

Research Skills for Healthcare

Certificate of Higher Education in Health and Social Care

Digital Skills and Research Methods

The Use of Technology in Modern Healthcare Workplace

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Introduction

This report seeks to explore a research idea on the use of technology in the healthcare workplace and the methodology that should be used. Technology has been a key driver of success in almost every industry and healthcare is no exception. To ensure accuracy, increased production, and efficiency, healthcare stakeholders have been integrating various technologies in various aspects of healthcare workplace (Usman & Qamar, 2020). This report explains how various credible sources can be found for this research and highlights some of the sources.

Finding Research Topic

Every successful research project starts with a well-defined research topic. The research topic refers to the issue or the subject that the researcher is interested in while undertaking the research. Choosing a research topic helps to reduce a broad subject area into a manageable topic. The first step in selecting a research topic involves choosing a general subject area that the researcher is interested in. The general subject area in this case is the use of technology in healthcare workplace. The next step is to narrow the topic into something that is manageable. Notably, the use of technology in healthcare workplace is a broad topic since technology can be used in treating a certain disease, record keeping, care homes, and many other areas. One can find too much information and may not be able to focus. In this research, we narrow down the topic and select 'investigating the impact of Electronic Medical Record (EMR) system in hospitals'. This topic is narrow enough and the researcher can focus.

There are several reasons behind this topic. Firstly, record keeping is a crucial element in the healthcare workplace and it can ensure quality healthcare services. Proper recording helps to determine when a patient can be referred to another hospital and the exact service that can be offered based on previous medication. Secondly, there is a need to improve efficiency in hospitals (Kim et al., 2019). Hospital and healthcare workers need to reduce the energy they use writing records manually or producing reports on patients. Exploring this topic will help hospitals achieve efficiency and accuracy in offering healthcare services. Thirdly, this topic is chosen as there is a need to improve cross-hospital communication between hospitals. Notably, caregivers should have accurate information about a patient based on the previous records kept by different hospitals. The use of technology can enable hospitals to share information about a patient with

great accuracy. For instance, if a patient accesses healthcare services from Birmingham NHS hospital at first, NHS doctors in Glasgow NHS hospital should have access to the information from their database if the patient visits them. The use of technology in record keeping in hospitals can improve sharing of information among hospitals.

Research Idea

The research focuses on ‘investigating the impact of EMR systems in hospitals’. EMR system is used in hospitals to organize, capture, retrieve, and maintain medical records related to a patient. This technology has replaced paper medical records which have been the primary source for all clinical and administrative, and legal purposes. At first, hospitals were reluctant in accepting and integrating EMR systems. However, with the development of technology, many hospitals in the UK have accepted and integrated EMR systems. The chosen research explores the impact of EMR system on healthcare service delivery, the research idea also focus on the advantages and challenges of EMR systems usage in the healthcare industry. Moreover, the research will explore how this technology can be improved to tackle some challenges and improve the positive impacts.

EMR systems have wide use in the healthcare industry (Kim et al., 2019). Comparing EMR systems records with paper records, one would realise that EMR systems produces records that are easy to copy and saves time of caregivers. There is also increased speed of exchanging information and people can conduct searches to minimize the time that could have been spent in manual searches (Kim et al., 2019). Moreover, the cost of electronic records is cheaper than that of paper records. Notably, paper records requires books to be bought every time. There is increased concern about environmental sustainability of medical service activities. Paper records can increase pollution and carbon emissions. However, keeping records electronically protect the environment (Nomani & Hussain, 2020). EMR system save office space significantly. Keeping hard copies of medical files can take large office space.

However, several aspects show that EMR systems have some disadvantages. The hardware that is used to keep such records and software becomes obsolete over a short period of time. Secondly, EMR systems are accessed through software, operating systems, and computers which limits their accessibility in hospitals in remote areas where there are poor access to the internet or electricity. Thirdly, they require high hardware costs. Some hospitals may not be able to install EMR systems because of lack of enough funding for the initial cost of installation. Software and computer hardware get damaged and this increases the risk of losing medical information.

EMR systems have several impacts on information accessibility and easing hospital operations. Operations in hospitals can be completed quickly when records about patients are accessed within a short time (Nomani & Hussain, 2020). This helps to increase the number of patients served within a day. Notably, long waiting lines have been an issue in many hospitals in the UK. EMR system can significantly minimize waiting lines in hospitals. EMR systems also improve the continuity plan of hospitals. They ensure that back-ups are available in case the hospital is affected by catastrophe such as fire. However, there are issues with confidentiality and privacy of patient information. Other than the physician serving the patient, other people within the hospitals such as IT personnel can easily access information which compromises the privacy of the patient.

Research Methodology

The research methodology refers to specific procedures and techniques used to select, identify, analyse, and process information about a certain research topic (Mishra & Alok, 2022). The methodology section of a research report allows the reader to evaluate the reliability and validity of the research. This research will use secondary data only. Due to the explanatory nature of the study and the novelty of the topic, a meta-analysis methodology will be used to investigate the impacts of EMR systems on hospital service delivery. This method searches and summarises evidence from several sources about the research question. It involves combining evidence from various sources to provide a single interpretation of the topic. Specific steps are followed when conducting research using meta-analysis. Mengist, et al., (2020), suggest that meta-analysis involves formulating the question, literature review, and applying qualitative research techniques to interpret information from the literature review. Consistent with this suggestion, the following procedure will be used in this study.

- *Research question:* Research question will be formulated as follows; investigating the impacts of EMR systems in hospitals, its challenges, and ways of improving the usage of EMR systems in hospitals.
- *Literature review:* This will involve collecting secondary data sources. This will ensure that research is based on evidence from credible sources.
- *Meta-synthesis and findings:* This step will involve selecting several themes related to the topic based on literature review.

Meta-analysis methodology has been chosen for several reasons. Firstly, it will avoid biasness in the research. It will avoid the personal ideas and experiences of the researcher. Secondly, this methodology is the most appropriate in bringing the blurry picture of the impacts of EMR systems

into focus (Mengist, et al., 2020). There will be abundance of evidence from sources and comparing such sources will lead to a single interpretation that is clear to users of the research. Thirdly, it has been chosen as it is cost-effective. There will be no cost incurred on collecting primary data from participants.

Research Sources

This research will use several sources of research that will be retrieved from Google search engine, Google Scholar, and EBSCO. Sources used will be credible. Here are some of the sources credible sources that will support the research.

Hossain et al., (2019), investigated the factors that influence physicians to adopt electronic medical record systems in hospitals. This source was found from Google Scholar. It was accessed by searching the research topic on Google Scholar. According to Hossain et al., (2019), physicians use EMR systems to cut costs and increase efficiency in healthcare service delivery. Moreover, these researchers suggests that increased training should be done on physicians in regard to use of EMR systems. They suggest that training should be one to medical students and also on people practising as physicians.

In another research, Pai et al., (2021), explored the impacts of using electronic health records (EHR) on healthcare outcomes. This source was found from Google search engine. It was accessed by searching the research topic on Google search engine. Since not all sources found on Google search can be credible, this source was evaluated using CRAAP test and it was found to be credible source. According to Pai et al., (2021), EMR systems help medical practitioners and managers in planning their work and ultimately help them to achieve national and international healthcare goals. Moreover, there help physicians and hospital managers to achieve standards set at national and international levels. Pai et al., (2021), argue that most EMR systems are error-free and this help in getting accurate results especially when searching medical history of patients. They also argue that EMR system provides timely information about a patient.

The research identified a source that explored a challenge in using EMR systems in hospitals. This source was found from Google Scholar. It was accessed by searching the research topic on Google Scholar. According to Poulos et al., (2021), a key challenge in using this system is incompleteness of information recorded that lead to data gaps in the system. Poulos et al., (2021), argue that storing medical information in structured way helps those involved in making accurate clinical decisions, enables better research, and improves patient care. However, a significant number of records are incomplete which makes such records unreliable. This challenge is caused by lack of sufficient digital skills in medical physicians and caregivers. In another

research, Keshta and Odeh (2021), explored the concerns and challenges that face EMR systems. They found that security and privacy of patients is a key challenge. According to Keshta and Odeh (2021), sensitive healthcare data is kept in separate devices which enables accessibility to patient's information to other people. This threatens the privacy and security of information offered by patients in hospitals. Keshta and Odeh (2021), recommend that healthcare professionals should apply efficient encryption scheme to safeguard patient information. This source was found from Google Scholar. It was accessed by searching the research topic on Google Scholar.

Conclusion

The research topic chosen is 'investigating the impact of Electronic Medical Record (EMR) systems in hospitals'. This topic was chosen as there is need to improve the usage of EMR systems in hospitals and offer a viable response to the challenges that face the usage of this technology. Due to the explanatory nature of the study and the novelty of the topic, meta-analysis methodology will used adopted to investigate the impacts of EMR systems on hospital service delivery. The sources explored in this research suggest that some of the impacts are helping medical practitioners and managers in planning their work and ultimately help them to achieve national and international healthcare goals as well as cutting costs and increasing efficiency in healthcare service delivery.

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