The Impact of technology in Nursing Practice

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In the past, many obstacles hindered efficient and effective delivery of healthcare services. However, the introduction of technology era has made diagnosis and treatment in healthcare to be not only efficient but also cost effective in the overall performance. This is thanks to introduction of radiography equipment, dialysis machines, and an introduction of biometrics and electronic health records. Also, technological innovations such as EHR, modern imaging devices, and remote monitoring facilitate patient-centered care that is timely. Therefore, main aim of an introduction of technological innovations is to cut on cost, improve service delivery, and improve the overall performance of healthcare.

The field of nursing is of great significance in the medical world. Nurses play a key role in the diagnosis, treatment, management and prevention of diseases among individuals as well as populations (Roneyet al., 2017). Technology is a discipline which has been applied in almost every sector all over the world. Over the past decades, developments in technology have led to tremendous improvements in various fields. The field of nursing is one area where technology has led to numerous improvements and breakthroughs (Roneyet al., 2017). Technological discoveries and advancements have had massive impacts in nursing. Use of technology in the nursing field has had various impacts in nursing practice with such tasks as patient records, disease diagnosis, treatment and surveillance being made easy (Piscotty, Kalisch & Gracey‐Thomas, 2015). Additionally, use of technology in nursing has led to enhancements in areas such as nurse education, research, and communication.

**Problem Statement**

Efficiency is a significant element of success and progress in any field. Nursing profession, like any other field, has witnessed numerous changes over the years. Moreover, improvements have been made in a bid to explore ways through which service delivery can be improved (Piscotty, Kalisch & Gracey‐Thomas, 2015). Many organizations have turned to the use of technology in order to make work easier and to improve service delivery (Elgin & Bergero, 2015). The field of nursing is crucial in the health sector and as such, it is important to incorporate the use of technology in nursing in order to yield the best results (Piscotty, Kalisch & Gracey‐Thomas, 2015). Through proper use of technology, the nursing sector would experience unprecedented success.

**Purpose of the Study**

This research was primarily set up to determine and understand the various ways in which the use of technology affected the nursing practice. It was important to determine some of the ways in which technology improved service delivery and efficiency within the field of nursing. The study was carried out with a view of understanding the various ways in which technology has been utilized in the field of nursing. In order to achieve this, it was of great essence for the study to determine the most crucial areas in the nursing profession where the use of technology had recorded the most significant impact. Among the areas of interest included the following; research, data storage and retrieval, communication among various stakeholders in the nursing field as well as the use of electronic health records.

**Research Questions**

To help achieve its purpose, it was of great essence to identify a research question which would be used for the study. It was notable that use of technology had resulted in significant improvements in the nursing sector. These improvements ranged from easier storage and retrieval of records, communication as well as medical research. This study sought to determine how use of technology had affected operations in the nursing practice. Thus the first research question used in this study was; what were the impacts of technology in the field of nursing? The second research question was; what were the challenges faced in the implementation of technology in nursing practice?

The research included an interview with Kelly Hancock, a nursing practitioner who also doubled up as the executive chief nursing officer at Cleveland clinic (Kelly Hancock, 2019). With experience spanning twenty years and placed in charge of close to twenty-two thousand nurses (Kelly Hancock, 2019), Hancock was viewed as the best candidate for this interview.

**Significance of Research**

Focusing on the impact of the use of technology in the field of nursing, this study was vital for various reasons. One of the ways in which this study was significant was in determining the importance of embracing technology in the nursing practice. Additionally, the study was significant since it provided the best ways through which technology was being utilized in the medical sector; nurses and other medical practitioners who had not yet embraced the use of some of the various medical technologies would be able to do so. In providing the benefits and strengths that were associated with use of technology in nursing, the study helped in the marketing of the various technologies.

There were challenges too in the implementation of the various technologies in nursing practice. Some of the equipment were new while most hospitals were used to the old ones (Huston, 2013). Additionally, there was also the fear that human interaction in nursing practice was being overlooked in the implementation of the new technologies.

**Use of Technology in Facilitating Mobility, Communication, and Relationships**

In the new millennium, use of technology in healthcare facilitates operation processes, interactions, mobility, and relationships. It is critical for all nurses to be able to use technology in their daily activities in healthcare centers. This is for the reason that leadership skill set enables them to understand applications and smart technologies that are being introduced in healthcare (Wilson, 2017). By 2020, it is expected that every nurse will be able to use health information technology and health communication strategies to achieve health equity, improve on healthcare quality, and improve on health outcomes of a population.

In addition, systems will be developed in such a way that they will support decision making between healthcare providers and patients. This technology will support social networks where it will be easy to access and deliver accurate information about healthcare (Wilson, 2017). Information technology innovations will also be useful especially in interventions that result in healthy behavior, providing sound principles in program designs, connecting populations that are in remote areas and culturally diverse, increasing health literacy skills, and enabling for public health emergencies and decision making on health risks

This study determined that the use of technology in nursing practice as well as the health sector in general was becoming an integral part of most healthcare organizations. It was important for nurses and other medical service providers to embrace the use of technology. Among the key areas where use of technology was found to yield the desirable results included relationships among medical service providers and other stakeholders within the healthcare organizations as well as communication enhancement among medical care providers (Huston, 2013).

Introduction of a number of technological equipment, software and applications would go a long way in helping nurses develop proper communication skills and build good working relationships (Huston, 2013). Furthermore, technology had been of great essence when it came to conveying information between different departments within the healthcare organizations. Medical applications and software had been introduced into the healthcare sector and had proved to be very effective in disease diagnosis, management and prevention (Doswell et al., 2013).

**Electronic Health Records**

Technology has mostly contributed to the development of electronic health records. It is apparent that any alterations in the documentation process may cause detrimental effects on the nursing practice. Notably, electronic health record (EHR) can be described as a digital record that consists of a patient’s date and can be accessed by authorized personnel from different health facilities. EHR is accessible all through, and adequate measures have been enforced to ensure that confidentiality is enhanced (Roney, Westrick, Acri, et al., 2017). President George Bush pledged that by 2014 all Americans would enjoy the EHR system. When President Obama took over, he backed up his predecessor’s desire by funding hospitals in implementing the program by a tune of $30 billion. For this reason, this significant advancement that was once optional is becoming mandatory.

For instance, many Federal programs have been set up to support the implementation of EHR. This includes employee-training, exchange of information across facilities, capturing a patient’s accurate information. However, challenges continue to exist since capturing accurate information has not been fully enhanced. On top of that, there is also the problem of insufficient technology. Many health care facilities and health systems feel that they do not have the capacity to adhere to the new EHR policies (Roney, Westrick, Acri, et al., 2017). According to a recent survey, only 48% of healthcare facilities were confident in using EHR. Thirty-nine percent revealed that they were not fully confident while three percent exposed that they doubted the system. This has not deterred healthcare facilities from using EHR systems since 71 percent of them have revealed that they are 50% complete in implementing EHR.

Use of electronic health records was viewed as one of the most easily recognizable impacts of technology in the field of nursing as well as medical care at large (Huston, 2013). Use of electronic health records resulted in major positive impacts in nursing practice since advancements in technology had resulted in hospitals and other healthcare provision organizations switching to electronic data storage, retrieval and manipulation (Weaver et al., 2016). Through use of modernized software, applications and equipment, healthcare provision organizations had embraced the use of electronic health records, a move which lead to improved service delivery and efficiency within the nursing practice (Weaver et al., 2016).

In the United States of America, President George Bush had pledged to ensure that the use of electronic health records would be in use in all American hospitals by the year 2014, an idea which was put into effect by his successor, President Barrack Obama. Most hospitals in the United States are either in the process of finalizing the switch to electronic health record or have already switched to its use (Lavin, Harper & Barr, 2015). However, implementation of the electronic health records had its own challenges such as complexity of the systems involved as well as less knowledge by many individuals on how to use it (Lavin, Harper & Barr, 2015).

**Biometrics**

The issue of security on patients’ data and confidentiality is prompting healthcare to come up with transformative technology that ensures accountability. Through establishment of HIPPA (Health Insurance Portability and Accountability Act), it suggests biometric signatures on healthcare institutions to secure medical records (Piscotty, Kalisch & Gracey‐Thomas, 2015). Therefore, only individual with full authorization would be able to get access to medical records and patients’ data. Thus developers had to ensure that the systems are appropriate and accurate in every activity they were performing. These activities would range from identification of individuals through dynamic signatures, facial structure, voice recognition, palm vein prints, retinal scans, hand prints, and fingerprints.

Accessing information would be done depending on the level of authorization, and this will ensure that there are minimal errors in terms of misdiagnosis as a result of a mix-up in records. In the long run, every healthcare system would adopt use of biometrics for access and authorization. Therefore, it will make it convenient for healthcare organization from different regions as they will be able to communicate and access information remotely (Piscotty, Kalisch & Gracey‐Thomas, 2015). Currently, a fingerprint is the most common biometric in healthcare as it is affordable, small in size, and is easy to use. However, healthcare organizations are starting to consider advancing to facial recognition as a way to identify and authorize individuals to access healthcare data and information.

Over the years, the issue of patient identity and confidentiality proved to be a nightmare to medical practitioners until after technology had been embraced (Lavin, Harper & Barr, 2015). Through the use of technology, patient identification and confidentiality was solved. Technology enhanced the manner in which crucial information on health matters and patients was handled. The introduction of the Health Insurance Portability and Accountability Act, HIPPA, ensured that vital medical information was secure and that it could only be made available to the relevant authorized persons (Doswell et al., 2013). Challenges were reported in the implementation of most technologies in hospitals. Among the major cited reasons included compatibility, complexity of the systems, and difficulties in operating some of the complex equipment (Doswell et al., 2013).

**Discussion**

This research study was able to explore the various ways through which technology had had an impact not only in nursing practice but also in the medical service provision field generally. Through the interview with Hancock, the research was able to not only determine the impact of technology in the nursing practice; it was also able to determine the major areas where technology had the most significant impact.

The use of technology in nursing practice was, no doubt, a major breakthrough in the healthcare industry as noted by Hancock (Kelly Hancock, 2019). Technology proved to be of great essence in improving service delivery, disease diagnosis and management in various hospitals (Roneyet al., 2017). There are numerous positives as a result of incorporation of technology in various areas such as biometrics, electronic health records as well as in the communication and research sector.

The interview with Hancock not only provided insight into the positive impacts of technology in the nursing practice but also provided an overview into the challenges which were associated with the introduction of new technologies into the field of nursing (Kelly Hancock, 2019). A number of challenges were reported with one of them being the complexity of the technological equipment being utilized (Elgin & Bergero, 2015). Additionally, the issue of compatibility was also a major concern; most of the adopted technologies were not really compatible with the old ones (Elgin & Bergero, 2015). This meant that a complete overhaul of the systems would be needed, meaning the whole process would be very expensive. There were also concerns about loss of human interaction in nursing practice with the use of technologies such as robots (Kelly Hancock, 2019).

One of the challenges faced during this research was the limited interview time with the main correspondent, Hancock. This meant that crucial information and data was not completely captured. Furthermore, the interview was only conducted on one person. It was not possible to have more nurses and other medical health practitioners being interviewed.

One of the recommendations would be for future research studies to carry out more research on the challenges faced in the adoption and implementation of new technologies in nursing practice. While technology has provided better results, it is important to note that a number of nurses face numerous challenges in the use and implementation of certain technologies (Elgin & Bergero, 2015).

**Conclusion**

Technological advancements played a big role in the nursing practice. Through modern technological equipment, software and applications, most areas in nursing practice witnessed tremendous success in terms of service delivery and efficiency in handling medical cases. Among the areas where technology was of great essence in nursing were; research, storage and retrieval of information as well as communication within the medical provision organizations.

Challenges were also reported in the use of technology within nursing practice. Among these challenges include the expensive costs of the technologies to be implemented as well as compatibility issues. Moreover, there were also challenges to do with the complexity of various equipment.

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