FACTORS INFLUENCING MEDICAL PRACTITIONERS' USE OF INFORMATION COMMUNICATION TECHNOLOGY IN PROVISION OF HEALTH SERVICES IN KENYA.

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FACTORS INFLUENCING MEDICAL PRACTITIONERS' USE OF INFORMATION COMMUNICATION TECHNOLOGY IN PROVISION OF HEALTH SERVICES IN KENYA

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ABSTRACT

The main purpose of this study was to determine readiness to accept and use ICT among medical practitioners in health services delivery by investigating medical practitioners' perception on factors of influence in acceptability and use of ICT. The study focused on 3 factors that have been identified to be of significant influence in ICT use namely; perceived usefulness, perceived ease of use and social pressure. The study therefore aimed at determining whether perceived usefulness of ICT, perceived ease of use of ICT and social pressure in ICT use, have influence on ICT use by medical practitioners. Using a survey method, a descriptive research methodology was adopted for the study and a stratified sampling technique used to define a sample size that consisted of doctors, clinical officers and nurses from the accessible population of medical practitioners in Kiambu district hospitals. The identified medical practitioners were requested to respond to questionnaires provided. The responses collected from the respondents were evaluated using descriptive analysis based on a multi regression model after which the outcome was presented using frequency distribution tables. The study findings were that, perceived usefulness of ICT positively influences its use by medical practitioners to a great extent where ICT enhances the security of patients' health records as well as increasing the effectiveness of health service delivery. The study revealed that perceived ease of use of ICT influences its use by medical practitioners to a great extent since learning how to use ICT was perceived not easy and that it may require a lot of time learning how to use ICT system. The study established that users with limited ICT skills and knowledge tend to rely heavily on other people's opinion about ICT at early stages of ICT adoption hence confirming the influence of social pressure on ICT users.

Key Words: *Medical Practitioners, Information Communication Technology*

INTRODUCTION

Background of the Study

Access to quality health care services is a basic human right which is entrenched in the Kenya constitution under economic and social rights (Government of Kenya, 2010). The same is contained in the universal declaration of human rights (United Nations, 1949). Every government must therefore provide its citizens with affordable, accessible and quality healthcare. Sufficient funds must be availed to health sector for construction of health facilities, purchase of drugs, research and development, purchase of medical equipment and prompt payment of health workers.

According to Kerry (2007), access to affordable and quality health services has not been achieved in developing countries. Health facilities are inaccessible due to the distance especially in rural areas and there is shortage of medical practitioners and lack of drugs. The specialists are restricted to the main national and referral hospitals, leaving people in the rural areas with a burden of travelling cost. Some special treatment especially for cancer, kidney failure causes people to seek treatment abroad where the cost is very high and very few patients can afford.

Each health center maintains patient's records independently. When a patient visit different health centers multiple copies of health profile is generated. Unless a patient wishes to share the data from the previous hospital with the current and prospective health centers, each hospital will build patients medical profile from scratch (International Telecommunication Union, (ITU) 2012).

Information and Communication Technology (ICT) involves use of computers hardware, software, communication devices and equipment, in collection, storage, retrieval, analysis and transmission of information (Marcelle, 2000). ICT can be applied in various sectors to enhance delivery of services. In education ICT supports learning processes where classes can be attended online. In business ICT has supported marketing, sales, payments, forecasting and predictions in the market. In governance ICT can be used to improve the way government services are accessed by its citizens (ITU, 2005). In health sector, ICT can be used to manage patient's health data and support diagnosis and treatment (Capron & Johnson, 2004).

According to Houghton (2002), ICT implementations can improve quality of services and also ensure the accessibility, affordability and timeliness in provision of health services. ICT systems can be used to store records, digital and scanned images about patients which can then be shared among health facilities instead of each facility keeping its independent copy. It can be used to facilitate online training of medical practitioners. ICT can enhance the medical related research by medical practitioners, increase patient's participation in healthcare and enable collaborations and consultations between and among health institutions or health officers.

Decision support systems when implemented can enables automated criteria to be used to make decisions about patients tailored medication, effect of drugs combination on a patient or generate real time data on new infections for necessary action to be taken. Results from lab tests including radiological images can be sent electronically direct to the doctor and the patients prescription details can be accessed by the pharmacist directly, therefore reducing the time taken, data loss, and avoid prescription errors caused by illegibility (Hancock & Groff, 2000).

Global perspective of ICT use for Healthcare

In developed countries there is significant ICT use in healthcare by medical practitioners. In Germany as of 2007, 99% of General Practitioner's (GP) used a computer in the line of duty. However, only 59% of the German GP practices were connected to the Internet with 40% of practitioners enjoying Broadband connections. There was considerable storage of electronic medical patient data by 96% of practitioners. The survey also found out that in 85% of practitioner's practices, there is a computer in consultation room and 77% of practitioners used a Decision Support System either for diagnosis or prescribing. However transfer of electronic patient data via networks or the Internet was low with only 3% of practitioners exchanging administrative data with other care providers, 4% of practitioners exchange administrative data with reimburses and 4% of practitioners exchanging medical data with other health care providers. It was also found out that 63% of the practitioners' practices, receive results electronically from laboratories (Karl, Jörg, & Giest, 2010).

In Poland as of 2007, 72% general practitioners used a computer, 62% of practitioners had internet connection but only 32 % of practitioner's enjoyed broadband internet connections. Electronic Patient data storage was practiced by around 50% of Practitioners practices. Computers use during patient's consultation was by 11% while 19% of practitioners used Decision Support Systems either for diagnosis of prescribing purposes. The electronic transfer of individual patient data has not been implemented but it was found that 23% of practitioners exchange administrative patient data with reimburses via networks, while only 2% of the GP practices had exchanged medical data with other care providers and 10% received electronic results from laboratories (Turowiec, Giest, Dumortier, & Jorg, 2010).

In developing countries especially in Africa, use of ICT to enhance health services delivery is minimal and implementations done at slow pace. Most of the population is found in rural areas, but majority of health facilities, health care specialist and resources are based in the cities. This force many patients to travel to the cities looking for treatment which is inconveniencing and costly. Adoption of ICT in health sector can greatly improve accessibility to health services by many people including those based in rural and remote places (Kerry, 2007).

However some countries have implemented some successful ICT projects for healthcare. In Uganda an SMS-based reporting platform (mTRAC) was launched in 2011 to enables health care workers to report on weekly bases to government about diseases surveillance, drugs stock quantities using mobile phones and computers. Uganda also adopted a District Health Information Software (DHIS) in 2011 that has facilitated planning and delivery of quality health care in the country (UNICEF , 2012).

Problem statement

During implementation of ICT in healthcare, there is a need to consider the capacity, views and needs of various stakeholders who play different roles in healthcare sector. This participatory approach ensures representation of all beneficiaries and this increases the success rate of ICT based health implementations (Kerry, 2007).

One group of stakeholders in healthcare is medical practitioners who are expected to use ICT systems to directly provide health services to patients and therefore are concerned by the changes the systems may introduce (ITU 2008). Medical practitioner's adoption and use of ICT can be measured based on its benefits after implementation compared to requirements for implementation in relation to technical, operational, social and economic considerations (Houghton, 2002). For example, medical practioners are concerned by the effect ICT use may have on daily workflow, training needed to acquire the

necessary computer skills, ICT systems usability complexities and fear of losing control over patients and recognition which medical practitioners enjoy during face to face patient treatment (ITU, 2008).

Failure to involve medical practitioners in ICT projects implementation has been identified as one of the main challenges in ICT adoption in healthcare (Mohamed, 2011). Therefore, before procurement and roll-out of ICT based health implementations, there is a need to assess the medical practitioners' perception and willingness to adopt ICT in healthcare (ITU, 2008).

In Kenya Integration of ICT in health sector is at inception (Kilwake, Matoke, Waliaro, Wanyembi & Ogao, 2012). It would be of great importance if medical practitioners' views and concerns towards ICT are identified and considered as the national and county governments progress in rolling out ICT projects in the country.

The researcher therefore sought to undertake this study in order to determine the extent to which various factors that have been identified to influence technology acceptance, can influence medical practitioners' use of ICT in health service provision.

Objectives of the study

General Objective

The overall objective of this study was to determine the factors influencing use of ICT in provision of health services by medical practitioners.

Specific Objectives

Specifically the study's objectives were to:

i. Establish whether the perceived usefulness of ICT influences its use by medical practitioners.
ii. Determine whether the perceived ease of use of ICT influences its use by medical practitioners.
iii. Establish whether social pressure influences ICT use by medical practitioners.

Research Questions

The study was guided by the following research questions:

i. To what extent does perceived usefulness of ICT influence its use by medical practitioners?
ii. To what extent does perceived ease of use of ICT influence its use by medical practitioners?
iii. To what extent does social pressure in use of ICT influence its use by medical practitioners?

Research Hypotheses

H1: Perceived usefulness of ICT has significant influence on ICT use by medical practitioners.

H1: Perceived ease of use of ICT has significant influence on ICT use by medical Practitioners.

H1: Social pressure in use of ICT has significant influence on ICT use by Medical practitioners.

Significance of the Study

During implementation of ICT based healthcare more focus should be on acceptance from the users both medical professionals and patients than just the performance of the ICT systems (ITU, 2008). The study outcome will enable managers and all those who are in charge of rolling out ICT projects in health institution to understand the importance of considering medical practitioners' views and concerns about ICT adoption, for effective implementation of ICT projects in health sector. The national government is working on a comprehensive national policy on ICT based healthcare (e-health). The role of medical practitioners must be clearly outlined in the policy and therefore the outcome and recommendations from this study will enable better understanding of medical practitioner's perception on ICT and the need to consider this perception when planning for ICT implementations in healthcare.

The study also comes at a point when most national government services, health services included are being devolved to county governments. Both

governments will find the need to allocate sufficient funds to the ministry of health and ministry of ICT to enable running of awareness campaign and training of medical practitioners on ICT, as well as enough funds for infrastructures and necessary technology required for effective roll out of ICT projects in health sector in the country.

Scope of the Study

The study focused on three factors of influence on technology acceptance and use namely; perceived usefulness, perceived ease of use and social pressure. These factors were identified among others from various existing theories and models and have been used previously in studies to evaluate technology acceptance. Medical practitioners constituted the target group for the study as they are considered the end users who directly use ICT to give health services to patients. There are other factors which have also been identified to affect technology use but have been intentionally excluded from this study because they would not adequately capture the perception and views of medical practitioners as end users of ICT as intended in this study.

Geographically, the researcher intended to base the study on medical practitioners in Kiambu district hospital in Kiambu County. The researcher preferred the hospital due to the high number of medical practitioners available at the facility representing doctors, clinical officers and nurses, which provided a recommendable sample size for the study. The researcher resides within the hospital locality and therefore easy access to health facilities hence reducing expenditure especially on transport.

LITERATURE REVIEW

Introduction

This chapter entails review of relevant literature on factors influencing medical practitioners' use of ICT in provision of medical services. It discusses the identified applicable theories, the constructed conceptual framework for the study and a review of various variables identified in the conceptual framework. Other existing and relevant literature is discussed and research gaps identified.

Theoretical Framework

Theory of Planned Behavior

A healthcare organization can be considered a system that consist of people, values, norms and culture, and which are interrelated. Therefore social aspect and technical aspect can't be separated when evaluating operations in health organizations. When ICT is implemented, it can lead to organizational changes in relation to work structure, workers behavior and their attitude. This changes require prior consideration before technology implementation. (Pirnejad, 2008).

According to Ajzen, I. (1991), attitude, subjective norms and perceived behavioral control factors, have influence on individual's intention to perform a certain behavior. Attitude is explained as individual's beliefs and judgment on performing a particular behavior. Subjective norm entails individual's intentions to act or behave in a certain way, based on other people views and expectations. Perceived behavioral control measures how much control an individual has over a certain behavior and also the confidence of performing a behavior by that individual.

An individual behavior is influenced by people he/she considers important among them family members, friends and colleagues (Thomson & Lim, 1998). According to Henry and Spitler (1999) organization social norm and nature of the job an individual is expected to undertake can have more influence on predicting technology use than the individuals perception of the technology. From this theory, the research opinion is that there is a need to evaluate whether important people around a medical practioners can influence ICT use by the medical practioner.

Technology Acceptance Model

Davis (1986) developed Technology Acceptance Model (TAM) to be used in predicting the acceptability of an information system. The model identifies perceived usefulness and perceived ease of use as key determinants of technology acceptance and usability. The model developer defined perceived usefulness as "the degree to which a person believes that the use of a system will improve his performance" and perceived ease of use is defined as "the degree to which a person believes that the use of a system will be effortless". Perceived usefulness can be measured by assessing whether use of an application increases productivity, increases job performance, enhances effectiveness on the job and generally whether user finds the application useful. Perceived ease of use can be evaluated by assessing whether learning to operate an application is easy, whether it easy to get the application to do exactly what the user want to do, whether an application is flexible to interact with and whether the user generally will find an application easy to use (Legris, Ingham, & Pierre, 2001).

Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) identifies 4 key determinants that can be used to predict and explain user acceptance of information technology. Performance expectancy is "the degree to which an individual believes that using the system will help him or her to attain gains in job performance". The performance expectation can be evaluated in relation to the time spent when undertaking a task, quality of the output produced, quantity of the output produced and the ease at which the system can be used. Expectation that one will be perceived competent by workmates and that the use of system will increase chances of getting promoted or pay raise can also contribute to acceptability of a system by user (Venkatesh et al., 2003).

Effort expectancy is defined as "the degree of ease associated with the use of the system". Users will consider the extensiveness and duration of training expected in order to learn how to use the system and whether the user can perform the exact task he or she want. The user interface which would be expected to be friendly and flexible and the amount of time the system may take running other tasks rather than the core job are factors users would consider. Where understanding what the system is doing at any onetime is perceived difficult or the user expect to be spending much time performing routine operation, the acceptability would be minimal (Vankatesh et al., 2003).

Social influence is described in the model as "the degree to which an individual perceives that important others believe he or she should use the new system". This involves user accepting an ICT system because other people considered important to the user think he should use the system or just because some workmates use the system. The acceptability may also be influenced by the level of support shown and given by the senior management and immediate supervisor to the user. When the user perceives use of the system as status symbol in the organization, one may tend to accept and use such a system (Venkatesh et al., 2003).

Facilitating condition is defined as "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system". The availability of resources required by the user to use the system, the compatibility of the system with other existing system, necessary knowledge to use the system, help to resolve system difficulties and whether the system is compatible with user's way of performing tasks are some key factors in the model that may influence system acceptability by users (Venkatesh et al.,2003). However during evaluation of the model it was concluded that in the presence of perceived expectancy and effort expectancy determinants,

facilitating conditions factor had no significance in determining technology use.

Conceptual Framework

A conceptual framework has been used in this study that shows the dependent and independent variables. It is based on 3 independent variables which are focused on the research specific objectives and a single dependent variable. For each variable, key indicators have been specified.

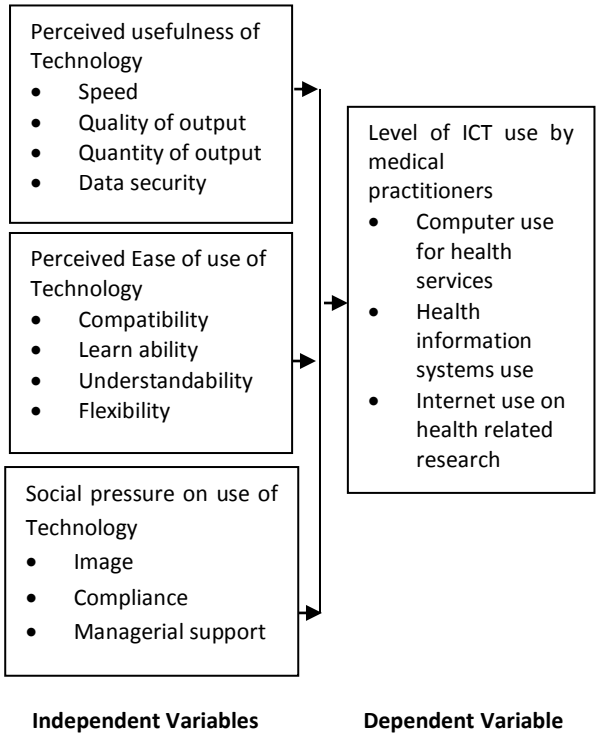

Figure 2.1: Conceptual Framework

Perceived Usefulness of Technology

The level of expectations users have on a technology can greatly influence their acceptability and use of the technology and therefore users may need to identify how applicable is the technology in their line of duty and expected benefits as a result of using the system (Venkatesh et al.,2003). Accessible and cost effective healthcare can be realized through electronic interconnection of healthcare facilities (Njiru, 2011).

According to Houghton (2002), ICT can greatly improve the way in which health services are provided. ICT implementations can improve quality of services and also ensure the accessibility, affordability and timeliness in provision of health services. ICT systems can be used to store records, digital and scanned images about patients which can then be shared among health facilities instead of each facility keeping its independent copy. It can be used to facilitate online training of medical practitioners. ICT can enhance the medical research, increase patient's participation in healthcare and enable collaborations and consultations between and among health institutions or health officers. Decision support systems when implemented enables automated criteria to be used to make decisions about patients tailored medication, effect of drugs combination on a patient or generate real time data on new infections for necessary action to be taken. Results from lab tests including radiological images can be sent electronically direct to the doctor and the patients prescription details can be accessed by the pharmacist directly, therefore reducing the time taken, data loss and avoid prescription errors caused by illegibility (Hancock & Groff, 2000).

According to American College of Physicians (2008), ICT can improve provision of healthcare in many ways. Accessibility to healthcare is increased through remote consultation sessions and monitoring of patients. Any patient either in rural place, overseas or bedridden at home can access health services. Practitioner's time spent on face to face consultation is saved because much of it can be done online. For example patients follow ups, renewal of drug prescriptions and any other issue that do not really require patients and doctor face to face encounter can be done online. The time saved can be used on research and attending to more argent treatment cases. E-mail use for communication between patients and practitioners is convenient in that it can be sent, read, responded to at any time , hence there is no transport or

commuting cost or seeking time off from work place by patients.

ICT systems in remote monitoring can be used to predict and detect occurrences thus helping in prevention rather than curative which greatly reduce cost for health care. ICT can increase access to test results by medics hence reducing delays in response to argent health diagnosis which eventually improves patients' quality of life. There is accuracy and timely communication from clinician to service department such as laboratories and medical imaging. ICT can help reduce errors due to poor practitioner's handwriting and incomplete data (ACP, 2008)

Medical practitioners can use ICT for knowledge enrichment, research and education. They increase their medical knowledge, advance their medical education, read journals, researching topics of interest, exploring drug details and interaction with fellow practitioners. ICTs can also be used in practice administration which cut staff labor force, facilitate patients scheduling, improve communication and fasten claims processing and billing (Houghton, 2002).

Perceived Ease of Use

According to Gary and Benbasat (2001) the amount of time user expect to spend in learning a can determine the acceptability of a system. Users may also consider the flexibilty of the system in performing the required tasks and in the expected manner. Where the interraction with the system is percieved clear and understandable, the acceptability and use of such a system can be significantly high.

During ICT implementation, there might be a need to have an alternative plan in order to ensure the continuity of operations in case the ICT fails. Running two parallel systems can be inconveniencing to medical practitioners and users may therefore resist any that may result to such a setup (ITU, 2008).

Effective application of ICT in health care depends on the level of ICT literacy and skills among users which can be promoted by inclusion of ICT in the health professional curriculum and providing skilled maintenance staff (Kilwake et al., 2012). Plans must be put in place for education and training programmes, allocating enough time and funding and this should be outlined at the initial stages of rolling out ICT project. Development of training programmes can be done in conjunction with academic bodies where trainees can be awarded recognition after successful training (ITU,2008).

For effective use of ICTs, awareness and literacy in ICTs are an essential. There must be equal opportunity for all users to acquire the necessary skills and knowledge. Continuous learning through adult education, re-training, distance learning should be promoted (ITU, 2005). Inclusion of ICT in medical courses curriculum can enhance understandability of benefits and impact of ICT on health services provision (Muchangi & Nzuki, 2014)

Sufficient time must therefore be set aside for user's training so that they can effectively use the ICT tools (Houghton, 2002). Capacity to use, service and maintain ICTs has been identified as a challenge to effective use of ICT in health care. Users must therefore be highly skilled and great expertise required for the technical team responsible for configuring and maintaining the ICTs. The government and learning institutions should invest in education, research and development for necessary technologies needed in healthcare (Kerry, 2007).

There are concerns that the ICT tools can generate activities that may be hard to bill or be reimbursable and difficulty in usability of ICT which can lead to interruption of practitioner's workflow

and can also affect interaction between patients and their doctors. Some patients supplement or substitute doctor's opinion with their own research while others do their own research on internet before and after they see their doctors and discuss their findings with their doctors for clarity. Some patients however do not trust their doctors and they do their research only to come to the doctor for specific drug or medication. These informed patients cause inconvenience to practitioners especially when much of the information they possess is incorrect and therefore the practitioner has to spend extra time with such patients without any compensation (Houghton, 2002).

According to ACP (2008), use of ICTs can impact on practitioner's workflow. The large volumes of E-mail to be responded to can also discourage because there is no compensation to this extra work. The other problem is that not all information from internet is correct. Patients, who use internet for research on health matters may getting information from unreliable sources, resulting to misinformation and confusion. Medical practitioners will therefore have an additional task of correcting whatever the wrong information such a patient has. There is no compensation for time spent on sessions with the misinformed and confused patients. Time required to learn ICT skills by Practitioners is a factor because sometimes medical practitioners may feel that they would rather use that time on their patient rather than training in skills they feel they don't really need. Muchangi and Nzuki (2014) recognised that ICT systems have some degree of complexity which requires users to be well equipped with ICT skills failure to which some resistance to the systems can be experienced.

Social pressure on ICT use

Acceptability and use of ICT by a prospective user can be influenced by the views, opinions and contribution of other people especially coworkers, family members, management team and any other person or group of persons whose opinion is deemed valuable to the user (Thomas et al.,1991). Users can also consider adopting ICT as status symbol which can improve one's image and profile in the organization (Gary & Benbasat, 2001). Therefore adopters may be influenced by the social status gains attached to use of technology or the need to comply to social pressure exacted by opinions and expectations of other people rather than the adopter him/herself . Reliance on other people opinion on use of ICT is expected to be high at the initial stage of technology use when user has limited understanding and experience and must therefore rely on other people's opinion on the technology (Venkatesh & Davis, 2000).

The perceived assistance by prospective users from senior management and immediate supervisor in organization is critical in determining technology acceptability (Thomas et al ., 1991). Patients themselves can become the force behind ICT adoption by medical practitioners. Patients with access to internet can research and access lot of health information which they can use to challenges the practitioner's views and approaches. This will force the medics to enhance their knowledge by accepting ICT as a tool of learning and providing health services (ITU, 2008).

Social influence on ICT use can also be assessed in two forms; administrative support and peer usage. Administrative support entails the assistance provided by organization management especially on encouraging ICT usage by employees, leading by example in ICT usage and giving explanations on areas that can bring about doubt and uncertainties among employees. Peer usage entails accepting ICT to meet expectations of people who are close or important to the adopter. These could be colleagues in the same office or organization, friends and classmates (Thomson & Lim, 1998).

Facilitating conditions for ICT based healthcare

According to Aidstar-Two (2011), Radio and Television are the most common tools used for information, communication and education in health care. In addition computers have been used to strengthen health systems, by providing storage, sharing and exchange of health information. Wireless technologies such as mobile phones, Personal Data Assistant (PDAs) and broadband Internet connection have immensely improved running of ICT based Healthcare. However connectivity in developing countries is at slow pace compared to developed countries and this in turns slows integration of ICT in Health care.

Houghton (2002) classified clinical tools used by medical practitioners in to three categories; Electronic medical records, Electronic prescribing and Online communication. Electronic medical records systems used to stores and manages patients' health records. Such tools provides patient's information when and where needed thus reducing duplications, enhance decision making and saves time. Electronic prescribing systems enhances communication between practitioners and pharmacist hence eliminating errors especially due to doctors handwriting greatly facilitating drug selection and prescription Online communication systems supported by internet based technologies and distributed systems enable provision of health services to patients with no geographical limitations .

There should be universal, equitable and affordable access to ICT infrastructure and services, as well as access to reliable energy source for successful ICT application. Communication network infrastructure must be easily-accessible and affordable, and should support use of broadband and other modern technologies, necessary framework must be developed to create conducive environment in order to make it attractive for investments (ITU, 2005).

Connectivity access can be evaluated in terms of telephone access, personal computer ownership, and Internet connectivity which varies among countries. For ICT adoption in healthcare to be a successful issues such as lack a comprehensive ICT policy and necessary regulatory controls, lack of power access either electricity or solar power, insufficient infrastructure and connectivity access and high connectivity costs must be addressed (Kerry, 2007).

According to AIDSTAR-Two (2011), Computer networks both LAN/WAN, IP telephony, unified communications and video conferencing are some of the technology connection necessary for ICT based healthcare. High definition video solutions are necessary to provide a real-time high-quality streaming during medical operations and engagement. Appropriate Collaboration technologies must be in place to support sharing of documents, presentations, images across the network, and support virtual conferences and other meetings among practitioners.

The medical practitioners must have confidence in the ICT abilities to maintain information privacy and security features to control access to patient's information. Consumers need to be reaffirmed on who can get access to their information and what their personal health information can be used for (Deloitte , 2011).

The sensitive nature of health information held and transmitted using ICT, requires a high degree of privacy protections, quality assurance, and security. Individual privacy of patients as well as their data must be guaranteed by implementing data integrity features and authentication mechanisms. The connectivity provided must be reliable I order to avoid errors during transmission. Without an assurance to privacy, security and safety issues the health practitioners can be reluctant to adopt new technologies no matter how promising it sounds (ITU, 2012).

Health ICT professionals must be concerned with data security and privacy issues with an aim of protecting patient data from inappropriate access. Health facilities must implement identity management techniques in order to ensure that only the authorized persons have access to health information stored in ICT systems (Microsoft, 2010).

Kilwake et al.(2012) pointed out that where internet is used to transmit sensitive medical data there is a concern over the weaknesses that can be exploited resulting to accidental or malicious misuse of information. Therefore much caution is required when handling and transmitting electronic patient records using computer networks. Infrastructure sustainability for ICT based healthcare can be achieved through security enhancement, timely supply and maintenance of ICT equipments and provision of reliable power, network and internet connections (Chew, Bahaman, & Siti, 2013). In order to ensure confidence among ICT users, information and network security, authentication, consumer protection and privacy must be ensured (ITU, 2005).

According to Policy Engagement Network (2010) report, developing countries lack privacy and security expertise for ICT based healthcare and privacy is considered a hindrance to health care services. Medical practitioners have limited understanding of how to enforce privacy and confidentiality in ICT driven healthcare especially on collection, use, disclosure and retention of personal information. The perceived level of compatibility between a technology and way in which user undertake his/her duties can determine the acceptability and use of a technology (Schaper & Pervan, 2007).

The key stakeholders in ICT adoption in healthcare

According to Matsuda (2009), ICT based health systems policy formulation involves various stakeholders. Government through the appropriate ministries initiates and develops the strategies and policy framework necessary to guide ICT integration in healthcare. The government also funds health sector especially in public health facilities. The health services provider both in public and private health facilities need to understand the actual gains and benefits compared to the cost of implementing and running ICT based healthcare. Political parties play a key role in discussing and passing appropriate legal framework for ICT based healthcare implementation. Political support or opposition to the proposed guidelines can determine the rate at which ICT systems can be successfully adopted in healthcare.

Houghton,(2002) identified health professionals or medical practitioners as key stakeholders during ICT integration in healthcare. They use the implemented ICT systems to directly provide health services to patients. Their understanding on how the ICT can improve service delivery with minimal adjustments and changes in how they carry out their day to day activities is critical. Patients are the end consumers of health services supported by ICT systems and therefore their concerns and views should be highly considered and also clearly made to understand the importance and benefits of ICT systems in provision of quality, affordable and accessible health services**.**

According to Kerry (2007), stakeholders involved in ICT adoption in health sector can be grouped into four main levels. International level consisting of International agencies such as World health organization (WHO), UNAIDS, donor agencies, International Non-governmental Organizations (NGOs). Regional level consisting of regional bodies such as European Union (EU), New Partnership for Africa's Development (NEPAD), African Union and regional NGOs. National and provincial level which consist of national, provincial or county government in Kenya, government ministries, health departments and national NGOs. Local level consists of personnel at health clinics, health workers,

doctors, traditional healers, community leaders, patients and citizens.

Summary

User's perception on ICT system adoption and implementation especially on time required to learn an ICT system, conversion from paperwork operations to computerized filling system while still providing health services has been found significant on use and acceptability of ICT (Njoroge, 2014)

The conceptual framework for this study has been developed based on Theory of Planned Behavior, Technology Acceptance Model and UTAUT model which were developed to assist in evaluating technology acceptance and use. The study independent variables; perceived usefulness and perceived ease of use are derived from Technology Acceptance Model and they also feature in the UTAUT model where they are referred to as performance expectancy and effort expectancy respectively. Social pressure independent variable is derived from UTAUT and Theory of Planned Behavior where it is referred to as social influence and subjective norms respectively. Facilitating conditions determinant identified in UTAUT model has been intentionally omitted in this study because it was found to be non-significant when performance expectancy and effort expectancy factors are present (Venkatesh et al.,2003). The study has also been focused on perceived characteristics of technology use rather than characteristics of technology itself in order to avoid inconsistency which can result from distinct differences among technologies and how adopters view this difference (Gary & Benbasat, 2001).

Research Gaps

From the literature review conducted, researchers both local and international have discussed the models and approaches for evaluating technology acceptability. Technical and economic challenges and requirements for ICT implementations have been discussed. However, the researcher has identified some gaps in all the studies especially in ICT adoption in health sector where medical practitioners' perception of ICT use has never been assessed. Considering the sensitivity nature of health service provision and bearing in mind that medical practitioners are expected to use the ICT systems to directly give health services to patients, the researcher is concerned that ICT systems may be proposed and implemented in health sector only to be used by individuals who have negative attitude towards the system or who have no sufficient information on system use. This can result to diagnostic and computing errors and mistakes that can cost patients live or complicate patients health.

A local example of research done on ICT in Healthcare, is one conducted by Boore, (2012) on factors affecting implementation of Electronic medical records (EMR) in selected public hospitals in Nairobi which concentrated on EMR which is just one form of ICT application in healthcare. The researcher didn't consider the medical practitioners perception of ICT prior to implementation. Another example is a research done by Kilwake et al. (2012) on Current Status of E-Health in Kenya and emerging global research trends which concluded that E-health implementation is at its inception in the country. The study looked at policy aspect and facilitating conditions especially technical requirements in rolling out ICT projects. However the study didn't focus on medical practitioner's involvement in E-health implementation especially their perception on such implementations.

According to a study conducted by Muchangi and Nzuki(2014) on determinants of electronic health in developing countries, users' perceptions on ICT was identified as a key determinant of ICT acceptability among other determinants. The study recommended more research to be done on effect of this determinant in specific countries. This recommendation was factored in this study, forming the bases on which the researcher constructed the study objectives.

This study therefore focused on medical practitioner's perception on ICT adoption in healthcare by looking at the extent to which the identified factors can influence their acceptability and use of ICT in health services provision. The study outcome is a key input in implementation of successful ICT projects in health sector by county and national governments as well as investors in private health facilities.

METHODOLOGY

Introduction

This section discusses the research design, target population to which the study can be generalized, the accessible population from which sample size was defined, sampling technique used in selecting or picking the respondents and research instruments used to capture responses from the respondents. Procedure for pilot testing of the questionnaires, procedures used to collect primary and secondary data as well as data analysis method are also discussed.

Research Design

A descriptive design using survey method was adopted for this study. Descriptive design help in identifying the questions to be answered by the respondent in the survey and directly getting primary data from the respondents in order to determine the current status of the population in relation to the identified variables (Mugenda & Mugenda, 2003). The design therefore helped in collecting primary data from respondents for analysis, in order to determine the extent to which the identified factors influence ICT use by medical practitioners.

Target Population

A population consists of all items in the area of study (Kothari, 2004). ICT use by medical practitioners has been discussed in this study at national level and involvement of medical practitioners in the entire country in the study would have provided every practitioner's views thus increasing the accuracy of the results obtained. However, due to time and economic challenges, an accessible population consisting of all doctors, clinical officers and nurses in Kiambu District Hospital was identified.

Table 3.1: Target Population

Respondent Title	Population estimate	Sample size	Percentage
Doctors	14	7	50%
Clinical officers	28	15	54%
Nurses	185	66	36%
Total	**226**	**88**	**39%**

Sample Frame

According to the records at Kiambu district hospital, there are 226 medical practitioners consisting of 10 doctors, 20 clinical officers and 225 nurses. The 255 medical practitioners therefore constituted the sample frame from which the samples size was defined. It is the researcher's opinion that this size of sample frame from a single health facility was sufficient enough to produce a recommendable sample size whose results can be generalized.

Sample and Sampling Techniques

A sample is a small proportion of accessible population and sampling is a way of selecting a given number of subjects from a defined population as a representative of that population (Mugenda &

Mugenda, 2003). For this study, stratified sampling technique was used to accommodate the heterogeneous nature of respondents as suggested by (Orodho, 2003). In Table 3.0, respondents are classified into 3 categories; doctors, clinical officers and nurses. Therefore 88 respondents constituted the sample size representing 39% of sample frame.

Data Collection Methods

The researcher used questionnaires for primary data collection which were administered to the medical practitioners in the health facility. Due to the tight schedule of medical practitioners, questionnaires were the most convenient method. The questionnaires consisted of close ended questions most of which were arranged in matrix format with various consistent scales provided. Where necessary, open ended questions were used to enable the respondent explain and express the answer in details. The questionnaires were physically delivered to respondents who were briefed on the objective of the study and allowed to ask any question they feels necessary before filling the questionnaire. The questionnaires were left for completion for about two weeks after which the researcher collected the completed questionnaires.

Online searching was used to gather secondary data that was obtained from journals and publications from previously done studies on factors of influence on ICT acceptability and use by medical practitioners.

Pilot Testing

Before the questionnaires were distributed to the respondent, a pilot test was conducted on 9 medical practitioners at Kiambu medical center and Marura nursing home both in Kiambu town. This tested whether the research instrument is grammatically correct, understandable and the flow of the questions hence testing test if questionnaires structure provided appropriate feedback to the research questions.

In order to check reliability of the results, the study used Cronbach's alpha methodology, which is based on internal consistency. Cronbach's alpha measures the average of measurable items and its correlation. The current and desirable situation was tested for factors influencing use of ICT in provision of health services by medical practitioners. SPSS software was used to verify the reliability of collected data. Overall scales' reliability of the present situation and the desirable situation was tested by Cronbach's alpha, which should above the acceptable level of 0.70 (Hair et al., 1998).

Data Processing and Analysis

Based on the fact that the study requires quantitative analysis for the discrete and quantifiable data produced, descriptive statistics was the most appropriate for this study in order to show the distribution of scores derived from the respondents. Using multiple regression analysis, the dependent variable (ICT use) was regressed against the three independent variables namely; perceived usefulness, perceived ease of use and social pressure. The analysis helped in determining the influence each of the independent variable had on the dependent variable as well as the overall influence of independent variables on the dependent variable. Statistical Package for Social Sciences (SPSS) computer software was used during analysis as an aid tool. The following multiple regression model will be used during the analysis;

$Y= \beta_0+\beta_1x_1+\beta_2x_2+ \beta_3x_3+\varepsilon$

Where;

Y =level of ICT use by medical practitioners

β_0 = constant or intercept

$\beta_1, \beta_2, \beta_3$ = the regression coefficients

X_1=Perceived usefulness of ICT

X_2=Perceived ease of use of ICT

X_3=Social pressure in use of ICT

ε = error term of the model

After analyzing the collected data, frequency distribution tables were used to present the findings from the study and it is on these findings that discussions and appropriate recommendations were based.

RESEARCH FINDINGS AND DISCUSSION

Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the background information of the respondents and the findings of the analysis based on the objectives of the study. Descriptive and inferential statistics have been used to discuss the findings of the study. The study targeted a sample size of 88 respondents from which 88 filled in and returned the questionnaires making a response rate of 100 percent. This response rate was satisfactory to make conclusions for the study. The response rate was representative. According to Mugenda and Mugenda (1999), a response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to excellent.

Response Rate

Table 4.2: Response Rate

Questionnaires	Frequency	Percentage
Filled and Returned	88	100.0
Unreturned	0	0.0
Total	**88**	**100.0**

Reliability Analysis

Table 4.3: Reliability Analysis

Scale	Cronbach's Alpha	Number of Items
Perceived Usefulness	0.811	6
Perceived Ease of Use	0.728	7
Social Pressure	0.791	6

A pilot study was carried out to determine reliability of the questionnaires. Reliability analysis was done using Cronbach's Alpha which measured the internal consistency by establishing if certain item within a scale measures the same construct. Gliem and Gliem (2003) established the Alpha value threshold at 0.7, thus forming the study's benchmark. Cronbach Alpha was established for every objective which formed a scale. The table shows that Perceived Usefulness of ICT had the highest reliability (α= 0.811), followed by Social Pressure (α=0.791) and Perceived Ease of Use of ICT (α=0. 728). This illustrates that all the three variables were reliable as their reliability values exceeded the prescribed threshold of 0.7.

Demographic Information

Job Category of the Respondents

The study requested the respondents to indicate their job categories.

Table 4.4: Job Category of the Respondents

Category	Frequency	Percent
Doctor	7	8.0
Clinical Officer	15	17.0
Nurse	66	75.0
Total	**88**	**100.0**

From the study findings, majority of the respondents were nurses as shown by 75%, 17% of the respondents were clinical officers while 8% of the respondents were doctors. The findings show that the respondents were from different job categories.

Gender of the Respondents

The study sought to determine the gender of the respondents.

Table 4.5: Gender of the Respondents

Gender	Frequency	Percent
Male	32	36.4
Female	56	63.6
Total	**88**	**100.0**

The study findings revealed that majority of the respondents indicated that they were female as shown by 63.6% whereas 36.4% indicated that they were male. These findings show that majority of the doctors, nurses and clinical officers are female.

Age of the Respondents

The respondents were requested to indicate their age category.

Table 4.6: Age of the Respondents

Age Category	Frequency	Percent
20-29	32	36.4
30-39	25	28.4
40-49	15	17.0
50-59	15	17.0
Above 59	1	1.1
Total	**88**	**100.0**

The findings revealed that most of the respondents indicate that they are aged between 20 and 29 years as shown by 36.4%, 28.4% of the respondents were aged between 30 and 39 years, 17% of the respondents were aged between 40 to 49 years and 50 to 59 years in each category while, 1.1% of the respondents were aged above 59 years.

Computer Skills

The study sought to determine whether the respondents have some training in computer skills.

Table 4.7: Computer Skills

Response	Frequency	Percent
Yes	71	80.7
No	17	19.3
Total	**88**	**100.0**

Majority of the respondents agreed that they have training in computer skills as shown by 80.7% whereas 19.3% of the respondents lack training in computer skills. This shows that majority of the doctors, nurses and clinical officers are trained in computer skills. The respondents were requested to indicate their experience in computer use.

Table 4.8: Period with Computer Skills

Period	Frequency	Percent
None	16	18.2
Below 1 year	10	11.4
1-2 years	12	13.6
2-3 years	19	21.6
Above 3 years	31	35.2
Total	**88**	**100.0**

From the study findings, most of the respondents indicated that they had acquired computer skills over 3 years ago as shown by 35.2%, 21.6% indicated between 2 and 3 years, 13.6% of the respondents indicated between 1 and 2 years while 11.4% of the respondents indicated below 1 year.

Perceived Usefulness of ICT

The study sought to determine the respondents' level of agreement with some statements relating to perceived usefulness of ICT.

Table 4.9: Statements Relating to Perceived Usefulness of ICT.

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Mean	Std Deviation
ICT use can increase the speed of health services delivery.	51	28	3	3	3	1.6250	.96267
ICT use can improve health services accessibility by patients.	46	29	5	4	4	1.7614	1.06128
ICT use can make it easier to perform tasks.	50	25	5	4	4	1.7159	1.07156
ICT use can improve quality of service in health service delivery.	53	23	7	1	4	1.6364	1.00781
ICT use can increase quantity of output (work done) by medical practitioners.	47	22	9	3	7	1.8506	1.20588
ICT use can enhance patients' data security in health facilities.	60	21	3	1	3	1.4773	.89670

From the study findings, majority of the respondents strongly agreed that ICT use can enhance patients' data security in health facilities, as shown by a mean of 1.4773. Majority of the respondents further agreed that ICT use can increase the speed of health services delivery, as shown by a mean of 1.6250; ICT use can improve quality of service in health service delivery, as shown by a mean of 1.6364; ICT use can make it easier to perform tasks, as shown by a mean of 1.7159; ICT use can improve health services accessibility by patients, as shown by a mean of 1.7614; and that ICT use can increase quantity of output (work done) by medical practitioners, as shown by a mean of 1.8506. These findings were found to concur with the findings of Houghton (2002) who asserted that ICT can greatly improve the way in which health services are provided. He noted that ICT implementations can improve quality of services and also ensure the accessibility, affordability and timeliness in provision of health services. Among the uses of ICT systems, Houghton further added that it can be used to store records, digital and scanned images about patients which can then be shared among health facilities instead of each facility keeping its independent copy as well as facilitate online training of medical practitioners.

Perceived Ease of Use of ICT

The study requested the respondents to indicate their level of agreement with some statements relating to perceived ease of use of ICT.

Table 4.10: Statements Relating to Perceived Ease of Use of ICT.

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Mean	Std Deviation
Learning of ICT by medical practitioners is not easy	21	23	19	22	3	2.5795	1.20078
ICT systems may not be flexible to perform tasks in whichever way the user want	12	25	26	24	1	2.7386	1.04490
Interaction with ICT system may not be clear and understandable	17	25	22	21	3	2.6364	1.14653
ICT use may hinder skills development among medical practitioners.	18	14	25	30	1	2.7955	1.15628
ICT use may not reduce time for undertaking normal tasks by medical practitioners	16	16	24	28	4	2.8636	1.18595
It may require a lot of time learning how to use the ICT system	24	19	28	15	2	2.4545	1.13370
Use of ICT may not be compatible with medical practitioner's style of working.	21	17	29	16	5	2.6250	1.19686

The study findings revealed that majority of the respondents agreed that it may require a lot of time learning how to use the ICT system, as shown by a mean of 2.4545. The findings further revealed that majority of the respondents disagreed that ICT use may not reduce time for undertaking normal tasks by medical practitioners, as shown by a mean of 2.8636; ICT use may hinder skills development

among medical practitioners, as shown by a mean of 2.7955; ICT systems may not be flexible to perform tasks in whichever way the user want, as shown by a mean of 2.7386; use of ICT may not be compatible with medical practitioner's style of working, as shown by a mean of 2.6250; interaction with ICT system may not be clear and understandable, as shown by a mean of 2.6364; and that Learning of ICT by medical practitioners is not easy, as shown by a mean of 2.5795. These findings were found to be consistent with the findings of Kerry (2007) who argued that ICT use may reduce time for undertaking normal tasks by medical practitioners.

Social Pressure in Use of ICT

The study further sought to determine the respondents' level of agreement with some statements relating to social pressure in use of ICT.

Table 4.11: Statements Relating To Social Pressure in Use of ICT

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Mean	Std Deviation
I may use ICT if my friends think I should.	11	9	34	33	1	3.0455	1.01607
I may use ICT if members of my family think I should	8	9	37	32	2	3.1250	.95668
I may use ICT if my coworkers are using it	14	13	29	28	4	2.9195	1.12289
I may use ICT even where level of support from supervisor and senior management is low.	18	19	33	15	3	2.6136	1.09787
Use of ICT can enhance my image in the society.	17	21	25	22	3	2.6667	1.12753
I may use ICT if my patients think I should	7	7	34	36	4	3.2414	.95193

The study findings revealed that majority of the respondents disagreed with the statements that they may use ICT if their patients think they should, as shown by a mean of 3.2414; they may use ICT if members of their family think they should, as shown by a mean of 3.1250; they may use ICT if their friends think they should, as shown by a mean of 3.0455; they may use ICT if their coworkers are using it, as shown by a mean of 2.9195; use of ICT can enhance their image in the society, as shown by a mean of 2.6667; and that they may use ICT even where level of support from supervisor and senior management is low, as shown by a mean of 2.6136. These findings concur with the findings of Venkatesh & Davis (2000) that adopters of ICT may be influenced by the social status gains attached to use of technology or the need to comply to social pressure exacted by opinions and expectations of other people rather than the adopter him/herself . They noted that reliance on other people opinion on use of ICT is expected to be high at the initial stage of technology use when user has limited understanding and experience and must therefore rely on other people's opinion on the technology.

Future Improvements on ICT in Healthcare

The respondents were also requested to indicate their level of agreement with some statements relating to future improvements on ICT in healthcare.

Table 4.12: Statements Relating To Future Improvements on ICT in Healthcare.

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Mean	Std Deviation
Medical practitioners' views are always considered throughout ICT projects implementation.	2	27	26	12	16	3.0115	1.21516
ICT studies are adequately included in medical schools' syllabus.	8	18	28	30	4	3.0230	1.03404
There exist adequate on-job ICT training programs for medical practitioners.	6	13	37	27	5	3.1149	.95753
Use of ICT can support realization of universal health services provision	37	34	7	2	8	1.9425	1.15493

Majority of the respondents agreed that use of ICT can support realization of universal health services provision, as shown by a mean of 1.9425. The findings further established that majority of the respondents disagreed that there exist adequate on-job ICT training programs for medical practitioners, as shown by a mean of 3.1149; ICT studies are adequately included in medical schools' syllabus, as shown by a mean of 3.0230; and that medical practitioners' views are always considered throughout ICT projects implementation, as shown by a mean of 3.0115.

Regression Analysis

Table 4.13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.799[a]	0.638	.613	0.0761	.783	11.516	.003

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in table 4.13, the value of adjusted R squared was 0.613 an indication that there was a variation of 61.3% use of ICT in provision of health services by medical practitioners due to changes in perceived usefulness, perceived ease and social pressure at 95% confidence interval. This shows that 61.3% changes in the use of ICT in provision of health services by medical practitioners could be accounted for by changes in perceived usefulness, perceived ease of use and social pressure. R is the correlation coefficient which shows the relationship between the study variables. From the findings, the study found that there was a strong positive relationship between the study variables as shown by 0.799. From the ANOVA statistics, the processed data, which is the population parameters, had a significance level of 0.03 which shows that the data is ideal for making a conclusions on the population's parameter as the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value

(2.442<11.516) an indication that perceived usefulness of ICT, perceived ease of use of ICT and social pressure significantly affects the use of ICT in provision of health services by medical practitioners. The significance value was less than 0.05, an indication that the model was statistically significant.

Table 4. 14: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	3.404	.453		2.865	.003
	Perceived Usefulness	.236	.160	.198	1.479	.008
	Perceived Ease of Use	.441	.126	.245	1.834	.011
	Social Pressure	.309	.145	.008	.065	.010

From the data in the above table the established regression equation was

$Y = 3.404 + 0.236 X_1 + 0.441 X_2 + 0.309 X_3$

From the above regression equation it was revealed that holding perceived usefulness of ICT, perceived ease of use of ICT and social pressure to a constant zero, use of ICT in provision of health services by medical practitioners would be at 3.404 , a unit increase in perceived usefulness of ICT would lead to increase in use of ICT in provision of health services by medical practitioners by a factors of 0.236, a unit increase in perceived ease of use of ICT would lead to increase in use of ICT in provision of health services by medical practitioners by factors of 0.441 and a unit increase in social pressure would lead to increase in use of ICT in provision of health services by medical practitioners by a factor of 0.309.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presented the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study. The researcher had intended to establish whether the perceived usefulness of ICT influences its use by medical practitioners, establish whether the perceived ease of use of ICT influences its use by medical practitioners and to establish whether social pressure in use of ICT influences its use by medical practitioners.

Summary of the Study

The study focused on doctors, clinical officers and nurses from Kiambu district hospital, capturing their opinion on the identified factors of influence in ICT use in health services delivery. 88 respondents were involved in the study and their response analyzed in relation to the study objectives.

Perceived Usefulness of ICT

The study sought to determine the respondents' level of agreement with some statements relating to perceived usefulness of ICT. The study findings revealed that majority of the respondents agreed that ICT use can enhance patients' data security in health facilities, ICT use can increase the speed of health services delivery, ICT use can improve quality of service in health service delivery, ICT use can make it easier to perform tasks, ICT use can improve health services accessibility by patients and that ICT use can increase quantity of output (work

done) by medical practitioners. These findings were found to concur with the findings of Houghton (2002) who asserted that ICT can greatly improve the way in which health services are provided. Houghton noted that ICT implementations can improve quality of services and also ensure the accessibility, affordability and timeliness in provision of health services. He further added that it can be used to store records, digital and scanned images about patients which can then be shared among health facilities instead of each facility keeping its independent copy as well as facilitate online training of medical practitioners.

Perceived Ease of Use of ICT

The study requested the respondents to indicate their level of agreement with some statements relating to perceived ease of use of ICT. The findings unfolded that majority of the respondents agreed that it may require a lot of time learning how to use the ICT system. The findings further revealed that majority of the respondents disagreed that ICT use may not reduce time for undertaking normal tasks by medical practitioners, ICT use may hinder skills development among medical practitioners, ICT systems may not be flexible to perform tasks in whichever way the user want, use of ICT may not be compatible with medical practitioner's style of working, interaction with ICT system may not be clear and understandable and that Learning of ICT by medical practitioners is not easy. These findings were found to be consistent with the findings of Kerry (2007) who argued that ICT use may reduce time for undertaking normal tasks by medical practitioners.

Social Pressure in Use of ICT

The study further sought to determine the respondents' level of agreement with some statements relating to social pressure in use of ICT. The study unfolded that majority of the respondents disagreed with the statements that they may use ICT if their patients think they should, they may use ICT if members of their family think they should, they may use ICT if their friends think they should, they may use ICT if their coworkers are using it, use of ICT can enhance their image in the society, and that they may use ICT even where level of support from supervisor and senior management is low, as shown by a mean of 2.6136. These findings concur with the findings of Venkatesh & Davis (2000) that adopters of ICT may be influenced by the social status gains attached to use of technology or the need to comply with social pressure exacted by opinions and expectations of other people rather than the adopter him/herself. They noted that reliance on other people opinion on use of ICT is expected to be high at the initial stage of technology use when user has limited understanding and experience and must therefore rely on other people's opinion on the technology.

Conclusions

From the study findings, the study concludes that perceived usefulness of ICT positively influences its use by medical practitioners to a great extent. The medical practitioners view ICT really useful in enhancing the security of patient's data, improve health services accessibility, increase the speed of health services delivery and generally facilitate universal health services provision.

The study further revealed that it may require a lot of time learning how to use the ICT system. Thus, the study concludes that perceived ease of use of ICT influences its use by medical practitioners to a great extent since the time taken to learn how to use ICT system is an important factor.

The study further concludes that during the beginning of ICT adoption, there is heavy reliance on other people's opinion on the use of ICT systems. This is due to the fact that the user has limited knowledge and understanding of the ICT system at this time and will highly rely on other people's opinion.

In addition, majority of respondents felt that ICT is not adequately covered in the medical schools syllabus. It therefore a challenge for medical

practitioners to learn much about ICT while already in a working environment at the same time providing health services to patients.

Lack of involvement of medical practitioners in ICT projects adoption was noted during the study. This creates an impression that the management of health institutions force ICT systems to medical practitioners who are the end users.

Recommendations

From the findings, the study recommends that healthcare centers should adopt ICT to improve on health services delivery by enhancing patients scheduling, improve communication among departments and also among themselves, support efficient patient records management and fasten claims processing and billing.

There is need for the medical practitioners to have a positive attitude towards adoption of ICT system which will enhance the acceptance and use of the systems inorder to support and enhance their day to day health services delivery activities. By accepting the ICT system, the medical practitioners will reduce the time taken to learn how to use the system and concequently reduce time for undertaking normal tasks by the medical practitioners. Time required to learn ICT skills by practitioners is a factor because sometimes medical practitioners may feel that they would rather use that time on their patient rather than training in skills they feel they don't really need.

The study further recommends that assistance by prospective users from senior management and immediate supervisor in organization should be offered. Administrative support should entail assistance provided by organization management especially on encouraging ICT usage by employees, leading by example in ICT usage and giving explanations on areas that can bring about doubt and uncertainties among employees. Much of this support should be directly to those medical practitioners with no or minimal ICT skills and knowledge to impact them with positive attitude towards ICT.

The study also recommends that medical schools do revise their syllabus to adequately include ICT subjects which will impact the students with necessary ICT skills and knowledge required at modern ICT driven health services provision. There is also a need to involve medical practitioners in the planning process and all other stages involved during ICT implementation in health facilities. This will make them understand the projects being proposed and implemented, making them part of the whole implementation process and hence enhance the acceptability of such implementations.

Areas for Further Research

The study sought to determine the perception of medical practitioners on perceived usefulness of ICT, perceived ease of use and social pressure as factors of influence on ICT use. However other than medical practitioners, health facility management is another stakeholder in health sector and has critical management roles to play in implementation of ICT projects and running of health facilities in general. It's a recommendation of this study that more research is done on the perception of health facility management on adoption of ICT in their facilities and whether this perception influences ICT adoption.

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