and culture while KM process capability is comprised of acquisition, conversion, application and protection process [6]. Gold, Malhotra and Segars [6] further highlighted that in order to effectively leverage knowledge infrastructure, it is crucial to rely on KM processes, which make it possible to store, transform, and transfer knowledge within the organization.

Over the last few years KM has become an important part of the everyday work in healthcare practices [9]. In health organizations, knowledge management blends people, technology and processes to create, share, translate and apply knowledge to improve effectiveness. Increasingly, health care organizations are turning towards knowledge management strategies to achieve organizational goals. While a number of studies have been carried out on knowledge management in healthcare organizations in general, specific attention has not been given to the knowledge management enablers in the clinical nursing function. The nursing workforce, which constitutes the greatest portion of healthcare professionals strongly impacts the productivity of the healthcare institution [10] and play an integral role in providing efficient patient care [11].

Nursing, as an integral part of the health care system, encompasses the promotion of health, prevention of illness, and care of physically ill, mentally ill, and disabled people of all ages, in all health care and other community setting [10]. The quality of nursing care makes a vital difference in patient outcomes and safety. The dearth of published studies on the unique perspective of knowledge management in addressing nursing care outcomes was noted by [12] who observed that KM tools and processes while established in other sectors of the economy are relatively new in clinical nursing.

Nigeria, a developing country in West Africa is seized with a number of limitations that make it difficult for professional nurses to effectively deliver quality patient care. Such challenges include but are not limited to poor infrastructure, lack of professional

retraining, inefficient health process [13]. Okafor, [14], Ezeugwu [15] and Okaroh, Ohagwu and Njoku [16] concur that the nurses in Nigeria lack adequate infrastructure and resources to enhance optimal patient outcomes. The major challenge therefore facing nurses working in healthcare facilities in Nigeria is to ensure that quality nursing care is provided to all patients on 24-hour basis [17]. The contexts in which these challenges occur are neither clearly understood. The healthcare environment in which nurses provide care to patients is defined by organizational characteristics that can either facilitate or constrain the quality and safety of patient care [37].

The overall goal of any healthcare organization is to sustain and ensure high quality care is given to patients and these require nurses to a deliver a high level of performance. A well-organized and effective strategy for knowledge management in nursing care can help organizations achieve this goal. Subsequently, there is growing interest both within and beyond the healthcare sector in how to manage knowledge resources to support performance. In organizations, KM embodies people, infrastructure and process to improve performance. When infrastructure factors support the care processes and enable team work, performance of nurses are enhanced and patients receive higher quality care [38]. This study therefore examines KM capability in nursing care in South West Nigeria.

2. RESEARCH PROBLEM

Nurses play a central role in the provision of quality health services in both developed and developing countries; and also form an integral backbone of the workforce in health systems. Nursing care delivery is highly knowledge intensive requiring nurses to have a broad knowledge base and a high level of decision making skills in providing quality patient care [18]. Antrobus [19] highlighted that nurses are knowledge workers and their role in an increasingly complex healthcare environment requires more sophisticated knowledge management. Research has shown that the inability of nurses to access and apply current and relevant knowledge in healthcare leads to the delivery of suboptimal care to patients [20]. Therefore it is critical for nurse managers and stakeholders in teaching hospitals to look for innovative solutions as well as develop strategies that aim to manage knowledge in nursing practice.

The challenge of mobilizing and utilizing knowledge to improve nursing care and ensure effective use of resources by nursing professionals is a concern in health institutions in Nigeria [21]. Obansa and Orimisan [22] asserted that the Nigerian health system is presently faced with multiplicity of factors which restrict the quality of nursing care rendered to the population in Nigeria. These factors include: inadequate health facilities and structures, poor management of human resources, poor motivation and remuneration, inequitable and unsustainable health care financing, skewed economic and political relations, corruption, illiteracy, absence of integrated system for surveillance and treatment, inadequate access to health care, shortage of essential drugs and supplies and inadequate health care providers.

Abdulraheem, Olapipo and Amodu, [23] pointed out that the quality of nursing care in Nigerian health institutions is affected by inconducive and unsupportive working environment; poor leadership; inadequate health facilities and structural infrastructure; and absence of integrated system for nursing practices. Similarly, Akpabio et al., [24] noted that lack of organizational learning, absence of continuous retraining, lack of understanding of organizational process, technology and skills hindrances affected the delivery of nursing care in Nigeria health institutions. However, the extent to which these factors affect the delivery of efficient nursing care in Nigeria has not been researched. Nursing care involves interactions of different components that are shaped by the work environment. The key to understanding the success and failure of knowledge management in relation to nursing care delivery is the identification and assessment of capabilities that are necessary for nursing care performance.

3. RESEARCH OBJECTIVES

The study seeks to address the following specific research objectives:

1. To investigate the factors of KM capability affecting nursing care performance outcomes in health institutions in South west Nigeria.
2. To investigate the relationship between knowledge infrastructure and knowledge process in KM capability on nursing care performance in health institutions in South west Nigeria.
3. To examine how KM capability can be leveraged to support nursing care performance outcomes in health institutions in South west Nigeria.

4. RESEARCH QUESTIONS

The following research questions will be addressed:

1. What are the factors of KM capability influencing nursing care performance outcomes in health institutions in Southwest Nigeria?
2. What relationship exists between knowledge infrastructure and knowledge process in KM capability on nursing care performance in health institutions in Southwest Nigeria?
3. How does the relationship that exists between knowledge infrastructure and knowledge process in KM capability affect nursing care performance in health institutions in Southwest Nigeria?
4. How can KM capability be leveraged to support nursing care performance in health institutions in Southwest Nigeria?

5. RESEARCH HYPOTHESES

The following null hypotheses were developed based on the variables gleaned from the theoretical framework to answer the research questions in the study.

To address research question 1: four hypotheses are developed as follows:

H_{01}: IT support does not have a positive influence on nursing care performance

H_{02}: Organizational structure does not have a positive influence on nursing care performance.

H_{03}: Organizational culture does not have a positive influence on nursing care performance.

H_{04}: Knowledge Process capability does not have a positive influence on nursing care performance.

To address research question 2: three hypotheses are proposed:

H_{05}: IT is not positively related to knowledge process in KM capability.

H_{06}: Organizational structure is not positively related to knowledge process in KM capability.

H_{07}: Organizational culture is not positively related to knowledge process in KM capability

Finally, to address research question 3: three hypotheses are proposed:

H_{08}: The relationship between IT support and knowledge process in KM capability does not positively influence nursing care performance.

H_{09}: The relationship between organizational structure and knowledge process in KM capability does not positively influence nursing care performance.

H_{010}: The relationship between organizational culture and knowledge process in KM capability does not positively influence nursing care performance

6. THEORETICAL FRAMEWORK

This study will be underpinned by Organizational Capability Theory by [6]. Organizational Capability Theory is chosen for this study because it is built on the underlying theoretical frameworks of social-capital (its role in creating intellectual assets) and knowledge-integration (its role in creating knowledge synthesis) which are grounded in the theories of the resource-based view and knowledge-based view of the firm.

In examining the issue of knowledge management failure, Gold, Malhotra and Segars [6] provided a definitional and empirical context of knowledge management effectiveness from the perspective of organizational capabilities. Gold, Malhotra and Segars [6] posited that a firm's predisposition to organizational effectiveness lies in its knowledge management infrastructure and process capabilities. Gold, Malhotra and Segars [6] operationalized knowledge integration through four knowledge management process activities - acquisition, conversion, application, and protection. The knowledge infrastructure capability consists of three key infrastructures- structural, cultural and technological, because together they enable the maximization of social capital and are essential organizational capabilities or "preconditions" for effective knowledge management. Technological infrastructure is suited for the creation of knowledge and integration of fragmented flows of information and knowledge. Structural infrastructure focuses on the existence of and trust mechanisms as well as formal organizational structures which enable and encourage people to create, share knowledge and leverage technology infrastructure. Cultural infrastructure comprises of shared contexts such as employee interaction which are often the basis of creation of new ideas and is essential to innovation process. In order to leverage infrastructure, knowledge management processes must also be present in order to store, transform, and transfer knowledge throughout the organization. Developing both infrastructure and process capability enables a firm to integrate and use new knowledge and, therefore, create new knowledge for effective performance. This theory is relevant in addressing research question 1, 2, 3 and 4. Research question 1 seeks to investigate the factors of KM capability affecting nursing care performance outcomes in health institutions in South west Nigeria. Research question 2 seeks to know the relationship that exists between knowledge infrastructure and knowledge process in KM capability on nursing care performance in health institutions in Southwest Nigeria. Research question 3 seeks to investigate how the relationship that exist between knowledge infrastructure and knowledge process in KM capability affect nursing care performance in health institutions in Southwest Nigeria. Research question 4 seeks to examine how KM capability can be leveraged to support nursing care performance in health institutions in Southwest Nigeria. The organizational capability theory has been applied in nursing care research such as that of [12]) and [43].

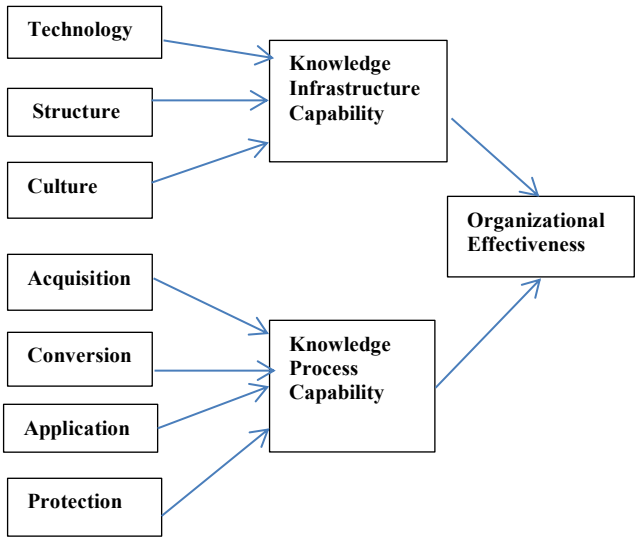

Figure 1: Organizational capabilities model of knowledge management by [6]

7. RESEARCH MODEL

The variables of the research model are derived from [6].

The research model in figure 1 illustrates the relationship among variables. The research model consists of knowledge management infrastructure, knowledge management processes, and nursing care performance.

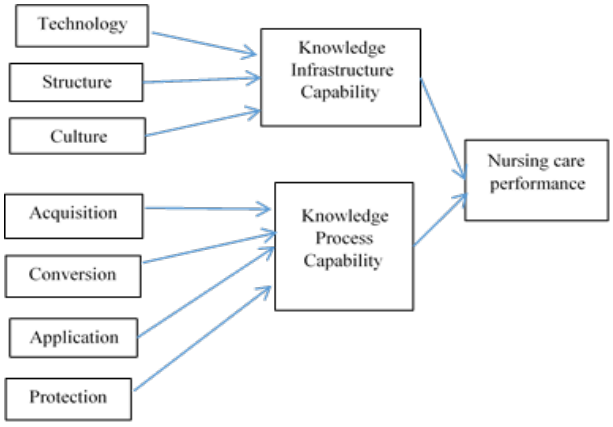

Figure 2: Research model (Adapted from [6])

8. PRELIMINARY LITERATURE REVIEW

The empirical and theoretical literature covered in this section is from both print and electronic resources and focuses on the following key themes: Knowledge management capability, knowledge management in nursing care, knowledge processes in nursing care, nursing care performance, current debates on knowledge management in nursing care, and nursing care performance.

Gold, Malhotra and Segars [6] in their study of KM capability on organizational effectiveness highlighted that the KM capability of

an organization includes two key components: KM infrastructure and KM process capabilities. Gold, Malhotra and Segars [6] found that knowledge infrastructure capability and knowledge process capability significantly affected organizational effectiveness. Lee, H., and Choi [7] emphasize both technical and social perspectives of KM infrastructure and the impacts they have on organizational performance. Zheng, Yang and McLean [25] examined the possible mediating effect of KM processes (knowledge generation, knowledge sharing, and knowledge utilization) on the relationship between organizational culture, structure, strategy and organizational effectiveness. Cho [26] surveyed the effects of knowledge infrastructure and processes on organizational performance. They found that there is a positive relationship between effective knowledge management and organizational performance.

Ghosh and Scott [12] studied the major factors impacting knowledge management strategy and processes in the clinical nursing function in a large hospital using a survey method. The results indicated that technology can play a pivotal role in KM initiatives among nurses, provided it supports the processes involved with knowledge acquisition and application to solving new problems. The findings also indicated that most nursing processes are individualistic and therefore the organizational structure, IT and culture need to be emphasized during the implementation of knowledge management systems. Hsia et al., [27] proposed a conceptual framework that integrates nursing process, knowledge management activities, and enabling information technology (IT) for designing a nursing knowledge management system. The framework identified KM technical functions such as codifying and sharing of internal best practices; the creation of corporate knowledge directories; the creation of knowledge networks and a variety of enabling IT such as databases, knowledge repositories; intranet and extranet; groupware among others.

Lee, Kim and Kim [28] in a cross-sectional survey investigated the core KM factors affecting the outcomes of nursing performance and reported that a knowledge sharing culture and organizational learning were core factors affecting nursing performance. They concluded that identifying other core factors that can be used to effectively manage and share nursing knowledge is vital to improving outcomes of nursing performance. Anderson and Willson, [29] examined the concept of KM as a framework for identifying, organizing, analyzing and translating nursing knowledge into daily practice and concluded that KM is valuable for nurses to produce informed competent clinical decisions for ensuring excellence in patient care and continuous quality improvement. Gagnon et al., [30] using semi-structured interviews investigated the effects of a learning organization and KM among nurses and concluded that organizational learning through knowledge transfer in the work environment is needed for changes in nursing practices and work environment. Israel [31] highlighted that nursing care quality was needed to enhance the quality of patient care in Nigerian hospitals. Akpabio et al., [24] in a study of nurse role performance in South-south Nigeria outlined deficiencies in patient care infrastructure and work environment.

The gaps identified from the preliminary literature presented suggest that most of the studies on KM capability have been carried out in the business sector compared to the health sector. Similarly, studies on KM capability are relatively few in the context of patient nursing care [28]. While empirical and conceptual work examining the role of knowledge management in nursing care have often focused on the individual components. Besides, where studies exist none have attempted to identify how knowledge management capabilities are directly linked to performance of patient care by nurses [26].

Furthermore, previous studies of KM in nursing have hardly investigated how the elements of KM capability interact with each other and how these interactions affect the outcomes of nursing performance. This situation therefore provides the motivation for studying these factors in a single endeavor. In addition existing studies have been carried out in the context of the developed world [12, 29, 28, and 30]. From the Nigerian context the literature reviewed reveal a dearth of literature on KM capability in nursing [24].

9. RESEARCH METHODOLOGY

Creswell [34] underlined that research methodology provides a generic framework to describe the philosophical positions and rational that underpinned the inquiry. Research methodology in this study provides an overview of the research paradigm and the justification for choosing the research paradigm. It examines different research approaches and their underlying philosophical assumptions including the selection and justification of the research approach and research design that will be followed in the execution of this study.

9.1 Research paradigm

The underpinning for this study is the pragmatic research paradigm deriving from the work of [32]. The pragmatic paradigm places "the research problem" as central and applies all approaches to understanding the problem [39]. Pragmatism applies a practical approach, integrating different perspectives to help collect and interpret data. The pragmatic approach provides for the use of both qualitative and quantitative research methodologies to collect information and make inquiry into complex phenomenon of social and natural contexts [33].

9.2 Research design

This study is designed to provide a broad perspective of KM on nursing care performance and, thus, describe the characteristics of KM capabilities of an organization from a review of existing literature. In addition, the study aims to gain insight and explore how different elements of KM capabilities relate to each other in nursing care using organizational capability theory. Furthermore, the literature reviewed reveals a dearth of literature on KM capability in nursing from the Nigerian context. Thus, a combination of exploratory and conclusive survey research design will be used in this study. Survey design is consistent with pragmatic paradigm, which is pluralistic and allows the application of mixed methods [33]. Survey design has been used in similar studies on nursing care [35]; [36]; [37].

9.3 Research approach

Based on the philosophical orientation, this study employs the mixed method approach. Mixed method research involves the mixing of quantitative and qualitative methods in research studies to understand a research problem [34]. Integrating both quantitative and qualitative methods helps to gain a deeper understanding of the phenomena under study [40]. This approach enables flexibility in addressing the research questions the study seeks to answer. Employing both approaches enables the validation of quantitative findings by referring to information extracted from the qualitative phase of the study and vice-versa.

9.4 Population of study

The study will be carried out at the University College Hospital (UCH) located at Ibadan, Oyo State and Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) located at Ile-ife, Osun State. These two hospitals are situated in the Southwest

region of Nigeria. Southwest is purposively selected because it has the highest number of professional nurses as stated by [35]. Nurses are also selected out of the other health professionals because they represent the largest occupational group in the healthcare workforce in any country and play a pivotal role in improving the healthcare delivery of hospitals [36] UCH and OAUTHC are selected for study for a number of reasons: they are among the first generation of teaching hospitals established by the Federal Government. In addition, both institutions provide training to health practitioners and health services to patients within and outside the South West region. The total population of registered nurses in UCH is 1192 while that of OAU is 756. Therefore, the total population of the study is 1948.

9.5 Sample size and sampling procedure

[41], created a table for determining required sample size given a finite population. In order to determine the proportional sample size for each of the two institutions, [41] formula below will be used:

$$SP = \frac{N * S}{TP}$$

Where SP = sample population, N = population size, S = sample size and TP = total population.

Based on this formula, the distribution of samples across the two teaching hospitals. For (UCH):

$$SP = \frac{320 * 1192}{1948} = 196$$

For (OAUTHC):

$$SP = \frac{320 * 756}{1948} = 124$$

Table 1: Relative populations and corresponding sample sizes of the selected teaching hospitals.

S/N	Institution	Population of registered nurses	Population of nursing heads of departments	Sample size
1	UCH	1192	8	196
2	OAUTHC	756	6	124
	Total	**1948**	**14**	**320**

Source: UCH Establishment, 2016; OAU Establishment, 2016

The population of registered nurses in University College Hospital (UCH) will be stratified into fourteen according to the clinical units. Also, Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) will be stratified into fourteen according to the clinical units. Proportionate allocation will be used to select the size of the sample from each stratum. Census method will be employed to select the heads of the units of the clinical nursing department. Census method is a data collection method that obtains data from every member of a population and attractive for small populations of 200 or less [31].

9.6 Data collection procedure

Evidence will be collected primarily through survey questionnaire and semi-structured interview. Survey questionnaire will be used to solicit the quantitative data from the registered nurses covering themes of IT support, organizational structure, organizational culture, knowledge acquisition, knowledge conversion, knowledge application and knowledge protection. In addition data will be gathered on nursing care performance covering patient safety, effectiveness, timeliness, efficiency and equity. A semi-structured interview will be used to gather qualitative data from the heads of the clinical units in the cadre of Deputy Director Nursing Services (DDNS) covering themes of infrastructural policies, knowledge management practices and challenges faced in providing efficient nursing care in Obafemi Awolowo University Teaching Hospital (OAUTHC) and University College Hospital (UCH) respectively. Deputy Directors are chosen for semi-structured interview because they provide professional leadership to all nursing staff, possess an in-depth understanding of the hospital system and responsible for the provision of a high-quality nursing service in the delivery of patient care and quality.

9.7 Reliability and Validity

A pilot study will be conducted to pretest the survey questionnaire and interview schedule in a teaching hospital that will not be involved in the actual survey. Pretesting of the survey questionnaire is in order to establish the highest degree of reliability. Onwuegbuzie, Leech, and Collins [32] asserted that a sample size of 10-20% of the sample of the actual study is a reasonable number of participants to consider in a pilot study. The survey questionnaire will be pretested on 32 registered nurses while reliability of the self-designed interview schedule will be ensured by pretesting on 3 clinical heads in the cadre of Deputy Director Nursing Services (DDNS) in a teaching hospital that will not be involved in the actual survey. The instrument will also be subject to construct and content validity. This will be done using judgmental validation i.e. checking of constructs by expert in the field [33].

9.8 Data Analysis

The analysis of the quantitative data will be done in Statistical Package for the Social Sciences (SPSS) version 22 and AMOS version 22. The analyses to be carried out include descriptive and summary statistics, structural equation modeling (SEM), multivariate analysis, simple linear regression and Pearson's correlation coefficient. To statistically assess the hypothesized relationships, structural equation modeling (SEM) approach will be employed. SEM is better suited to explain the complex relationships in this research model whereby a variable is independent in one relationship, but dependent in another relationship. SEM explains the different patterns and significance of the relationships among the variables [42]. Qualitative data will be subjected to thematic analysis using NVivo software package. NVivo is a qualitative data analysis software package used for the organization and analysis of non-numerical or unstructured data.

9.9 Ethical Considerations in the study

The researcher will design an informed consent form for the respondents and ensure that all respondents involved in the study willingly consent to participate in the research and will be assured confidentiality of their responses. The researcher will apply for ethical clearance from the Ethical and Research Committee of both health institutions (OAUTHC AND UCH) where the study will be conducted and also comply with the guidelines of University of Kwa-Zulu Natal ethics policy.

10. EXPECTED CONTRIBUTIONS OF THE STUDY

The outcome of this study is expected to contribute to policy by serving as basis for re-evaluation, re-focusing and re-strategizing KM activities through the provision of clear policy direction and

implementation strategies for a robust knowledge management in nursing practice in Nigerian health institutions. Knowledge as a resource is difficult to grasp; this research aims at revealing the methods that can deployed to best utilize this resource within the context of the nursing work practices and also provide nursing professionals a scientific basis for their interventions and provides an impetus for the improvement of KM practices. This study will also create awareness of the support needed by nursing personnel in the health institutions in Nigeria to exploit and make effective use of knowledge-based resources to enhance nursing care.

Despite the research efforts made by scholars till now, KM remains an immature field lacking integrative initiatives in nursing care practices; the study will provide useful contribution to the domain body of literature/knowledge in the area of KM and nursing care particularly in understanding the influence of KM capabilities in nursing care performance. Also, provide awareness of the KM strategies and practices in the health care institutions and in Nigeria as a whole.

Findings and recommendations from the study will benefit the society through improved nursing care delivery, thereby enhancing performance of health institutions. The results from this study will serve as a baseline for future research and contribute to existing body of literature on KM in nursing care in the Nigerian environment.

11. CONCLUSIONS

This study explores the role of KM enablers and their influence on nursing care effectiveness for quality patient care. Identifying the KM enablers: organizational structure, organizational culture, technology and KM processes in relation to nursing care is imperative when further viewed in context of large health care deficits in Nigeria.

12. REFERENCES

[1] Hsieh, H. J. 2007. Organizational characteristics, knowledge management strategy, enablers and process capability: Knowledge management performance in US software companies. Doctoral dissertation, Lynn University.

[2] Davenport, T. H. and Prusak, L. 1998. *Working Knowledge*: How organizations manage what they know, Harvard Business School Press, Boston Day,

[3] Gallupe, B. 2001. Knowledge management systems: surveying the landscape. *International Journal Management Reviews*, *3*, 1 (March. 2001), 61-77.

[4] Chuang, S. H. 2004. A resource-based perspective on knowledge management capability and competitive advantage: an empirical investigation. *Expert Systems with Applications*, *27*, 3(October. 2004), 459- 465.Coulon L.

[5] Cohen, W. and Levinthal, D. 1990. "Absorptive capacity: A new perspective on learning and innovations". *Administrative Science Quarterly,* 35,1 (March. 1990), 128-152.

[6] Gold, A.H., Malhotra, A., and Segars, A.H. 2001. Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, *18*,1 (May .2001), 185-214.

[7] Lee, H., and Choi, B. 2003. Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, *20*, 1 (July .2003), 179-228.

[8] Lee, Y.C. and Lee, S. K. 2007. Capability, processes, and performance of knowledge management: a structural approach. *Human Factors and Ergonomics in Manufacturing*,17,1 (January. 2007), 21-41.

[9] El Morr, C. and Subercaze, J. 2010. Knowledge management in healthcare. *In Handbook of Research on Developments in e-Health and Telemedicine: Technological and Social Perspectives*, 490-510.

[10] International Council of Nurses. 2006. Report on Global shortage of registered nurses: an overview of issues and actions. Retrieved from: http://www.icn.ch/publications/the-global-shortage-of-registered-nurses-an-overview-of-issues-and-actions/

[11] Needleman, J. and Hassmiller, S. 2009. The role of nurses in improving hospital quality and efficiency: real-world results. *Health Affairs*, *28*,4(July. 2009) w625-w633.

[12] Ghosh, B. and Scott, J. E. 2005. Comparing knowledge management in health-care and technical support organizations. *Information Technology in Biomedicine, IEEE Transactions*, *9*,2 (June.2005), 162-168

[13] Olade, R.A. 2004. Evidence-based practice and research utilization activities among rural nurses. Journal of Nursing Scholarship, 36*,* 3*(September.2004),* 220–225.

[14] Okafor, S. 2005. Incidence of adverse events in hospitals. *Journal of Surgery*, 2,1 (June. 2005), 20-25.

[15] Ezeugwu. F. 2007. Incidence of maternal mortality in Nigerian hospitals. *Nigerian Journal of Surgery*, 5,3 (2007), 34-37.

[16] Okaroh, Ohagwu and Njoku. 2010. Incidence of Maternal mortality in hospitals. *Nigerian Journal of Surgery,* 14, 2 (2010), 35-27.

[17] Salawu, R. A. 2004. Consumer Satisfaction through Quality Nursing Care. In Proceedings of the *Nursing Council Examiners Workshop/Conference.* (Osogbo, Nigeria, August, 2004).

[18] De Beer, J., Brysiewicz, P., and Bhengu, B. R. 2011. Intensive care nursing in South Africa. *South African Journal of Critical Care*, *27*, 1 (July. 2011), 6-10.

[19] Antrobus, S. 1997. Developing the nurse as a knowledge worker in health—learning the artistry of practice. *Journal of Advanced Nursing*, *25*, 4 (April. 1997), 829-835.

[20] McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A., and Kerr, E. A. 2003. The quality of health care delivered to adults in the United States. *New England Journal of Medicine*, *348*,26 (June.2003), 2635-2645.

[21] Siemuri, K. E. 2014. Factors Influencing the Utilization of the Nursing Process in Ogun State, Nigeria*. International Journal of General Medicine and Pharmacy* 2, 3(March. 2014), 57-64.

[22] Obansa, S. A. and Orimisan, A. 2013. Health care financing in Nigeria: prospects and challenges. *Mediterranean Journal of Social Sciences*, *4*,1 (January. 2013), 221-36.

[23] Abdulraheem, I. S., Olapipo, A. R., and Amodu, M. O. 2012. Primary health care services in Nigeria: Critical issues and strategies for enhancing the use by the rural communities. *Journal of Public Health and Epidemiology*, *4*, 1 (January. 2012), 5-13.

[24] Akpabio, I. I., John, M. E., Akpan, M. I., Akpabio, F. F., and Uyanah, D. A. 2016. Work-related conflict and nurses' role performance in a tertiary hospital in South-south Nigeria. *Journal of Nursing Education and Practice*, *6*, 2(November.2016), 106-114. DOI= https://doi.org/10.5430/jnep.v6n2p106

[25] Zheng, W., Yang, B., and McLean, G. N. 2010. Linking organizational culture, structure, strategy, and

organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*, 63, 7(July. 2010), 763-771. DOI= http://dx.doi.org/10.1016/j.jbusres.2009.06.005

[26] Cho, T. 2011. Knowledge management capabilities and organizational performance: An investigation into the effects of knowledge infrastructure and processes on organizational performance. PhD dissertation, University of Illinois at Urbana-Champaign.

[27] Hsia, T. L., Lin, L. M., Wu, J. H., and Tsai, H. T. 2006. A framework for designing nursing knowledge management systems. *Interdisciplinary Journal of Information, Knowledge, and Management*, *1*,1 (2006), 13-22.

[28] Lee, E. J., Kim, H. S., and Kim, H. Y. 2014. Relationships between core factors of knowledge management in hospital nursing organizations and outcomes of nursing performance. *Journal of Clinical Nursing*, *23 (*December. 2014), 3513-3524. DOI= 10.1111/jocn.12603.

[29] Anderson, J. A., and Willson, P. 2009. Knowledge management: organizing nursing care knowledge. *Critical Care Nursing Quarterly*, *32*,1 (January.2014), 1-9.

[30] Gagnon, J., Fortin, J. P., Paré, G., Côté, J., and Courcy, F. 2015. A learning organization in the service of knowledge management among nurses: A case study. *International* Journal *of Information Management*, *3,* 5(October. 2015), 636-642. DOI=http://dx.doi.org/10.1016/j.ijinfomgt.2015.05.001

[31] Israel, G. D. 2012. *Determining sample size*. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.

[32] Onwuegbuzie, A. J., Leech, N. L., and Collins, K. M. (2010). Innovative data collection strategies in qualitative research. *The Qualitative Report*, *15*, 3, (January.2010) 696-726. DOI= http://nsuworks.nova.edu/tqr/vol15/iss3/12

[33] Teddlie, C., and Tashakkori, A. (Eds.). 2009. *Foundations of Mixed Methods Research:* Integrating quantitative and qualitative approaches in the social and behavioral sciences. Sage Publications Inc.

[34] Creswell, J. W. 2009. Editorial: Mapping the Field of Mixed Methods Research. *Journal of Mixed Methods Research*, *3*, 2, (April.2009), 95-108.

[35] Agbedia, C. 2012. Re-envisioning nursing education and practice in Nigeria for the 21st century. *Open Journal of Nursing*, 2, (September.2012), 226-230. .DOI= http://dx.doi.org/10.4236/ojn.2012.23035

[36] Pappas, S. H. 2008. The cost of nurse-sensitive adverse events. *Journal of Nursing Administration*, 38, 5, (May.2008), 230-236.

[37] Institute of Medicine. 2004. Keeping patients safe: transforming the work environment of nurses. Washington, DC: National Academy Press.

[38] McGillisS, H. & Doran, D. 2007. Nurses' perceptions of hospital work environments. *Journal of Nursing Management*, *15*,3, (March.2007), 264-273.

[39] Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. 2003. Advanced mixed methods research designs. *Handbook of Mixed Methods in Social and Behavioral Research*, 209-240.

[40] Johnson, R. B., Onwuegbuzie, A. J., and Turner, L. A. 2007. Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*, 2, (April.2007), 112-133.

[41] Krejcie, R. V., & Morgan, D. W. 1970. Table for determining sample size from a given population. *Educational and Psychological Measurement*, *30*, 3, (September.1970), 607-610.

[42] Byrne, B. M. 2001. *Structural equation modeling with AMOS.* New York, NY: Psychology Press.

[43] Allen, G. (2013). The Influence of Organizational Culture on Affinity for Knowledge Management Practices of Registered Nurses. *Faculty Publications. Department of Professional Studies. Paper3*.