FACTORS AFFECTING KNOWLEDGE TRANSFER IN PHARMACIES IN UGANDA: A SURVEY OF SELECTED PHARMACIES IN KAMPALA DISTRICT

BY

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DECLARATION

I, Kasagga Aloysius, do hereby declare that this is my original work and the material contained is the result of my own work and where other people's work has been used it has been dully acknowledged.

This work has never been submitted for an award of a degree in any institution of higher learning.

Signed:………………………………………………………………..

Date: ………………………………………………………………….

APPROVAL

We certify that Kasagga Aloysius carried out the study and wrote the dissertation under our supervision. We confirm it is the candidate's original work.

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DEDICATION

This piece of work is dedicated to my family because they have given me support during the period of my research.

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I wish to extend my sincere gratitude to those persons without whom this piece of work would not be possible.

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ACRONYMS

ADRs	-	Adverse Drug Reactions.
CEO	-	Chief Executive Officer.
CME	-	Continuous Medical Education.
CPD	-	Continuous Professional Development.
ICT	-	Information Communication Technology.
IT	-	Information Technology.
KT	-	Knowledge Transfer.
MOH	-	Ministry of Health.
NDA	-	National Drug Authority.
SPSS	-	Statistical Package for the Social Science.
UMI	-	Uganda Management Institute.

ABSTRACT

The study sought to assess factors that affect knowledge transfer in pharmacies in Uganda. The general objective of the study was to assess factors affecting knowledge transfer in selected pharmacies in Kampala District. The specific objectives of the study were to investigate the effect of leadership styles on knowledge transfer in pharmacies, to establish the effect of organizational support structures on knowledge transfer in pharmacies and to examine the effect of ICT on knowledge transfer in pharmacies. The study employed cross-sectional survey and correlation research designs, both quantitative and qualitative methods were used in the study. A total of fifty nine (59) respondents of the total population of one hundred ten (110) representing a 54% response rate were subjected to questionnaires and interviews. The study used purposive and simple random sampling strategies to select the sample. Data was analyzed using descriptive statistics, Pearson's product moment correlation coefficient and multiple regressions using the SPSS programme. The study revealed a significant positive relationship between leadership styles and knowledge transfer. Further, the study indicated that there were structures to support knowledge transfer in pharmacies and organisational support structures significantly affect knowledge transfer. In the same study, it was also found that the relationship between ICT and knowledge transfer was statistically significant. The study recommended participatory approaches to enhance knowledge transfer, systems be put in place and ICT utilization be reinforced in order to enhance knowledge transfer.

CHAPTER ONE

INTRODUCTION

1.0   Introduction

The study focused on factors such as leadership styles, organizational support structures, and information communication technology (ICT) which are the independent variables and knowledge transfer which is the dependent variable in the study. This chapter presents the background, the statement of the problem, the objectives, the research questions, hypotheses, the scope, justification and the significance of the study. The definitions of concepts are also treated in this chapter.

1.1   Background to the study

In Uganda the pharmaceutical sector is divided in six areas which include pharmaceutical industry, regulatory, hospital (clinical pharmacy), educational / training, research and trade in drugs (dispensing chemists). The operations of these areas are controlled by National Drug Authority (NDA). The key role of NDA is to promote the health of the people of Uganda through use of safe, efficacious and quality medicines, regulation of pharmacies and other drug outlets, approve national list of essential drugs, and estimate national drug needs, control importation / exportation and sell of drugs, control the quality of drugs, training of health workers on rational use of medicines and control local production of essential drugs (National Drug Policy, 2002). This involves protecting the

public against the use and effect of poor quality; take expired and otherwise unacceptable medical items. It also prevents irrational use of drugs and unethical promotion of medical items including herbal drugs (World Health Organisation, 2007). In short, NDA is involved in the transfer of knowledge as far as drugs are concerned both to the public and private sectors. This is done in collaboration with the pharmaceutical division of ministry of health (MOH).

Knowledge transfer (KT) in the fields of organizational development and organizational learning is the practical problem of getting a packet of knowledge from one part of the organization to another (or all other) parts of the organization (Argote & Ingram, 2000). It is considered to be more than just a communication problem. If it were merely that, then a memorandum, an e-mail or a meeting would accomplish the knowledge transfer. Knowledge transfer is more complex because knowledge resides in organizational members, tools, tasks and their sub networks (Argote & Ingram, 2000) and also much of the knowledge in organizations is tacit or hard to articulate (Nonaka & Takeuchi, 1995).

The emergence of knowledge era as an integral part of the global economy is leading to dramatic changes in the business environment and other sectors. According to Lank (1997), knowledge and its manifestation in the expertise of people is nowadays seen as the greatest asset of value creation for organizations. As business is no longer limited by national boundaries, many of the world's corporations, both small and large, are now performing a significant portion of their activities outside their home countries. National

borders seem to be almost non – existent with an increase in international joint ventures, companies establishing subsidiaries and sales offices abroad. Such changes make it invaluable to organizations if they are to be successful, to manage their knowledge and to transfer existing skills, knowledge and to expertise effectively within the organization, especially across national borders. According to Lin (2007), there is an explosion of knowledge and the only way to remain competitive and relevant in this global village is to transfer knowledge from one unit of the pharmaceutical establishment to another. In support of this, Nonaka (1994), stated that "In a work where the only certainty is uncertainty" the only sure way of remaining relevant is to acquire new knowledge and skills. In a report by WHO (2007) it is indicated that there is acute shortage of health workers globally. In such circumstances, it is rather challenging to transfer knowledge in such organizations and to the public in general.

Neef (1999) details that the changes that are occurring in the global economy (such as technological breakthrough in computing, the rising importance of information technology, the expansion of global telecommunications, the accelerated pace of change, and the changing nature of organizations) are reshaping economic structures. Despite this, improved communication and transportation provides consumers with a remarkable choice of goods and services, as well as new and better offerings from global companies (Davenport & Prusak, 1998). In this sense, information is available without leaving one's office or even country. The development of knowledgeable people and the retention of

expertise have become problematic if organizations rely simply on real-time access to information without the benefit of face-to-face contact.

In this regard, as more and more firms gain access to the same technology, the driving force behind successful global companies and competitive advantage is more likely to move away from the technology itself (Stroh & Caliguiri, 1998; Davenport & Prusak, 1998), and focus on the development of knowledgeable people and the retention of expertise. Whilst the focus on technology is important, Davenport and Prusak (1998) and also Thurow (1997) argue, that in today's global economy, knowledge, skills and subsequent expertise is being considered as the most strategic resource for building and sustaining competitive advantage and in this sense is integral to business success. The speed of change, the ferocity of the competitive environment, the shift to service-based industry and the developments in information technology make it a critical task to manage knowledge and retain expertise as significant assets relative to a firm's competitive advantage (Lank, 1997).

Knowledge and subsequent expertise can now be seen as the most valuable asset of firms competing effectively in global information-intensive economies (Demarest, 1997) and therefore need to be managed and well coordinated (Wiig, 1994). Hence, to remain competitive, organizations must create, capture, harvest, share, and apply their organization's knowledge and expertise (Zack, 1999). Application in this regard refers to the manifestation of knowledge evidenced in a person's expertise. In this respect, the

importance of knowledge is emphasised by Prusak (1996), who suggests that the only thing that gives an organization a competitive edge – the only thing that is sustainable – is what it knows, how it uses what it knows and how fast it can know something new.

The increase of interest in research and the application of knowledge management by developing and sustaining a competitive advantage in business, evidences the growing importance of knowledge transfer for organizations (Beckman, 1999). Knowledge transfer then is critical to organizations as they strive to become a learning organization that seeks to survive in the newly emerging knowledge-based global economy (Despres & Hiltrop, 1995; Neef, 1999).

Developing country based firms have been known to be defiant in technology and managerial acumen and other financial resources (Kuada, 2002). The prospects of forming corporation with their developed country partners could present them with an exciting opportunity to augment their resource bases including knowledge transfer. They are therefore likely to possess high learning intent in such collaborative ventures. One way by which learning intent can be demonstrated is through a firm's ability to design a reward system that recognizes and rewards learning. Harvey & Denton (1999) argued that there was consensus among managers that organizational learning involves elevating the status of knowledge workers, making conscious efforts to reward them appropriately and creating a learning environment in which they might flourish. Conceptually, Lei,

Slocum & Pitis (1997) have also argued that a firm's reward system could have an impact on its ability to explore corporation because it shapes the way managers perceive tasks.

In developing countries, there is a general perception that employees are normally poorly remurated and this affects their commitment to organizational goals. It could thus be argued that poor remuneration for individuals, especially those assigned the responsibility of acquiring knowledge, would affect the knowledge acquisition efforts. Narteh (2008), states that firms that intented to learn from their partners must not only have the learning intent but also the absorptive capacity to absorb new knowledge (Cohen & Levinthal, 1990; Lane, Salk&Lyles, 2000) .This implies that the competence level of the human resource, scholars have argued that firms possess individuals with different portfolio of competencies (Wright,Dunford & Snell, 2001) implying that individuals would have different absorptive capacities. It should be noted further that absorptive capacity of individuals will be affected by the qualifications, exposure, and experience of the transferees. Freeman & Hagedoom (1994) have argued that developing countries receive little technology due to lack of indigenous capabilities to capitalise on the learning processes that comes with interfirm transfer.

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Pharmaceutical companies require quality, value, service, innovation, and speed to market in order to keep pace with, let alone stay ahead of competitors.

Organizations are increasingly competing on the basis of their knowledge and expertise as technology can be replicated fairly quickly (Davenport & Prusak, 1998). It is only people's knowledge that cannot be quickly replicated and copied, as knowledge and

expertise have to be created and developed individually. Knowledge can only be employed through people (Thurow, 1997) and in this sense; an organization's people become the principal source of competitive strategic advantage for the firm (Stroh & Caligiuri, 1998; Thurow, 1997). Irrespective of the type and availability of technology, it is people that take in data, process it, sort it, categorise it, store it in the form of information and use it to build knowledge and create meaning for themselves and expertise for the organization (Allee, 1997).

In Uganda, the pharmaceutical society of Uganda (PSU) is a key player in multidisciplinary knowledge networks that need to continuously create and apply knowledge in pursuit of finding novel solutions to clients or patients immediate problems. In case of Uganda, pharmaceutical services are fragmented and sometimes non-existent in rural areas. This makes it difficult to disseminate pharmaceutical knowledge to the public especially on rational use of medicines (Kafuko, 1994).The transfer of pharmaceutical knowledge in Uganda is still a problem. This is contributed by lack of human resource for pharmacy, leadership, lack of support structures and ICT (Nakibinge, 1998). The transfer of knowledge in pharmacy is important because it helps pharmacy professionals to keep updated with new knowledge and skills. Also lack of latest information hampers delivery of knowledge to others. Pharmaceutical science is dynamic in the areas of doses of medicines, drug combination and uses. If there is interaction between pharmacy professionals and the rest of health workers, this will improve their performance in the delivery of quality services.

In a training needs assessment study carried out by the Infectious Disease Institution (IDA) at Mulago to identify human resource required in pharmacy, it was found that the majority of health centres providing antiretroviral therapy (ART), the pharmacy staff included pharmacy technicians (40%), pharmacists (23.4%) and nurses (27.7%) to bridge the gap due to shortage of pharmacy professionals (IDI, 2007). In the same study it was also found that pharmacists were only found at regional referral and private hospitals. This is one of the explanations why knowledge transfer in pharmacy is still a problem. However, there are other contributing factors to the problem which need to be investigated. The current pharmaceutical situation in Uganda may impede knowledge transfer among pharmacy professionals themselves and other health workers. The New Vision of Sept, 1st 2008 reported that Uganda requires seventeen thousand (17,000) pharmacists to render satisfactory pharmaceutical services and yet there are only 350 pharmacists in Uganda at present.

1.2   Statement of the problem

In spite of the existence of learning manuals, books on pharmacy and pharmacy professionals, the problem of knowledge transfer in pharmacies has been experienced. Owing to its importance and developments, knowledge which is generated from time to time ought to be transferred. Pharmacies are expected to have leadership and support systems that allow transfer of knowledge, which assumption has not been confirmed in Uganda. The available information shows that the existing infrastructures do not enhance knowledge transfer in many pharmaceutical establishments (WHO, 2007). Pharmacy

professionals do not have enough time to counsel the patients on the proper use of their medications, to give health education to the public on the rational use of medicines; direct patients where to get medicines and to attend ward rounds with the rest of health workers, a clear indication of inability to transfer knowledge. This is evidenced by the many complaints facing the sector, such as irrational medicine use and administration, the dispensing of class A and B drugs without a doctor's prescription and partial doses by pharmacy personnel (Kaffuko, 1994).

All these complaints confirm a low incidence of knowledge transfer and call for further investigation. These malpractices if not addressed will result into government spending a lot of foreign exchange to purchase medicines, patients experiencing adverse medicines reactions and diseases becoming resistant to the medicines.

1.3 General objective of the study

The general objective of the study was to assess factors that affect knowledge transfer in selected pharmacies in Kampala District.

1.3.1 Specific objectives of the study

The study was guided by the following objectives:-

- To investigate the effect of leadership styles on knowledge transfer in pharmacies in Kampala District.

- To establish the effect of organizational support structures on knowledge transfer in pharmacies in Kampala District.

- To examine the effect of information communication technology on knowledge transfer in pharmacies in Kampala District.

1.4 Research questions

The study was guided by the following research questions.

- What is the effect of leadership styles on knowledge transfer in pharmacies in Kampala District?

- How do organizational support structures affect knowledge transfer in the pharmacies in Kampala District?

- What is the effect of ICT on knowledge transfer in pharmacies in Kampala District?

1.5 Hypotheses of the study

The following hypotheses were postulated:

H_1 = There is significant positive relationship between leadership styles and knowledge transfer in pharmacies in Kampala District.

H_2 = Organizational support structures significantly affect knowledge transfer in pharmacies in Kampala District.

H_3 = There is significant positive relationship between information communication technology and knowledge transfer in pharmacies in Kampala District.

1.6   Scope of the study

In the study, the dependent variable is knowledge transfer and the independent variables are leadership styles, organizational support structures and ICT.   There are so many factors that can be used to explain knowledge transfer but this study focused on four factors.   The study was conducted among the pharmacy professionals working in both private and public pharmacies in Kampala District. The researcher investigated the problem from 2003 to 2007.   This was the period when MOH conducted a lot of Continuous Professional Development (CPD) among pharmacy professionals.   The training was intended to reinforce knowledge transfer among themselves and the rest of health workers. The study took two weeks from 1st August to 14th August 2009.

1.7   Significance of the study

There is limited empirical evidence on the effect of knowledge transfer in pharmacies in Uganda. The findings of this study act as eye – opener to the pharmacy professionals and to the public who have not yet appreciated the role of pharmacy personnel in the promotion of rational use of medicines.

The research results improved the existing body of knowledge on the transfer of knowledge in the area of pharmacy. The findings of the study will assist the trainers, employers and policy makers to consider knowledge transfer during planning and training.   The findings are to be utilized by future researchers who need literature on similar problems.

1.8   Justification of the study

The study explored the opportunities for transfer of knowledge in the area of pharmacy. Pharmaceutical care delivery is undergoing constant change that affects both patients and health professionals across the spectrum care. Consequently, each health profession is searching to redefine its role in a world where teamwork and patients satisfaction are paramount. Nowicki (1996), recently made several predictions about staff development; old way are no longer sufficient and viable and will take a back seat to more innovative, efficient and effective ways of delivering quality health care and educating health professionals' greater emphasis will be put on maximizing the unique contributions of each member of the health care team and empowering health professionals with higher responsibility, accountability, ownership and personnel knowledge.

New drugs are being manufactured from time to time. Health workers need to acquire new information about the products. This study explored opportunities for avenues through which the pharmacy professionals would best enhance knowledge transfer to colleagues and other health workers in the field of pharmacy.

Hence this study investigated the knowledge transfer process and found the most efficient and effective strategies to support it.

For purposes of this study, in order to avoid ambiguity as well as create a common understanding of the terms, the operational definitions of terms are as follows.

1.9 Operational definitions

- **Class A and B drugs -** refers to classified drugs according to the National Drug Authority Act of 1993.

- **Democratic leadership -** In this type of leadership also known as participative or person-oriented leadership, the leader involves everyday in the running of the organization.

- **Autocratic leadership -** refers to a leader who alone determines policies and makes plans without consulting anybody in the organization.

- **Laissez faire leadership** - also known as free rein, refers to a leader who allows workers complete freedom of choice and can do as they like.

- **Leadership style** - This refers to the manner in which a manager in the pharmacy unit interacts with colleagues and subordinates so as to facilitate knowledge transfer in the field of pharmacy.

- **Organizational support structure** - This refers to the organizational inputs which can facilitate knowledge transfer. (Nonaka, 1994)

- **Knowledge** – This refers to tacit and explicit knowledge. (Havens & Knapp, 1998)

- **Knowledge transfer** – This is the act of transferring knowledge from one individual to another by means of mentoring, training, documentation, and other collaboration.

- **Pharmacy professionals** – These are people who have had formal training from a pharmacy recognized institution whether a university or any

other tertiary institution and registered with Allied Health
Professionals Council or Pharmacy Council. (Pharmacy Act,
1970)

1.10 Limitations to the study

During the study, the following limitations were experienced and were addressed in a
Satisfactory manner. The limitations included: (1) respondents having negative attitude
Towards the study; (2) respondents misinterpreting the purpose of the study; (3)
Respondents claiming to be very busy with high patient load to work on; (4) there were
also respondents who were not ready to give relevant information . Mechanisms to
address the limitations were instituted during the study which included protecting
respondents who wished to remain unanimous on submission of information.

CHAPTER TWO

LITERATURE REVIEW

2.0   Introduction

This chapter reviews related literature on the factors affecting knowledge transfer in pharmacies. Review of related literature was done according to the study variables namely; leadership styles, organizational support structures and ICT which are the independent variables of the study and knowledge transfer which is the dependent variable in the study. It further considers the theoretical review, in which the two theories were used to underpin the study and conceptual model were discussed in view of contributions made by earlier scholars.

While reviewing related literature before and during the study, it was found that there have been earlier studies which are related to knowledge management but little on knowledge transfer in pharmacies

2.1 Theoretical Review

The theoretical foundation adopted for this study is based on two theories, namely the systems theory and knowledge-based theory of the firm .The systems theory developed by Ludwig Von Bertalanffy (1950) is an alternative to the classical and neo-classical organization theories.   The researcher felt that organizations cannot suffice when fragmented and behave as closed social units independent of external forces (Baber,

1973). The only meaningful way therefore is to consider   an organization (including a pharmacy unit) as a whole system.

Systems theory postulates that social systems are open and of necessity exchange with the environment Katz & Kahn (as cited in Oso & Onen, 2005). The theory emphasizes the relationship between the social systems and the environment in which they operate (Hall, 2001).   The system theory is basically concerned with the problems of relationships between the systems that make up the general system and their interdependence.   As adapted in this study, the systems theory holds that leadership styles, organizational support structures and ICT must be considered in totality in order to march their impact on knowledge transfer. The knowledge Based Theory of the firm on the other hand considers knowledge as the most strategically significant resource of the firm. Its proponents argue that knowledge- based resources are usually difficult to imitate and socially complex, heterogeneous knowledge bases and capabilities among firms are the major determinants of sustained competitive advantage and superior corporative performance.

 This knowledge is embedded and carried through multiple entities including organizational culture and identify polices, routines, documents, systems and employees. Originating from the strategy management literature, this perspective builds upon and extends the resource –based view of the firm (RBV) initially promoted by Penrose (1959) and later expanded by others (Wernerfelt 1984, Barney 1991, Conner 1991).

Although the resource- based view of the firm recognizes the important role of knowledge in firms that achieve a competitive advantage, proponents of the knowledge –

based view argue that the resource – based perspective does not go that enough. Specifically, the RBV treats knowledge as a genetic resource rather than having special characteristics. It therefore does not distinguish between different types of knowledge – based capabilities. Information technologies can play an important role in the knowledge – based view of the firm in that systems can be used to synthesize, enhance, and expedite large – scale intra and inter – firm knowledge transfer (Alavi & Leidner, 2001).The two theories provided a strong foundation for the arguments in this study. Against this background, the author argues that KT gives advantage to those pharmacies that share, both tacit and explicit knowledge. Further, the researcher argues that with good leadership in pharmacies the author anticipates that the sharing of knowledge will improve. The author also anticipates that a good organizational structure and ICT in place, KT will augment.

2.2. Conceptual Framework

The variance in knowledge transfer is explained by leadership styles of democratic, autocratic and laissez-faire leadership. Further, the variance in knowledge transfer is explained by organizational support structures of knowledge exchange policies, reward system, training and development. Lastly, the variance in KT is explained by ICT infrastructure and ICT know-how. As affirmed by various researchers, a firm gains competitive advantage through knowledge transfer practices (Davenpart and Prusak, 1998; Zack, 1999; Alavi & Leidner, 2001). .The conceptualized relationships are diagrammatically presented below.

Figure 2.1 below shows the hypothesized relationship between the independent variables and the dependent variable.

Independent variables (IVs)

Factors affecting knowledge transfer

• Leadership styles - Democratic leadership - Autocratic leadership - Laissez-faire leadership	

Dependent variable (DV)

• Knowledge transfer - Sharing tacit knowledge - Sharing explicit knowledge

• Organizational support structures - Knowledge exchange policies - Reward system - Training and development

• Information Communication Technology (ICT) - ICT Infrastructure - ICT know-how

Source: Li-Hua, (2009)

The conceptual framework above shows the relationship between the independent variables and dependent variable. The model explained that if a pharmacy lacked leadership, organizational support structures and ICT, then the transfer of knowledge would be problematic. This model is underpinned by the systems theory and knowledge-based theory of the firm, the systems theory as debated by Bertalanffy (1950) as cited by Oso & Onen,(2005) and knowledge-based theory of the firm as cited by Kabaza (2010). Further, the Model presents the independent variables which include leadership styles, organizational support structures and information communication technology whereas knowledge transfer is the dependent variable. Some variables, organizational support

structures and ICT were adapted from Li-Hua, (2009) and others, leadership styles from literature. The leadership styles are composed of three dimensions, democratic leadership, autocratic leadership and laissez-faire leadership whereas organizational support structures include three dimensions, knowledge exchange policies, reward system and training and development. Information communication technology includes ICT infrastructure and ICT know-how. The researcher anticipates that leadership, organizational support structure and ICT are likely to have an impact on knowledge transfer.

2.3   Knowledge: An overview

Creating an accurate definition of knowledge has challenged many researchers (Bhatt, 2000). However, the commonly held view is that knowledge is "content plus structure of the individual's cognitive system" (Propp, 1999). Content can be viewed as disorganized information which becomes knowledge when meaning is provided by the cognitive system of the individual. The cognitive system is a combination of beliefs, attitudes, values, opinions, presumptions and memories that governs the way meaning is provided. Marakas (1999) sums it up succinctly by defining knowledge as "meaning made by the mind."

Knowledge has become one of the critical driving forces for organizational survival since organizations are increasing levering the valued knowledge and hiring 'minds 'more than hands' (Wiing, 2005). Knowledge assets include knowledge bases, documents, policies and procedures as well as inarticulate expertise and experience across organizations often

characterized as either tacit or explicit. Whereas tacit knowledge is resident within the mind, behaviours and perceptions of individuals, explicit is deeply rooted in action, procedures, routines, ideas and commitment (Nonaka 1991; Nonaka & Tacheuchi, 1995). According to Nonaka (1991), thriving organizations are those that consistently create knowledge, disseminate it widely throughout the organization and quickly embody it in new technologies and products which process is coined in knowledge transfer. It should be appreciated that knowledge transfer has become an important feature for organizational survival (Hoon, 2003; Payne & Sheehan, 2004). Many researchers have hinted on KT as a key strategy to achieving organizational efficiency, staying ahead of competition, maximizing organizational potential, managing by reducing the loss of intellectual capital from employees who retire, reducing the loss of developing new service and making knowledge accessible to all employees (Argote & Ingram, 2000 ; Birknshaw, 2001; Syed – IKH Sam & Rowland, 2004).

Drucker (1995) stated, "We are entering the knowledge society in which the basic economic resource is no longer capital ---but it and will be knowledge." Knowledge is a broad concept that generally involves insights, interpretations and information. According to Nonaka & Takeuchi (1995), "Information is a flow of messages, while knowledge is created by that very flow of information, anchored in the beliefs and commitments of its holder." Knowledge is viewed as information that has been interpreted and processed in light of a person own experience, needs and biases (Kock & McQueen, 1998), which is then acted upon to actively guide decisions and problem

solving (Liebowitz & Beckman, 1998). That is why Sveiby (2001) defined knowledge as a "capacity to act." While some researchers assume knowledge to be universal, objective, transferable (when coded) and controllable, Krogh & Ross (1996) argued that knowledge is dynamic and subjective in nature (cited in Nielsen, 2000). Sveiby (2001), states that knowledge is dynamic, personal and quite different data and information.

Captured knowledge is a representation of a person's knowledge. This knowledge can be observed in many forms such as training manuals, video tapes, audio CD-ROMs, databases, policies, seminars and publications (Ernst & Young, 1996), as well as hypotheses, models and theories (Kock & McQueen, 1998). When a person's knowledge of how to accomplish a task is recognized and adopted as standard procedure, that knowledge is said to be successfully embedded into the organization (Ernst & Young, 1996)

2.4 Concept of knowledge transfer

Argote and Ingram (2000) define knowledge transfer as "the process through which one unit for example group, department and division is affected by the experience of another." They further point out the transfer of organizational knowledge, routine, best practice or otherwise can be observed through changes in the knowledge or performance of recipient units. Although the importance of disseminative capacity regarding knowledge transfer has been illustrated in numerous conceptual studies, substantial empirical support is largely absent (Minbaeva &Michailova, 2004). .

Research into knowledge transfer and knowledge acquisition has focused on separating the overall transfer into comprehensible sub-processes. An interactive model of technology transfer has been developed (Trott, 1995); describing stages in the knowledge transfer process; for in-ward technology transfer (i.e. knowledge acquisition) to be successful, an organization must be able to search and scan for information which is new to the organization, recognize the potential benefit of this information by associating it with internal organizational needs and capabilities, communicate these to and assimilate them within the organization and apply them for competitive advantage. Four stages are thus required: awareness, association, assimilation and application. Non-routine scanning, prior knowledge, internal communication and internal knowledge accumulation are key activities affecting an organization's knowledge acquisition ability (Mintzbers, 1973).

Organizations' internal characteristics have a significant influence on their abilities to acquire knowledge. A review of the literature on organizational learning (Hall, 2001), lists five sub-processes in knowledge acquisition within a firm entailing drawing on knowledge available at the organization's birth, learning by experience, learning by observing other organizations, grafting onto itself components that possess knowledge needed but not possessed by the organization and noticing or searching for information about organization's environment and performance. The first two sub-processes rely solely on internal resources. The remainder is influenced by the shape of the external

environment. Moving down the list, the acquisition processes become more active. Clearly, looking to outside sources of knowledge requires more effort and activity on the part of the acquiring organization.

Knowledge transfer in the area of pharmacy is the practical problem of transferring pharmaceutical knowledge from one part of the organization to another or all other parts of the organization due to number of factors, which researcher hypothesized as leadership styles, organizational support structures, and ICT. Knowledge transfer seeks to organize, create, capture or distribute knowledge and ensure its availability for future users.

There are many factors which complicate knowledge transfer which involve;

The inability to recognize & articulate "compiled" or highly intuitive competencies – tacit knowledge idea (Nonaka & Takeuchi ,1995), Geography or distance (Galbraith, 1990), Limitations of ICTs (Roberts, 2000), Lack of a shared/super ordinate social identify (Kane, Argote, & Levine 2005), Areas of expertise, Language, Internal conflicts (for example, professional territoriality), Generational differences, Union-management relations, incentives, the use of visual representations to transfer knowledge (Knowledge visualization), Previous exposure or experience with something, Misconceptions, Faulty information, Organizational culture non-conducive to knowledge sharing (the "Knowledge is power" culture), motivational issues and lack of trust (Stuhlman, 2005).

Knowledge transfer has been a challenge for organizations. Its importance has grown in increasing decades for three related reasons. First, knowledge appears to increasing

proportion of many organizations total assets. Organizations have moved away from hierarchical methods of control towards more decentralized organizational structures and increased employee involvement (Levine, 1995) resulted in more creativity by frontline employees and subunits, but fewer obvious organizational paths through which the transfer can occur. Finally, advances in information technology have created new means of knowledge transfer, innovations such Lotus notes, the internet, and intranets all hold the potential for increase diffusion of innovations. However, technology alone cannot solve the problem of knowledge transfer, organizational structures and practices must be facilitated and increase transfers (Levine & April, 1998). Knowledge transfer is only valuable when it is integrated into a set of policies, knowledge generation and capture.

The compelling question emerging from this picture is how to model knowledge transfer, in order to achieve a richer understanding of the phenomenon. Few authors have explicitly developed models of knowledge transfer. Szulanski's (2000) model, a five-stage transfer process, is particularly effective in predicting the process performance based on the analysis of source and recipient characteristics and relationship. The one by Argote & Ophir (2000) considers three basic elements (members, tasks and tools) and explains how their possible interactions (sub-networks) affect the effectiveness of creation, retention and transfer. Zack (1999) states that a model in which the interaction between source and recipient is mediated by technology, explains how organizational and technical resources can be aligned to exploit explicit knowledge

Even more important to knowledge transfer modeling is recognizing the critical elements emerging from the specific frameworks. Two main perspectives are adopted in modeling knowledge transfer. Knowledge can be viewed as an object, which can be directly observed, stored and successively reused and transferred, or as a process, where a flow of interacting changes take place in people who learn (Sveiby, 1997). Although most management literature claims the need of embracing both perspectives, the latter are based on quite radically different hypotheses. As discussed by Szulauski (2000), the object perspective can fail to predict difficulties in knowledge transfer and can hide several meaningful issues. However, this perspective allows the role of technology to be analyzed in a very effective way.

According to the study conducted by Newell (1999), knowledge transfer has been treated as a linear process flowing from knowledge sender and ending with the knowledge receiver. However, there are factors which impede this transfer in developing countries. One set relates to the characteristics of the transferor and transferee and these are called unique factors. The other set of factors relate to the interaction between the transferor and transferee and these are called relationship factors. Newell (1999), states that unique factors are peculiar to either the transferor's ability to transfer the knowledge or the transferee's ability to absorb the knowledge. Accordingly, unique factors have been further classified into transferor related and transferee related factors.

The transferor related factors include the type of knowledge to be transferred, the method of transfer adopted as well as the teaching capacity of the transferor. The nature of knowledge to be transferred as well as the medium of transfer adopted could impact on the efficiency of the transfer process. In studies conducted by Kogut & Zander, (1992), they looked at technological and managerial knowledge. Technological knowledge for the purpose of this study was assumed to be partly explicit that could be easy to codify and transfer because it is embodied in designs, blueprints, drawings and specifications (Tsang, 1999). Managerial knowledge on the other hand is assumed to be tacit, context specific, very difficult to codify and communicate and therefore difficult to transfer without the personal involvement of the knowledge holder as it resides mostly in human mind (Tsang, 1999). It is argued that a substantial amount of technical knowledge would be transferred compared to managerial knowledge in developed-developing country interfirm collaborations. Closely related to the nature knowledge is the method of transfer adopted by the transferor. In transferring knowledge, various methods can be adopted but their effectiveness may vary depending on the type of knowledge transferred. The transferor may choose from simple on-the-job training in the organization or in corporation with other interested party. However, on the job training is likely to be effective for transferring less-complex and codified knowledge (Hansen, 1999).

The last transferor factor affecting KT in developing country is the teaching capacity of the transferor. The teaching capacity of the transferors could be affected by the age and complexity of the knowledge, the experience in transferring knowledge as well as the

transfer intents of the transferors. Complex knowledge is likely to involve many components and may be difficult to understand let alone communicate to others (Hansen, 1999). However, this complexity is likely to reduce with age thereby making teaching and transfer less problematic. Also the more experienced the transferors become in knowledge transfer the easier it will be for them to transfer knowledge to other contexts because of the learning curve effect. Similarly, teaching intent is also likely to affect the type of knowledge transferred. In situations where the transferor perceives opportunistic behaviours to exist in its partner, it is likely to limit the amount of knowledge transferred, thereby affecting its transfer capacity. Norman (2002) for instance found a negative relationship between knowledge protection and trust.

In a study conducted by Narteh (2006), he found three transferee related factors which affect knowledge transfer in developing countries (Africa). The factors are learning intent or objective, reward systems and absorptive capacity. The literature has argued that firms may have different objectives for forming a corporation (Faulkner, 1995; Kuada, 2002) and that it is not automatic that firms entering into a corporation will learn and acquire the needed knowledge from their partners unless they possesses clear learning intent and allocate adequate resources to support the learning process (Hamel, 1991; Inkpen & Crossman, 1995; Inkpen, 2000). Learning intent implies that the partner must value knowledge acquisition as major goal or objective for the formation of the corporation. Studies have shown that most Japanese-Western corporation have ended leaking knowledge to the Japanese partners because they had clear learning intent and articulated

this to their employees working in the sister organization (Hamel & Pronald., 1989; Teramato, Richer & Lwasaki, 1993).

Though there are various types of knowledge classifications as discussed earlier on, one common factor is that knowledge has peculiar characteristics that cut across all dimensions and categorizations. There are six characteristics that distinguish knowledge from other types of resources (Ahmed et al, 2001). The first is that knowledge is sticky as it is usually embedded in people's minds and tends to remain there. The second is its extraordinary leverage and increasing returns because knowledge does not diminish in value. In contrast to value chain, the intangible value is seen as value network which grows each time a transfer takes place because knowledge does not leave the transferee but doubles effectively as it tends to grow by sharing (Davenport & Prusak, 1998: Inkpen & Beamish, 1997). Third, it needs to be refreshed and rejuvenated because some of it becomes obsolete with time. Fourth, knowledge per say has no tangible value which makes its value difficult to measure; its value derives from the outcomes of its application. Fifth, as knowledge grows it tends to branch and fragment and likely to become less valuable as it is widely shared. The essence of the peculiar characteristics of knowledge gives rise to a few fundamental issues: First, the discussion reveals how individuals learn from colleagues; second, the need for individuals to interact and share what they know in order to achieve organizational objectives. Third, beneath explicitly communicable knowledge is the tacit knowledge that is not easily communicated and articulated. Fourth, the need for well established systems to codify individuals' outside

organizations boundaries and updating and renewing existing knowledge bases (Birkinshaw, 2001). Against this background, the need for such a study becomes imperative.

Since knowledge transfer is a critical issue for survival for every organization, this study investigated the factors affecting knowledge transfer in pharmacies in Uganda with focus in Kampala district. It was thus hypothesized that leadership styles, organizational support structures and ICT have significant relationship with knowledge transfer.

2.5. Leadership styles and knowledge transfer

There have been earlier studies done, for example on the influence of leadership on organizational culture and its effects on knowledge management initiative (Ahmad, 2004). He states that leadership is the single most important factor in the creation of knowledge supporting culture. Other studies include barriers to knowledge transfer by Sun &Scot (2005), knowledge translation: a new perspective on knowledge transfer (Major & Cordey-Hayes, 2005), and knowledge transfer and expatriation in multinational corporation, the role of disseminative capacity (Minbaeva& Michailova, 2004). Despite of these numerous studies, there is still a dearth of research on the effect of leadership style on knowledge transfer in pharmacies.

Behavioral theorists proposed three classic leadership styles, which anyone in a position of leadership would use. The leadership styles include; autocratic or authoritarian leadership, democratic or participative leadership and laissez-faire or free rain leadership.

Kreitner (1995) seem to agree that any leader is likely to be democratic, authoritarian, or laissez-faire in the course of his leadership. As regards to democratic style, Kreitner (1995) makes reference to an early study, which demonstrated that democratic leaders were preferred to either authoritarian or laissez-faire leaders. He asserts that this is because democratic leaders tend to encourage participation in decision-making and that this motivates followers. It must however, be pointed out that sometimes it's very difficult to draw a clear line between these styles, as leaders vary them with situations. In the health institutions it's also very difficult to use a genuine democratic style without being compromised. This as Musaazi (1982) observed is neither necessary nor expected of a manager if an institution is to be well run.

Under the democratic style the focus of power is more with the group as a whole and there is greater interaction within the group (Burns, 1978). Thus, emphasis under the democratic style is on the leader and group participation in the formulation of the goals of the organization. Musaazi (1982) observes that decisions about organizational matters are arrived at after consultation and communication with various people within the organization in a democratic system. The implication here is that leaders derive their power and authority from the people they lead. This is why they take the trouble to make every one feel important through involvement in decision-making, delegation of work and encouraging feedback. This is not done to buy favors, because as Stephen & Docenzo (2002) argue, it is the leader who makes the final decision. This is to say that the team or group may do the ground work leading to the decision, but the final input of

the leader is paramount. However, if the transfer of knowledge is to take place in pharmacies, leaders of those pharmacies have to take the lead and their behaviors need to be consistent with a philosophy of openness and their willingness to share knowledge.

A democratic manager in charge of pharmacy unit is one who supposedly involves pharmacy personnel in the running of the unit. Musaazi (1982) agrees that this kind of leadership promotes staff morale and identification with the pharmacy unit vision and mission. This is because the relationship between the head of the unit and the rest of the health workers is good. They all see each other as one family who share the same values and aspirations. This in turn will promote transfer of knowledge. Democratic style in general supports knowledge transfer as compared to autocratic and laissez-faire styles. According to a study conducted by (Goh, 1998& Garvin, 1993) it was stated that leaders have a major influence on the organizational culture and the support conditions needed for knowledge transfer. It was further argued that as role models, through their visible actions, leaders can encourage a willingness in other employees to emulate them. In this context, if leadership shows their willingness transfer knowledge in the organization the rest of staff will follow the same.

Authoritarian leaders on the other hand centralize all authority and responsibility to themselves. Whatever work is assigned to group members is clearly defined according to Kreitner (1995). Normally the relationship between the leader and the subordinates is confrontational because the leader does not encourage any initiative or criticism from subordinates. The decisions they make are unilateral and keep everybody on the

receiving of instructions and commands. The staff has limited opportunities to use their

talents and knowledge. In the pharmacy practice there is needed to be innovative but

autocratic leadership does not encourage this. In the pharmaceutical sector, authoritarian

managers insulate themselves with a lot of powers and do not tolerate anybody who

questions their authority according Drucker (1995). They carry the impression that they

don't trust anyone to make a decision as good as theirs. They cultivate an environment of

mistrust and fear around themselves. Drucker (1995) calls this state of affairs

"dangerous" because it kills the initiative of pharmacy personnel to contribute to the

development of the pharmacy profession and transfer of pharmaceutical knowledge.

Autocratic leadership in general does not support knowledge transfers in pharmacies.

This is supported by Flippo (1984), who found in his study that autocratic style does not

support knowledge transfer. In another study conducted by Axtel, Maitlis & Yeata

(2007), identified key environmental variable affecting KT and likely to be of central

importance in creating a "transfer friendly" climate where supervisors are supportive in

the process of KT. This facilitates KT.

The laissez-faire leadership style represents the absence of formal leadership in an

organization. The leader leaves the running of the pharmacy unit to nobody in particular;

instead group members are left to do as they please, Kreitner (1995). In other words,

there is no specific person to direct the activities of others as we see in the case of

authoritarian and democratic leadership styles. Burns (1978) makes reference to genuine

laissez-faire leaders as those who just stand aside and let individuals or groups make

decisions on their own. He adds that such a leader is ever willing and ready to intervene whenever help is needed. He plays a supportive role in the organization. In other words according to Burns (1978) creates the impression that in a genuine laissez-faire style the leader does not abdicate his responsibilities as has been implied by many writers. He simply stands aside to let group members make decisions on their own, but is always ready and willing to intervene whenever needed. It appears that this style fosters knowledge transfer in pharmacy practice as it fosters innovation.

Drucker (1995) however, points out that the laissez-faire style is totally impractical in most organizations. He argues that a head of organization like a pharmacy, plans, organizes controls, coordinates and does many other functions in the department on a daily basis. He seems to suggest here that the functions of the in-charge are too crucial for the effective running that it cannot be left; "to whom it may concern". It must be noted that mismanagement in pharmacy units can cause conditions akin to laissez-faire. This nearly shows that heading a pharmacy unit/department cannot be achieved through 'bossing' everyone around or leaving it 'to whom it may concern'. This is because it will affect the transactions in the pharmaceutical organization. Although laissez-faire style encourages innovation, in the final analysis does not support knowledge transfer as leaders are not fully involved in the work. In the pharmacy profession, there are gaps which need to be addressed if effective knowledge transfer is to succeed. These include; focused leadership, leaders who look at the future generation, leaders who are innovative,

capable of initiating new programmes in pharmacy and leaders who can instill in young generation the concept of quality pharmaceutical services.

Leaders have to play an important role in establishing some of the key conditions to facilitate knowledge transfer. They have a major influence on the organizational culture and the support conditions needed for knowledge transfer. Leaders have to show a willingness to share information and knowledge freely and to seek it from others in the organization. This is very crucial in the field of pharmacy, as new information is continuously coming up about medicines. They have to convey the attitude that knowledge to solve organizational problems and improve organization's effectiveness can exist at any level of the organization and not exclusively in the upper levels of the hierarchy. Such an attitude creates an environment of trust, and influences attitudes throughout the organization about information sharing and collaboration. As role models, through their visible actions, leaders can encourage a willingness in other employees to emulate them. They can convey the culture of the organization as one of collaboration and sharing of knowledge and information and increase the propensity of employees to participate (Swee, 2002). Many studies have been conducted on the role leaders in organizations for example; Kakatura (2010) investigated the effects of leadership on employees in NON-Government organizations in Uganda. However, in her findings there are no dimensions on the role of leaders in the transfer of knowledge in pharmacies. So, there is a gap in this area which requires to be investigated

2.6 Organizational support structures and knowledge transfer

In a study by Syed-Ikhsan & Rowland (2004), done on knowledge management in a public organization :a study on the relationship between organizational elements and the performance of knowledge transfer, it was recommended that it is necessary for organizations to consider some of the elements that show a relationship between the tested in implementing a knowledge management strategy in the organization. In another study conducted by Bender& Fish (2000) on the transfer of knowledge and the retention of expertise: the continuing need for global assignments, the results stressed the importance of retaining experts in the organization, if knowledge transfer is to be attained. In spite of these studies, no study has been conducted to investigate the effect of organizational support structures on their effects in pharmacies. This study addressed this gap because we cannot achieve knowledge transfer without organizational support structures in place.

Organizational structure refers to the way people and jobs in an organization are arranged so that the work of the organization can be performed (Encyclopedia of *management,* 2000). For the purpose of this study, the organizational structure will only be discussed in terms of knowledge exchange policies, reward system, training and development.

One of the factors that influence the creation and transfer of knowledge in an organization is the status of information and documents. Certain items of information and documents are restricted to certain levels of employee, which prevents the flow of knowledge across the organization. In the ministry of health documents and information are classified into four classifications, which are "open", "confidential", "secret" and "top

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secret". The status of the documentation in the Ministry has an implication for the sharing of knowledge between individuals, divisions and organizations (WHO, 2007).

According to DeTienne, Dyer, Hoopes and Harris (2004), organizational culture "exerts a powerful influence on how companies manage knowledge" and thus becomes a sought-after mechanism to promote free-flow of information among employees and across department lines. De Long & Fahey (2000) identified four means in which organizational culture influences the behaviors central to knowledge creation, sharing and use. Firstly, culture and subculture shape the assumptions about what knowledge is and which knowledge is worth transferring. Secondly, culture defines the relationships between individual and organizational knowledge, determining who is expected to control specific knowledge as well as who must share it and who can hoard it. Thirdly, culture creates the context for social interaction and determines how knowledge will be used in particular situations. And finally, culture shapes the process by which new knowledge is legitimated and transferred in the organization.

In another study by Knapp & Yu (1999), they further explained the dynamics of organizational culture which eventually lead to cohesiveness internalizations of knowledge management initiatives. Specifically, they asserted that organizational culture "provides employees with the permission, the prescription and the incentives…" to execute the knowledge transfer initiatives. Guptara (1999) proposed nature of hierarchies of the organizational culture as the major obstacle to promote the ease of communication

and interpersonal relationships which are critical for knowledge management implementation. Chin-loy (2003) reasoned that since organizational culture influences decision-making, management style, employee relations and behavior pattern in the organizations any knowledge management initiatives must be' fit' with the organizational culture. Devenport and Prusat (1998) asserted that values and beliefs "… are integral to knowledge, determining the large part what the knower sees, absorbs, and concludes from observations". This contention is further supported by Baker and Baker (2001) whom succinctly concluded "although a variety of technologies can support it, knowledge transfer is about changing people's behavior to make their experience and expertise available to others". This implies that organizational culture is the 'very core' of knowledge transfer.

In terms of organizational structure, formal and hierarchal organizational structure is claimed to prevent knowledge transfer imitative (Guptara, 1999) Learning organization and the formation of communities of practice are among the highly cited organizational structures that make knowledge transfer more permeable. In a traditional model, large organizations normally have many layers of managers where "formal reporting structures are more detailed at the top than ate the bottom" (Davenpert & Prusak, 2000). Decision making flows vertically up and down this chain of command, and often communication also flows only up and down this chain of command. "This kind of communication/decision making can significantly slow organizational processes, which can be very detrimental to the organization" (Huczynski, 1989).

Formal organizational structures that constrain reporting solely within divisional channels limit each division's access to knowledge accumulated by other divisions of the corporation. "Such 'vertical' structures raise barriers to knowledge transfers between different divisions because each division is operated largely as if an independent firm" (Lord & Ranft, 2000) Most of the communication functions are "top down" and too slow to meet employee needs. It takes too much time for information to filter down through every level of the organization. According to Kludge, Stein & Licht (2001) , effective top-down and bottom – up communication is very important in making existing knowledge profitable to the organization effective communication across hierarchies is very tricky (Kludge et al, 2001). Therefore, to make knowledge accessible to knowledge seekers it is important to make the path short by the knowledge providers. This in turn will enhance knowledge creation and knowledge in the organization easy.   Another important factor in knowledge transfer is an appropriate infrastructure to reinforce and support it.   Breaking down hierarchies in the organization enables knowledge transfer (Nonaka, 1994). Organizations that maintain hierarchical levels and silos will not encourage it.   Knowledge in such organization frequently becomes "sticky," that is, residing in one area or silo and not easily moved to other parts of the organization. (Bartlett & Ghoshal, 1998). Therefore, in order to ease knowledge transfer in pharmacy, it is necessary to create directorates within the sector.

Swee (2002), in his study suggested developing horizontal communication flows, which goes beyond using technology.   He stated that one approach is to encourage cross-functional teams and team work in the organization.   This is very crucial for health

workers. A pharmaceutical section can design tasks that require cross-functional collaboration to succeed, for example in the management of anti retroviral therapy (ART). This forces individuals and groups from the silo mentality and to begin learning to communicate horizontally. Swee (2002) states that knowledge exchange policy should be instituted in the organization if knowledge transfer is to realized. He argues that without a proper policy in place knowledge transfer will be impossible to succeed in the organization.

Another element in organizational support is a reward system. Bartlett an Ghoshal (1998) suggest that one way to encourage knowledge transfer is to base rewards to groups on more than financial success; rewarding only financial success tends to encourage competition and lack of sharing. Measurement and reward systems that favour a more balanced "score card" that take into account collaboration and the sharing of best practices can play a critical role in encouraging knowledge transfer. The key is to establish new processes that reward and encourage horizontal communication and the sharing of information in the organization. (Davenport & Prusak, 1998). Time is also important factor. Appropriate structures and processes may be put in place but employees in the pharmacy need an opportunity to use them. The organization needs to free up time for them to engage in such activities. This suggests that the organizations design the structure of reward system and the availability of time as a resource can give further impetus to effective knowledge transfer (Swee, 2002).

According to Mullins (1999) new reward techniques have been formulated to raise the morale of workers .They include commissions to rewarding leadership effectiveness, new goals, pay for knowledge workers in teams, skill pay and competence pay.

Knowledge transfer can be boosted by non-monetary rewards, also called psychological rewards (Etzioni, 1999).The author indicates that employees often put their effort where they will be rewarded. According to him, the job content should include advancement in knowledge, recognition and responsibility; maintaining that such inducements can cause employee behavior to change positively towards knowledge transfer. According to Davar, [1996], rewards can take the form of fringe benefits whose major objective is to encourage employees transfer knowledge to the organization .Zaharias, Samiotis,& Poulymenakou (2001) argue that knowledge gained by employees through training will enable them to translate their knowledge into organizations' routine, competences, job descriptions and business processes, plans, strategies and cultures. Employees should be given constant training to improve their knowledge and capabilities. According to Smith (2001), employees with luck of adequate training, or explicit knowledge, struggle to keep up. Therefore it is important for the organization to have proper training program to enable employees to gain knowledge and contribute to the creation and transfer knowledge in the organization.

Organizational members need to be aware of the needs to manage knowledge transfer and to recognize it as a key resource for viability of an organization and its staff. This can be

addressed if proper training is provided to its employees. Training of staff enhances promotion of staff knowledge and skills and which is a prerequisite to effective organization performance. Through training, organizations create and acquire knowledge upon which important decisions are made. (Swee, 2002). In pharmacy there gaps to be addressed as far training is concerned .One area which need to be addressed is the CPD. Therefore, there is a need to develop a curriculum for CPD. This should be done after needs assessment. In spite of the need CPD no study has been conducted to identify training needs for pharmacy professionals.

2.7 Information and Communication Technology and knowledge transfer (ICT)

In a study by Muhenda & Lwanga (2009) conducted to investigate the effect of information communication Technologies on intra-Knowledge transfers success among information workers in Higher public Institutions of learning in Uganda , it was recommended that institutions of learning should invest substantially in training information workers in ICTs. Other researchers have also acknowledged the importance of ICT in knowledge management initiatives. Results of such studies confirm how technology plays a key role in knowledge transfer in organizations (Kim & Lee,2006; Wiig, 1999). According to Saito,Umemoto and Ikeda, (2007) for instance, technologies can be categorized as collaboration technologies that support the creation of personalized knowledge; dissemination technologies that support the transfer of personalized knowledge, discovery technologies that support the creation of especially codified knowledge and repository technologies that support the codified knowledge.

Kim and Lee specifically reported a positive significant effect between employee usage of IT applications and levels of employee knowledge-sharing capabilities for public sector employees'. This finding is amplified by Syed-Ikhsan and Rowland (2004) who reported that ICT infrastructure allow individuals to create and share knowledge effectively and contribute to knowledge performance. Their study found positive a significant relationship between ICT know how and the performance of knowledge transfer. This study addressed this gap because we cannot appreciate knowledge transfer efforts without paying attention to technology, and to the impact of technology on the process. And it is against this background that this study considered ICT infrastructure, and ICT know how as dimensions of information communication technologies and they affect knowledge transfer.

Many factors have transformed the way organizations view knowledge and knowledge transfer, but perhaps most pivotal is the dramatically extended reach of knowledge through new information technology (*world development report, 1998/1999*). However, most of the literature reviewed suggests that technology, particularly ICT, is not what knowledge management is. Technology is a key enabler is implementing a successful knowledge transfer program and strategy. Although technology is an enabler to knowledge transfer, it is still considered as the most effective means of capturing, storing, transforming and disseminating information.

Referring to the technological dimension, the huge potential of information and communication technologies (ICTs) to support knowledge transfer has been stressed by

many authors since the pioneer work by Daft & Lengel (1986). The current development of ICTs is now increasing opportunities; knowledge can be captured, codified and stored in repositories, where it can be easily shared, accessed and used by anyone in the organization (Abecker, Bernardi, Hinkelmann, Kuhn & Sintek, 1998). However, the real value of technology in supporting knowledge transfer is not yet fully understood. Many applications seem to be inherently limited, better suited to information processing than to knowledge management (Cross & Baird, 2000; McDermott, 1999; Luftman & Brier, 1999). While explicit knowledge can be effectively turned into databases or electronic documents, the same task can be much harder when knowledge is mostly tacit (Brown & Duguid, 2000). Also the crucial role of practice in learning processes may suggest relying on face-to-face communication rather than on electronic document exchange (Cook & Brown, 1999). Most authors consider technology insufficient without human intervention, and companies are always in search of the right balance between technology and human centered approaches.

Lin & Tseng (2005) state that organizations should have a well developed technology that is easily accessible and easy to leverage knowledge transfer. Zack (1999) believes that information technology plays four different roles in knowledge transfer, namely; obtaining knowledge; defining, storing, categorizing, indexing and linking knowledge related digital items; seeking and identifying related content and lastly, flexibly express the content based on the various utilization background. Laudon & Laudon (1998) has named four classes of information transfer used in organizations (e.g. pharmaceutical

industry).The first class is for knowledge creation such as Computer Aided design systems. The second class is under office automation systems such as Word Processors and Databases. The third class is systems that facilitate knowledge sharing such as intranets, internet, group ware, document management systems, electronic mails and bulletin boards. The fourth class is for knowledge capture and codification with artificial intelligence technology (Carneiro, 2001). Organizational scattered data can be integrated through ICT via the network (Hoon, 2003).

In pharmaceutical industries, ICT plays an important role on how the pharmacies operate, as they can collect and share innovative ideas from and between every corner of the organization and finally come up with excellent products and new processes which can significantly out perform the competitors (Lin & Wei, 2005). ICT use and knowledge transfer are closely linked as ICT enables rapid search, access and retrieval of information and supports communication and collaboration among organizational employees at the same time overcoming geographical boundaries (Lin, 2007; Carrillo & Chinowsky, 2006.

In pharmacy practice, the use of ICT is likely to make the internal and external collaboration faster and more efficient. As some of the benefits of knowledge transfer include time and lost saving, the use of the computer as a tool to organize, store, and retrieve knowledge as soon as it is required would be beneficial towards the organization. In this context, ICT can be considered as a key enabler to knowledge transfer. Therefore,

ICT in place in pharmacies supports knowledge transfer to individuals and other organizations.

Effective knowledge transfer depends on people sharing their knowledge through computer facilities that users throughout the organization have access to. Bloodgood and Salisbury argue that IT can be seen as embodying two general capabilities with respect to knowledge. First, knowledge may be modified into a decision support or expert system by making it explicit. Second, it helps to keep track of persons with particular expertise and enabling rapid communication between them (Bloodgood & Salisbury, 2001) With regard to ICT infrastructure, up-to-date ICT infrastructure will help employees to create, share and transfer knowledge within the organization.

There have been few studies on KT in Uganda. Kaddu (2008), investigated drug registration system and its effects on the performance of National Drug Authority (NDA) and reported that data retrieval systems significantly affect the performance of NDA. However, no mention was made on knowledge transfer. Kabaza (2010), studied knowledge management in consulting Engineering firms in Uganda, which study did not stipulate transfer of knowledge in pharmacies. Furthermore, Muhenda, Lwanga and Wandaraga (2008) conducted a study on knowledge management strategies and performance improvement in management development institutes in Uganda and Tanzania. There is therefore, a gap as far as knowledge transfer in the pharmaceutical industry is concerned. This motivated the researcher to investigate the factors affecting knowledge transfer in pharmacies in Uganda

2.8 Summary of literature review

A review of the related literature revealed that some studies have been done on knowledge transfer but little in pharmacies, hence the need for this study.

The theoretical foundation used for this study is derived from the systems theory and the knowledge-based theory of the firm. The literature review focused on four variables: leadership styles, organizational support structures, ICT and knowledge transfer. Thus this study investigated the factors that affect knowledge transfer in the field of pharmacy and the extent to which knowledge is transferred among pharmacy professionals and other health workers in Uganda. Although the literature reviewed was relevant to the study, there was knowledge/information gap as most of it did not focus on knowledge transfer in pharmacies.

CHAPTER THREE

METHODOLOGY

3.0   Introduction

This chapter focuses on how the study was conducted. It describes the research design that was adopted for the study, study area, study population, methods and techniques used to determine the sample size, sampling method and procedure, data collection methods, instruments used to collect the data, test their validity and reliability, measure the variables of the study and data analysis.

3.1   Research design

The study was carried out using cross-sectional survey and correlational research designs. A cross-sectional survey was used because the researcher wanted to cover different cadres of pharmacy personnel at the same time (pharmacists and pharmacy technicians). A correlational design enables a researcher to analyze the relationship between two or more variables, Orodho & Kombo (2002). The researcher did not have to worry about participants dropping out, since it only covered one particular point in time.   Both qualitative and quantitative research methods were used in the study.   The two approaches were chosen since they are seen to supplement each other, in that quantitative approach was used to provide hard data while the qualitative approach provided the in-depth explanations needed to answer the research objectives and to test the hypothesis. (Mugenda & Mugenda, 2003). Punch (2000) puts emphasis on the use of both qualitative

and quantitative approaches by noting that none of the two can exhaustively answer all the research questions. The units of analysis were the individual pharmacy professionals working in pharmacies. The study was more inclined to quantitative approach.

3.2 Study population

As used in survey research, population refers to the entire set of individuals, events or objects having a common observable characteristic about which generalization of research findings will be made (Mugenda & Mugenda, 2003). The study population was 122 consisting of 33 pharmacists and 89 pharmacy technicians who dispense medicines both in public and private pharmacies in Kampala district. The units of the study were pharmacies.

3.3 Study area

The study was conducted in Kampala District. Kampala district is divided into five (5) divisions. The divisions are Kawempe, Makindye, Rubaga, Nakawa and Central Division. There are pharmacies scattered in all these divisions totaling to three hundred and thirty-five (335) according to New Vision (2nd October, 2008). The study settings were pharmacies in public and private sector. This district was selected because majority of pharmacy professionals work in the district.

3.4   Sample size and selection

The idea to sample from a study population is premised in Amin, (2005) who argues that it reduces costs; economizes time thus greater speed and greater accuracy. Punch, (2000) also reported that all studies involve sampling; since not all subjects in the study population can be considered as respondents. The sample size in the study comprised of 110 subjects.   The respondents included pharmacists and pharmacy technicians (dispensers). The sample size for the pharmacy was determined according to Krejcie & Morgan (1970), which was adopted from Amin, (2005) as shown in table 3.1

Table 3. 1: Distribution of study population and sample size

Area	Category of respondent	Study population	Sample size	Sampling method
Mulago Hospital Pharmacy	Pharmacists	5	5	Purposive sampling
	Pharmacy Technicians	10	10	Purposive sampling
Kampala City Council Health Units (pharmacies)	Pharmacy Technicians	4	4	Purposive sampling
Private pharmacies in Kampala District	Pharmacy Technicians	70	59	Simple random sampling
	Pharmacists	25	24	Simple random sampling
	Pharmacy Technicians	5	5	Purposive sampling
Missionary Hospital Pharmacies – Rubaga, Nsambya, Mengo, Kibuli & Namungoona	Pharmacist	3	3	Purposive Sampling
	Pharmacy Technician	5	5	Purposive Sampling
Total		**122**	**110**	

Using Krejcie & Morgan (1970) sampling table (Appendix D), the sample size of the respondents was determined by identifying the sample size that corresponds to the size of the population for each category. The reason for categorizing the pharmacies as shown in the table above is that the researcher wanted to get key information from pharmacy personnel working in both public, private pharmacies and missionary hospital pharmacies. Thirty four (34) pharmacies were selected for the study. Made a list of pharmacies from each division and then randomly selected five (5) from each division.

3.5   Sampling methods and procedures

This study employed purposive sampling and simple random sampling strategies.

Purposive sampling was used to select the pharmacies and the category of respondents to be included in the sample. Accordingly, purposive sampling was used to select respondents from public pharmacies mostly from health units funded by government in order to collect focused information. Simple random sampling was used to select pharmacy technicians in private pharmacies. Simple random sampling ensures that each member of the target population has an equal and independent chance of being included in the sample. The researcher wrote the names of the pharmacies in Kampala district on similar pieces of paper, folded them and put them in a basket and choose every 10th number until the required were obtained. The researcher used simple random sampling because he wanted every respondent to have the same opportunity to participate in the study.

3.6 Data collection methods

The data was collected using the following methods;

3.6.1 Self administered questionnaires

Quantitative data was colleted using a self-administered questionnaire. The questionnaire is an efficient data collection method as administered questionnaire has advantage of high complete responses within a short period. Use of questionnaire also allowed the respondent's time to reflect on answers to avoid hasty responses (Mugenda & Mugenda, 2003).

3.6.2 Interviews

Qualitative data was collected using interviews. The method of interviewing is used to collect information that cannot be directly observed. It also helps the researcher to gain control over the line of questioning. Qualitative data was obtained through interviewing purposively selected respondents to supplement the data gathered through quantitative sources. The researcher used standardized open-ended interviews.

3.7 Data collection instruments

The following research instruments were used to collect data;

3.7.1 Questionnaire

The questionnaire was the major instrument used because of its convenience and efficiency in the collection of quantitative data (Amin, 2005).

The data was collected using self-administered questionnaire and interview guide.

Questionnaires are used to obtain information about the population and ensure a wide coverage of the population in a short time (Kabanza, 2001). A closed-ended structured questionnaire was used to capture data on factors affecting knowledge transfer which included leadership styles, organizational support structures, and ICT. The structured questionnaire was considered appropriate as it helps respondents make quick decisions to make a choice thereby saving time as well as helping the researcher to code the information quickly for analysis (Sekaran, 2003; Mugenda& Mugenda, 2003).This was also supported by Amin (2005) who affirmed that a questionnaire offers greater assurance for anonymity especially when handling sensitive issues in organization like pharmacies. The survey questionnaires were set in four sections. Section one has eight (8) items which were about the respondent's profile, section two, perception of leadership styles was divided into three (3) subsections; A-democratic style, B-autocratic style and C-laissez-faire style , altogether there were twelve (12) items . Section three, knowledge transfer extent which was divided into five (5) subsections; D - support structures; E – reward system; F – training and development; G – tacit knowledge; H – explicit knowledge with twenty six (26) items; section four, ICT which was subdivided into ICT infrastructure and ICT know – how with a total of nine (9) items. Five scales were used in the study to measure the relationship between leadership styles, organizational support structures, ICT and knowledge transfer. The respondents were asked to respond to how strongly they agreed or disagreed with a series of statements on a five-point Likert-type scale (ranging from 1 = strongly disagree to 5 = strongly agree).

3.7.2   Interview guide

Interview guide consisting of unstructured questions was used for the case of the in-depth interviews with key respondents to gain interviewees' point of view. A separate instrument in the form of interview guide was designed to measure the opinion of subjects on the predictors of knowledge transfer as in Appendix B. The unstructured interview guide comprised of eleven (11) open ended questions that were posed during the face – to- face interviews. The use of the interview guide allowed the collection of important information. They provided information that reflected the opinion of both the employers and employees in the pharmacies. An interview guide was used was used to information from key five (5) informants.

3.8   Pre-testing of data collection instruments

3.8.1   Validity

Validity of a data collection instrument refers to the appropriateness of the instrument to measure a variable or construct and come up with the intended results (Amin, 2005). This can be done using construct, face and content tests.   For this study, content and face validity was used to test the instruments. To establish content validity Index (CVI), the researcher employed four (4) judges; in this case respondents were used in the pre-testing of the instruments.   The results of the observations made after pharmacy staff reviews were discussed with the supervisor work-based and a few adjustments were made where necessary, in order to present a better understanding of what the items meant thereby increasing the credibility of the research.

Formula.

CVI = (No of items declared valid)/(total no of items)

For the instrument to be accepted as valid, this average index should be 0.7 or above.

In the study, validity was computed as follows:

$$CVI = \frac{52}{62} = 0.83$$

Therefore, instruments were valid.

3.8.2 Reliability

Reliability refers to the consistency of respondents in answering items in a questionnaire (Amin, 2005). Babbie (2007) concurs that reliability is the technique when applied repeatedly to the same object, yields the same results each time. One pilot test was conducted on three (3) pharmacy staff who was not currently working in any of the pharmaceutical establishment to gauge how well they understood the questions and to help debug any ambiguous questions. The pilot tests results indicated that the pharmacy personnel understood the questions the same way they were intended, which indicated the consistency of the tool. It can be measured using such tests as   test-retest, split-half, or Cronbach's Alpha method of internal consistency (Amin, 2005).   All of the measures included in the questionnaires showed adequate levels of internal consistency (Cronbach's Alpha >0.910).   Therefore, the research instruments were adopted with confidence to be administered to pharmacy personnel. (See Appendix C)

3.9 Procedure of data collection

An introductory letter was secured from the head higher degrees deparment, UMI and used to enhance the researcher's self-introduction to the respondents. After self-introduction, the researcher explained to the respondents the purpose of the study and the reasons why they were required to participate in it. The respondents were told that the study was purely academic and is part of the requirements for the award of a Masters Degree that the researcher is pursuing at UMI.

This explanation was used to solicit respondents' cooperation and willingness to participate in the study. Some of the selected pharmacy technicians and pharmacists were requested to complete and return the questionnaires promptly. The respondents who agreed to cooperate were then given the tools designed for them to fill.

They were given sufficient time of one week in which to respond without interfering with their normal duties. More questionnaires than the required number were given out to cater for those that are likely not to be returned or filled properly. A written consent was obtained from the subjects. Anonymity of respondents and confidentiality of responses were assured to the subjects to encourage honest responses. The researcher, in person, collected the data throughout the period of collecting the data. The completed questionnaires were checked for completeness.

3.10 Analysis of data

Data analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data groups (Kothari, 1990). Data analysis was

a triangulation of qualitative and quantitative approaches. It was quantitative by the structure of the questionnaire using the Likert Scale and qualitative given the use of interview guide and documentary review. Statistical package for social sciences (SPSS) version 12.0 for windows software program was used to process the data. A number of data analysis methods were used to answer research questions and test the hypotheses, namely descriptive analysis, Pearson Product-Moment Correlation Co-efficient and multiple regressions.

3.10.1 Quantitative data

After editing, each response was given a code, "1 – strongly agree", "2 – disagree", "3 – neutral", "4 –agree", 5-srongly disagree (Internal scale). These codes were entered in a code book for purpose of entering in the computer (Mugenda **&** Mugenda, 2003). Data was then entered into the computer using statistical package for social scientists (SPSS) to generate frequencies and percentages (Saunders, Lewis & Thornhill, 2003). These were then presented in tabular format for both sample characteristics and the main variables under study.

Data was further analyzed to measure the degree of relationships between independent and dependent variables using the Pearson Product – Moment Correlation Co-efficient (sometimes known as the PMCC) (Mugenda& Mugenda, 2003).

In order to carry out statistical tests of significance, the level of confidence was pre-set at 0.01(2-tailed).

Bruce (2004), states that statistical test is predicted to be accrued for a certain percentage of the population. Thus a finding at 0.05 and 0.01 levels suggests that the researcher has confidence that is 95 times and 99 times respectively out of 100, these same results will be obtained with a similar population.

The regression co-efficient analysis was used to examine the relationship of dependent variable (response variable) to specified independent variable (predictor variable).

3.10.2 Qualitative Data

The data was collected using interview guide and documentary reviews was edited and systematically organized in a manner that facilitated further analysis (Mugenda & Mugenda).

It was summarized in categories according to main themes based on the variables. This was helpful in further understanding that explanations for responses under quantitative questionnaires and in drawing up conclusions for the study.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND

INTERPRETATION OF RESULTS

4.0   Introduction

This chapter discusses the results of the analysis that is presented on the basis of

objectives postulated to assess the factors that affect knowledge transfer in pharmacies in

Kampala District. The study specifically investigated the effects of leadership styles,

organizational support structures and, ICT on the transfer of knowledge. In this chapter,

the results of the quantitative and qualitative data that was collected are presented,

analyzed and interpreted.   It particularly presents socio-demographic results and

descriptive statistics of the respondents and the results and interpretations of correlation

and regression analysis.

4.1   Response rate

Self administered questionnaires were distributed and responded to by pharmacists and

pharmacy technicians in Kampala District. Table 4.2 indicates the response rate, sample

size, questionnaires issued, returned questionnaires, valid questionnaires and invalid

questionnaires.

Table 4.2: Summary of the results of the response rate

Category	Numbers
Sample Size	110
Questionnaires Issued	110
Returned Questionnaires	60
Valid Questionnaires	59
Invalid Questionnaires	11
Response rate	54%

From accessible population of one hundred twenty two (122) respondents a sample size of one hundred ten (110) respondents was derived using Krejcie and Morgan tables (1970) as cited in Amin (2005). One hundred ten (110) respondents returned completed instruments which gave fifty four (54%) of the response rate. Mugenda & Mugenda (2003), states that a response rate of fifty percent (50%) is considered satisfactory. Of the returned filled in questionnaires, 11 (18%) were rejected as invalid. Some of the factors that affected the response rate included refusal by respondents to attend to the questionnaires at the pretext of being busy and also failing to contact the respondents as a result of change in physical location of the pharmacies.

4.2   Socio-demographic characteristics results of respondents

In order to establish the perceptions of respondents and pharmacy's profiles, descriptive statistics were computed using the data set of 59 respondents. The percentages of the

socio-demographic characteristics of the respondents were computed and these generated the categories of age, gender, level of education, time spent in current post, position in the pharmacy unit and type of pharmaceutical firm. The results of the descriptive analysis are presented, interpreted and discussed below.

4.2.1 Age distribution of respondents

The age of an individual quite often has a bearing on his/her level of thinking and perception (Piaget, 1952). In this regard, the study sought to obtain information on the age distribution of the respondents, with a view of establishing the differences in views and opinions as a result of age differences. The results of which are presented in table 4.3 below.

Table 4.3: Age of respondents

Age	Frequency(f)	Percentage (%)
21 – 30 years	30	50.8
31 – 40 years	13	22.0
41 – 50 years	9	15.3
Over 50 years	7	11.9
Total	**59**	**100.0**

From table 4.3 above, most of the respondents representing 50.8% are between the ages of 21 – 30 years, 22% of the respondents are between 31 and 40 years, 15.3% of the respondents are between 41 and 50 years and 11.9% are above 50 years. This therefore

shows that most of the respondents (50.8%) were below 30 years of age, however, mature

enough to give relevant information on the concept of knowledge in pharmacy.

4.2.2 Gender distribution of respondents

The participants of the study included both male and female staff in pharmaceutical

institutions and this analysis was aimed at establishing the distribution of the respondents

according to gender. Table 4.4 below shows the summary of the results.

Table 4.4:   Gender distribution of respondents

	Frequency (f)	Percentage (%)
Gender		
Male	23	39.0
Female	35	59.0
Total	**58**	**98.3**
Missing system	1	1.7
Total	**59**	**100**

According to table 4.4, 59% of the respondents were female while 39% were male and

1.7% was missing data. This information implies that most of the employees in the

pharmacies were female. The implication of this result is that, most employers believe

that female employees are more trust worthy than their male counterparts and could

therefore give accurate answers.

4.2.3 Level of education

In the table 4.5 below, it is apparent that all the pharmacy personnel had some professional training in pharmacy. This means that the information that they provided about the factors affecting knowledge transfer in pharmacies in Uganda is trustable, given their professional qualification and experience.

Table 4.5: Level of education

Qualification in pharmacy	Frequency (f)	Percentage (%)
Certificate in pharmacy	1	1.7
Diploma in pharmacy	41	69.5
Degree	9	15.3
Postgraduate diploma	2	3.4
Masters degree	6	10.2
Total	**59**	**100.0**

Study findings in table 4.5 revealed that 69.5% of pharmacy employees have diploma in pharmacy, 15.3% have bachelor's degree in pharmacy, 10.2% had master's degree, 3.4% had attained a post graduate diploma and 1.7% had a certificate in pharmacy. The respondents' level of education may affect the ability to acquire and transfer knowledge.

4.2.4 Time spent in current post

The study analyzed the time spent in their current position in pharmacies and the periods were predetermined by the researcher which categorized the respondents into four groups. Table 4.7 above shows the summary of the results of the analysis.

Table 4.6:   Time spent in current post

Time spent	Frequency(f)	Percentage (%)
Less than 5 years	37	62.7
6 – 10 years	12	20.3
11 – 15 years	2	3.4
Over 15 years	8	13.6
Total	**59**	**100**

As shown in the table 4.6 above, the results indicated that majority of the respondents had worked in their current pharmacies for a period of not less than 5 years which accounted for 62.7% of the total respondents. Furthermore, 20.3% were in the category of between 6 – 10 years, 13.6% were in the category of over 15 years and the least that is 3.4% were between 11– 15 years. Since majority hand worked for more than 6 years, we assume that there are likely to be well understood and could therefore offer reliable answers.

4.2.5 Position in pharmacy unit

The analysis distributed the respondents into four predetermined groups namely; pharmacist, manager, pharmacy technician (dispenser) and others.

Table 4.7: Position in the pharmacy unit

Position	Frequency (f)	Percentage (%)
Pharmacist	15	25.4
Manager	4	6.8
Pharmacy technician (Dispenser)	33	55.9
Others	7	11.9
Total	**59**	**100**

As shown in table 4.7 above, majority of the respondents were pharmacy technicians (dispensers) and these accounted for 55.9% of the total respondents. On the other hand, pharmacists and pharmaceutical managers accounted for 25.4% and 6.8% of the total respondents. Since the majority of employees in the pharmacies were pharmacy technicians they require continuous professional development in field of pharmacy to be able deliver quality pharmaceutical services.

4.2.6 Type of pharmaceutical firm

The respondents were also categorized according to type of pharmaceutical firm. The researcher predetermined the categories of pharmaceutical establishments into manufacturing, whole pharmacy, dispensing chemist, whole and retail pharmacy, and others for example hospital pharmacies. Table 4.8 shows the results of the analysis.

Table 4.8:   Summary of type of pharmaceutical firm

Pharmaceutical firm	Frequency (f)	Percentage (%)
Manufacturing	5	8.5
Whole sale pharmacy	3	5.0
Dispensing chemist	18	30.5
Whole & retail pharmacy	4	6.8
Others	29	49.2
Total	**59**	**100**

Table 4.8 shows that majority (49.2%) of the respondents were working in pharmaceutical establishment categorized as others. The researcher observed that these were mostly hospital pharmacies. Those working in dispensing chemist shops constituted 30.5%.   On the other hand 8.5% and 6.8% of the respondents were working in manufacturing and whole and retail pharmacies respectively. The least number of the respondents (5%) were working in whole pharmacies. These results indicate that majority of pharmacy personnel were interested in working in hospital pharmacies.

4.3   Descriptive analysis

4.3.1 Respondents views on knowledge transfer

The researcher wanted first of all to get the views of the respondents on how tacit and explicit knowledge is shared among pharmacy staff; respondents' views are summarized in the table 4.9 below.

Table 4.9: Description on knowledge transfer

ITEM	SD	DA	NT	A	SA
	%	%	%	%	%
I have acquired enough experience in the field of pharmacy.	3.4	5.1	8.5	3.9	44.1
I have the ability for generating new knowledge from existing knowledge.	0	3.4	6.8	49.2	40.6
I impact tacit knowledge to the pharmacy staff.	0	1.7	18.6	54.2	20.3
Supervisors disseminate tacit knowledge to their subordinates	1.7	5.1	22.0	50.8	15.3
There are processes for integrating different sources and types of knowledge.	3.4	18.6	16.9	52.5	5.1
Staff has the tacit knowledge base necessary to easily put to use.	1.7	8.5	22.0	44.1	20.3
Explicit knowledge is made accessible to all who used it.	1.7	23.7	20.3	42.3	8.5
There opportunities for exchanging to all who need it.					
There opportunities for exchanging explicit knowledge within the organisation.	0	20.3	20.3	45.8	11.9
There are opportunities for distributing explicit knowledge throughout the organisation.	3.4	22.0	20.3	44.2	6.8
There are reading materials to acquire explicit knowledge.	1.7	16.9	11.9	54.2	11.9
Staff has access to technology to acquire explicit knowledge.	8.5	27.1	11.9	44.1	6.8

<u>**Key:**</u> **SD = Strongly Disagree; DA = Disagree; NT = Neutral; A = Agree; SA = Strongly Agree**

As can be viewed in table (4.9) above, the results on the views on knowledge transfer indicated that the majority of the respondents were in agreement that there was knowledge transfer in pharmacies. The researcher wanted to know whether individuals in the pharmacies had acquired enough experience in the field of pharmacy, results show that 83.1% argued that they had acquired experience, 8.5% disagreed and also 8.5% were neutral.

On the point whether the respondents had the ability for generating new knowledge from existing knowledge, the above results show that majority, 89.8% agreed, 6.8% were neutral and 3.4% disagreed on the point. On inquiring if individuals impact tacit knowledge to fellow pharmacy staff, 74.5% agreed that they impact tacit knowledge to pharmacy staff, 18.6% of the respondents were neutral and 1.7% were neutral. Finding out whether supervisors disseminate tacit knowledge to their subordinates a large number, 66.1% agreed that supervisors disseminate tacit knowledge to them, 22% were neutral and 6.8% disagreed. On further inquiry whether there are processes for integrating different sources and types of knowledge, 57.6% of respondents who were the majority agreed on the above point, while 22% disagreed and 16.9% were neutral. The researcher also sought to find out whether staff has the tacit knowledge base necessary to easily put to use majority 64.4% agreed on the matter, 22% did not express their views and 10.2% disagreed. On the point whether explicit knowledge is made accessible to all who need it, it was found that 50.8% of the respondents were in agreement, 25.4% disagreed and 20.3% were neutral on the point. When the researcher discussed on whether there were opportunities for exchanging explicit knowledge within organisation (pharmacy), it was found that 67.7% of the respondent who were the majority agreed, 20.3% disagreed and 20.3% were neutral.

The researcher also, tried to find out whether there are opportunities for distributing explicit knowledge throughout the organisation, 50.9% of the pharmacy staff agreed on the point, 25.4% disagreed and 20.3% did not express their opinion. On the point whether there are reading materials to acquire explicit knowledge in the pharmacies,

majority, 66.1% agreed, 18.6% disagreed and 11.9% ere neutral. The researcher wanted to know whether the pharmacy staff has access to technology to acquire explicit knowledge.   50.9% of the staff who were the majority agreed, 35.6% disagreed and 11.9% remained neutral. Further more, during the discussion with one respondent he commented; *"knowledge transfer is a new concept in pharmacy and staff need to be sensitized on the issue".* It can be said from the above points that majority of pharmacy agreed that there is knowledge transfer in pharmacies generally. It can also be concluded that knowledge transfer is an important management activity in the pharmacies in Kampala. The majority of the pharmacy staff also agreed that there is ongoing process of knowledge transfer and a moderate use of information technology.

4.3.2   Respondents' views on leadership styles

The views of respondents are on leadership styles presented in table 4.10 below.

Table 4.10: Descriptive analysis on leadership styles factors

ITEM	SD	DA	NT	A	SA
	%	%	%	%	%
Democratic Style					
The leadership in general usually considers suggestions from workers	3.4	25.4	15.7	37.3	16.9
The leadership in general seeks opinion of all categories of workers on important issues.	3.4	25.9	15.7	37.3	16.9
Consultation by leadership has far reaching effects	1.7	11.9	22	27.1	33.9
Overall leadership uses popular decisions	35.6	18.6	32.2	8.5	1.7
Decisions are seldom made without everybody's impact	10.2	27.1	22.0	23.7	16.9
Autocratic Style					
Overall leadership lays out procedures and rules	5.1	8.5	6.8	52.5	27.1
Overall leadership schedules and coordinates work	1.7	11.9	18.6	37.3	25.4
Laissez – faire Style					
Overall leadership ensures complete clarity in the job	3.4	11.9	16.9	47.5	13.6
Overall leadership has no central authority	33.9	39	5.5	11.9	5.1
Overall leadership uses leave-to-do approach	13.6	32.2	23.7	16.9	3.4
Overall leadership provides guidance	1.7	8.5	5.1	54.2	30.5
Overall leadership employs indirect supervision	6.8	32.2	16.9	33.9	8.5

Key: SD = Strongly Disagree; DA = Disagree; NT = Neutral; A = Agree; SA = Strongly Agree

Table 4.10 above shows respondents' views on leadership styles. The researcher wanted to know whether leadership considers suggestions from workers. Results show that 54.2% of the respondents were in agreement that leadership considers suggestions from workers, whereas 28.8% of the respondents disagreed with this view and 15.7% were neutral. On the point whether leadership seeks opinion of all workers, the above results

show that the majority of the respondents, 54.2% leadership seeks their opinion, 28.8% disagreed and 15.7% were neutral.

On inquiring if consultation by leadership has far reaching effects, 61% of the respondents were in agreement on this point, while 13.6% disagreed and 22% were neutral on the matter. Finding out whether overall leadership uses popular decisions, 54.2% of the respondents were in disagreement, 32.2% were neutral and 10.2% were in agreement on this matter. On further inquiry whether decisions are seldom made without everybody's impact, majority,, 40.6% of respondents were in agreement, 37.3% disagreed on this matter and 22% of the respondents were neutral. All the above views indicated that democratic style of leadership was being used to facilitate knowledge transfer in pharmacies.

On further inquiring, whether overall leadership lays out procedures and rules, a big number, 79.6% were neutral. The researcher also, tried to find out if the overall leadership schedules and coordinates works, most of the respondents, 62.7% agreed, 18.6% were neutral and 13.6% disagreed. The above two points indicate that autocratic leadership style was being used in pharmacies to facilitate knowledge transfer. On the point whether the overall leadership ensures complete clarity in the job, most of the respondent 61.1% agreed, 16.9% of the respondents did not express their views on the matter and the least, 15.3% disagreed. The above two points indicate that autocratic style was being used in pharmacy. The researcher wanted to know whether the overall leadership had no central authority, results show that the majority, 72.9% of the

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respondents were in disagreement of this point, 17% agreed and 8.5% were neutral. The researcher inquired whether the overall leadership uses leave-to-do approach in the transfer of knowledge and found that 45.8% of the respondents disagreed, 20.3% agreed and 23.7% remained neutral. The researcher inquired whether overall leadership provided guidance, 84.7% of the respondents who were the majority agreed, 10.2% disagreed and 5.1% of the respondents remained neutral. Finally, the researcher wanted to find out whether overall leadership employs indirect supervision, 42.4% of the respondents agreed, 39% disagreed and 16.9% did not express their views. These views indicated laissz-faire leadership style in the process of transferring pharmaceutical knowledge to pharmacy personnel. Interviews on the other hand showed that the three styles (democratic, autocratic and laissez-faire) were being employed to facilitate knowledge transfer. However, through discussion with the respondents, 71.2% indicated that democratic style was more applicable to transfer of knowledge, while 20.3% were of the view that autocratic style can be used. The least number of 8.5% stated that laissez-faire can also be utilized to transfer knowledge in pharmacies.

During the discussion with both top management in the pharmacies and staff, it was found that the concept of knowledge transfer was new to most of them. However, after explanation, they all appreciated the idea of knowledge transfer in pharmacies. The leadership commented; *"they had not taken lead in the matter. Also the pharmacy staffs commented that the management was not bothered about transferring new ideas either acquired externally or internally".*

Relationship between leadership styles and knowledge transfer

After establishing the views on leadership styles, we proceeded to establish whether there was significant positive relationship between leadership styles and knowledge transfer. Below we present the results.

Table 4.11: Relationship between leadership styles and knowledge transfer

Correlations		Knowledge transfer	Leadership styles
Knowledge transfer	Pearson correlation Sig. (2-tailed) N	1.000 . 59	.358* .005 59
Leadership styles	Pearson correlation Sig. (2-tailed) N	.358* .005 59	1.000 . 59

* Correlation is significant at the 0.01 level (2-tailed)

The results in table 4.11 show that the correlation between leadership styles and knowledge transfer is .358*, meaning there is a moderate positive correlation between the leadership styles and knowledge transfer. The P-value corresponding to this correction is .005, since it is less than .01, then the correlation between the two variables is statistically significant. Since the relationship explains a positive direction, democratic style will enhance knowledge.

HYPOTHESIS TESTING

Hypothesis 1: **There is significant positive relationship between leadership styles and knowledge transfer in pharmacies**

After establishing that leadership styles were significantly related to knowledge transfer, we proceeded to test if leadership styles affect knowledge transfer. Below are the results.

Table 4.12: Regression results for leadership styles and knowledge transfer

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	2.825	.697		4.053	.000
	Leadership Styles	.408	.156	.328	.2.623	.011

a. Dependent Variable: Knowledge Transfer

The multiple regression results confirmed a positive effect of leadership styles on knowledge transfer with a beta value of .328 at 90% of confidence. This implied that the use of suitable leadership styles will increase knowledge transfer in pharmacies. The positive beta value revealed that with increased use of democratic style the chances of knowledge transfer in pharmacies are likely to increase. This opinion was also held by key informants who indicated that "*democratic leadership style creates opportunities of sharing knowledge and skills which in turn encourages innovation*". In addition, respondents consented that the of departments promoted team work which is an important component of democratic leadership.

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4.3.3 Respondents' views on organizational support structures

The results of analysis are presented in table 4.13 below.

Table 4.13: Descriptive analysis of organizational support structures factors

ITEM	SD	DA	NT	A	SA
	%	%	%	%	%
There are established structures to support learning.	5.1	15.3	18.6	40.7	18.6
There are established structures for distributing knowledge within pharmacy.	3.4	10.3	18.6	52.5	11.9
There are established structures for exchanging pharmaceutical knowledge with fellow health workers.	3.4	15.3	11.9	50.8	15.3
Staffs are rewarded for innovations	8.5	44.1	25.4	13.6	5.2
Bosses appreciate my work and it makes me share knowledge	3.4	13.6	22	40.7	16.9
Training allowances given facilitates knowledge transfer	25.4	27.1	18.6	23.7	1.7
Salary paid motivates me	16.9	20.3	22	30.5	6.8
Organizational resources are available for training	6.8	33.9	32.2	16.9	8.5
There is well established resource centre	11.9	32.2	15.3	25.4	11.9
There are structures for exchanging pharmaceutical knowledge	6.8	11.9	13.6	50.8	15.3
Staffs are encouraged to attend development activities life conferences	1.7	16.7	13.6	37.3	30.5
There is willingness to collaborate in training activities in organization	1.7	18.6	27.1	39.0	11.9

<u>**Key:**</u> **SD = Strongly Disagree; DA = Disagree;   NT = Neutral; A = Agree;   SA = Strongly Agree**

From table 4.13 above, respondents had varied views on the effect of organizational support structures and knowledge transfer as indicated below. On the point whether there

were structures to support learning, 59.3% were in agreement, 20.4% disagreed and 18.6% were neutral on the matter. The researcher further inquired whether structures for distributing existed, 64.4% agreed, 18.6% remained silent on matter while 13.6% disagreed. On the point of structures to support exchanging knowledge, results indicate that 66.1% of respondents were in agreement, 18.7% disagreed and 11.9% were neutral. Finding out if staffs are rewarded for innovations, 52.6% were in disagreement, 25.4% were neutral and 18.8% agreed. On further inquire whether bosses appreciate individual work and share knowledge, 57.6% agreed, 22% remained silent, and 17% disagreed. On inquiring whether training allowances given facilitates knowledge transfer 53.5% disagreed, whereas 18.6% were neutral on the matter and 25.4% agreed. On the matter whether salary paid motivates staff findings show that 37.2% disagreed and 22% surprisingly remained neutral. Researcher wanted also to know if organizational resources are available for training. The results reveal that 40.7% of the respondents disagreed, on serious note, 32.2% of the respondents were neutral and 25.4% agreed.

The researcher went ahead to find out whether there was well established resource centre, 37.3% agreed on the matter, 54.1% disagreed and 15.3% were neutral on the point. Further inquiry, if there are structures for exchanging pharmaceutical knowledge, 66.1% of the respondents agreed, 18.7% disagreed and 13.6% remained neutral. The results on the point whether staffs are encouraged to attend development activities life conferences, the majority, 67.8% agreed, 18.4% disagreed and 13.6% remained silent on the issue. Lastly, the researcher asked, if there is willingness to collaborate in training activities in

the organization, majority 50.9% agreed, 27.1% were neutral whereas 20.3% disagreed on the point.

The results of the investigation have revealed that there are structures to enhance knowledge transfer in pharmacies. However, there are no systems to reward the pharmacy staffs who come with new innovations and this can be very demotivating for the staff who would like to share new knowledge with the rest of the colleagues in the area of pharmacy.

During the interaction with the pharmacy personnel, the respondents were asked whether pharmacies had systems for knowledge transfer. Some of the comments in this regard were:-

"There is a system to transfer both internal and external knowledge. This is done through organising continuous medical education workshops, by holding departmental training using senior qualified staff and exchanging ideas through emails".

Relationship between organizational support structures and knowledge

After establishing the views on support structures and knowledge transfer, the researcher proceeded to establish whether there was significant relationship between organisational support structures and knowledge transfer.

Below we present the results.

Table 4.14: Relationship between organizational support structures and knowledge transfer

Correlations			
		Organizational Support Structures	Knowledge transfer
Organizational support structures	Pearson correlation	1.000	.754*
	Sig. (2-tailed)	.	.000
	N	59	59
Knowledge transfer	Pearson correlation	.754*	1.000
	Sig. (2-tailed)	.000	.
	N	59	59

* Correlation is significant at the 0.01 level (2-tailed)

The results showed in table 4.14 shows that there was significant relationship between organizational support structures and knowledge transfer. The correlation coefficient between organizational support structures and knowledge transfer is .754* meaning there is a strong positive correlation between organizational support structures and knowledge transfer.

The P-value corresponding to this is 0.000 since it is less than 0.01, then the correction between the two variables is statistically significant. From the results, it is important to strengthen organizational support structures in pharmacies in terms of knowledge exchange policies, reward system, training and development.

HYPOTHESIS TESTING

Hypothesis 2: Organizational support structures significantly affect knowledge transfer in pharmacy

After establishing that organizational support structures were significantly related to knowledge transfer, we proceeded to test if organizational support structures affect knowledge transfer. Below are the results.

Table 4.15: Regression results for organisational support structures and knowledge transfer

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	-.675	..634		-1.065	..292
	Organizational Support Structures	.885	.116	.744	7.617	..000

a. Dependent Variable: Knowledge Transfer

The multiple regression results confirmed a positive effect of organizational support structures on knowledge transfer with a beta value of .744 at 90% of confidence; we can conclude that the presence of organizational support structures will increase knowledge transfer in pharmacies.

The positive beta value indicated that with proper organisational structures in pharmacies in place, the opportunities for KT are increased. This view was further held by key informants who stated that *"ministry of health had structures in place which promoted knowledge transfer to health workers at health man power development centre at Mbale*

for in-service training". Furthermore, the respondents revealed that government policies enhanced knowledge transfer in Uganda by having a documentation centre at Uganda Management Institute.

4.3.4 Respondents views on Information Communication Technology

The views of respondents on ICT are presented in table 4.16 below.

Table 4.16: Descriptive analysis on information communication technology factors

ITEM	SD	DA	NT	A	SA
	%	%	%	%	%
All sections in our institution are connected to internet.	22	25.4	6.8	16.9	28.8
Every staff accesses the internet easily.	50.8	39.0	3.4	5.1	4.7
We have responsible ICT department.	16.9	22.0	1.7	33.9	25.4
Use of intranet is first choice in exchange of information.	22	23.7	10.2	30.5	11.9
We regularly receive in-service training in the use of ICT tools.	27.1	40.7	11.9	15.3	3.4
Majority of our staff have sufficient computer knowledge.	8.5	25.4	25.4	35.6	5.1

<u>Key:</u> **SD = Strongly Disagree; DA = Disagree;   NT = Neutral; A = Agree;   SA = Strongly Agree**

As shown in table 4.16   above, majority   47.4% of the respondents disagreed that all section in the institution (pharmacy) are connect to internet, 45.7% agreed and 6.8% reserved their comment. On the point whether every staff accesses the internet easily, 86.8% were in disagreement, 9.8% agreed and 3.4% were neutral. Finding out if staffs

have responsible ICT department, 59.3% of the respondents agreed on the point, 38.9% disagreed while 1.7% were neutral. On inquiring if use of intranet is the first choice in exchange of information, majority 45.7% disagreed on this view, 42.4% agreed and 10.2% remained neutral. The results also show that 67.8% disagreed that pharmacy staffs receive in-service training in the use of ICT tools, 18.7% were in agreement on this matter and 11.9% were neutral. Lastly, the researcher wanted to know whether majority of staff have sufficient computer knowledge, the findings show that 40.7% of the respondents were in agreement with this point, 33.9% disagreed and 25.4% did not express their views (neutral). The pharmacy staffs were interviewed on how they communicate external knowledge within the organization. Respondents reported that they can easily communicate external knowledge within the organization, majority 25.4% reported the use of departmental meetings, 23.7% reported CME's meetings, 22% reported academic workshop presentations, and 11.9% by use of intranet, 10.2% reported the use of memos circulars and 6.8% of respondents use internet During the interview, respondents were asked how they utilize ICT to communicate external knowledge within the organization. They explained that one can easily communicate external knowledge within organisation by use of internet 6.8%, intranet 11.9%, use of memos and circulars 10.2%, CME's meetings 23.7%, departmental meetings 25.4% which takes the largest part, and academic workshop presentation 22%. The departmental meetings being the outstanding means of communicating external knowledge. The results show that pharmacy staffs have access to internet and this enhances knowledge transfer in turn. This in its way is very good in that pharmacy personnel get latest information on the use

of medicines. Despite of all the above comments, some voices indicated that there constraints related to the use of ICT as expressed below "*in pharmacy we lack resource centres*"

From the above views on the role of Information Communication Technology in knowledge transfer, it can be said that pharmacy staff agreed that Information Communication Technology can improve the efficiency of knowledge transfer by increasing the speed of transfer and decreasing costs due to time and distance. However, it is important to note that most pharmacy establishments lack ICT facilities and this can impede the process of knowledge transfer and also most staff lack access to internet.

Relationship between ICT and knowledge transfer

After establishing the views on ICT, the researcher proceeded to establish whether there was significant positive relationship between ICT and knowledge transfer.

Below we represent the results.

Table 4.17: Relationship between ICT and knowledge transfer

Correlations		Knowledge transfer	ICT
Knowledge transfer	Pearson correlation	1.000	.562*
	Sig. (2-tailed)	.	.000
	N	59	59
ICT	Pearson correlation	.562*	1.000
	Sig. (2-tailed)	.000	.
	N	59	59

* Correlation is significant at the 0.01 level (2-tailed)

The results in table 4.17 shows that the correlation between ICT and knowledge transfer is .562**, meaning there is a significant positive correlation between ICT and knowledge transfer. The P-value corresponding to this is .000, since it is less than .01, then the correlation between the two variables is statistically significant. During the interaction with the pharmacy staff, it was found that although most of the staff was knowledgeable on ICT, they were not exposed to dispensing of drugs by use of computer. Secondly, ICT initiatives to facilitate knowledge transfer by use of intranet are relatively recent and more time is needed for its effect to be felt.

HYPOTHESIS TESTING

Hypothesis 3: There is significant positive relationship between information communication technology and knowledge transfer in pharmacies.

After establishing that Information Communication Technology was significantly related to knowledge transfer, we proceeded to test if ICT affect knowledge transfer. Below are the results.

Table 4.18: Regression results for information communication technology and knowledge transfer

Coefficients^a

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	7.176	..820		1.434	000
	ICT	.663	..232	.377	2.854	..006

a. Dependent Variable: Knowledge Transfer

The multiple regression results confirmed a positive effect of ICT on knowledge transfer with a beta value of .377 at 90% of confidence. We can conclude that the use of information technology will increase knowledge transfer in pharmacies.

The positive beta value revealed that with the establishment of ICT systems in pharmacies the chances for knowledge transfer are high as the following comment illustrates:- *" if only we could have some staff trained in ICT, this would improve knowledge transfer in pharmacies".*

Summary of the regression results are in table 4.19 below.

Table 4.19: Summarised results of the multiple regression coefficients

Hypotheses	Independent variables	Standardized coefficient	Sig.	Results of hypothesis
H$_1$	Leadership style	.328	0.011	Supported
H$_2$	Organizational support structures.	.744	0.000	Supported
H$_3$	Information communication technology.	.377	0.006	Supported

Dependent variable: Knowledge Transfer

Significant at 1% level

The three hypotheses formulated in chapter one were tested using the data presented under this chapter and the summary of the findings are displayed in table 4.20 below.

The table 4.20: Summary of hypotheses results

Hypotheses	Supported or not supported
There is a statistical significant effect between leadership styles and knowledge transfer	Supported
Organisational support structures significantly affect knowledge transfer	Supported
There is a statistical significant effect between ICT and knowledge transfer	Supported

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the research findings, and finally makes conclusions and recommendations based on the study findings. The discussion of the results is based on the research objectives that guided the study.

5.1 Discussion of findings

The general objective of the study was to identify factors that affect knowledge transfer in selected pharmacies in Kampala district. The study was specifically guided by three objectives derived from the general objective namely: to investigate the effect of leadership styles, on knowledge transfer in pharmacies, to establish the effect of organizational support structures on knowledge transfer and to examine the effect of ICT on knowledge transfer in pharmacies.

Three research hypotheses were tested to establish the effect of leadership styles, organizational support structures and information communication technology (referred to as the independent variables) on knowledge transfer (referred to as the dependent variables). Three hypotheses were tested and below are the results;-

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5.1.1 Hypothesis one (1): There is significant positive relationship between leadership styles and knowledge transfer in pharmacies

From the study findings, the alternative hypothesis was supported since there was moderate positive relationship between leadership styles and knowledge transfer in pharmacies as evidenced from statistical output of linear regression correlation (See table 4.11 and 4.12). This shows that leadership styles of managers in pharmacies affects greatly to the transfer of knowledge in pharmacies in Kampala district. A significant contributor to knowledge transfer is the democratic style of leadership since it encourages participation in decision making.

These findings concur with Swee (2002) who explains that leaders will have to play major role in establishing some of the key conditions required to facilitate knowledge transfer. He goes on to argue that leaders will have to show a willingness to share information and knowledge freely and to seek it from others in the organization. Swee (2002) further states that leaders have the attitude that is to solve organizational problems and improve the organization's effectiveness can exist at any level of the organization and not exclusively in the upper levels of hierarchy. Such an attitude creates an environment of trust and influences attitudes throughout the organization about information sharing and collaboration. As role models, through their visible actions, leaders can encourage a willingness in other employees to emulate them. They can convey the culture of the organization as one of collaboration and sharing of knowledge and information and increase the propensity of employees to participate.

From the study findings, it should be noted that a single leadership style may not effectively enhance knowledge transfer in all circumstances. Therefore, a combination of leadership styles is recommended (Havens & Knapp, 1999).

5.1.2 Hypothesis two (2): Organizational support structures significantly affect knowledge transfer in pharmacies

The hypothesis that postulated that there is significant positive relationship between organizational support structures and knowledge transfer in pharmacies was supported (See table 4.14 and 4.15). The findings imply that the more managers in pharmacies utilize Organisational support structures, the greater the flow of knowledge. These results concur with Nonaka (1994) who states that breaking down hierarchies in the organization enhances knowledge transfer. He goes on to argue that organizations that maintain hierarchical levels and silos will not encourage knowledge transfer. In addition, Nonaka & Takenchi (2005) argued that the success of firms depends on their unique approach to managing the creation of new knowledge that results in innovation which is a prerequisite to knowledge transfer, Noweres (2001) argued that not all knowledge acquired is useful because all knowledge is not made equal. This argument is supported by Sveiby (2001) who affirmed that it is only actionable knowledge that is important which he termed as the "Capacity to act".

During the face to face interviews with top management in pharmacies, it was found that there was little effort to acquire or create knowledge on a continuous basis. Knowledge in pharmacies is acquired through experience but in most cases highly experienced

individuals are outsourced and they have little time to train and transfer their knowledge to others. This means that knowledge is just moving in and out of the offices as the individuals move in and out of office. Pharmaceutical firms in Uganda operate in dynamic environments where technology keep changing thus the need to create new knowledge from existing knowledge and create new knowledge is important for creativeness and innovativeness to keep ahead of competition. The study revealed that there were reward systems, policies, training and development structures to enhance knowledge transfer. As regards reward system, the Ministry of health does this by awarding certificates of attendance whoever completes continuous professional development courses in different forums. In the context of policy, Ministry of Health has a policy that all health worker s, pharmacy personnel inclusive must have fifty (50) hours of CPD if they have to be allowed to practice legally. As regarding training and development, there opportunities for upgrading for all cadres of health workers both locally and overseas.

However, in the study it was found that there were structures to support knowledge transfer. Swee (2002) recommends that this can be improved by putting in place systems like reward system, training and development in addition to the knowledge exchange policies. These results imply that knowledge transfer requires appropriate policies and infrastructures to reinforce and support it.

5.1.3 Hypothesis three (3): ICT significantly affects   knowledge transfer in pharmacies

The hypothesis that postulated that there is significant positive relation between ICT and knowledge transfer in pharmacies was fully supported (see table 4.17 and 4.18). The findings imply that when individuals working in pharmacies utilize ICT, the greater the effect it will have on relationship between ICT and knowledge transfer. This is supported by Kim and Lee (2006) who found that ICT application was significant to KT. This is further supported by Li-Hua (2009) who argues that information communication technology has been a subject of considerable interest to many groups, such as government policy makers, international funding agencies, and business executives because of the close relationship between ICT and knowledge transfer.

According to Lin (2007), ICT can only be used to facilitate the rapid search, access and retrieval of information and support communication and collaboration among individuals in the firm, but it will not solve client problems. This is in line with earlier researchers, in particular, Davenport & Prusak (1998) who argued that knowledge is tacit and belongs to the knower and that it can only be passed on from person to person through experience and training and not by the aid of ICT. Knowledge is "Knowing how" that includes insights, intuition, and hunches of the individuals which are often built by experience and are tacit and cannot be easily formalized and shared (Connell et al 2003; Nonaka, 1998; Carrillo & Chinowsky, 2006). Furthermore, Davenport & Prusak (1998) stated that computers are not knowledgeable and cannot make firms or individuals working in the firms more "knowledgeable". This was also supported by Egbu (2004) who contended

that ICT is an important enabler as "it enables the process, people and the knowledge content". Supporting the same argument Civin-loy (2003) stated that knowledge originates from the people and computers cannot create it.

5.2 Conclusions

Based on study findings and discussion the following conclusions were made objective by objective as follows:

5.2.1 The first objective of the study was to investigate the effect of leadership styles on knowledge transfer in pharmacies in Kampala District.

Leadership style dimension had the least effect on knowledge transfer in pharmacies in Kampala District. This implied that leadership style dimension had a lesser impact on promoting knowledge transfer. Among the three leadership styles considered under the research it was concluded that democratic leadership contributed more to knowledge transfer in pharmacies. Autocratic leadership and laissez-faire leadership had less effect.

5.2.2 The second objective was to establish the effect of organisational support structures on knowledge transfer in pharmacies in Kampala District.

Organisational support structures had the highest effect on knowledge transfer in Pharmacies. These results imply that investment in the right resources in terms of structures is essential to subsequent knowledge transfer if accessibility to information is to occur. Pharmacy personnel have to be trained in using new technology and maximizing its potential to increase communication and information sharing. Lastly, it

should be noted that the formalized structures in an organization can either help or hinder knowledge transfer depending upon the prevailing circumstances in the organization.

5.2.3 The third objective was to examine the effect of Information Communication Technology on knowledge transfer in pharmacies in Kampala District.

Information Communication Technology had a moderate effect on knowledge transfer in pharmacies in Kampala District. This implied the ICT has an important role in the area of knowledge transfer in pharmacies in Kampala District.

The results indicate that in the presence of a well developed ICT system it would be easy to quickly store and retrieve knowledge so that it can quickly be accessed and used by everybody in the pharmacy unit. Furthermore, in pharmacies, the use of ICT is likely to make the internal and external collaboration faster and more efficient in terms of knowledge transfer.

5.3 Recommendations to address the problem of knowledge transfer in pharmacies in Kampala district

The recommendations are given according to the study objectives.

From the findings of the study, the following recommendations are made to the authorities of Ministry of Health, Kampala City Council, National Drug Authority and the professional councils to address the problem of knowledge transfer in Uganda generally and in Kampala in particular. The recommendations are given according to the study objectives.

5.3.1 Objective one: To investigate the effect of leadership styles on knowledge transfer in pharmacies in Kampala District

In order to ensure that quality pharmaceutical services are provided to patients and clients, individual pharmaceutical firms have to make sure that they have mechanisms in place to acquire new knowledge.

5.3.2 Objective two: To establish the effect of organizational support structures on knowledge transfer in pharmacies

Proprietors of pharmacies need to bear in mind that the organizational design of the pharmacy has influence on knowledge transfer to staff and clients. Therefore, it is hereby recommended that organizational designs which enhance horizontal communication and has few hierarchical barriers to communication are in place. Ministry of health, pharmaceutical division should establish structures and systems that re-enforce and support knowledge transfer. There has to be a balanced approach to encouraging the sharing and transfer of knowledge through structured processes such as sharing best pharmacy practices.

5.3.3 Objective three: To examine the effect of ICT on knowledge transfer in pharmacies Kampala District

In this knowledge age, all pharmacy staff should be trained to use ICT tools to facilitate the flow of information and make it easily accessible. This is because pharmacy staff requires data and information on new medicines.

5.4 Contributions of the study

This study is among the first empirical researches that investigated knowledge transfer within pharmacies in Uganda. The study is an important addition to the limited existing literature on knowledge transfer and will encourage the establishment of a concrete conceptual framework in this area of research. The study explored opportunities for a successful transfer of knowledge in the area of pharmacy.

5.5 Recommendation for further research

The study covered only Kampala district due to time and budget constraints. It is hereby recommended that further research should be conducted to cover all the districts in Uganda on the problem of knowledge transfer in pharmacies. Future research on factors affecting knowledge transfer could also include individual factors, organizational design factors, technology in pharmacy factors taking into consideration the cultural, economic and social context of Uganda.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

Dear Respondent,

This questionnaire is intended to investigate factors affecting knowledge transfer in Pharmacies in Kampala District. The author is masters Degree Student at Uganda Management Institute. You are therefore requested to contribute to this study by answering the questions below. The information you provide will be treated as confidential as possible and used for academic purposes only. Please be assured on anonymity. Your cooperation is appreciated.

SECTION 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Tick (√) where appropriate

No	Questions	Coding categories
A1	Age in years	21 – 30 years ☐ 31 – 40 years ☐ 41 – 50 years ☐ 51+ years ☐
A2	Gender	1. Female ☐ 2. Male ☐
A3	Highest level of education	1. Certificate ☐ 2. Diploma ☐ 3. Bachelors Degree ☐ 4. Postgraduate Diplomas ☐ 5. Masters ☐ 6. (Others-specify)………………………..
A4	Marital status	1. Single ☐ 2. Married ☐ 3. Widow/widower ☐ 4. Divorced/separated ☐ 5. Cohabiting ☐
A5	Time spent in current post	1. Less 5 years ☐ 2. 6 – 10 years ☐ 3. 11-15 years ☐ 4. Over 15 years ☐
A6	Religion	1. Catholic ☐ 2. Muslim ☐ 3. Protestant ☐ 4. Others (specify)……………………..

No.	Questions	Coding categories
A7	Position in the pharmacy unit	1. Pharmacist ▭ 2. Manager ▭ 3. Dispenser ▭ 4. Cashier ▭ 5. Others ▭ 6. Specify……………………………………………
A8	Type of pharmaceutical firm	1. Manufacturing ▭ 2. Whole pharmacy ▭ 3. Dispensing chemists ▭ 4. Whole and retail pharmacy ▭ 5. Others ▭ 6. Specify…………………………………………… ….

SECTION II: PERCEPTION OF LEADERSHIP STYLE

Please indicate by ticking (√) your opinion by using the following Likert Scale where 1 is strongly disagree and 5 is strongly agree.

Scale	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	5	4	3	2	1
(A) Democratic Style					
In the pharmacy where I work----					
9. The leadership in general usually considers suggestions from workers					
10. The leadership in general seeks opinion of all categories of workers on important issues.					
11. Consultation by leadership has very wide reaching effects.					
12. Decisions are seldom made without everybody's impact.					
(B) Autocratic Leadership					
13. The overall leadership provides specific guidance that allows workers to know what is expected of them.					
14. The overall leadership lays out specific procedures and rules that guide the performance of all jobs.					
15. The overall leadership closely schedules and coordinates all work.					
16. The overall leadership ensures complete clarity in job.					
(C) Laissez-faire leadership					
17. The overall leadership employs indirect supervision.					
18. The overall leadership has no central authority.					
19. The overall leadership uses leave to do approach.					
20. The overall leadership utilizes popular decisions.					

SECTION III: ITEMS ON KNOWLEDGE TRANSFER EXTENT

Scale	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	5	4	3	2	1
(D) Support Structures					
In the pharmacy where I work--------					
21. There are established structures to support learning.					
22. There are established structures to support exchanging knowledge between individuals.					
23. There are established structures for distributing knowledge within the pharmacy.					
24. There are established structures for exchanging pharmaceutical knowledge with fellow health workers.					
25. There is a well established resource centre.					
26. Pharmacy professionals fear that sharing their knowledge with others might reduce their influence within the organization					
(E) Reward system					
In the pharmacy where I work-------					
27.The salary paid to me makes me motivated					
28. Training allowances given to me facilitates knowledge transfer					

29. Certificates of recognition are always given to best performers.					
30. My bosses always appreciate my work and this makes me share knowledge acquired with colleagues.					

Scale	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
(F) Training and Development					
In the pharmacy where I work--------					
31. Opportunities are provided for individual continuous professional development					
32. Staffs are encouraged to attend formal developmental activities (Professional Seminars, Conferences, Symposia).					
33. Staff are rewarded for new innovations					
34. Adequate organizational resources are available for training.					
35. There is willingness to collaborate across organizational unit in training activities					
(G) Tacit knowledge					
In the pharmacy where I work--------					
36. I have acquired enough experience in the field of pharmacy.					
37. I have the ability for generating new knowledge from existing knowledge					
38. I impact tacit knowledge to the pharmacy staff.					
39. Supervisors disseminate tacit knowledge to their subordinates.					
40. There are processes for integrating different sources and types of knowledge.					
41. Staff have the tacit knowledge base necessary to easily put to use.					

Scale	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	5	4	3	2	1
(H) Explicit knowledge					
In the pharmacy where I work--------					
42. Explicit knowledge is made accessible to all who need it.					
43. There opportunities for exchanging explicit knowledge within the organization.					
44. There are opportunities for distributing explicit knowledge throughout the organization.					
45. There are reading materials to acquire explicit knowledge.					
46. Staff have access to technology to acquire explicit knowledge.					

SECTION IV

INFORMATION COMMUNICATION TECHNOLOGY (ICT)

Scale	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
ICT Infrastructure					
47. All departments and sections in our institution are connected to an internet.					
46. All staff have easy access to internet.					
47. Every member of the staff has a personal computer.					
48. The use of intranet is number one choice in exchange of information					
49. Out ICT tools are regularly upgraded and serviced in line with new development in the ICT field					
50. We have a department of ICT that is responsible for support provision to staff					
ICT know-how					
51. The majority of staff in our institution have sufficient computer knowledge..					
52.I use computers often to share knowledge and information with my colleagues					
53. We regularly receive in-service training in the use of ICT tools.					

Which of the following technologies mechanism does your organization have?

(Tick more than one box where applicable)

A1   Messaging Tools (e.g. electronic mail)   ☐

A2   Intranet   ☐

A3   Internet   ☐

A4   CD-ROMs   ☐

A5   Tools for analysis of data (e.g. SPSS)   ☐

A6   Video conferencing   ☐

A7   Information retrieval engines   ☐

APPENDIX B: INTERVIEW GUIDE

Knowledge Transfer

1. How does the organization use support structure to enhance knowledge transfer?

    …………………………………………………………………………………………

    ………………………………………………………………………………………

2. In your opinion, which type of leadership style would facilitate knowledge transfer?
    (E.g. Democratic, Autocratic, laissez-faire) ……………………………………………...

    ……………………………………………………………………………………………….

3. Does your organization have a knowledge transfer system?
    If YES, how does your organization transfer knowledge to the health workers?

    …………………………………………………………………………………………

    …………………………………………………………………………………………

    If NOT, why not? …………………………………………………………………………....

    …………………………………………………………………………………………..

4. How much emphasis does your organization put in knowledge transfer? …………….

    …………………………………………………………………………………………

    …………………………………………………………………………………………

5. How do you communicate the external knowledge acquired within your organization?

    …………………………………………………………………………………………..

    …………………………………………………………………………………………

    …………………………………………………………………………………………

    …………………………………………………………………………………………

6. How do you transfer organizational knowledge to individuals?

    …………………………………………………………………………………………

    …………………………………………………………………………………………

    …………………………………………………………………………………………

7. Does your organization have resource centre for knowledge transfer?

    If YES, how does it make?...

    …………………………………………………………………………………………

    …………………………………………………………………………………………..

8. How does your organization promote transferring pharmaceutical knowledge with clients and patients?

    …………………………………………………………………………………………..

    …………………………………………………………………………………………..

9. Does your organization have a reward system for transferring knowledge?

    …………………………………………………………………………………………..

    …………………………………………………………………………………………..

    …………………………………………………………………………………………..

10. How does your organization use knowledge transfer in improvement of pharmacy services?

    …………………………………………………………………………………………

    …………………………………………………………………………………………

    …………………………………………………………………………………………

11. What type of knowledge is transferable in your organization?

    Tacit knowledge　　　　　☐

    Explicit knowledge　　　　☐