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**AN INVESTIGATION OF CLINICAL KNOWLEDGE MANAGEMENT
PRACTICES AT THE AGA KHAN UNIVERSITY HOSPITAL, NAIROBI**

MUMTAZ SHAFFIQUE HIRANI

MBA-HCM/83148/14



**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
DEGREE OF MASTERS IN BUSINESS ADMINISTRATION IN HEALTHCARE MANAGEMENT**

STRATHMORE BUSINESS SCHOOL

STRATHMORE UNIVERSITY

NAIROBI, KENYA

JUNE, 2016

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DECLARATION

Student's Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself:

Mumtaz Shaffique Hirani

May, 2016

Approval

This thesis of Mumtaz Shaffique Hirani was reviewed and approved by:

Dr. Pratap Kumar (Supervisor)

May, 2016

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ABSTRACT

Globalization has had a lot of impact on the management of various organizations, and the health care sector is not exempt. In the era of knowledge economy, management of knowledge has become a significant tool for enhancing the competitiveness of firms. The Aga Khan University Hospital, Nairobi is the tertiary, teaching and referral healthcare facility in Kenya. Their approach to care is guided by their core principles of Quality, Access, Impact and Relevance. Knowledge management at The AKUH is primarily facilitated by the University hospital library and The Continuous Medical Education (CME) department. The libraries provide the university community access to comprehensive and multi-disciplinary information resources in print and digital formats. This access is provided through innovative services and state-of-the-art systems. Despite all the above there still exist an empirical gap in the knowledge management practices of the healthcare institution.

This study investigated the knowledge management practices implemented in the university hospital. Simple random sampling technique was applied to select a sample size of respondents picked from the university hospital setting. The research applied both quantitative and qualitative data analysis. Out of 201 questionnaires' distributed, 188 responded giving a response rate of 93%. 8 of the respondents were section heads and 10 were program directors, 64 were consultants, 28 were registrars, 24 were senior house officers and 54 were residents. Data was collected from the respondents using structured questionnaires. For qualitative study, semi structured interviews were conducted on 13 senior managers out of which 8 were chairs of different clinical departments, 1 ICT officer, 1 regional librarian and 1 head librarian, 1 dean of the medical college and 1 CME coordinator to make a total of thirteen giving a response rate of 81%. Descriptive and causal research designs were used in analysis of the data. The design was ideal in describing the characteristics of the large targeted sample used in the study.

The results of the study established that the use of Electronic medical records, Continuous medical education, Communities of Practice, Knowledge cafes, and Web based system are the key knowledge management practices that are in place in the university hospital. The leadership role played by top management emerged as being a key facilitator of knowledge management practices in the healthcare facility. The results from this study will inform the hospital management on the knowledge management practices in the hospital, suggest that knowledge management practices directly influence the performance of clinical staff.

Key recommendations from the study were that an alignment of knowledge management policy to the organizational strategy would act as guideline on how knowledge should be disseminated within the organization, secondly the role of leadership in managing KM activities in terms of management support is key and finally, incentive programs which reward knowledge sharing are important so as to encourage employees to actively share knowledge both in the departments and across department knowledge sharing. Further research efforts can investigate the impact of social media in the improving implementation of knowledge management within organizations or between sector partners. The study was limited to the Aga Khan University Hospital which is a private health care facility, further studies can be carried out in public health care facilities.

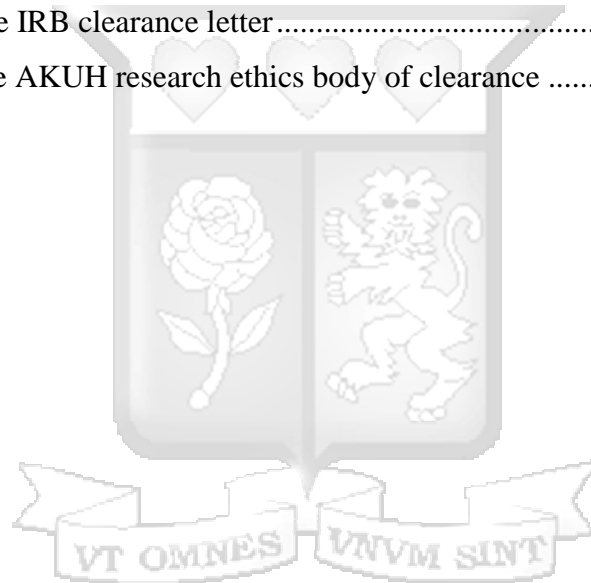
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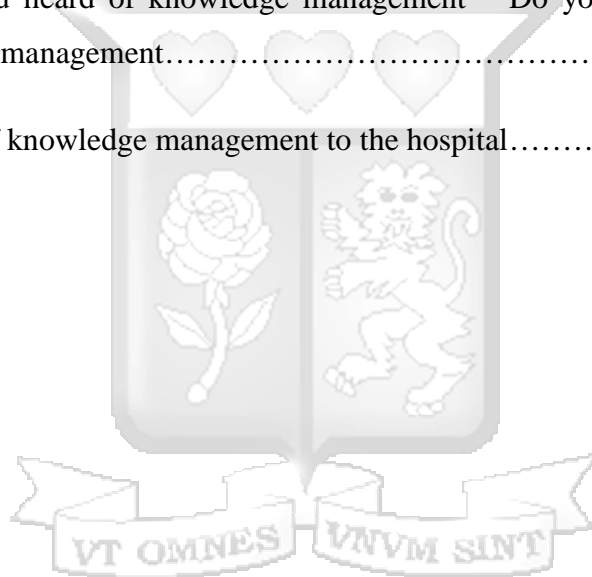
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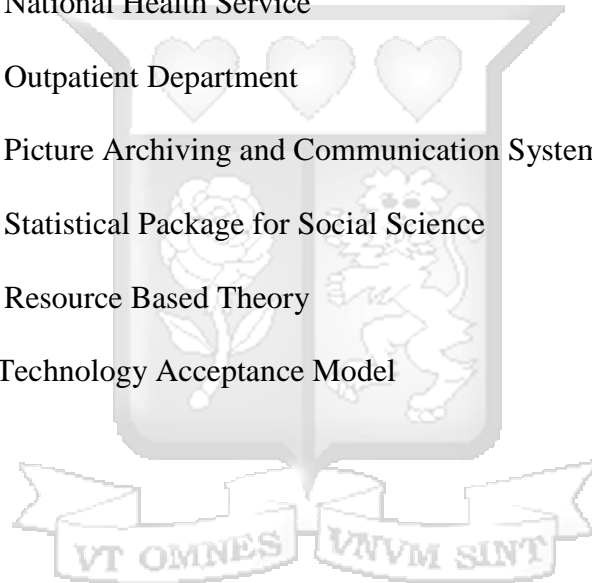
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LIST OF ABBREVIATIONS

AKU	Aga Khan University
AKUH	Aga Khan University Hospital
ICT	Information and Communication Technology
KBT	Knowledge Management Theory
KM	Knowledge Management
MOH	Ministry of Health
NHS	National Health Service
OPD	Outpatient Department
PACS	Picture Archiving and Communication Systems
SPSS	Statistical Package for Social Science
RBT	Resource Based Theory
TAM	Technology Acceptance Model



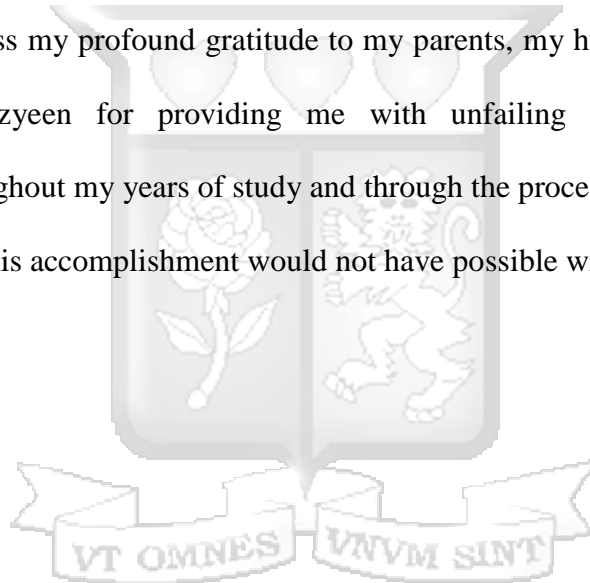
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DEDICATION

This thesis is dedicated to my family. Your prayers and encouragement kept me going.
Thank you for your understanding during the study period.



Chapter One: Introduction

1.1 Background to the Study

In the current global world, knowledge economy is increasingly becoming significant as a strategy for organizations to achieve and sustain their competitive advantages (Bate & Robert, 2002). Knowledge management is defined as "the systematic process of identifying, capturing, and transferring information and knowledge people can use to create, compete, and improve". In response to this, knowledge management, as both a concept and practice, has become a strategic weapon for most organizations to sustain their positions amid global competition.

Due to the importance of knowledge management, its application has spread to various sectors which include health care. Nevertheless, the previous studies reveal that knowledge management within health sector differs among institutions and states, which undermines the standardization of health care strategies and practices (Van Beveren, 2003). However, Spender (2006) noted that there is a close similarity among health care organizations, especially in the sharing of knowledge as well as best practices. According to Anderson & McDaniel (2000), health care institutions are organizations which have specialized functions that are implemented by specialized people under a shared rules of interaction and job specification, as well as behavior's and values.

Regardless of the existence of variations in institutional practices, various health care facilities share a common goal, which is to save humanity and reduce human suffering (Perrott, 2007). In addition, the provision of health care service is achieved through an interactive and collaborative process that requires the participation of different workers with specialized types of knowledge. Therefore, management of knowledge within healthcare institution needs a well-established and collaborative system, which enhances the main goal of reducing human suffering and saving the life. Furthermore, Anderson & McDaniel (2000) argued that health care employees work in collaboration and interaction to enhance the effectiveness and efficiency of services, which lowers the cost of provision of health care services.

However, the practices of knowledge management in different health sectors vary, especially in relation in how these practices are executed in other facilities.

One of the vital reasons that cause this variation in the practices within the health sector is based on variations in the challenges that face human beings and the goal of each health sector.

According to Bose (2003), the challenges of creating and sustaining, as well as integrating new knowledge into the mainstream is caused by influx of medical knowledge, that is basically caused by current development in information and technology. Hence, the evolution of information technology is increasingly posing its effects on patterns of patient care, medical research and education within the medical institutions. As a result, these changes enhance inconsistencies and variations in the creation of patients' records, interactive learning strategies, genomic, proteomic and molecular systems which affect the delivery of medical services. Therefore, the management of medical knowledge has become more complex due to the inconsistencies caused by the emerging technological developments which attempt to harmonize different patterns of management from various cultural backgrounds that hinder the uniformity of provision of health care services. Nevertheless, there are different practices and methods of managing various health conditions.

The existence of different procedures undermines the ability of medical practitioners to memorize and apply a wide range of practices that are relevant to the current condition. Therefore, the medical personnel are faced with the problem of solving the information challenge because there are a lot of variations in the medical information, which undermine their ability to promptly establish the most reliable and current medical information to use to solve the condition in the immediate context. In other words, it means that there is a lot of information in the healthcare sector that undermines the promptness of the delivery of health care services, as well as practices of knowledge management (Sveiby, 2007). In this case, the main issue concerns understanding the authenticity of the origin of various medical information that is caused by the influx of information. However, according to Ferlie & Shortell (2001) reveals that social boundaries and cognitive or epistemological process in the health care sector hinder the innovation and development of knowledge management practices. In regard to the effects of organizational and professional boundaries on the sharing of knowledge within national health care institutions, Waring & Currie (2009) noted that knowledge sharing is the most complex practice because of the wide margins that exist in the sector.

For example, the division between clinicians and managers in the clinical institutions makes each group to apply on divergent understanding of the delivery of health care services. In this case, the clinicians emphasize on patients' care while managers emphasize on managing the costs.

The Aga Khan University Hospital, Nairobi is the tertiary, teaching and referral healthcare facility in Kenya. It has set the standard for comprehensive healthcare and modern medical education in East Africa. Their approach to care is guided by their core principles of Quality, Access, Impact and Relevance. Knowledge management at the AKUH is primarily facilitated by the University hospital library and the Continuous Medical Education (CME) department. The libraries provide the University community access to comprehensive and multi-disciplinary information resources in print and digital formats. This access is provided through innovative services and state-of-the-art systems.

1.2 Problem Definition

There are a number of empirical inquiries on the concept and practice of knowledge management in organizations (Waring & Currie, 2009; Sveiby, 2007; and Walshe & Rundall, 2001). One of the informative studies was carried out by Waring & Currie (2009) to explore knowledge management methods in health institutions. However, the findings of this study developed the general argument of knowledge management strategies, which may not be applicable to private sector health institutions. Consequently, the study cannot be applied in the management of specific health care facilities. In response to this lack of knowledge in existing studies the current study narrowed down the investigation to private health facilities, especially in The Aga Khan University Hospital in Nairobi, Kenya.

The implementation of knowledge management healthcare IT systems requires the support of top management. Top Management must believe in and drive the KM initiatives so as to bring benefits to the organization (Chen, Elnaghi, & Hatzakis, 2011). Moreover, studies (Huang, Quaddus, Rowe, & Lai, 2011; Hung, Chou, & Tzeng, 2011) have shown that the lack of an institution's adoption of knowledge information management system implementations can be a challenge to knowledge management practices.

Furthermore an institution's IT infrastructure can limit the scope of knowledge management system implementations in as much as the IT infrastructure should act in a supportive and facilitator role in knowledge management practices (Hung, Chou, & Tzeng, 2011). Thus as seen in the above empirical literature this study sought to ascertain the role played by top management and the adoption levels of knowledge information management systems in the University hospital and its acceptability.

Walshe & Rundall (2001) among other studies (Kureshi, Qureshi, & Sajid, 2010; Mills, & Smith) explored the challenges that health care facilities face in managing health care knowledge in developed countries. However, these studies were not comprehensive to cover these challenges as experienced in the context of developing countries. Henceforward, in response to the lack of empirical data for the local context the current study sought to investigate knowledge management strategies of private healthcare organizations in Kenya using the case of The Aga Khan University Hospital.

1.3 Research Objectives

1.3.1 Broad Objective

- i. To investigate clinical/medical Knowledge Management (KM) Practices at The Aga Khan University Hospital in Nairobi, Kenya

1.3.2 Specific Objectives

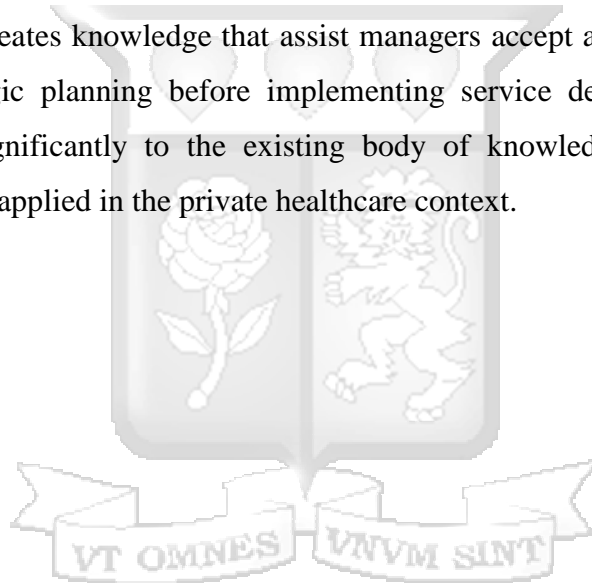
- i. To investigate and document different practices of clinical knowledge management used in The Aga Khan University Hospital in Nairobi, Kenya.
- ii. To investigate the acceptability, adoption and challenges around specific clinical knowledge management practices implemented at The Aga Khan University Hospital.

1.4 Research Questions

- i. What are the practices of clinical knowledge management used in The Aga Khan University Hospital Nairobi, Kenya?
- ii. What is the acceptability, adoption and challenges experienced by The Aga Khan University Hospital in Nairobi, while implementing clinical Knowledge Management practices?

1.5 Significance of the Study

The tremendous shifts in the patterns of globalization have increasingly impacted on how an organization is managed. In this case, the health care sector has also been exposed to the influence of globalization, especially in its strategies of clinical knowledge management. Institutions are increasingly adopting various strategies of clinical knowledge management to enhance the efficiency of delivery of health care services. However, few studies have been conducted on knowledge management strategies in specific contexts such as private health facilities in developing countries. As a result, the study provides useful information that will be integrated into strategies for knowledge management to assist managers engage in appropriate knowledge management practices, which consider the role of employees. In addition, the study creates knowledge that assist managers accept and integrate views of the employees in strategic planning before implementing service delivery. Furthermore, the study contributes significantly to the existing body of knowledge by providing a new paradigm that can be applied in the private healthcare context.



Chapter Two: Literature Review

2.1 Introduction

The practice of knowledge management became more popular in 1990s in other sectors, such as information management, business administration and policy management (Walshe & Rundall, 2001). As a method of providing appropriate information to the right place, knowledge management is perceived as a process of attaining and sustaining competitive advantage (Spender, 2006). As a result, the health care sector has also emerged to embrace the practices and strategies of knowledge management to enhance the provision of health services. Therefore, this chapter reviews the existing literature that has attempted to explore the topic of knowledge management in the private health care sector. The sole purpose of this chapter is to give insight to the current investigation on the extent to which the previous studies have examined the topic and various areas that this study seeks to improve.

2.2 Theoretical Foundation of the Study

This section focuses on theoretical review of how organizations through their employees achieve competitive advantage by adopting knowledge management practices. The study is anchored on Technology Acceptance Model, Resource-Based Theory and Knowledge Management Theory.

2.2.1 Technology Acceptance Model

Technology Acceptance Model was put forward by Davis (1993), who discussed a theoretical model based on the consequence of system behaviour and characteristics on the user acceptance of computer-based information systems. This theory explicated an understanding of why users accepted new information and communication technology.

Davis et al. (1989) pointed out the key goal of technology acceptance model was to offer an elucidation of the predictors of technology acceptance that are general, capable of explaining user behavior across a broad range of end-user computing technologies and user population. In regards to reliability and validity, there are many studies that have attempted to examine technology acceptance model in various knowledge management implementations e.g. Hu, Chau, Sheng & Tam, (1999), Money & Turner (2004) and De Angelis (2016). These studies

found that the model was consistent for forecasting and explaining the human behavior regarding information and communication technology and the adoption of knowledge management information systems.

2.2.2 Resource Based Theory

Resource-based theory looks at organizations as probable creators of value-added capabilities, and the underlying organizational capabilities involve viewing the resources and assets of the organization from a knowledge-based perspective (Conner & Prahalad, 2002). It focuses on the idea of hard and expensive to imitate attributes of the firm as sources of business returns and the means to achieve superior performance and competitive advantage (Barney, 2001).

Knowledge is a resource that is of valuable, rare, poorly imitated and non-substitutable encompassing the firm's inimitable or core competencies (McKnight, Wycoff, Wharton, Schoonover, Colvin, Kinsley, & Julian, 2016). It presents a lasting competitive advantage (Hitt, Bierman, Shimizu & Kochhar, 2001). Explicitly, impalpable firm-specific resources such as knowledge facilitate for organizations to come up with innovative factors of production (Harris & McMahan, 2015).

2.2.3 Knowledge Management Theory

Duhon (1998) contends that management of knowledge is a discipline that stimulates an assimilated methodology to identifying, capturing, evaluating, retrieving, and sharing all of the firm's information based assets. These information based assets comprise of information databases, procedures, documents, policies, and formerly un-collected proficiencies and know-how in individual workers (Geisler, & Wickramasinghe, 2015). Knowledge in firms, often becomes entrenched not only in documents or repositories but also in the firm's practices, routines, initiatives, procedures and customs (Duffield, & Whitty, 2015).

According to Daven-port, De Long and Beers (1997) recognition of certain influences of the culture of a firm that inhibit the effective transmission of knowledge within a firm. Shortfalls

in trust, differences in cultures and language habits, lack of time and meeting-opportunities, incentives for knowledge carriers, according to Glisby and Holden (2003), show an absence of competence to captivate inventive knowledge. Developments in knowledge management stimulate and enhance aspects that lead to a firm' creativity, better performance, operative effectiveness and quality of services to customers (Glisby & Holden, 2003).

2.3 Knowledge Concepts

This category of the literature includes definitions, types and characteristics of knowledge, Knowledge management and associated practices.

2.3.1 Knowledge and Knowledge Management

Knowledge is one of an organization's key resources that has an influence on its acumen, decision-making, projecting, designing, planning, diagnosing, analysing, evaluating and having an effective intuitive judgment (Alavi & Tiwana, 2003). Implications of knowledge as a resource comes because of the ability to generate protection to the institution from being easily replicated thus its capacity to build strategic equivalents or limitation of imitation (McInerney, 2002). Knowledge and information are some of the key resource assets that produce what is called resource-based firms where their resources, competences and proficiencies vary more than competing firms (Barney, 2001). This supplements Zack (2009) who argues that only when the organization that has the capability to create, exploit and safeguard knowledge that is challenging to reproduce, can it achieve competitive advantage over other competing firms.

The basis of management of knowledge is meant to make knowledge the main source for improving a firm's capacity to have an additional competitive advantage in the contemporary economy (Theriou, & Chatzoglou, 2008). The progression of creation, categorization and transmission of knowledge in firms are usually referred to as Knowledge Management which is also found to improve business performance and decision making (Amar & Hlupic, 2016).

2.3.2 Medical Knowledge

In the context of healthcare, knowledge management means confluence of formal techniques and methodologies, which facilitate the development, dissemination, preservation, acquisition, identification and utilization of different elements of knowledge assets present in the healthcare units (Stroetmann, & Aisenbrey 2012; Walshe & Rundall, 2001). However, this paper adopt the definition of knowledge management as constructed by Kuper & D'Eon (2011): a systematic process used to identify, capture and transfer knowledge and information for creating, competing and improving service delivery in the healthcare facility.

Information about health care is not consistent since various nations and organization have different understanding of appropriate practices of delivery of health care services. However, such inconsistencies can only be solved through partnership and collaboration among different health care facilities and professional (Gerbing & Thiel, 2016). Healthcare facilities are specialized organizations where various professionalized individuals with specific behaviour's, values, rules and job requirements interact based on one objective, to save humanity. In addition, Kuper & D'Eon (2011) reveals that the provision of health care services is an interactive activity that includes both implicit and tacit elements of knowledge. In this case, health care workers function in collaboration to enhance access to and quality of health care services, which in turn lowers the cost of health care services. Therefore, the existences of strong boundaries which distinguish the management of health care knowledge among different sectors plays a significant role in determining the outcome of health care services.

According to Rothschild et al (2005), social boundaries in the health care sector suppress the ability to develop standardized procedures for health care delivery. By investigating the impact of organizational and professional divides on sharing of knowledge in national health care organizations, Abidi, Cheah and Curran (2005) revealed that knowledge sharing is a complex task because of the wide divides that exist in the health facilities. For example, the division between management and subordinates in the clinical setting makes each level to orient to divergent practices to the delivery of the health care services. Therefore, the subordinates focus on patients' care while management emphasizes on managing the operational costs. The effects of fragmentation in the national health care facilities was also

explored by Nettleton et al (2008) who revealed that despite enhancing their strategies of knowledge management, health care facilities is still undermined by the divides that exist between various sections.

2.3.3 Explosion of Medical Knowledge: Data and Information

According to Nettleton et al, (2008) noted that the problem of creating knowledge in the mainstream is caused by excess medical knowledge. Excessive knowledge results from the development of information technology. In the current digital era, technology is continuously changing strategies of patient care, medical research, and education in the medical institutions. Therefore, these changes develop inconsistent sets of patient records and different interactive learning strategies that undermine the development of standard methods of delivery of health care services. According to Arnold & Stern, (2006), management of medical knowledge has become complex because of the challenges caused by development in technology and innovation. Hence, medical workers are unable to learn and apply various medical practices that are relevant to their current condition. Therefore, the current medical workers face the challenge of finding the best practice among a vast body of knowledge that has different prescriptions to apply to the current condition. Therefore, the existence of information overload in the health care sector is a challenge that affects the delivery of service and management of knowledge (Heiberg Engel, 2008). In this case, the main challenge is establishing the source of medical information and linking it to the current condition. Therefore, data mining plays a significant role in NHS in the development and management of knowledge, which is used for creating and assessing a wide range of information.

2.3.4 Appropriate Knowledge for Clinical Decisions

According to Heiberg Engel (2008), there are different sources and types of knowledge which form the foundation for clinical decisions. However, most professionals prefer using local and tacit knowledge to process their decisions. A major contribution, in this case, was done by Matheson (2008) who distinguished between knowledge that is created through practices (proximal knowledge) and knowledge which is meant for application (distal

knowledge). According to Abidi, Cheah and Curran (2005), distal knowledge is created from the external context of a given health care institution. However, it is perceived that this knowledge is not owned by any particular practitioners. Therefore, it is prescriptive in nature. On the other hand, Bate & Robert (2002) notes that proximal knowledge is created in a given health care organization. Therefore, it is affected by contextual factors in the health care institution such as the types of services and level of staffing. In this case, proximal knowledge, which is also knowledge created through practice does not rely on factors such as quality judgments because of its high integration of traditional practices (Perrott, 2007). Therefore, to be used in other health care facilities, proximal knowledge must be decontextualized to reflect the current needs. Transference, as well as re-contextualization, is then done to fit this knowledge into new health care context. Therefore, implementation of proximal knowledge in different settings increases the costs of managing knowledge (Martínez-García, Moreno-Conde, Jódar-Sánchez, Leal & Parra, 2013)

In addition, a study by Bate & Robert (2002) noted that clinicians seldom use and apply explicit knowledge, but depend on collectively created, internalized and tacit guidelines. In other words, it means that these practices are created from the experience of clinicians and the contributions done by their workmates. However, Sveiby (2007) revealed the input of pharmaceutical professional, opinion leaders and patients in creating tacit knowledge. Hence, a creation of tacit knowledge is beyond clinicians' experience and involves the input of other health care professionals. The concept of proximal knowledge is also enhanced further by Waring & Currie (2009) who investigated the practice of sharing knowledge among employees in different professional contexts. Therefore, this research concluded that the operational proximity and spatial location of practitioners are major determinants of the sharing of knowledge. In this case, those who are closer to others have higher tendencies to reveal similar behaviour's and skills.

Furthermore, the idea of the local environment was also considered in a study by Nettleton et al (2008) who emphasized on information needs and information searching behaviours of the medical professionals. In this case, the study concluded that written materials are the most useful source of information. In addition, an inquiry from the workmates also contributes to information creation. However, this study did not consider the input of electronic materials as

sources of information, which is becoming popular in the current era of globalization. Therefore, with the emergence of online social groups, electronic sources of information are experiencing a lot of changes to enhance communication among different parties (Ash et al., 2004). Therefore, medical professionals have also shifted their methods of search towards the electronic sources.

This shift is done to take advantage of the importance of emerging information so as to enhance the delivery of health care services. Furthermore, another useful source of information for medical practitioners is tacit knowledge. Fasquel et al (2006) revealed that the actions taken to enhance safety and reduce harmful practices are the main elements that trigger the process of developing health care services which have significant impacts on the process of decision making. For example, this is experienced in the change from making decisions based on tacit knowledge to computerized decision system, as well as clinical guidelines. Hence, the modern changes in the management of knowledge neglect the traditional practices which were based on the tacit practices by embracing the computerized decision system that emphasizes on the new practice-based knowledge.

2.3.5 Knowledge Management Practices

In practice, knowledge management has been instigated as a global standard that is examined on countries level for the last ten years. This has driven organizations within countries to set standards for their development on different aspects and influences for example knowledge management awareness, knowledge management strategy and direction and communicating channels (Barnes & Milton (2015); Beyk & Halas, (2014); Storey & Kahn (2010)). Some of the knowledge management practices have an effect on indexes dedicated to knowledge processes that start from knowledge identification, stimulation, distribution, and application. However, Villar, Alegre and Pla-Barber (2014) and Zack, McKeen and Singh (2009) have a different opinion which was that all available criterions have been unsuccessful in addressing the degree to which knowledge management an effect on practices to clients, innovation and speedy reaction to other firms' needs.

Effective knowledge management initiatives have been found to be the driving force behind the capability to generate exceptional and valuable knowledge within the firm (Babnik, Širca, & Dermol (2014); Cong & Pandya, (2003) contemplate that this type of exceptional knowledge is a significant aspect in expediting the success of knowledge integration initiatives with other practices towards better a better organizational competitiveness perspective. However, the level of writings available requires the search for an improved understanding of what guarantees the realization of knowledge management practices (De Souza, de Almeida Falbo, & Vijaykumar, 2015; Seba & Rowley, 2010).

2.3.6 Factors for successful knowledge management practices implementation

Owing to the fact that modern organizations have realized how critical knowledge is to the success of their operations, the implementation of knowledge management programmes has become an ongoing major concern. Wong (2005), for instance, argues that, because organizations have become more knowledge intensive, they tend to be more concerned with hiring ‘minds’ than ‘hands’, and those strategies which are aimed at leveraging the value of knowledge in organizations are increasing in number.

In a bid to streamline knowledge management in organizations, researchers and practitioners have carried out a number of studies aimed at answering the pivotal question: What factors influence the successful implementation of knowledge management practices in organizations? Such studies have been geared towards different aspects of the problem, such as towards finding out what the prerequisites for, or predictors of, knowledge management success are, as well as towards determining what the key success factors knowledge management implementation are (Rasmussen, & Hall, 2015). In all studies reviewed, notable factors for knowledge management success revealed range from Knowledge sharing and human resource capacity, knowledge management strategy and tools in terms of information and communication technology.

2.3.6.1 Knowledge Sharing

There are two main schools of thoughts regarding knowledge sharing (Gourlay, 2006; McAdam, et al., 2007). The first group mainly follows Polanyi’s (1966) view and believes that knowledge is highly personal and resides only in human minds, and therefore it would be

very difficult to share such knowledge using formal methods. This group argues that knowledge can only be shared or learned in a form through personal experience, apprenticeship, observation, and imitation. In the view of this group, most knowledge is inexpressible and when it is articulated then it is no longer tacit.

Conversely, the second group, who primarily follows the standpoints of Nonaka (1994) and his colleagues, believes that parts of knowledge can be converted to explicit knowledge and therefore can be somewhat shared. This group not only admits the arguments of the previous school of thoughts that tacit knowledge can be shared in a tacit form through personal experience, apprenticeship, observation, and imitation, but it also believes that tacit knowledge can be externalized and converted to explicit knowledge through dialogue, social interaction, and storytelling.

There is an agreement among researchers that sharing knowledge is difficult (McAdam, et al., 2007). Different mechanisms and enabling conditions are required for knowledge sharing. Although a great deal of the literature has been dedicated to identifying how knowledge might be shared and what mechanisms could be employed to crystallize, externalize, and share it, most studies just seem to replicate Polanyi's (1966) and Nonaka and Takeuchi (1995) arguments about knowledge sharing.

2.3.6.2 Knowledge Management Strategy

Knowledge management strategies are described along two main directions reflecting what they stress on. One direction points towards highlighting the competence to help create, store, share, and use a firm's overtly accepted information. The strategy as per this dimension emphasizes categorizing and storing information. Classically, information and knowledge can be codified by the use of information and communication technology (Davenport, Long, & Beers, 1998). Categorized information and knowledge has a chance of being used repeatedly. The second direction towards an emphasis of knowledge sharing by the means of interactive dealings amongst the human resource. The strategy exploits dialogue through human social-networks including professional clusters in the firm (Kamara, Anumba, & Carrillo, 2002). It advocates for the open sharing of knowledge through human contact (Wu, 2008). This strategy endeavors to attain internal and tacit knowledge and share it casually (Swan & Scarbrough, 2001).

2.3.6.3 Top Management Support

Top management support has been said to positively affect the knowledge management evolution stages that are knowledge management initiation, development and maturity. (Schiuma, 2012). In any organization, importance of a knowledge friendly Top management is of paramount importance. In fact, a knowledge friendly Top management lies at the heart of knowledge management implantation. (Kamhawi, 2012; Chawla & Joshi; 2011). In their study (Lee, Gon Kim, & Kim, 2012) respondents were asked about the initiators of knowledge management practices in their respective organizations. Almost all the knowledge management practices were initiated by the top management. In one corporation, the practices were initiated by the executive CEO. This intensifies the belief that knowledge management practices and initiatives need top management support, for their successful implementation. Other studies indicate several factors for the success of knowledge management, such as the provision for knowledge creation, leadership and top management support among others (Hussain, Xiaoyu, & Ahmed, 2011; Chen, Elnaghi, & Hatzakis, 2011).

2.3.6.4 Tools and techniques of Knowledge Management in Health Care Sector

E-Libraries

To facilitate the process of knowledge management within the health care sector, the evolution of electronic libraries play the significant role in informing clinical decision-making processes (Andersen & Newman, 2005). For example, there are national health care libraries, which are viewed as a comprehensive source for promoting evidence-based decision-making processes in the healthcare sector. The major function of e-Libraries is to act as primary source for enhancing the creation of appropriate information that is used to inform the decision-making process in the clinical context. Electronic libraries facilitate the integration of local and national knowledge sources to promote service delivery.

Data Mining

According to Bohmer (2010), data mining is a technique used to manage knowledge within the healthcare context. The transition towards evidence-based and outcome-based studies

reveal a great challenge and opportunity to the development of relevant information from a range of information sources and transforming it into applicable information to guide health care decisions (Andersen & Newman, 2005). In this case, as context experts, medical researchers are well positioned to generate from a range of data and change it into applicable information to guide health care practices. In addition, use of data mining as tool in operational management within health care sector needs relevant technology (Baars et al., 2005). Despite adequacy of information, medical practitioners utilize it to a small extent to promote the management and delivery of health care services. Hence, health care institutions should create info-structure that applies data mining strategies in creating, sharing and applying health care skills appropriately. Nevertheless, the variations in the health care strategies and revolutions in medical care increase the inefficiency and ineffectiveness of the delivery of medical care services (Weiss & Sutton, 2009). However, the application of appropriate and current data mining techniques through IT improves the quality of access to health care services. Therefore, this means that applying data mining tools singly may not enhance the quality of services. Therefore, there should be the integration of IT to enhance quality access to services in the health care industry.

Web-based system

A study by Weiss & Sutton (2009) on collaborative operations in the virtual environment revealed main telemedicine technologies: firstly, tele-radiology involves the transfer of radiographic images as a form of distance learning to facilitate human resource strategies in the management of knowledge, which is also called tele-consultation; secondly, there is Tele-radiology which is the digitization of the radiographic images sent to radiologist for understanding and provision of diagnosis that is sent back through e-mail. In this case, the choice is between knowledge transfer and knowledge delivery in relation to target audience (Shortliffe, 2012). Tele-consultation, as an aspect of distance learning, involves one health professional inquiring advice from the colleagues. Depending on the context, Tele-consultation may create, discover and transfer knowledge creating.

2.3.7 Social Learning Techniques

Informal groups and networks have a significant role in creating relevant knowledge to the health care professional (Shortliffe, 2012). The information generated from such sources is used in the creation of clinical perceptions which are used in the delivery of health care services. In this case, health care professional develop their decisions from collective thoughts through networks of informal interactions. According to Jovic et al (2007), a focus is placed on collaboration from different stakeholders such as local communities, health care organization and patients to create quality knowledge. Hence, a well-developed network is useful in managing knowledge in the health care sector.

2.3.8 Training and Education Techniques

The focus of training and education is to translate knowledge. In this case, reflection means the process used to understand complex ideas (Jovic et al., 2007). This process enhances the transformation of ideas and experiences into knowledge and actions. Therefore, training and education enhance reflection by applying case-based discussions.

2.4 Overview of Knowledge management at The Aga Khan University Hospital

Knowledge management at The AKU is primarily facilitated by the University/hospital library and the Continuous Medical Education (CME) department. The AKU network of libraries supports practicing doctors and nurses in their study, teaching and research needs. The library network includes nine libraries in five countries spread over three continents. The libraries provide the University community access to comprehensive and multi-disciplinary information resources in print and digital formats. This access is provided through innovative services and state-of-the-art systems.

The library facilitates acquisition, organization and dissemination of relevant and up-to-date information to doctors and other practitioners. The Library is equipped to offer information services using modern technology. It has a dedicated Resource Centre with 16 computers. There is wireless Internet Access within the library and a dedicated section for multimedia

services. The library staff regularly offers courses on information literacy to a wide variety of users ranging from students, residents, hospital staff and faculty.

As a repository of knowledge, the library implements an AKU wide Institutional Repository - eCommons@AKU. This repository collects, showcases, archives, and preserves a variety of intellectual output and publications authored by the Aga Khan University community. This knowledge portal provides access to the University's research and publications in digital format on a single dedicated web site.

The library networks with other AKU libraries through a shared catalogue and an integrated Library Management System (Symphony). This system enables users to get automatic email notifications and log on to their personal accounts, renew materials, reserve items and communicate with the library. The user-friendly Online Public Access Catalogue (OPAC) is available online. The library has a dedicated website that is used to disseminate knowledge to a wide variety of users. The library website is used to access electronic resources subscribed by the university and to access various databases which are aimed at different user groups.

In addition, the library also has a portal (intranet) that is used to display resources and for internal communication with the users. The libraries across all the university campuses share electronic resources through the email and digital network.

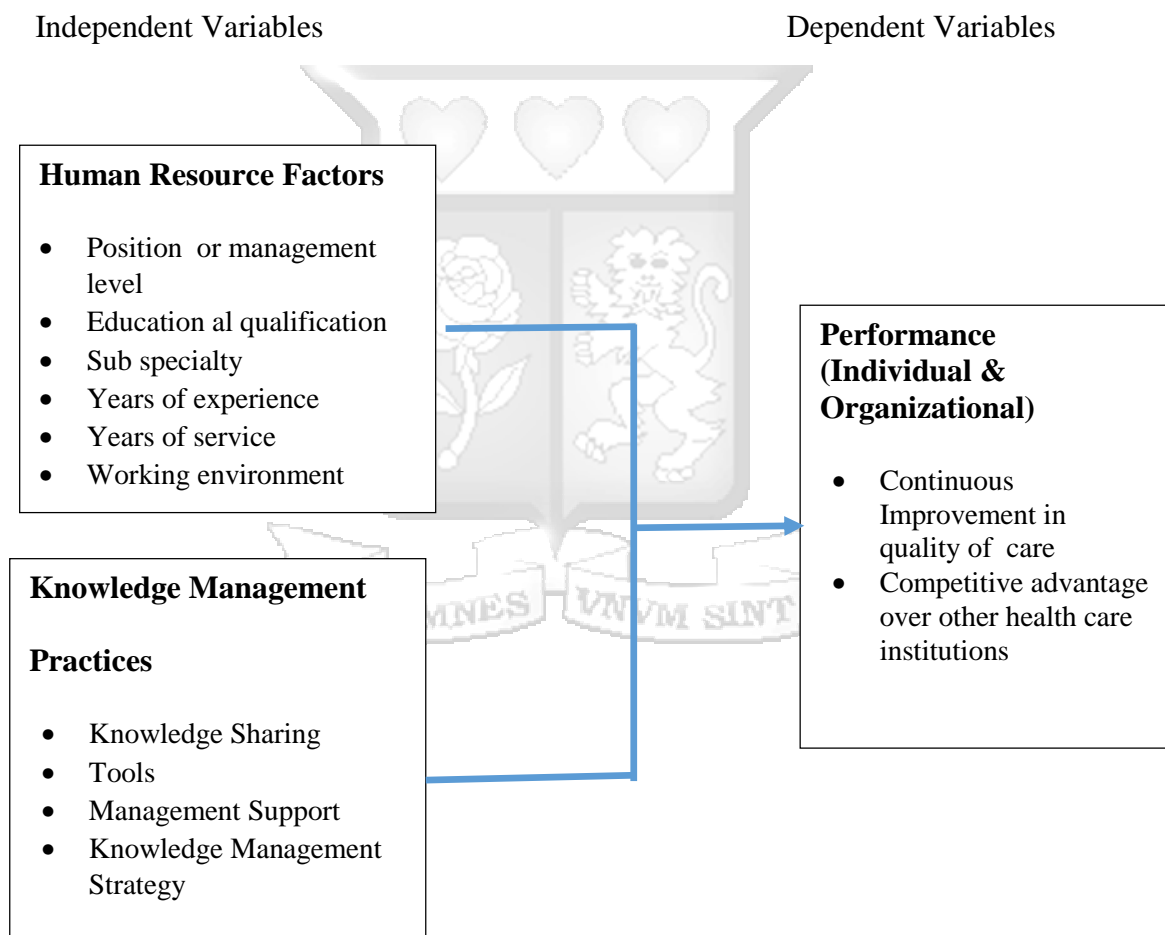
The Continuous Medical department also contributes to knowledge management in AKU by offering several activities open to doctors and other health professionals. Specifically, CME activities are categorized into six separate entities as follows; 1) Clinical meeting both departmental and general 2) Life support courses 3) Morbidity and Mortality meetings 4) Health Management CPD and 5) Tumor boards. Each of these activities consists of dedicated budgets and time. Furthermore, most of the activities tends to be multidisciplinary, thus fostering team learning in the clinical setting.

2.5 Conceptual Framework

A conceptual framework is defined as “a diagram which shows a set of relationships between factors that are believed to impact or lead to a target condition or a diagram that defines theoretical entities, objects, or conditions of a system and the relationships between them.

This study will utilize a conceptual model that attempts to describe facets of knowledge management in health care settings. The conceptual model emphasizes on the interrelationship between both human (employee) factors and external (market factors) in determining outcomes of knowledge management strategies in health care institutions (Mary & Mihiotis, (2012). This conceptual model will be utilized to design quantitative and qualitative questions on the practice of knowledge management at The AKUH.

Figure 2.1: Conceptual framework for knowledge management in health care institutions



Source (Researcher, 2016)

Chapter Three: Research Methodology

3.0 Introduction

This chapter provides the methods, techniques, tools and procedures that were utilized by the researcher to collect appropriate data to achieve the research aim as formulated in the preceding chapters. Thus, this chapter discusses the research approaches, research methods and design that were used in carrying out the study.

3.1 Research Design

This study will utilize a mixed method study design; which is a sequential design comprising of two phases and the research methodology used to explore the phenomenon within its real life context using multiple data sources with the aim of allowing multiple aspects of the phenomenon to be revealed and understood (Yin, 2009). Two main data sources will include a quantitative survey and secondly a qualitative semi-structured individual interviews. One of the strengths of this design is that it allows for a holistic view of complex phenomena, such as knowledge management. The proposed research design will enable the researcher to investigate knowledge management strategies in one private tertiary hospital in Nairobi, Kenya the Aga Khan University Hospital.

As this research was new and unique it was deemed crucial to combine a blend of research methodologies, as a comprehensive understanding of the knowledge management practices within this setting and environment was primarily required. Hereafter, as an initial phase, a survey of the hospital was thought fitting, tailed by a deeper understanding of knowledge management practices and initiatives within the hospital through a more comprehensive research study that would expound on the initial phase. I was therefore led by the research objectives and these considerations to contemplate the value of mixing both quantitative and qualitative methodologies.

The research was divided into two phases: Phase one assimilated a quantitative research methodology using quantitative techniques and tools to collect and analyze the data, and Phase two integrated a qualitative research methodology.

Table 3.1 Sampling plan for quantitative surveys

Quantitative (Structured) surveys	
Full time medical faculty(section head/program directors/consultants)	86
Residents/Registrars	90
On campus medical officers and interns	24
Total	200

3.2 Phase One Quantitative Research Methodology

3.2.1 Quantitative study through survey questionnaires

The survey method ensured a cost-effective choice for establishing the overall state of a study questions, and was used to examine and consider the state of knowledge management practices within the hospital. Initiatives, Perceptions and knowledge management practices within the hospital's setting were not sufficiently implicit at the start of this research.

The survey method was utilized to make sure a proficient technique to examine the current state of knowledge management practices within the hospital in general, which provided data to be used for further investigation and analysis. A comprehensive survey questionnaire was administered after its design.

3.2.2 Data Analysis

The data was analyzed using the statistical software package SPSS, and Microsoft Excel 2013. Questionnaires were distributed and completed and returned or collected by the researcher. Descriptive statistical analyses, i.e. frequency distributions were provided for each question in the form of percentages which were presented graphically.

Descriptive statistics were used to establish how often each score of observations of knowledge management in the hospital happened in the data. A frequency distribution, defined as a listing of all observed scores of a variable and the frequency (f) of each score or category was conducted on each of the questions of the data set, thereby providing the initial

information required for the second phase of the research. Percentage frequency distributions, a listing of the percent of the responses for each category or score of a variable, were also used to present information per question and participant, in relation to the group as a whole. I was interested in establishing if there were any relationships between the different variables. The analysis of the findings of this phase is presented in Chapter four.

3.3 Phase Two Qualitative Research Methodology

The qualitative phase of the research study was intended to be expounding, illustrative and descriptive in nature. The research method was selected as the most appropriate method to deliver an in-depth study of the knowledge management occurrence. The goal was to comprehend and appreciate and further explore the initiatives, attitudes, perceptions, and different practices of Knowledge Management within the hospital context.

For the qualitative data, analysis was carried out using content analysis. Definitions provided by Holsti states that content analysis techniques are used for making inference by objectively and systematically identifying specified characteristics of messages and text without any reference to quantification (Holsti, 1969). The utilization of content analysis as a qualitative technique has in recent times been acknowledged by various researchers as a methodology or approach to offer proficient inquiry for data groups with word-based constituents (Son-per & Golden-Biddle, 2008).

Approaches to content analysis include syntactical analysis using word count, referential analysis, prepositional analysis and thematic analysis. Researchers such as Franzosi (2004) specify that thematic analysis is superlatively suited to get a clear picture of the basic content of text and its representation.

Semi-structured, one-to-one interviews were carried out at the hospital in a location that was familiar and comfortable for the chosen interviewees mainly in their offices where they were comfortable. Participants were clinical members of staff, typically members on the different departments of the hospital, and some of these staff members were either directly or indirectly linked to knowledge management or Information Management practices in some

way. Others were involved with Information and communication Technology developments that could be categorized as a knowledge management initiatives.

The interviews were originally transcribed word for word into MS Word 2013, and later the different themes and replies and responses to the questions were analyzed. There was no qualitative software, used to organize code and analyze the data, this was done manually and the findings of these analyses are presented in Chapter four.

3.4 Population

This study was undertaken at The Aga Khan University hospital (AKUH), a private tertiary hospital in Nairobi, Kenya with a 250 bed capacity. The AKUH has approximately 250 doctors practicing in 10 departments. The para-clinical structure is composed of the dean/associate dean, the head of department and section heads and program directors, consultants, registrars and finally residents and house officers.

The target population for this study included dean, doctors, medical faculty, information technology staff, librarians and clinical managers working at Aga University Hospital. Exclusion criteria included part time doctors.

3.4.1 Sampling for qualitative interviews

Purposive sampling methods, such as snowball were used to select participants for interviews. Purposive sampling is a form of non-probability sampling that involves the selection of specific information rich cases or participants to be interviewed (Patton, 2002). Snowball sampling relies on participants' recommendations for further data sources/individuals. Criterion sampling ensures the study is focused and specifies who, where, when and why. In an exploratory case study design, the objective is to obtain the greatest possible amount of information about Knowledge management strategies. Tentatively, we are targeting 16 participants based on the study objectives, however the total number of interviews needed depends on the emerging data from the participants' interviews and reaching data saturation (Strauss & Corbin, 1998).

For qualitative interviews, the study targeted 16 purposively sampled participants to include 1 dean/associate dean, 1 medical director, 8 programme directors, 2 librarians, 1 CME

coordinator, 2 finance directors, and 1 ICT manager. However, the total number of qualitative interviews needed may depend on the emerging data from the participants' interviews and reaching data saturation (Strauss & Corbin, 1998).

Table 3.2 Sampling plan for qualitative interviews

Qualitative Interviews	
Dean/Associate Dean	1
Medical director	1
Program directors	8
Librarians	2
CME coordinator	1
Finance director	2
ICT	1
Total	16

3.4.2 Sampling for quantitative survey

A stratified sampling approach will be used to select participants for the survey. First, the sample size is computed based on the confidence interval approach for estimating a binomial proportion. A margin of error and confidence level of 0.10 and 90%, respectively, will be used. Based on these parameters we determine that we require 272 participants for the study. We then applied a finite population adjustment to give a total sample size of 201 participants. The sample size computation is summarized below.

$$n = \frac{Z_{\alpha/2}^2 p(1-p)}{E^2}$$

$$n = \frac{1.645^2 \times 0.5(0.5)}{0.1^2}$$

$$= 272$$

Where;

- n = Desired Sample size,
- P = A pre-study estimate of 0.5
- Z = Standard normal deviate at 90% confidence level = 1.645,
- E = the expected half width of the confidence interval = 0.1

Applying a finite population adjustment (for populations below 10,000) gives;

$$n = \frac{n}{1 + \frac{n}{\text{population}}}$$

$$n = \frac{272}{1 + \frac{272}{200}} = 201$$

Therefore we require 201 participants for the quantitative survey.

We defined our strata as the different levels of clinical practice (among doctors) at The Aga Khan University Hospital, namely; full time faculty, residents and medical officers/interns. We then applied proportional allocation to each strata to maintain a stable sampling fraction. Based on this approach, we sampled 77 full time faculty, 93 residents and 23 medical officers for the survey.

3.5 Data Collection Methods

3.5.1 Qualitative interviews

Semi-structured interviews were conducted using an interview guide that has open ended questions with probes (see Appendix B). The interviews were tape-recorded and transcribed following the participant's signing of the study informed consent form.

3.5.2 Quantitative interviews

A structured questionnaire on various aspects of knowledge management was administered to sampled doctors through electronic survey software (survey monkey) who were away and hard copies personally delivered to them in their departments. The questions were designed to elicit responses on all facets of knowledge management to include identification, capturing, storage and transfer of knowledge. Categorical variables in the questionnaire include knowledge on KM, use of KM systems at AKU, relevance to their work, reason for using KM systems, and challenges of using KM systems.

3.6 Quality of quantitative data

Reliability refers to the extent to which a measurement scale or a test is dependable, consistent, predictable and stable (Sekaran, 2003). Such a concept refers to whether one can obtain the same answer in repeated use of the same instrument. The greater the consistency of an instrument, the more reliable it is. Sekaran (2003) posits that reliability refers to the extent to which a set of variables is consistent with what it is intended to measure. Expressed contrarily, reliability is the ability of the research tool to produce the same results when it is used at different times, but in a similar setting. In other words, reliability measures how reproducible survey data are, using the same survey instrument. The reliability of the scale, therefore, is the degree of accuracy with which it measures what it is supposed to (Sekaran (2003)

According to Creswell, Klassen, Plano Clark, and Smith (2011) a number of factors may affect the reliability of an instrument, including the wording of the questions, the mood of the respondent and the nature of interaction between the researcher and the subject. To enhance the reliability of the instrument used in the current study, a pilot test was conducted on a number of the hospital staff who provided feedback on the way in which the questions were formulated, as well as on their wording, and on the length of the questionnaire. The questionnaire was revised after the pilot test to address the concerns raised.

3.5.2 Validity

Validity is about the extent to which the empirical measure adequately reflects the real meaning of the concept under consideration (Sekaran, 2003). Due to the fact that the study used instruments which had been developed and used on samples other than those in the hospital sector in countries other than Kenya, the researcher deemed it to be necessary to assess their validity. The validity of an instrument can be inferred from three perspectives: face and content, validity; concurrent, or predictive, validity; and construct validity (Creswell, Klassen, Plano Clark, & Smith, 2011). Face validity refers to the judgment made of the instrument in respect of the logical linkage between the questions asked and the objectives of the research in question. Concurrent validity refers to the degree to which one instrument compares with another when they are concurrently administered. Predictive validity, in contrast, refers to the extent to which an instrument can easily predict or forecast the outcome of a study. Construct validity, which is the most sophisticated method of testing validity of all three, aims at ascertaining the contribution which each construct makes to the total variance observed in the phenomenon.

In the current study, both the face validity and the construct validity tests were conducted. The face validity was established with the help of the hospitals staff who formed a peer review group, which comprised doctors, clinicians, nurses and other hospital staff. They were asked to review the items on the questionnaire and assess the extent to which they reflected the meaning they are expected to measure. This process was followed by rewording some statements that were deemed not accurate. The construct validity was established by means of factor analysis, in terms of which a number of constructs were established, based both on the eigenvalues and on the percentages of variance explained by each construct. The eigenvalues and the variance which are explained by each are presented in chapter four.

3.7 Quality of qualitative data

Golafshani (2003) argues the need to demonstrate that the research is credible not only in quantitative, but also in qualitative, research. The adaptation of validity and reliability

concepts should focus on ensuring the credibility, transferability and trustworthiness of the research concerned (Golafshani, 2003).

The literature suggests a number of ways in which the credibility and trustworthiness of qualitative research can be tested and demonstrated. Sekaran, (2003) proposed the number of techniques, based on paradigm focus and the lens used by the researcher to validate the studies.

In the light of the post positivism approach taken in the current study, the appropriate validity approaches applied were triangulation and disconfirming evidence as described as follows, triangulation across multiple sources of data, the researcher conducted interviews with the representatives of medical staff separately from that which was conducted with a representative of the management of the hospital. Such separate interviewing provided an opportunity to cross-check the evidence which was gathered from each set of respondents. In addition where necessary, follow-up interviews were conducted to clarify some of the matters that seemed to have been either unclear or unfinished during the analysis phase.

3.8 Ethical Considerations

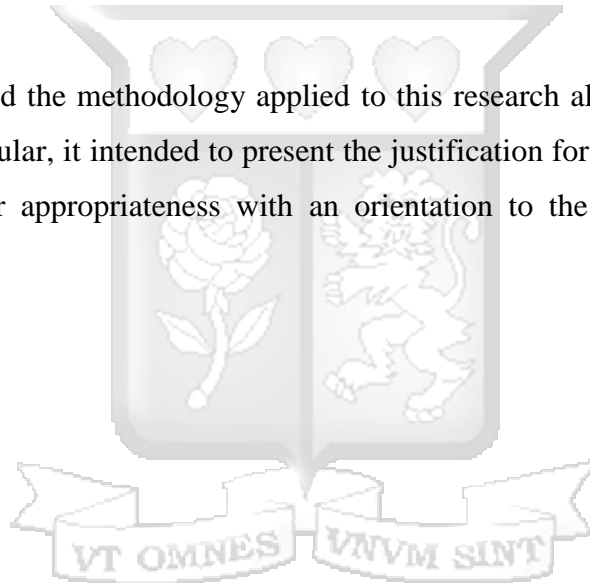
The research study was sanctioned by both the Strathmore University and The Agakhan University hospital Ethics Board. (see Appendix E and F). Participants were informed that study participation is voluntary and were asked to sign an informed consent form prior to any data collection. Participants were informed that they have the freedom to withdraw at any time throughout the research process without any adverse consequences or questioning on the part of the researcher. Participants were provided with contact information through participant information and consent forms and were informed that they can contact members of the research team at any time. Anonymity of all participants will maintained through the study and in any publications. Participants' confidentiality was maintained throughout the study and data will be aggregated in any publications. Survey materials, audiotapes, and transcripts are being kept in a locked cabinet. All of the electronic study materials are stored on a password-protected computer with access limited to the researcher.

3.9 Limitations

Just like any study, the investigation of knowledge management in the private health sector faced various limitations and challenges. Firstly, limited ability to access appropriate sources of information to provide data for the research problem was a limitation. However, the researcher was able to address this limitation by critically searching various sources on the internet and in the library collection to access a variety of materials. In addition, a small sample may be a limitation to the study as it undermines the variety of ideas and opinions collected. Nevertheless, the researcher was able to address this limitation by using participants from different age groups, genders and lifestyles with divergent opinions.

3.10 Summary

This chapter presented the methodology applied to this research along with justification for its adoption. In particular, it intended to present the justification for the use of these methods, and to consider their appropriateness with an orientation to the extensive organizational literature available.



Chapter Four: Presentation of Findings

4.1 Introduction

This chapter presents the analysis, findings and discussions on the topic. Survey questionnaires were administered to the selected employees at The Aga Khan University hospital (AKUH), a private tertiary hospital in Nairobi, Kenya. The data was analyzed with the help of SPSS statistical package and presented using tables, charts, frequencies and percentages.

4.2 Response rate

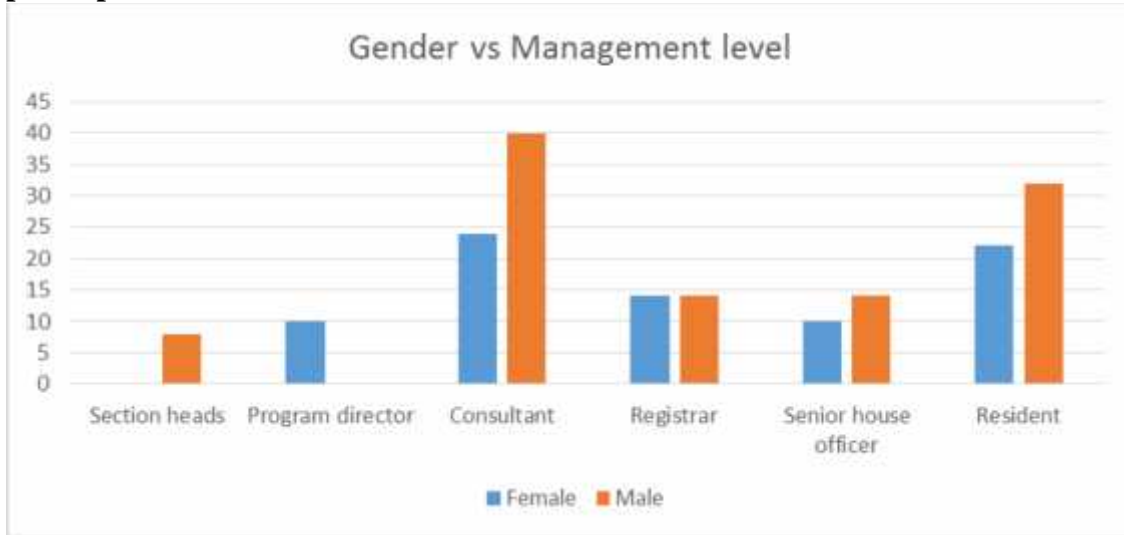
The study involved two hundred (201) questionnaires which were issued to collect data from employees. One hundred and eighty eight (188) questionnaires were filled and returned for analysis which gave a response rate of 93%. This response rate was considered adequate for analysis to investigate different knowledge management practices among clinicians at The Aga Khan university hospital, Nairobi. According to Awino (2011), a response rate of 65 percent is acceptable for such studies.

Table 4.1 Cross Tabulation of Position/ management level * Sex of the participant Cross tabulation

		Female	Male	Total
Position/ management level	Section head	0	8	8
	program director	10	0	10
	consultant	24	40	64
	registrar	14	14	28
	senior house officer	10	14	24
	resident	22	32	54
Total		80	108	188

From table 4.1 and figure 4.1, 8 of the respondents were Section head and 10 were program director, 64 were consultant, 28 were registrar, 24 were senior house officers and 54 were residents. This information is clearly visible in the bar chart below this is an indication that the respondents were drawn across different gender and management levels.

Figure 4.1 Cross Tabulation of Position/ management level and Gender of the participant



4.3 General Information

The respondents were asked to provide information on their current position and how long they have served in their current position and them respondent as follows.

Table 4.2: Experience of the respondents

		Years of service at aga khan university			Total
		below 5 Years	5-10 Years	Over 10 Years	
Position vs Management level	Section head	50.00%	50.00%		100.00%
	program director		100.00%		100.00%
	consultant	23.30%	66.70%	10.00%	100.00%
	registrar	78.60%	21.40%		100.00%
	senior house officer	50.00%	41.70%	8.30%	100.00%
	resident	96.30%	3.70%		100.00%
Total		58.00%	37.50%	4.50%	100.00%

From table 4.2 and figure 4.2, 58.0% of the respondents had served for less than 5 years, 37.5% had served for between 5 and 10 years and 4.5% had served for a period of more than 10 years. From this study majority of the respondents had served the in the hospital for less than 5 years. Of those who had worked for more than 10 years, 10% were consultants and 8.3% were senior house officers.

Figure 4.2 Years of experience in Aga Khan University Hospital

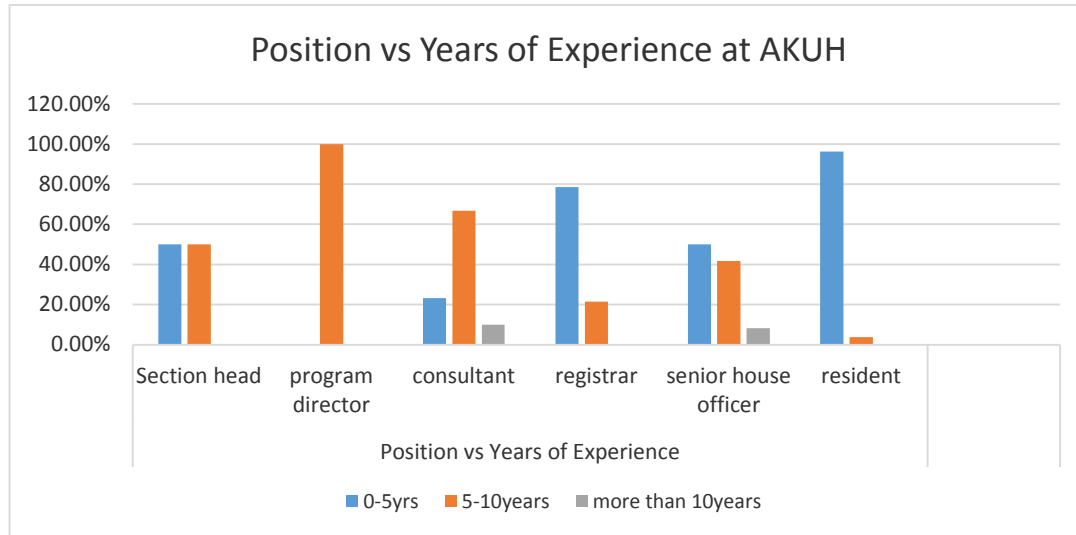
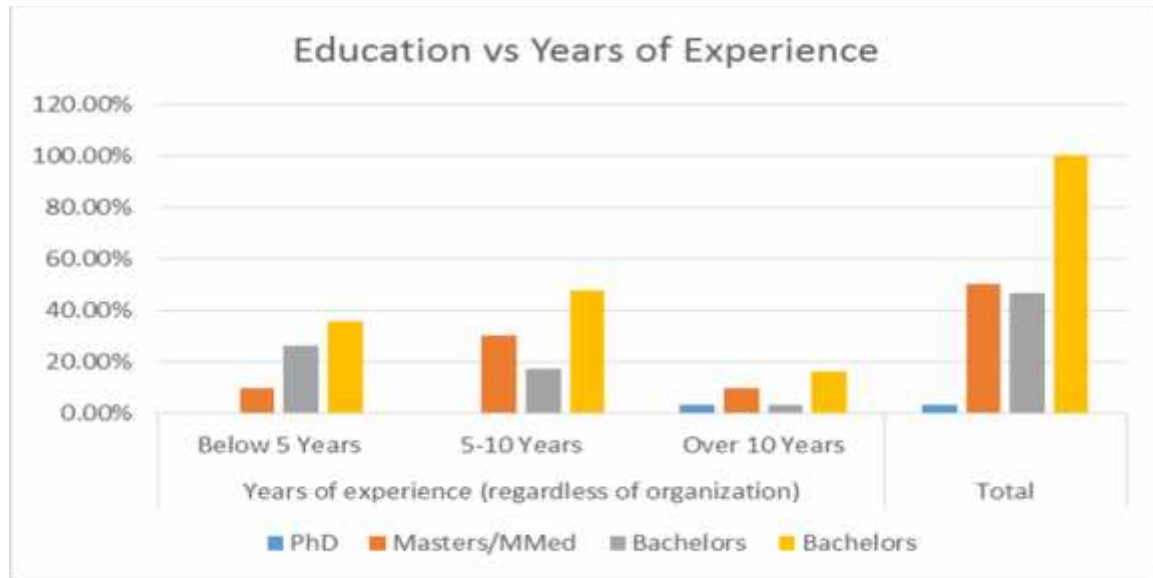


Table 4.3 Education qualifications * years of experience (regardless of organization)

	Years of experience (regardless of organization)			Total
	Below 5 Years	5-10 Years	Over 10 Years	
PhD	0.00%	0.00%	3.30%	3.30%
Masters/MMed	9.80%	30.40%	9.80%	50.00%
Bachelors	26.10%	17.40%	3.30%	46.70%
	35.90%	47.80%	16.30%	100.00%

From table 4.3, 3.3% of the total respondents that have PhD had served for more than 10years, 50% of those who have masters qualifications 9.8% have served below 5years and more than 10years while 30.4% had served for between 5 and 10 years .For 46.7% of the respondents with bachelors qualifications, 26.1% have served below 5years, 17.4% served for between 5 and 10 years and 3.3% had served for a period of more than 10 years.

Figure 4.3: Years of Experience regardless of the organization the years of experience respondents have served at The Aga Khan University hospital were presented in the figure below.



From figure 4.3, it indicates the years of experience served by the respondents, 47% of the respondents have served between 5-10 years of experience, 37% have served below 5 years and 16% have served for more than 10 years of experience. This indicates that majority of the respondents have at least served for more than 5 years.

From table 4.3 below the cross tabulation of years of experience and opinion of the main benefit of knowledge management at the university hospital, respondents with up to five years' experience 48.9% had the opinion that knowledge management was important for their continuous improvement, respondents with between five and ten years' experience had the opinion that knowledge management practices should help to prevent knowledge loss as their key benefit while 40.0% of those with over ten years' experience had the opinion that the key benefit of knowledge management practices is to gain competitive advantage over other similar institutions. This observation clearly shows that respondents at different levels of their career in terms of experience had different goals for their interaction with knowledge management.

Operations was more interested in capturing and retaining knowledge while middle management had their interests in ensuring continuous patient improvement while top level managers were looking at the strategic level where knowledge management was to assist the hospital in attaining competitive advantage over other institutions. This has also been shown in Figure 4.4.

Figure: 4.4 Respondents views on Benefit of Knowledge management based on years of experience regardless of the organization worked for.

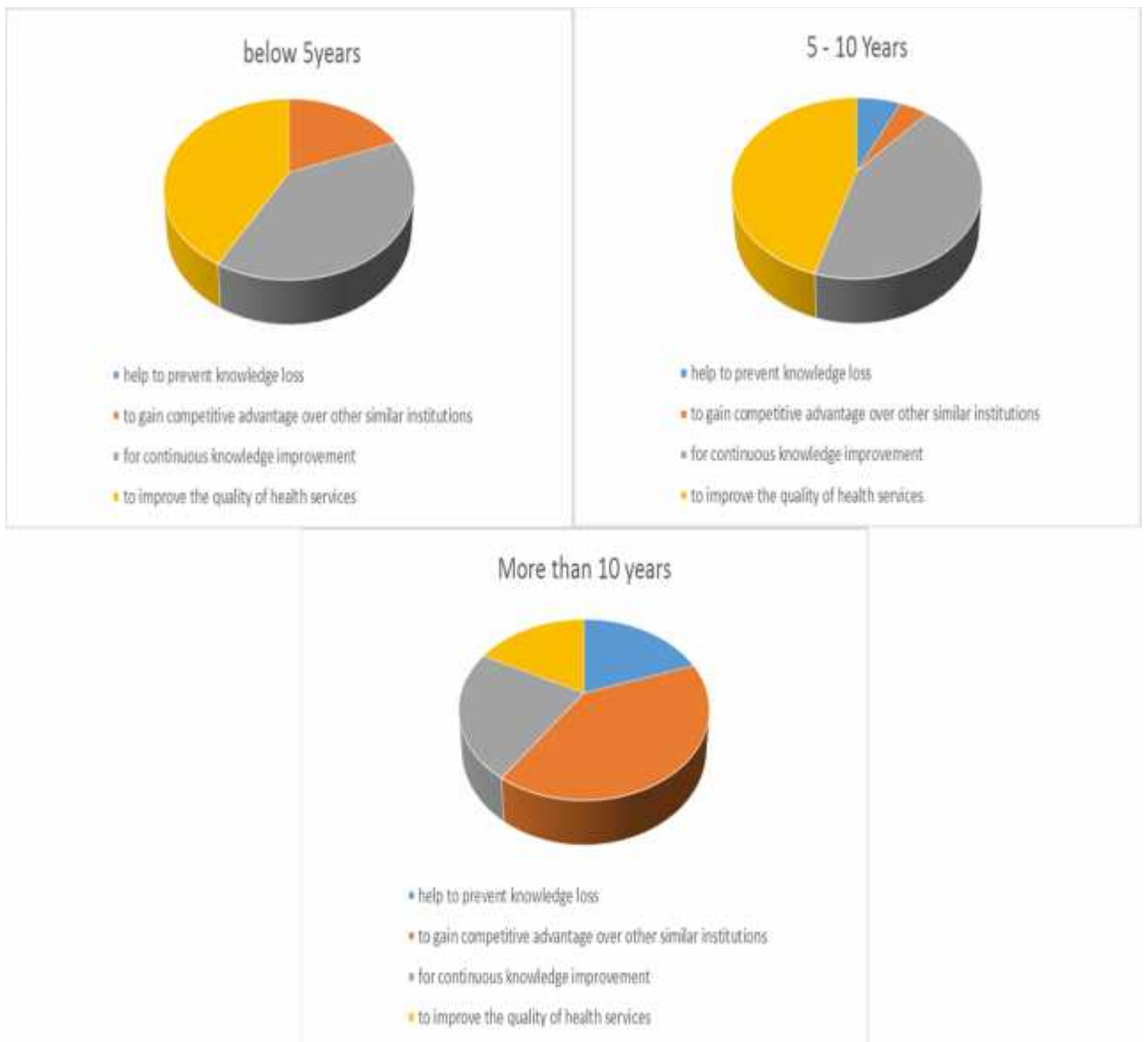


Table 4.4 Benefit of Knowledge management * years of experience (regardless of organization) Cross tabulation

			what do you think is the main benefit of knowledge management for the agakhan university hospital				Total
			help to prevent knowledge loss	to gain competitive advantage over other similar institutions	for continuous knowledge improvement	to improve the quality of health services	
years of experience (regardless of organization)	below 5 years	% within what do you think is the main benefit of knowledge management for the AKUH	0.0%	18.9%	39.1%	42.0%	100.0%
	5-10 years	% within what do you think is the main benefit of knowledge management for the AKUH	6.8%	4.5%	43.2%	45.5%	100.0%
	more than 10 years	% within what do you think is the main benefit of knowledge management for the AKUH	19.6%	40.0%	23.0%	17.4%	100.0%
Total	% within what do you think is the main benefit of knowledge management for the AKUH	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	4.7%	5.6%	43.0%	46.7%	100.0%	

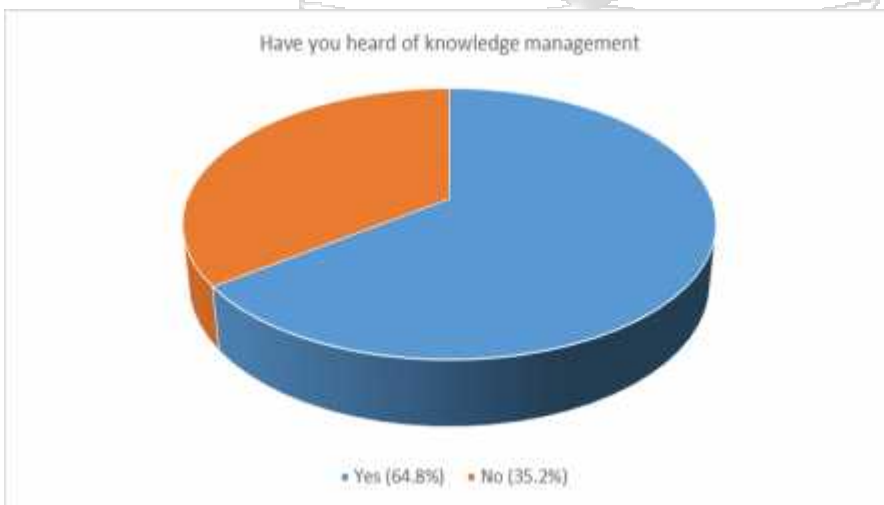
4.4 Awareness of knowledge management

The respondents were asked to give their views on their awareness of knowledge management and the respondent as per the table below.

Table 4.5 Have you heard of knowledge management * Do you think of your work as involving knowledge management

		Do you think of your work as involving knowledge management			Total
		Yes	No	No Response	
Have you heard of knowledge management	Yes	58.00%	5.70%	1.10%	64.80%
	No	28.40%	6.80%		35.20%
Total		86.40%	12.50%	1.10%	100.00%

Figure 4.5 Have you heard of knowledge management * Do you think of your work as involving knowledge management



From table 4.5, 58.0% of the respondents accepted that they have heard of knowledge management and they think their work involves knowledge management, 5.7% have heard of

knowledge management but they don't think their work involves knowledge management and 1.1% of the respondents did not respond.

On the other hand 28.4% of the respondents have never heard of knowledge management but they think that their work involve knowledge management and 6.85 of the respondents have never heard of the knowledge management and they think their work do not involve knowledge management. In general 64.8% said yes they have heard of the knowledge management while 35.2% says they have never heard of knowledge management. Likewise 86.4% of the respondents accepted that they think that their work involves knowledge management, 12.5% think it does not and 1.1% did not respond on this issue.

The interesting revelation from the respondents is that in as much 35.2% claimed not to have heard of knowledge management, as they went through the survey tool; their responses were very similar to those that do know about the subject matter. It seems the term knowledge management is an unusual term to many of them as not frequently used and most doctors were unaware of the terminology.

4.5 Learning Knowledge and its Evidence

The respondents were asked to if they were happy with the way in which learning knowledge and evidence are addressed in your organization and they respondent as per the table below.

Table 4.6 Are you happy with the way in which learning knowledge and evidence are addressed in your organization

	Frequency	Percent	Valid Percent	Cumulative Percent
I am very happy	44	23.4	24.4	24.4
I am somewhat happy	120	63.8	66.7	91.1
I am not happy	16	8.5	8.9	100
Missing System	8	4.3		
Total	188	100		

From table 4.6, 23.4% of the respondents accepted that they were very happy, 63.8% say they were somewhat happy, 8.5% said they were not happy with the way in which learning knowledge and evidence are addressed in your organization and 4.3% did not respond to this

issue. These responses from the survey indicate that the university hospital management is on the correct path in terms of managing learning.

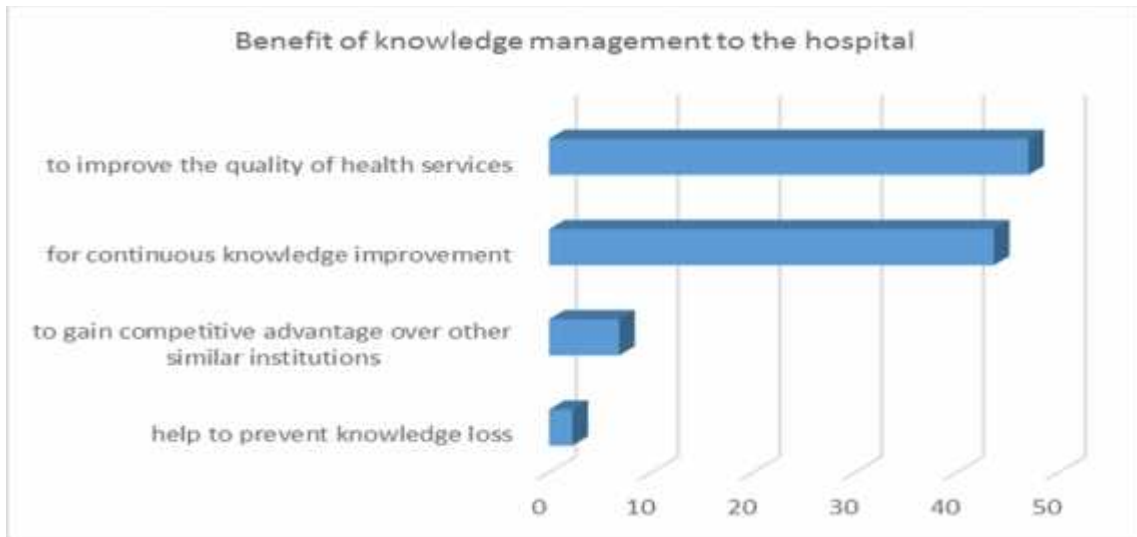
4.6 What do you think is the main benefit of knowledge management for The Aga Khan university hospital?

The respondents were asked if they were happy with the main benefit of knowledge management for The Aga Khan University and the respondent as per the table below.

Table 4.7 Benefit of knowledge management to the hospital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	help to prevent knowledge loss	4	2.1	2.3	2.3
	to gain competitive advantage over other institutions	12	6.4	6.9	9.2
	for continuous knowledge improvement	76	40.4	43.7	52.9
	to improve the quality of health services	82	43.6	47.1	100
	Total	174	92.6	100	
Missing	System	14	7.4		
Total		188	100		

Figure 4.6 Benefit of knowledge management to the hospital



From table 4.7, 2.1% of the respondents accepted that knowledge management help to prevent knowledge loss, 6.4% say it help to gain competitive advantage over other similar institutions, 40.4% to improve the quality of health services help for continuous knowledge improvement and 43.6% to improve the quality of health services and 7.4% did not respond to this issue. The same information is displayed in figure 4.6.

4.7 PRACTICES OF KNOWLEDGE MANAGEMENT

The respondents were asked to respond on matters of awareness and use of knowledge management system at university hospital on electronic medical records, continuous medical education, communities of practice, knowledge cafes, clinical supports systems and web-based systems and their responses are as per the tables below.

4.7.1 Electronic Medical Records

Electronic medical records are medical records of a patient that is stored and retrieved in digital/electronic format.

Table 4.8 Electronic Medical Records

		Electronic Medical Record					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Human Resource Factors	Section head	0 %	0%	0%	50%	50%	4
	program director	0%	0%	0%	33%	67%	6
	consultant	0%	0%	10%	34%	56%	64
	registrar	0%	0%	8%	21%	71%	28
	senior house officer	0%	0%	0%	25%	75%	24
	resident	0%	0%	0%	19%	81%	54
Total		0%	0%	4%	27%	69%	180

The Survey sought to determine whether the respondents consider Electronic Medical Records as one of the factor of knowledge management practice.

Most of the respondents were agreeable.69% were strongly agreeable and 27% were agreeable.4% were neutral. We can deduce that Electronic Medical Records is most easily accessible and acceptable knowledge management practice by clinicians at the Aga Khan University Hospital.

4.7.2 Continuous Medical Education

Continuous medical education refers to a specific form of continuing education that helps those in the medical field maintain competence and learn about new developments in the field.

Table 4.9 Continuous Medical Education

		Continuous Medical Education					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Human Resource Factors	Section head	0%	0%	0%	25%	75%	8
	program director	0%	0%	0%	50%	50%	10
	consultant	0%	0%	0%	34%	66%	64
	registrar	0%	0%	0%	29%	71%	28
	senior house officer	0%	0%	0%	25%	75%	24
	resident	0%	0%	0%	26%	74%	54
Total		0%	0%	0%	30%	70%	188

We deduce from the agreement levels which are 100%, that continuous medical education is the important factor of knowledge sharing in knowledge management practice at the AKUH. Another reason why most doctor consider it as an important factor because CME is also a requirement by Kenya Medical Practitioners and Dentist Board for registration as practitioners in Kenya.

4.7.3 Communities of Practice

This is a group of people who share a common interest in working together over an extended period of time to explore ways of working in a specific area of knowledge.

Table 4.10 Communities of Practice

		Communities of Practice					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Human Resource Factors	Section head	0%	0%	0%	67%	33%	6
	program director	0%	0%	17%	33%	50%	6
	consultant	0%	8%	8%	40%	32%	59
	registrar	0%	4%	14%	61%	21%	28
	senior house officer	5%	25%	8%	29%	33%	24
	resident	0%	27%	39%	22%	12%	51
Total		1%	17%	20%	37%	25%	174

From the table 4.10 we see that 25% and 37% of the respondents strongly agreed and agreed respectively as communities of practice is a major factor of knowledge management practice to get more information on latest inventions and knowledge sharing practice. Most of these respondents are with specialty / subspecialty degree and run the specialist clinic in the hospital. 20% respondents were neutral, 17% disagreed and 1% strongly disagreed. As we can see in the table that most of the human resource factors who were neutral and disagreed were the registrars, senior house officers and residents as they have not yet accomplished any specialty degree and are not aware communities of practice usually.

4.7.4 Knowledge Cafes

A group of people having an open, creative conversation in an informal environment on a topic of mutual interest.

Table 4.11 Knowledge Cafes

		Knowledge Cafes					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Human Resource Factor	Section head	0%	0%	0%	50%	50%	4
	program director	0%	0%	0%	0%	100%	6
	consultant	0%	4%	16%	61%	19%	62
	registrar	0%	14%	14%	36%	36%	28
	senior house officer	0%	0%	8%	67%	25%	24
	resident	0%	5%	0%	88%	7%	52
Total		0%	5%	9%	67%	19%	176

From the table 4.11, we can see that 19% and 67% of the respondents strongly agreed and agreed respectively. These respondents indicated that their clinical practice is largely influenced by knowledge cafes (learning in an informal sector), like conferences, retreats etc. Majority of human resource factors who agreed were from all categories of positions. 9% of respondents were neutral and 5% respondents disagreed. From this survey we deduce that AKUH encourages their doctors to attend conferences and learning in informal environment.

4.7.5 Clinical Support Systems

Clinical decision support systems are systems that provide healthcare professionals with patient-specific assessments or recommendations to aid clinical decision making.

Table 4.12 Clinical Support Systems

		Clinical Support Systems (Policies, Protocols, algorithms)				Strongly Agree	Total
		Strongly Disagree	Disagree	Neutral	Agree		
Human Resource Factors	Section head	0%	0%	0%	50%	50%	4
	program director	0%	0%	0%	67%	33%	6
	consultant	3%	3%	3%	85%	6%	62
	registrar	0%	0%	8%	15%	77%	26
	senior house officer	0%	10%	18%	45%	27%	22
	resident	5%	10%	4%	58%	23%	52
Total		3%	5%	6%	59%	27%	172

This survey sought to determine whether clinical support systems were considered important in clinical practice by the clinicians at the AKUH. 27% and 59% strongly agreed and agreed respectively. This positive response may be due to the evidence based practice and strict dependability on polices, protocols and algorithms to be followed by the doctors at the AKUH .6% were neutral , 5% and 3% respondents disagreed and agreed respectively. These respondents are mainly registrars, senior house officers and residents .Most likely these respondents were new in the hospital and were not quite familiar with the clinical support system at AKUH.

4.7.6 Web Based Systems

Collaborative operations in the virtual environment such as telemedicine technologies (example: tele-radiology involves the transfer of radiographic images as a form of distance learning)

Table 4.13 Web Based Systems

		Web based Systems				Strongly Agree	Total
		Strongly Disagree	Disagree	Neutral	Agree		
Human Resource Factors	Section head	0%	0%	0%	25%	75%	4
	program director	0%	0%	0%	67%	33%	6
	consultant	3%	3%	9%	53%	32%	64
	registrar	0%	0%	8%	38%	54%	26
	senior house officer	0%	8%	8%	42%	42%	24
	resident	0%	5%	15%	42%	38%	52
Total		2%	3%	10%	46%	39%	176

From the table 4.13, we see that 39% and 46% of the respondents strongly agree and agree respectively for web based system as a useful factor of knowledge management practice at AKUH, by doctors in their clinical practice. With the availability of picture archiving and communication systems (PACS), doctors at AKUH can access radiological images, interpretation and relevant data from multiple modalities. It breaks down the physical and time barrier which is associated with traditional film based image retrieval, distribution and display. Also 10% respondents are neutral and 3% and 2% respondents agreed and disagreed respectively. These respondents possibly were new to the system and in the learning phase.

4.7.7 Summary

The questionnaire made available through a survey that was valuable in regard to knowledge management practices and perceptions within the Aga Khan University Hospital, and provided an excellent overview of knowledge management in general. The survey provided an indication to the main research questions and enabled findings to be generalized. The survey further provided intuitions into the understanding and practices of knowledge management within The Aga Khan University Hospital, and also providing a springboard for the next phase of the research, the qualitative study, which included thirteen carefully selected interviewees who agreed to be incorporated into the research.

4.8 Qualitative Findings

In the case of this study, the researcher conducted semi-structured interviews as the main approach to collect the qualitative data. Nevertheless, the qualitative data was used along with quantitative data for triangulation results in order to better understand the research problem (Yin, 2009). The use of interviews seeks to emphasize the rich, real-world context in which the phenomena occur (Creswell, Klassen, Plano Clark, & Smith, 2011). Therefore, in the process of fulfilling research objectives the researcher followed in the paths of preceding researchers in the related area for employing semi-structured interviews for qualitative data collection in the banks (e.g. Cabrita & Bontis, 2008).

Therefore, the researcher approached senior managers at the organizational level within The Aga Khan University Hospital. Following the guidelines of other researchers in the related area, several criteria were used in selecting the participants to be included in the study.

The sample included the following, eight chairs of different departments who were medical doctors with different levels of qualification ranging from a medical degree to PhD, the ICT officer, both the regional and local librarians, the dean of the medical college and the CME coordinator to make a total of thirteen giving a response rate of 81%.

4.8.1 Thematic Analysis

Content analysis is utilized to draw conclusions from the presence of specific words, concepts, themes, phrases or sentences within transcriptions. The units of analysis according to Berelson (1952) are characters, words, themes, data items and measures of space and time. For the purpose of suitability to this research study, only word and themes as units were used to analyse the qualitative interviews that were conducted with thirteen members of staff working in different sections of The Aga Khan University Hospital.

4.8.2 Interview process and analysis

Semi-structured interviews were carried out in direct conversational encounters with staff from The Aga Khan University Hospital for two months, between December 2015 and January 2016. A total of thirteen interviewees took part in this study. The content analysis of interviews was carried out in a manual manner.

The different dimensions and their facets as discussed in the interview were categorized followed by the searching for specific words, phrases and or sentences mentioned by each selected interviewee that could have had a connection to the aforementioned dimensions and their different characteristics. This was followed by all data related to a particular dimension being composed and set aside in a separate section allowing for the researcher to get a detailed and an all-inclusive view of the factors.

4.9 Interview Questions

Based on the opinions expressed by the interviewees, the following findings have been extracted.

The interviews were in pursuit to answer the two research questions discussed earlier in Chapter one and covers two main areas as stated below:

- iii. What are the practices of clinical knowledge management used in Aga Khan University Hospital in Nairobi, Kenya? Investigating respondents' awareness of knowledge management practices in their institution;
- iv. What is the acceptability, usefulness, adoption and challenges experienced by Aga Khan University Hospital in Nairobi, while implementing Knowledge Management practices? Investigating respondents' acceptability, usefulness, adoption and challenges of knowledge management practices in their institution;

4.9.1 Findings

The findings of this second phase of the study which was qualitative were guided by the research questions arranged accordingly to the key informant interview script. The first two research questions aimed to: discover the awareness of knowledge management practices in the university hospital from the view of the clinical staff; and investigate the current state of acceptability, usefulness, adoption and challenges of knowledge management by The Aga Khan University Hospital.

4.9.2 Thematic Analysis of Interviews

The themes were organized into the following high level categories as shown in Table 4.14.

Table 4.14: Thematic areas of analysis.

	Theme	Indicator
1.	Knowledge Management Practice	- Understanding - Current practice - Tools
2.	Knowledge Management and Sharing	- existing practice - KM Strategy - Challenges - Perception - Competitive Advantage - University hospital support

- i. What are the practices of clinical knowledge management used in The Aga Khan University Hospital Nairobi, Kenya?
- ii. What is the acceptability, usefulness, adoption and challenges experienced by Aga Khan University Hospital in Nairobi, while implementing Knowledge Management practices?

4.9.3 Knowledge management practices

Respondents opinions on the implementation of knowledge management in The Aga Khan University Hospital as a way to progress in terms of having organizational knowledge in order to realize professional quality. Knowledge management is used in The Aga Khan University Hospital to support continuous professional development. Those practices in The Aga Khan University Hospital are also very much tasked and geared towards the collection of knowledge either from experts, so that it can be used at a later time, as three of the thirteen respondents noted:

'...It is about how we manage or control flow of information within an organization and whether that information has to do with procedures, processes within the institutions or just true knowledge dissemination...'

'...How information come to you, how you access it, how you make it available and how you utilize it...'

The cognizance or awareness of ease of access knowledge and flow in The Aga Khan University Hospital is also one of the important requirements of knowledge management. It necessitates that the clinical staff members of all ranks must have a free and easy access to clinical knowledge through information and communication technology. In regards to creation of knowledge and transmission in The Aga Khan University Hospital, a program director replied that residents are responsible for following the code of ethics and practice during preparation of their operational procedures. For this, they are aware and have access to vital information regarding the regulations policies, and rules. The notion was further emphasized by a top level manager:

'...management guidelines and policies are clearly specified and communicated to all the members of staff...'

Interviews indicated that it was both understood and agreed knowledge management is involved with the overall perception that knowledge management was largely information generation and dissemination through some form of technology might be attributed to the increased use of information and communication technology in knowledge management practices and initiatives.

4.9.4 Knowledge Sharing

Knowledge sharing was supported by the clinical environment which is instrumental in a significant role in deploying tacit knowledge over the constant social interaction in the offices, meetings, and training workshops. In The Aga Khan University Hospital, the open work space facilitates members to interact and share information. A top level manager replied that:

'...We have an open office setting throughout the different hospital wards in which all consultation and ward rounds are performed. Senior consultants, other medics and nurses can interact with each other at any time...'

In regard to the KM practices existing in their work environment, most respondents talked about the knowledge sharing practices that transpire, particularly related to their work. A respondent also noted that the university library can also be used as a channel to distribute the information.

'...Utilizing it in you work reporting or disseminating to the Library Universities...'

Other residents noted that the hospital has put in place clinical meetings “CME” and health conferences between hospital staff and medics that allow for the transfer of this information to colleagues. Such comments pointing to these meetings include;

‘...ongoing sessions like the Thursday Clinical meeting...’

‘...We have presentations where we share this with other campus mostly with Dar salaam and Uganda...’

‘...we teach our interns, we teach the wider population of general practice doctors by doing CME’s in the hospital and outside the hospital...’

Another practice that is implemented by the medical staff of the university hospital for sharing knowledge was that during the rounds that the doctors carry out during their work day shifts, they teach both nurses and interns from a practical perspective. One of the consultants commented as follows:

‘...We teach nurses, physiotherapists, and pharmacists during our normal patient rounds...’

Top managers on the other hand viewed knowledge sharing from another perspective where it was noted that they used this knowledge for top level decision making, meaning that at their level knowledge sharing does take place. This according to one of the top level managers was done during committee meetings which were either formal or informal. Two top level managers noted:

‘...There is committee and organizational structures that gathers and distributes knowledge, information agency for decision making. That is clinical information systems that tracks and provide resources of capturing information knowledge...’

‘...There is formal meetings and structures within the organization that share knowledge and information, decision making and away conversations...’

Information sharing is also accomplished via communication of vital information through e-bulletins and newsletters which are common activity in the university hospital. According one of the top managers:

‘...employees are also provided with an e-bulletin which has the key developments. Though prior circulation all information, it is appropriately appraised...’

4.9.5 Tools

The flow of knowledge requires an information system that must be open and available. In recent years, the hospital has put in place unique systems in order to fulfil the information and communication needs of the clinical staff. The application of the health information management system and electronic medical records systems have improved employee availability to essential information which enables them to associate with each other across the different departments. The section head for information and communication technology stated:

'...all the information is widely shared and available in our information systems. All clinical staff members have access to this vital information....'

The librarian also shared that tools were available to facilitate for the sharing of knowledge with others. These tools include the database systems, data-repository systems, which are geared towards academic purposes, to hold presentations, case files, theses and dissertations.

'...the point of care tool is the one I use every day in my capacity as a librarian...'

'...The knowledge could be from journals, ongoing research within the department, clinical updates...'

The head of information technology revealed that the university hospital had invested in its information and communication technology infrastructure with all medical staff members having access to a computing device connected to the locally provided network.

'...all medical staff have access to desktop computers, which are connected to the LAN and others to the intranet...'

'...we have got Wi-Fi in the hospital. Reading some is not difficult you have to look it up in the internet and there so much e-resources...'

The respondents controverted one another when they were asked about the extent to which such an infrastructure had enabled knowledge transfer. Whereas a member of the ICT staff maintained that the local area network was being used effectively in knowledge transfer activities, the respondent from senior management complained that the local area network was being used for transitory issues, rather than for the communication of knowledge which was intended to improve knowledge management.

'...It was revealed that, although the intranet is in place, it tends to be used for trivial matters...'

4.9.6 Knowledge Management Strategy

The influence of knowledge management strategy plays a universal role in the long-term organizational development. A top level manager stated that this had triggered the competition among different hospitals for staff.

'...the major strategy was long-term organizational capacity development. At which time, various vital practices and initiatives including knowledge management have been taken up...'

The qualitative results also acknowledged the way knowledge management strategy is treated in the knowledge management through learning-based career growth within the hospital. In the case of the hospital, training and development aimed to be a substantial instrument for helping the management to build a well-trained staff. The university hospital has invested heavily in the training of the clinical staff, and it turned into a core organizational strategy. Two senior managers noted that:

'... to be open, this university hospital promotes a philosophy of learning and development...'

'...Continuous professional development because when people say are lacking skills and knowledge the management is very uncomfortable. So if there is an avenue for people to be updated on what they are doing it's a great idea...'

In regards to the retention of doctors the staff training and development program offered at the university hospital is one of the best. Many have chosen to stay within the ranks due to the continuous career development opportunities easily available. Some of the managers' comments are as follows:

'...For full time faculty we have an incentive structure that rewards all the activities, including skill development. These are some of the reasonable facilities that attract physicians and retain them...'

'...The fact that we are a knowledge rich, knowledge sharing environment, typically or definitely leads to motivation and retention...'

'...Previously all faculty we get sponsored to go for fellowship abroad that's was another way to retain staff...'

Other attributed the lack of retention of doctors to other factors as opposed to training. One of the section head had this to say;

'...Retention may be a factor of compensation and this as broad as direct monitoring benefit as well as opportunities for carrier and personal growth. In accident and emergency department for example, one of the biggest reason why doctors leave is because they are generally young and junior doctors who are still growing in their profession...'

4.9.7 Perceptions Quality of care and competitive advantage

The presence of knowledge management practices and initiatives in the university hospital provides both quality care to the patients and gives the university hospital a competitive advantage. Competitive advantage can be obtained from knowing how to do things and further progressing into the ability to rapidly develop new and better knowledge. Knowledge management initiatives includes all the activities that exploit information so as to achieve the institutions objectives in facing environmental challenges and staying competitive in the market place. Top level managers noted:

'...The knowledge and we love what we do that's important. People are realizing that the care at AKUH is good...'

'...Yes because there are some who come here, as a patient what you want is to get better...'

'...In terms of giving quality care I think yes we do but in terms of perception there is still a lot to do...'

'...The direct answer is yes but the social perception because there is some perceptions that when you go to a teaching hospital the students will investigate you, stay for long, you will not be operated by the consultant...'

‘...My perception is that we are far ahead of the competition with them but the potential for us to be much better is extremely high which we are not exploiting. I think we are undermining ourselves. We are moving from A to B but we have the potential to move to C, but we are not doing it...’

‘...I think so, because we got the best trained doctors in the region and when we have systems like PACS that allows you to view images almost in real time. Have been able to do that for example for CT-Scans, am sitting in the ward have started a search for CT and within a few minutes am able to view the images before the child is back in the ward. This helps my work become more efficient...’

‘...Being a teaching institution makes a lot of difference and what happens is that: for example; multidisciplinary team that we have, like we have the so called Oncology multidisciplinary tumor board meetings that happen every Monday and every Thursday there is Breast Tumor board. That’s a big plus because if you look in most comparable hospitals it doesn’t happen in most hospitals. The care is more on single private doctor but here the care is multidisciplinary team...’

‘...If you look at the fact that being a training organization we are also benchmarked against generational knowledge, research etc. and very robust evaluate our outcomes and involve our patients by way of patient satisfaction services, I would say that we stand unique and quite distinct in terms of our competitiveness...’

4.9.8 Challenges

The qualitative interviews discovered a number of challenges identified as hampering the knowledge management initiatives from being implemented. These comprise the fears that the availability of too much information and a lack of time to share and disseminate the information in a timely manner to the relevant recipients of the knowledge. A number of senior managers had the following to say:

'...It would good to get more time to do it because you can be overwhelmed by your clinical work and therefore taking two days off to go and do a particular course can be quite challenging...'

'...Basically when we look at clinical knowledge management, doctors are busy people so sometimes I feel the applications that we have are not used fully, they don't maximize the potential of those tools...'

One other aspect that might encumber the participation and participation culture is people's unawareness. A top level manager commented that:

'...People need to keep themselves knowledgeable of what's going on...'

Bureaucratic inefficiencies in the university hospital's organizational structure is still an immense problem. This is an indication of poor clinical staff empowerment that confines them from making cognisant decisions on important workplace matters. An interim chair indicated that:

'...They might not be available to everybody. If you write a protocol, it's there but there is no accessibility to all staff...'

4.10 Conclusion

This chapter elucidated the findings of the qualitative data based on thirteen interviewees subjected to semi structured interviews so as to to corroborate the quantitative survey findings, and investigate the empirical relationship between knowledge management practices and the performance of clinicians at The Aga Khan University hospital. The chapter presented findings obtained from both the quantitative and qualitative phases of the research study.

Chapter Five: Discussion of Findings

5.1 Introduction

Chapter four described the collected data, its analyses and results. This chapter answers the research questions and discusses the results. The first research question was to investigate and document different practices of clinical knowledge management used in The Aga Khan University Hospital in Nairobi, Kenya and the following is a discussion of the responses to the research questions from the quantitative and qualitative sections of the study.

5.1.1 Knowledge Sharing

Knowledge sharing findings indicate that the university hospital provides a supportive environment for organising knowledge through continuous social interactions. The hospital top level management also supports teamwork and keeps staff motivated through employee engagement in the establishment of their goals. In relation to knowledge management practices and initiatives in the hospital, the changing clinical culture created a striking difference between the public and private sector organizations. The current hospital management tries to ensure that employees share and exchange ideas what they think could be imperative to improve on the clinical management of patients and overall management of the hospital. However, the role of doctors in terms of knowledge sharing and transfer is multi-layered in the hospital and they promote knowledge sharing and transfer within and without the organization.

5.1.2 Tools

ICT tools of the university hospital has facilitated clinical members to meet the information needs through capture and to share explicit knowledge. Though the clinical staff of all levels have an open access to organizational information repositories through the information system, the centralized structure and multiple span of controls restrains the continuous process of information sharing and transmission.

5.1.3 Knowledge Management Strategy

Knowledge management as a strategy for staff retention has been somehow successful. The advancement in the technology platform helped the university hospital to discover innovative knowledge resources via knowledge sharing and transference of imperative information to the different levels of the hospital especially to doctors. In conclusion, the present knowledge management as a strategy of the hospital is more focused on organizational learning; but does facilitate for some for doctor retention.

5.1.4 Perceptions Quality of care and competitive advantage

To be competitive, the hospital must create and sustain organizational knowledge, and assimilate the objective to manage the knowledge with effective knowledge processes. It is also essential to recollect that the university hospital's competitive advantage is not governed by on the current knowledge in the hospital to provide better quality care, but on the ability to apply this knowledge to successfully create a better experience for the patient.

5.1.5 Challenges

The conclusions drawn from this dimension of the research study brought out the different challenges to knowledge management applications for the staff in the university hospital. For instance, a lack of compliance due to ignorance from the associated benefits of knowledge management system weighs down the knowledge creation and sharing in the university hospital. Therefore, despite having a knowledge management application implementation in the university hospital, the level of engagement in regards to time spent on the system on knowledge management initiatives was minimal and may have been caused by ignorance, lack of time of generally the lack of a skill set to make use of the implementations put in place by the university hospital.

5.2 Summary

The objective of the study was to determine the knowledge management practices adopted by the university hospital staff in general and to determine the factors that influence adoption of knowledge management on performance of doctors in The Aga Khan University Hospital.

The study focused on knowledge management as a practice in achieving competitive advantage. In the first objective, the study established that the doctors adopt knowledge management practices in the areas of knowledge creation, acquisition, storage and representation, application and distribution. This finding is consistent with the study by Al-Hawary et al (2013) who studied the role of knowledge management in the financial segment of the economy. The study concluded that the financial segment of the economy was successful in establishing its own concept of knowledge management. The most adopted practice was initiatives to carry out jobs by appropriate methods, followed by motivation and reward of creative employees while the least adopted practice was encouraging employees to seek new ideas. Most of the doctors used participation in conferences and workshops as a mechanism of knowledge acquisition and dissemination. Training of doctors is mostly in house in most cases through seminars and workshops. The hospital on average made use of both internal and external experts and specialists to a great extent to transfer knowledge and experience to hospital staff.

Another underlying premise to this investigation was that organizations should engage in knowledge management formation, storage and dissemination to achieve long-term organizational effectiveness and efficiencies. The study finds that The Aga Khan University hospital is using technology in knowledge exchange both internally and externally. This reverberates the study by Alavi and Leidner (2001) who observed that communication technologies are required for all the key processes in knowledge management practices. This is necessary as it provides capabilities in information sharing, collaboration and the use of electronic depositories to collect both information and knowledge. While information infrastructure may be seen to actualize knowledge and turn it to lethargic information, emerging technologies are rapidly acclimatizing to allow organizational workers to create, adapt and modify their own technological tools.

All practices were however significantly adopted because all their means are above the average with the practice lowly practiced being each department determining important knowledge to distribute between personnel. In Knowledge Storage the study established that the hospital has a comprehensive, adequate database available for all its clinicians. It was also established that the university hospital does capture and document problematic cases

encountered and the procedures followed in finding the possible solutions. Knowledge Application practices have also been adopted by the university hospital where follow up techniques for monitoring and evaluation have been put in place to ensure that newly assimilated knowledge is not only applied but correctly applied in dealing with patients.

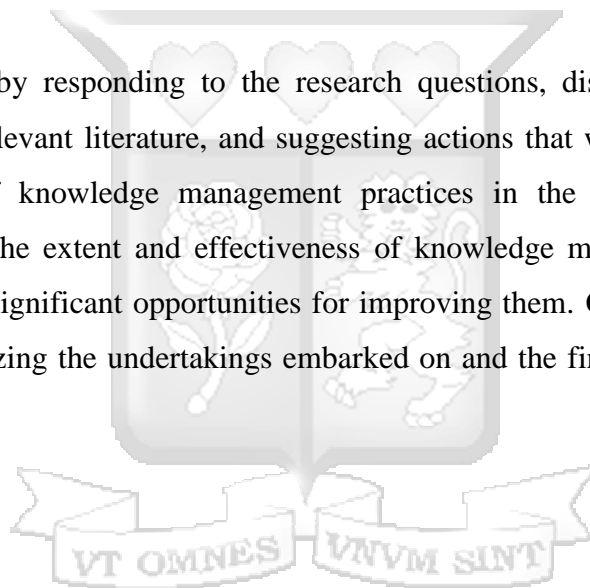
The study also established that knowledge distribution and exchange practices have been adopted and accepted by the university hospital averagely. The knowledge management practice that is most adopted is the creation and preservation of the databank by the hospital for cases that have been handled by different doctors and departments. The least practice is the access of internet to collect any information needed. With respect to the second objective, the study established that a team-based, non-hierarchical, self-organizing organizational structure is the most effective for knowledge sharing. In competitive advantage and quality care achievement, adoption of knowledge management practices made the university hospital experiences competitive advantage through the development of innovative treatment procedures with a minimum loss of valuable knowledge. It was also established that knowledge management practices have helped the university hospital to easily adopt new ideas. This is consistent with an earlier study by Sheikh (2008). In his study, the use of new knowledge and knowledge management to gain competitive advantage, he found out that to remain competitive, organizations must consistently generate and apply new knowledge in the procedures of an organization. It is also in line with a study Ojera et al (2014), who conducted a study on knowledge management practices and its effect on firm performance. The study revealed that there was a significant relationship between knowledge creation and application with organizational performance.

Earl (2001) research on knowledge management practices formed the investigative group of five distinct knowledge management activities. Joshi, Barrett, Walsham, and Cappleman, (2007) investigation on the perceived value of knowledge management confirms that the importance of organizations is placed in the process of knowledge sharing which is essential to the success in organizations. A large proportion of the respondents of this study are aware of the importance of knowledge management in hospital operations. The confirmation that organizations are seen to be transformational when they utilize knowledge indicates that the respondents are aware of the benefits of knowledge management in the hospital.

Most essentially, it was found that knowledge management has improved workforce efficiencies and productivity through the use of knowledge management practices and through improved operational performances through use of communities of practice Roman-Velazquez (2004). The research goal was achieved and the findings have definitively addressed the various initiatives that have been undertaken by university hospital in rigorous efforts in managing knowledge. The findings have found to support the theoretical framework of organizational knowledge creation where the aptitude of the organizations as a whole is to create new knowledge and disseminate it through the organization and epitomize it in services and systems (Nonaka & Takeuchi, 1995).

5.3 Conclusion

This chapter began by responding to the research questions, discussing the results with orientations to the relevant literature, and suggesting actions that would improve the extent and effectiveness of knowledge management practices in the university hospital. The research found that the extent and effectiveness of knowledge management practices was adequate, providing significant opportunities for improving them. Chapter six concludes the research by summarizing the undertakings embarked on and the findings resultant from this research.



Chapter Six: Conclusions and Recommendations

6.1 Introduction

This chapter presents the conclusions drawn from the findings highlighted in Chapter four and five and recommendations made there-to. The conclusions and recommendations drawn were focused on addressing the objectives of this study which were to find out the influence of knowledge management practices on the performance of clinicians at The Aga Khan University hospital, Nairobi, Kenya.

6.2 Summary of findings

The findings of this study indicate that the Aga Khan University Hospital provides a good environment for deploying tacit knowledge through continuous interaction in the work environment. The hospital top management also backs teamwork and keeps staff inspired. In regard to knowledge management practices and initiatives in the Aga Khan University Hospital, the changing clinical culture created a salient difference between the public and private sector institutions. The present hospital management ensures that employees share and exchange ideas what they think could be important to improve on the clinical management of patients and overall management of the hospital.

However, the role of clinicians in terms of knowledge sharing and transfer is multi-layered in the hospital and they promote knowledge sharing and transfer within and without the organization and this makes the majority of them not being able to appreciate the use of knowledge management as indicated in the study where they generally disagreed that the knowledge management systems awareness is not in place. The findings presented above indicate that knowledge management as a strategy for staff retention has been somehow successful. The advancement in the technology platform helped the university hospital to explore new knowledge resources through knowledge sharing and transfer of important information to the different levels of the hospital especially to doctors. In conclusion, the present knowledge management as a strategy of the hospital is more focused on organizational learning; but does facilitate for some for doctor retention. To be competitive and successful, an organization must create and sustain organizational knowledge, and

integrate the goal to manage the knowledge with effective knowledge processes. It is also important to remember that the university hospital's competitive advantage does not depend on the existing knowledge in the hospital to provide better quality care, but on the ability to apply this knowledge to effectively create a better experience for the patient. The findings mined from this inductive category uncovered different challenges to knowledge management applications for the staff in the university hospital. For instance, a lack of adaptability and unawareness due to ignorance from the associated benefits of knowledge management system weighs down the knowledge creation and sharing in the institution. Therefore, despite having a knowledge management application implementation in the hospital, the level of engagement in regards to time between employee and employer and a sense of ownership between employees does not support the structures through which employees can exchange their ideas, knowledge, and is considered as an important factor of knowledge conception and distribution in the hospital.

6.3 Conclusion

In line with the research objectives, the results confirm that clinicians have accepted and adopted knowledge management and they share knowledge through the implementation of knowledge management through various practices such as knowledge sharing.

The study concludes that policy strategies, knowledge capture, training and mentoring, and communications are applied as knowledge management practices of the university hospital. The findings determine that information technologies and human resource capacity are enabling elements in the implementation of knowledge management practices.

From this study which sought to assess the impact of knowledge management practices on the performance of doctors at The Aga Khan University hospital, Nairobi, the knowledge management practices were found to affect the performance of The Aga Khan University hospital. A few challenges were identified as hindering the knowledge management initiatives from occurring by respondents in this study including different skill levels of the different employees in use of the KM system in place, time for accessing the facility and fears of loss of political capital by having their data in the systems. The initiatives were widely accepted by the different cadres in the hospital for reasons ranging from saving time to the availability of concise data and information and mainly the perceptions towards the

system were very positive. These include the fears that the availability of too much information and a lack of time to share and disseminate the information in a timely manner. Due to the large amount of knowledge generated by the university hospital must ensure that management efforts in knowledge management implementation safeguard existing important knowledge. There should also be a conscious effort in ensuring a circular flow of knowledge with feedback mechanisms to the organizational policy-makers on knowledge management implementation and the dissemination of valuable management-generated information to medical workers.

6.4 Recommendation for the study

The study recommends that private hospitals should adopt more ways of sharing knowledge information among employees in order to improve their knowledge management capacities. The alignment of knowledge management policy to the organizational strategy will act as a guideline on how knowledge should be disseminated within the organizations.

The study also recommends that knowledge management will be harnessed more if the leadership component is further developed and is at the forefront in encouraging knowledge sharing. Based on these research findings, the role of leadership in managing knowledge management activities was lacking and this could likely result in inefficiencies if organizations do not harness the knowledge it generates.

Incentive programs which reward knowledge sharing will encourage employees to actively share knowledge with their colleagues. This may go further in encouraging cross-department knowledge sharing and will encourage coordination between different departments. This may be beneficial in reducing duplicate operations within the hospital. The training of staff capacity will also enhance the continued use of the knowledge management in the organization.

6.5 Areas of further research

Employees should be trained in more practical areas to eliminate fear that causes these challenges. It is also recommended that studies should approach research through a multi-sectorial approach as this may provide valuable information on whether organizations differ in terms of their knowledge management practices by sector. The use of information technology provides a wide-range of tools for knowledge sharing .This study confirmed the use of information technology as a facilitator of knowledge management implementation and how information technology is used to support collaboration between departments. The respondents indicated the use of the emerging technologies as a facilitator of knowledge sharing across geographical divides. This provides instant, on-the-spot exchange of information between employees and also across organizations. Follow up research can investigate the impact of social media in the improving implementation of knowledge management within organizations or between sector partners.

6.6 Implication on Policy

Key contributions that arise in this study are the relationship between effective knowledge management and performance. The findings in this study provide confirmation that workforce efficiency and improved medical staff performance are as a result of the application of knowledge management. The results of this research indicate that focus needs to be directed in the areas where knowledge management practices were found to be poorly developed, for instance in leadership and departmental coordination. Policy-makers may use the findings from the information technology tools to look into the investment potential of numerous ICT infrastructures. The use of knowledge management practices in knowledge implementation form the basis of a knowledge management strategy. The findings in this research found that the university hospital does indeed use knowledge management practices for implementation of knowledge management and positively identified that it had an effective knowledge management strategy in place. The influence of senior management is recognized as an enabler in establishing a knowledge sharing culture and when knowledge management is purposively applied, the development and use of knowledge and information increases the effectiveness of medical organizations.

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APPENDICES

APPENDIX A: Quantitative Survey Guide

Survey guide: An Investigation of Knowledge Management Strategies at Aga Khan University Hospital

Preamble

I am interested in understanding Knowledge Management Strategies in your institution. I have a few questions to ask that will take 20 - 30 minutes of your time to answer. Thank you again for agreeing to participate in this survey. If you are uncomfortable answering any of the questions, you have the option of not answering and proceeding to the following question.

GENERAL INFORMATION	
Sex	<input type="checkbox"/> Female <input type="checkbox"/> Male
Position/Management level	<input type="checkbox"/> Dean/Associate dean <input type="checkbox"/> Section head <input type="checkbox"/> Program director <input type="checkbox"/> Consultant <input type="checkbox"/> Registrar <input type="checkbox"/> Senior house officer <input type="checkbox"/> Resident
Educational qualifications	<input type="checkbox"/> Phd

	<input type="checkbox"/> Masters/MMed <input type="checkbox"/> Bachelors <input type="checkbox"/> Subspecialty
Subspecialty	_____
Years of experience (regardless of organization)	<input type="checkbox"/> Below 5 years <input type="checkbox"/> 5 – 10 years <input type="checkbox"/> More than 10 years
Years of service at Aga Khan University	<input type="checkbox"/> Below 5 years <input type="checkbox"/> 5 – 10 years <input type="checkbox"/> More than 10 years
AWARENESS OF KNOWLEDGE MANAGEMENT	
Have you heard of knowledge management	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do you think of your work as involving knowledge management?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are you happy with the way in which learning, knowledge and evidence are addressed in your organization?	<input type="checkbox"/> I am very happy <input type="checkbox"/> I am somewhat happy <input type="checkbox"/> I am not happy
What do you think is the main benefit of knowledge management for Aga Khan	<input type="checkbox"/> Help to prevent knowledge loss <input type="checkbox"/> To gain competitive advantage over other similar

University Hospital (Choose one)	institutions <input type="checkbox"/> For continuous knowledge improvement <input type="checkbox"/> To improve the quality of health services
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PRACTICE OF KNOWLEDGE MANAGEMENT

The questions below concern your awareness and use of knowledge management systems at Aga Khan University hospital. To help you with the questions, a definition of each system is provided.

1. **Electronic Medical Records:** Electronic medical records are medical records of a patient that is stored and retrieved in digital/electronic format.

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

Statements	1	2	3	4	5
I frequently use electronic medical records					
Electronic medical records are relevant for my work					
Electronic medical records are easily accessible					
My clinical practice is influenced by electronic medical records					

2. **Continuous medical education (CME):** Continuous medical education refers to a specific form of continuing education that helps those in the medical field maintain competence and learn about new developments in the field.

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

Statements	1	2	3	4	5
I frequently attend CME sessions					
CMEs are relevant to my work and clinical decision making					
My work environment and schedule allows me to attend CMEs					
My clinical practice is influenced by CMEs					

3. **Communities of Practice:** This is a group of people who share a common interest in working together over an extended period of time to explore ways of working in a specific area of knowledge (e.g systematic reviews working group)

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

Statements	1	2	3	4	5
I am currently participating in a community of practice					
Communities of practice are relevant for my work					
Communities of practice are easily accessible at AKUH					
My clinical practice is influenced by communities of practice					

4. **Knowledge Cafes:** A group of people having an open, creative conversation in an informal environment on a topic of mutual interest.

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

Statements	1	2	3	4	5
I often participate knowledge cafes					
Knowledge cafes are relevant for my work					
Knowledge cafes are easily accessible at AKUH					
My clinical practice is influenced by knowledge cafes					

5. **Clinical support systems (policies, protocols, algorithms):** Clinical decision support systems are systems that provide healthcare professionals with patient-specific assessments or recommendations to aid clinical decision making.

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

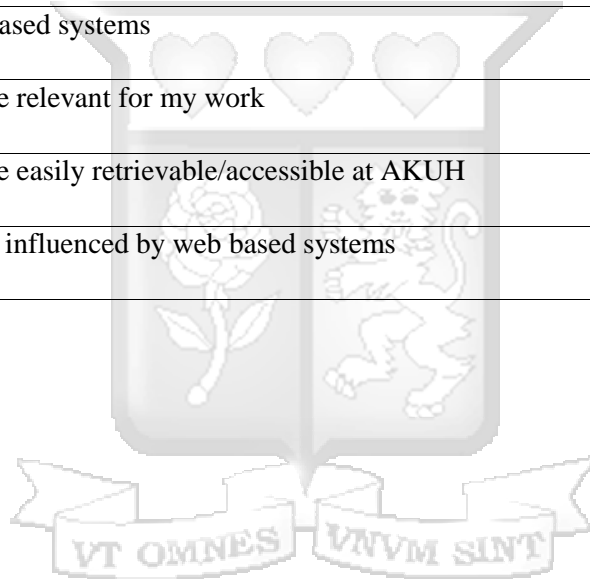
Statements	1	2	3	4	5
I frequently use clinical support systems					

Clinical support systems are relevant for my work					
Clinical support systems are easily retrievable/ accessible at AKUH					
My clinical practice is influenced by clinical support systems					

6. **Web based systems:** Collaborative operations in the virtual environment such as telemedicine technologies (example: tele-radiology involves the transfer of radiographic images as a form of distance learning)

Where 1=strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree

	1	2	3	4	5
I frequently use web based systems					
Web based systems are relevant for my work					
Web based systems are easily retrievable/accessible at AKUH					
My clinical practice is influenced by web based systems					



APPENDIX B: Qualitative Interview Guide

Interview guide: An Investigation of Knowledge Management Strategies of Private Healthcare Organizations in Nairobi, Kenya

Preamble

I am interested in understanding Knowledge Management Strategies in your institution. I have a few questions to ask that will take 40 - 60 minutes of your time to answer. Thank you again for agreeing to participate in this interview. If you are uncomfortable answering any of the questions, you have the option of not answering and proceeding to the following question. As a reminder, this interview will be tape recorded for accuracy.

A. GENERAL INFORMATION	
Sex	<input type="checkbox"/> Female <input type="checkbox"/> Male
Position/Management level	<input type="checkbox"/> Dean/Associate dean <input type="checkbox"/> Section head <input type="checkbox"/> Program director <input type="checkbox"/> Consultant <input type="checkbox"/> Registrar <input type="checkbox"/> Senior house officer <input type="checkbox"/> Resident
Educational qualifications	<input type="checkbox"/> Phd <input type="checkbox"/> Masters/MMed <input type="checkbox"/> Bachelors <input type="checkbox"/> Subspecialty
Subspecialty	_____
Years of experience (regardless of organization)	<input type="checkbox"/> Below 5 years <input type="checkbox"/> 5 – 10 years <input type="checkbox"/> More than 10 years

Years of employment at Aga Khan University	<input type="checkbox"/> Below 5 years <input type="checkbox"/> 5 – 10 years <input type="checkbox"/> More than 10 years
--	--

Knowledge on KM initiatives

1. What do you understand as the meaning of “knowledge management” (KM)?
2. Please describe for me some of the KM practices you are involved in

Prompt: Practice guidelines

e-health

EBM

3. Are the KM tools you are using beneficial for your management/clinical decision making? How frequently do you use these tools?
4. Please share with me some of the initiative aimed at improving process of acquiring, conserving, retrieving information in the hospital
5. What are some of knowledge management strategies that are working well at the hospital?
Probes: please briefing describing for me the strategies

5. What are some of knowledge management practices that are not working well at the hospital?
Probes: please briefing describing for me the strategy

6. How do you see these management initiative developing over the short- term, medium and long term?

7. What are the challenges you have experienced in knowledge management?

8. Are you happy with the way in which learning, evidence, and knowledge are addressed in your hospital?

Probes: Do you think more could be done?

After KM(CME...) do you always formal evaluation

KM and Quality of care

9. Share with me some of the KM initiatives at AKUH that are aimed at improving quality of care

Prompt on Initiatives: KM initiative that improve patient outcome, patient satisfaction, CMEs, evidence based practice etc

10. What are some of your responsibilities related to KM and quality of care?

Prompt: Evaluation, monitoring,

KM and retention Doctors

11. Please share with me trends in retention of doctors at AKUH

12. Please tell me some of the KM strategies at AKUH that are aimed at retention of doctors

Prompts: Training on KM/IT, CMEs, giving ample time etc

KM and motivation of doctors

13. Generally, what is the level of staff motivation at AKUH, and what some of the things that contribute to staff motivation?

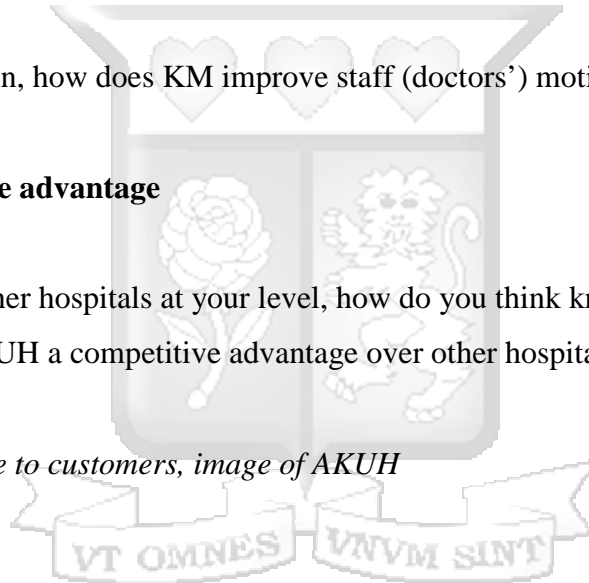
14. In your opinion, how does KM improve staff (doctors') motivation?

KM and Competitive advantage

15. Looking at other hospitals at your level, how do you think knowledge management has given AKUH a competitive advantage over other hospitals?

Prompt: Value to customers, image of AKUH

16. Is there anything else that you would like to discuss?



APPENDIX C: Informed Consent Form (Part I)

Study Title: An Investigation of Knowledge Management Strategies of Private Healthcare Organizations in Nairobi, Kenya

Purpose of the Study

You are being invited to participate in a research project on Knowledge Management Strategies. This study will provide baseline data to broaden the understanding of Knowledge Management Strategies in one private tertiary hospital, Nairobi, Kenya. Findings will assist decision makers and other stakeholders in forecasting future initiative on knowledge management.

Potential Harms, Risks, or Discomforts

There are no known risks to you for participating in this study. Questions will focus on your experiences as a healthcare professional working in private tertiary hospital. Taking part in the study is completely voluntary. You are free to choose whether you will participate. You do not need to answer questions that you do not want to answer. At any time throughout the research process, you may withdraw without any adverse consequences or questioning.

Potential Benefits

The research will not benefit you directly. The purpose is to learn more about hospital knowledge management. Following your participation in the interview, a letter of appreciation will be sent to you to include in your professional portfolio. Additionally, the results of this study will be shared with the institution in an effort to provide information on knowledge management to aid decision makers in planning and guiding future initiatives. Finally, study results will be disseminated in peer reviewed journals and presentations.

Confidentiality

For the interviews will be conducted in a private room, audio tape-recorded and transcribed verbatim; however, all personal information will be kept confidential. Your name will not

appear in any reports or publications. Questionnaire, audiotapes, digital audio files, and transcripts from interviews will be kept in locked files.

Participation and Withdrawal

Your participation in this study is voluntary. It is your choice to be part of the study and you can withdraw at any time, even after signing the consent form or partway through the study. If you decide to withdraw, there will be no consequences to you. You have the option of removing data already collected.



APPENDIX C: Informed Consent Form (Part II)

INFORMED CONSENT FORM

An Investigation of Knowledge Management Strategies of Private Healthcare Organizations in Nairobi, Kenya

I understand the information given to me about this study. My questions about the study have been answered to my satisfaction. I understand whom to contact if I have any additional questions. I am willing to participate in the study on knowledge management. I understand that all information gathered for this study will be confidential and that I will not be identified in reports or publications. I know that I can withdraw myself and/or my data from the study at any time and without any consequences.

I agree to participate in this study.

I agree that the interview can be audio/video recorded Yes No

Name of Participant (Printed)

Signature

Date

Consent form administered and explained, in person, by:

Name and Title (Printed)

Signature

Date

APPENDIX D: Letter of Introduction



Strathmore Business School

Tuesday, 1st December 2015

To whom it may concern,

RE: FACILITATION OF RESEARCH – MUMTAZ HIRANI

This is to introduce Dr. Mumtaz Hirani, admission number 83148 who is an MBA student at Strathmore Business School. As part of the SBS MBA Program, Dr. Hirani is expected to do applied research and to undertake a project. This is in partial fulfillment of the requirements of the Master of Business Administration in Healthcare Management. The outcome would be of immediate benefit to the organizations she is researching on. To this effect, she would like to request for appropriate data from your organization.

Dr. Hirani is undertaking a research paper on **An investigation of clinical knowledge management practices and its impact on clinicians at the Aga Khan University Hospital, Nairobi**. The information obtained from you shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct usefulness to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of value to your organization.

We very much appreciate your support and we shall be willing to provide any further information if required.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Gilbert Kokwaro', enclosed in a blue oval.

Prof. Gilbert Kokwaro

**Director, Institute of Healthcare Management and
Academic Director, MBA in Healthcare Management**



**Strathmore
UNIVERSITY**

Ole Sangole Road, Madaraka Estate
P.O. Box 59657 00200 Nairobi, Kenya
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Email: info@sbs.ac.ke or visit www.sbs.strathmore.edu
Twitter: @SBSKenya

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APPENDIX E: The IRB clearance letter



REF: SU-IRB 0019/15

15th December 2015

Dr. Mumtaz S. Hirani
Parklands Mediplaza
P.O. Box 1937-00606
Nairobi, Kenya.

Email: dmhirani@hormail.com

M&A-HCM/83148/14

Dear Dr. Hirani,

REF: SU-IRB 0019/15 PROPOSAL "AN INVESTIGATION OF KNOWLEDGE MANAGEMENT PRACTICES OF PRIVATE HEALTHCARE ORGANISATIONS IN KENYA; A STUDY OF AGA KHAN UNIVERSITY"

Thank you for your email dated 14th December 2015, responding to the comments raised by the Strathmore University Institutional Review Board.

We acknowledge receipt of the study protocol version dated 1st September 2015.


The committee has reviewed your response and concluded that the issues raised have been adequately addressed.

The study has been granted approval for implementation effective this 15th Day of December 2015. Please note that authorization to conduct this study will automatically expire on 14th December 2016. If you plan to continue with the study beyond this date, please submit an application for continuing approval to the SU-IRB before this expiry. You are also required to submit any proposed changes to this protocol to SU-IRB for review and approval prior to implementation of changes.

Sincerely,

Amna Salim
Regulatory Affairs Fellow

APPENDIX F: The AKUH research ethics body of clearance


THE AGA KHAN UNIVERSITY

Faculty of Health Sciences
Medical College

Ref: 2016-REC-07(v1)
25th January 2016

Dr. Mumtaz (Shafiq) Hiran
Student, Strathmore University and
Faculty, Aga Khan University - EA, Nairobi


Re: AN INVESTIGATION OF CLINICAL KNOWLEDGE MANAGEMENT PRACTICES OF PRIVATE HEALTHCARE ORGANIZATIONS IN KENYA: A STUDY OF AGAKHAN UNIVERSITY HOSPITAL

The Research Support Unit (RSU) of the Aga Khan University, Nairobi is in receipt of your revised protocol dated 18th January 2016 and request to use Aga Khan University Hospital Nairobi (AKUHN) as your research site. The RSU records that this study has ethics approval from Strathmore University IRB (Ref: SU-IRB 0019/15).

The relevant AKUHN committees record that the proposed work is in compliance with the Aga Khan University research ethics regulations. The committees have thus granted *approval* for this project based on core ethical standards that have been fully instituted in the protocol. You are authorized to conduct this study at AKUHN from **25th January 2016**. This approval is valid until **02nd July 2016**.

The study should be conducted in full accordance with all the applicable sections of the Research and Ethics Committee (R&EC) guidelines and you should notify the R&EC immediately of any changes that may affect your research project. You should report any unanticipated problems involving risks to the participants to the R&EC. You must provide an interim report before expiration of the validity of this approval and request extension if additional time is required for study completion. As the principal investigator, you must advise the R&EC when this study is finished or discontinued and a final report submitted to the RSU. Further approval from the hospital management should be sought before publishing the results. If you have any questions please contact Research Support Unit - kamunda@akuh.edu.ke or (20-366-2148).

Sincerely,



Prof. Rodney Adam
Chair, Research Committee, AKU (Nairobi)

Copies
Chairman, Health Research Ethics Committee, AKU (Nairobi)
Associate Dean, Clinical Services and Chief of Staff, AKUHN (Nairobi)

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