PERCEPTION AND ATTITUDES OF NURSES TOWARDS ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM IN UNIVERSITY OF BENIN TEACHING HOSPITAL, EDO STATE

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DECEMBER, 2025

DECLARATION

This is to declare that this research project titled **PERCEPTION AND ATTITUDES OF NURSES TOWARDS ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM IN UNIVERSITY OF BENIN TEACHING HOSPITAL, EDO STATE** was carried out by **OBAZEE VICTORY** is solely the result of my work except where acknowledged as being derived from other person(s) or resources.

EXAMINATION NUMBER: _____

FACULTY OF NURSING SCIENCE, UNIVERSITY OF BENIN, BENIN CITY

SIGNATURE: _____

DATE: _____

CERTIFICATION

This is to certify that this project **PERCEPTION AND ATTITUDES OF NURSES TOWARDS ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM IN UNIVERSITY OF BENIN TEACHING HOSPITAL, EDO STATE,** was carried out by **OBAZEE VICTORY, MATRICULATION NUMBER: BMS2009113** of the Faculty of Nursing Science, University of Benin, Benin City.

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DEDICATION

This research study is dedicated to God Almighty, the master of the Day of Judgment whose mercy, grace, strength, wisdom, love, guidance and protection has kept me through my period of training and also enabling me to carry out and complete this research work.

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ABSTRACT

Electronic Medical Records (EMR) are digital medical records that can be accessed by various healthcare providers to facilitate patient data accessibility, transmission, and storage, foster collaboration among healthcare professionals, and utilize patient data quickly and efficiently. The creation of the EMR system allowed institutions to manage patient records in an intelligent, secure, and knowledgeable way. This research focused on the perception and attitudes of nurses towards electronic medical record and documentation systems. A total of 278 questionnaires were distributed, with 265 properly completed and returned, representing a response rate of 95.3%. Data were analyzed using descriptive statistics (frequencies and percentages) and inferential statistics (Chi-square) to test the hypotheses providing valuable insights on the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state. The study adopted descriptive design. A convenient sampling technique. The results from this study showed that the majority of the nurses (81.9%) had a positive perception towards the electronic medical record and documentation system, while only 18.1% had a negative perception. It also showed that the vast majority of the nurses (87.2%) had a positive attitude towards the utilization of electronic medical record and documentation systems, while only 12.8% had a negative attitude. Furthermore, the findings also revealed that the most significant factors identified, were technical issues, prior experience with computers or technology, and lack of training. Other factors such as staffing shortage, lack of clear policies on EMR use, complexity of the software, and internet connectivity issues were also considered as a challenge in the effective utilization remains of EMR in the hospital.

KEYWORDS: *Electronic Medical Records, Electronic Health Records, Nurses, Perceptions, Attitudes,*

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Paper documents are created, maintained, and stored daily from patient visits to healthcare facilities where they are treated by trained medical staff and technology. These documents were numerous and combined to make what is known as "medical records." Maintaining this medical record, which is a confidential communication between the care providers and the patient during diagnosis, treatment, and therapy, is the primary duty of the healthcare professional. The patient record's most significant database, which is made up of diverse data entered by healthcare professionals in either paper or electronic form, is its medical records (Oumer et al., 2021). The healthcare provider must retain all patients' medical records for at least 10 years after their last visit, whether they are alive or deceased. In the end, there are several documents and pieces of paper that are manually and conventionally kept.

Despite its many shortcomings, such as the loss of cards and folders, untraceable folders, increasing space consumption, documentation and medication errors, time wasted during card/folder retrieval and slow workflow, delayed access to effective medical care, etc., the traditional (manual - pen to paper) system of recording, storing, and retrieving patient medical records has been in use for a long time. Due to risks associated with natural disasters like flood, theft, pest attacks, deterioration, and fire outbreak, among others, storing these paper documents and patient medical records can be a risky business (Mohana et al., 2021). The digitalization of healthcare entails a host of innovations to the healthcare system, which is supposed to support the provision of healthcare services, facilitate the interaction between different stakeholders, improve the quality of healthcare and facilitate patients' participation in the decision making process (Aakhus et al., 2023; Gopal et al., 2024). In this context, electronic

medical records (EMR) are considered a key element to the primary challenges encountered by the healthcare delivery systems (Basil et al., 2022).

Electronic Medical Records (EMR) are digital medical records that can be accessed by various healthcare providers to facilitate patient data accessibility, transmission, and storage, foster collaboration among healthcare professionals, and utilize patient data quickly and efficiently (Adler-Milstein et al., 2020; Keshta & Odeh, 2021; World Health Organization [WHO], 2021). The EMR are a comprehensive collection of patient information, including medical history, diagnoses, investigations and laboratory test results, medications, management plan, and other pertinent information (Enahoro et al., 2024; Knevel & Liao, 2023). EMR systems are gaining ground among contemporary information technology (IT) system initiatives in developing nations with the aim of enhancing data management and communication in healthcare organizations. The creation of the EMR system allowed institutions to manage patient records in an intelligent, secure, and knowledgeable way (Oumer et al., 2021).

EMRs allow healthcare professionals to transition from paper-based records to electronic formats. This shift helps in creating well organized and readable records while also improving access to clinical data related to specific patient outcomes (Handayani et al., 2023). The adoption of EMRs within healthcare systems has become widespread globally (Jha et al., 2024). EMRs have the potential to transform healthcare by reducing costs, improving the quality of care, enhancing patient safety, eliminating duplication, minimizing medical errors, streamlining decision-making, ensuring patient data privacy and security, and facilitating efficient information sharing (Aapro et al., 2020; Awad et al., 2021). Successful implementation of EMR systems, guided by well-defined strategies, increases acceptance among healthcare workers while minimizing delays and usability issues (Aguirre et al., 2024). However, the adoption of EMRs in developing countries has been lower and primarily focused

on administrative tasks rather than clinical applications (Akwaowo et al., 2022; Odekunle et al., 2022).

Many healthcare facilities in Nigeria have demonstrated a strong interest in EMR and made significant progress in promoting their adoption in healthcare as a means of improving patient care, controlling costs, and meeting other health objectives as the adoption of EMR systems is quickly gaining momentum in many healthcare settings across the country (Alanazi, Butler-Henderson & Alanazi, 2024). Despite these significant advantages of EMR The healthcare system still faces a multitude of challenges, including inadequate e-healthcare infrastructures, health professionals' attitudes and awareness levels, lack of training of health professionals, ineffective management, shortage of human resources, users' resistance and poor commitment of staff (Badran, 2022; Salameh et al., 2024). Another critical factor that can restrict EMR adoption is the staff's negative attitude and resistance to using the system, claiming that it would interrupt their workflow rather than improve it (Hossain et al., 2024). These issues then result in poor patient care, as well as poor work performance and job satisfaction among health professionals. When these systems are made available, health information managers, physicians, nurses, and other caregivers must be able to use them successfully; nevertheless, many of them still prefer to keep paper records. Understanding these challenges should foster empathy and a deeper appreciation for the complexities of implementing digital healthcare solutions in developing countries.

1.2 Statement of the Problem

Electronic Medical Record (EMR) system is the digital equivalent of paper records or charts in a hospital, typically containing patients' general health information, management, and treatment plan (Babale et al., 2021). Compared to other healthcare workers, nurses are among the foremost users of the system in their daily work practice (Holtz & Krein, 2021). In the

nursing profession, documentation is crucial for ensuring safe, ethical, and effective practice in clinical areas. It accounts for approximately 15%–20% of nurses' time, indicating that a significant portion of their working hours is dedicated to documenting patient care (Alkouri et al., 2021; Samani & Rattani, 2023). Accurate, effective, and timely EMR documentation reflects the quality of care rendered, saves time, and minimizes the risk of errors. It also meets the professional, legislative, and agency standards and facilitates communication between nursing personnel and other healthcare providers (Farokhzadian et al., 2020; Antwi, 2023).

Despite widespread agreement on the benefits of electronic health records and other forms of health information technology, healthcare professionals have been slow to adopt these technologies. Nurses, in particular, often view technology as incompatible with the personal nature of caregiving and fail to recognize its advantages for nursing practice (Nilsson et al., 2023). An effective documentation depends on the users' attitudes and knowledge, as well as their technical abilities, the functionality of the working environment and infrastructure, and the availability of necessary resources (Tilahun & Fritz, 2021). A large percentage of healthcare professionals prefer the conventional pen and paper method because they believe it to be easier to use than the EMR technology and the success of this technology depends largely on nurses' acceptance. They have the potential to either encourage their colleagues to adopt it or influence them to avoid using it (Yontz et al., 2020).

The adoption, use, and deployment of such systems have been found to be influenced by the perception of the healthcare professionals who are the systems' ultimate users. Based on their own talents, expertise, and experience, among other things, the providers may have different perceptions of the tools. As a result, user acceptance seems to be significantly influenced by perception (Alanazi et al., 2020). Since they are the system's primary users, numerous studies have demonstrated that users' attitudes, acceptance, and skills are crucial for the adoption and implementation of EMR systems in healthcare systems. Several studies have explained nurses'

attitudes and acceptance towards growing computerization. According to a study conducted by Cho et al. (2021), it revealed that nurses' resistant behavior was directly related to perceived usefulness and resistance to change. A study conducted in Oman (Raddaha et al., 2023), found that using an EMR system significantly reduced the time it took nurses to complete patient documentation. This benefit is attributed to the system's ability to give nurses more time to meet the needs of patients with direct care (Tipping et al., 2020)

Nevertheless, several concerning issues have been encountered in the usage of the EMR system in the clinical setting, such as its relatively high-cost consumption, especially in terms of setup costs, additional hardware costs, and maintenance costs (Ang, 2024). Apart from that, in the initial stage of EMR system adoption, there may be barriers for healthcare workers who are unfamiliar with the system and lack technical support (Pare et al., 2024). Nurses, who play the main role in patient care management, are expected to apply the new system in their work practices to enhance the patient care process. Therefore, the adaptation of these technologically advanced skills into their daily work practice could cause difficulties for nurses, thereby impacting their nursing care delivery (Fiato, 2022). Furthermore, the electronic medical recording and documentation system was recently introduced in inpatient care in the study population and this has prompt the researcher to carry this research on the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

1.3 Objectives of the Study

The main objective of this study is to assess the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

The specific objectives of this study are;

1. To assess the perception of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.
2. To assess the attitudes of nurses towards utilization of electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.
3. To determine the factors that influences utilization of electronic medical record and documentation system among nurses in University of Benin Teaching Hospital (UBTH), Edo state.

1.4 Research Questions

1. What is the perception of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state ?
2. What is the attitudes of nurses towards utilization of electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state ?
3. What are the factors that influences utilization of electronic medical record and documentation system among nurses in University of Benin Teaching Hospital (UBTH), Edo state ?

1.5 Hypothesis of the Study

To aid the completion of the study, the following research hypotheses were formulated;

H1: There is no significant relationship between the sociodemographic data (age, gender, years of experience) and the attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

H2: There is no significant relationship between the level of perception and the attitudes of nurses towards utilization of electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

1.6 Significance of the Study

The significance of the study lies in its potential to assess the perception and attitudes of nurses towards electronic medical record and documentation system which is multifaceted, encompassing improvements in patient care, efficiency, communication, and overall job performance among nurses in the University of Benin Teaching Hospital (UBTH), Edo state, and its broader implications for patients' well-being. The study holds the following key significance:

Enhanced Patient Care and Safety: The findings from the study will help show that electronic medical records (EMRs) and electronic health records (EHRs) can significantly improve patient care and safety by reducing medical errors and enhancing the quality of documentation. For instance, using an EMR system significantly reduced the time it took nurses to complete patient documentation, thereby allowing more time for direct patient care. Additionally, the clarity in communication of physician's orders with the use of computers results in a reduction of medication errors by staff on the receiving end of the order.

Improved Documentation Quality: Electronic documentation systems can lead to more accurate and complete patient records. The findings from the study will help show that EMRs has improved the quality of documentation. However, there are also concerns about the quality of content in electronic records compared to paper-based records.

Communication and Interprofessional Collaboration: The findings from the study will help show that EMRs and EHRs can enhance communication and collaboration among healthcare providers. The use of electronic systems can improve the clarity and readability of patient notes, reducing misunderstandings and errors. However, the introduction of technology can also disrupt informal communications and aspects of person-centered care. Nurses have

expressed concerns that interactions with patients can be displaced by time-intensive documentation tasks.

Empowering Hospital Healthcare Services: Furthermore, University of Benin Teaching Hospital (UBTH), can use the result from this study for improving its services towards its patients and clients. The implementation of electronic medical records (EMRs) and electronic health records (EHRs) can impact the efficiency and workflow of nurses. The findings from the study will help to report increased documentation time, and that the time spent on documentation can be reduced with proper training and system optimization.

Patient and Nurse Perceptions: The findings from the study will help show nurse perceptions of the nurse-patient relationship when nurses use EMRs which are also important. Some studies have found that patients generally hold positive opinions on the value of EMRs, appreciating quick access to their electronic records. However, nurses can identify strategies through this study as on recommendations to maintain therapeutic relationships and communication while using EMRs, such as positioning the computer to facilitate eye contact and involving patients in the documentation process.

Academic Contribution: Findings from this study will contribute to the development of educational materials and programs that focus on increasing awareness and understanding of the importance of EMRs and documentation to nurses and patient's care. The integration of EMR training into nursing education is essential for preparing future nurses to effectively use these systems. The findings from the study will help show the benefits to nursing education in receiving training on EMRs. It will add to the existing body of knowledge in nursing and helps as basis for further research. This study could be used by other students/researchers as reference material.

1.7 Scope of the Study

This study is limited or focuses on the assessment of perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state. This study is also limited to nurses who are currently working in University of Benin Teaching Hospital (UBTH), Benin city, Edo state. This study is equally delimited to the stated three(3) research objectives, research questions and two(2) research hypotheses.

1.8 Operational Definition of Terms

Electronic Medical Records (EMRs): An electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within a healthcare organization

Electronic Health Record (EHRs): An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be created, managed, and consulted by authorized clinicians and staff across more than one health care organization.

Perception: In the context of this study, it refers to the participants' understanding regarding meaning of electronic medical recording and also as a means through which nurses can documents patient's care and therapeutic regimen.

Attitude: In the context of this study, it refers to the participants' willing and acceptance to engage in use of electronic medical recording and documentation of patient care.

Utilization: In the context of this study, it refers to the participants' willing and how often electronic medical recording is being used by the participants in documentations of care and other therapeutic activities done on the patient.

Nurses: It refers to healthcare personnel registered with Nigeria nursing council tasked with provision of professional nursing care to patients and clients in the various units and functioning independently, interdependently and competently in University of Benin Teaching Hospital, Edo state.

CHAPTER TWO

LITERATURE REVIEW

This chapter deals with the review of related literature. The review of related literature was discussed under the following subheadings: Conceptual review, Theoretical framework and Application to the study, Empirical review, and Summary of Literatures.

2.1 Conceptual Review

Healthcare delivery has been completely transformed by electronic health records (EHRs) or electronic medical records (EMRs), which offer a digital platform for exchanging, managing, and storing patient data. A wide range of patient data, including lab results, treatment plans, medication lists, medical histories, and allergy in- formation, are included in electronic health records (EHRs). Critical findings and consequences for healthcare practice are highlighted in this comprehensive analysis, which looks at how EHRs affect patient care and outcomes (Cerchione et al., 2023; Gopal et al., 2024; Kumar & Mostafa, 2020). This review to provide a comprehensive overview of the role electronic health records (EHRs) play in modern healthcare and how they impact patient outcomes and care. This study identifies the benefits and challenges of EHRs through the examination of current literature, providing insights into their successful incorporation into clinical practice. This review is significant because it has the ability to educate researchers, policymakers, and healthcare professionals on how Electronic Health Records (EHRs) affect patient outcomes and care. Healthcare stakeholders and nurses may make informed decisions about the deployment and use of EHRs in their practices, which will eventually improve patient care and outcomes, by being aware of the advantages and difficulties associated with these technology.

2.1.1 Concept of Electronic Medical Records (EMRs)

Electronic Medical Records (EMRs) have reportedly been linked to several improvements in healthcare quality. Some of these include enhancing patient safety through the reduction of medication errors, enhancing care, efficiency through the elimination of redundant testing, enhancing care effectiveness through the use of clinical decision support systems, enhancing care timeliness through quicker access to clinical data at the point of care, and enhancing health delivery analysis through more effective outcome assessment, research, and audit to guide decision-making both at the individual practice level and across the health system (Kaala, 2022). Afolaranmi et al. (2020) described electronic medical records (EMRs) as the electronic record of a person's health-related information created, collated, managed, and used by authorized healthcare providers in a health institution. Any healthcare system with an electronic medical records (EMRs) system has the potential to revolutionize healthcare in terms of cost savings, medical error reduction, service quality improvement, patient safety improvement, decision-making, time savings, data confidentiality, and exchanging medical data. Depending on the system and healthcare settings, using an EMRs to read and write a patient's record may also be possible through mobile handwriting-capable devices, such as tablets and Smart phones. This makes it easily visible and accessible for consumers.

The enormous advantages of EMRs systems, including but not limited to the elimination of redundant paper-based processes, time management in registering and retrieving patient information, work efficiency and streamlined workflow, and simple access to patient data, enhancing patient safety, reducing prescription errors, reducing waste and costs associated with healthcare and research, and so forth are primarily responsible for the improvements in healthcare outcomes. Despite these significant advantages of EMRs, majority of healthcare facilities still register and document patients using paper and pen or a combination of manual and computerized systems. Because it takes less time and doesn't interfere with workflow,

health professionals believe that using paper records for patient registration and documentation is more practical and effective. Some staff members lack basic computer skills and are therefore slow to type and enter data. Others are resistant to technological change because they are concerned about using IT, and still others are just slow in general, among other factors, there is little or no time to become familiar with new technology, there is a lack of adequate management, there is weak worker dedication, and there is poor maintenance service (Afolaranmi et al., 2020). These issues arise during the transition from the old manual system to the new electronic system, which typically leads to skeletal completion, low adoption, and low acceptance of the technology.

People working in the healthcare industry want to be innovative and move toward a paperless system, but lack of information has caused them to be concerned about costs and patient safety. The concern of "how would these medical records be permanently preserved, safeguarded, and managed to avoid being exposed to dangers" arises in light of this. The adoption of electronic medical records is one of the most significant responses to the query. In order to address the various healthcare issues facing people in the modern world, this modern innovation has led to the adoption of Electronic Health (eHealth), which includes the use of electronic medical records, Health Information Systems, decision support systems, and telemedicine (Adebayo & Akinyosoye, 2021). This is due to its many benefits over the manual system of maintaining medical records. Health facilities are thinking about switching from paper-based records to electronic medical record systems in light of the introduction of information technology initiatives in the nation and around the world. The collection, storage, utilization, and dissemination of patient clinical data have become standardized thanks to information technology (IT). It is clear that a new system is gradually replacing manual (paper-based) methods, which many have described using different terms such as Automated Health Records (AHR), Computer-based Patient Record (CPR), Electronic Medical Record (EMR), and

Electronic Health Record (EHR). One distinctive quality of this new system is that it aids medical practitioners in managing patient health data and enhancing care. In this new approach, medical data about patients is now being recorded using an electronic medium called an EMRs, which is getting more sophisticated every day.

2.1.2 History

The growth of Electronic Health Records (EHRs) tells a journey of technology innovation, regulatory reform, and changing healthcare practices that collectively reshaped patient care and outcomes (Cogan et al., 2023; Darlington, 2022). This thorough analysis explores the key turning points and developments in the development of EHRs, highlighting their influence on patient outcomes and care. The idea for electronic health records (EHRs) originated in the 1960s when scientists and medical professionals started looking into ways to digitize patient records (Robichaux et al., 2024). The technology of the time limited the first attempts at electronic health records (EHRs), which mostly relied on punch card systems and mainframe computers. The early systems were expensive and cumbersome, which prevented their widespread use. More complex EHR systems were made possible by developments in computer technology in the 1970s and 1980s (Sadoughi et al., 2024). The emergence of networking technologies and personal computers facilitated the creation of electronic databases that could store and retrieve patient data more effectively. Despite these advancements in technology, the usage of EHRs by healthcare professionals has not increased, with many still keeping paper records (Kim et al., 2024; Sutton et al., 2020).

Patient care and results have been significantly impacted by the use of EHRs. EHRs have improved patient information's accuracy and accessibility, fostering greater care coordination and more informed decision-making. They have reduced errors and duplicate testing by streamlining record-keeping and documentation. EHRs have also enhanced provider-to-

provider contact, which has led to greater care coordination and a decline in medical errors. EHRs also enable evidence-based practices and clinical decision-making, leading to improved treatment outcomes and patient safety. EHRs have improved patient outcomes by improving the effectiveness, safety, and quality of patient care overall. EHRs seem to have a bright future ahead of them, thanks to ongoing technology improvements spurring new developments. It is anticipated that more interoperable EHR systems will enable smooth information sharing across healthcare providers. To further improve patient care and outcomes, it is also expected that EHRs would connect more closely with other healthcare technology, like telemedicine and remote monitoring. In summary, the development of electronic health records is a story of innovation and revolution in the provision of healthcare. Electronic Health Records (EHRs) have transformed patient care and outcomes, improving the quality, safety, and efficiency of healthcare delivery since its humble origins in the 1960s and broad implementation in the 2000s (Abernethy et al., 2022). EHRs will remain essential in influencing the future of healthcare, resulting in years to come in advances in patient treatment and outcomes (Jeffery et al., 2020; Wang et al., 2022).

2.1.3 Evaluation of Electronic Health Records

Revolutionizing the storage, access, and exchange of patient information, electronic health records, or EHRs, have profoundly changed the healthcare sector (Cerchione et al., 2023; Mourya & Idrees, 2020; Rudin et al., 2020). Decades of technology progress, changing healthcare regulations, and growing awareness of the benefits of digital health information are all contributing factors to this shift. Healthcare professionals initially investigated digitizing patient data in the 1960s, which is when the idea of electronic health records (EHRs) originated. The limitations of the time's technology, which mostly relied on mainframe computers and punch card systems, hindered the early attempts. Wide- spread adoption of these early systems was hampered by their high cost and complexity. More complex EHR systems were made

possible by advances in computer technology in the 1970s and 1980s. The development of electronic databases for the more effective storing and retrieval of patient data was made possible by the advent of personal computers and networking technologies. Many healthcare practitioners continued to use paper-based records in spite of these technological advancements (Kim et al., 2024; Sadoughi et al., 2024; Sutton et al., 2020).

Improved patient care, better care coordination, and increased efficiency are just a few advantages of the EHR's integration into healthcare systems. Electronic Health Records (EHRs) facilitate prompt and effortless access to patient data, allowing healthcare professionals to make better decisions and improve patient outcomes. They also help healthcare providers communicate with one another, which enhances care coordination and lowers medical errors. Notwithstanding these advantages, provider reluctance, data security concerns, and interoperability problems have hindered the adoption and integration of EHRs. However, it is anticipated that continued attempts to develop EHR systems and address these issues will strengthen their function in the provision of healthcare (Gill et al., 2020; Mullins et al., 2020; Watterson et al., 2020).

2.1.4 Effectiveness and Importance of EMR

Patient care and results have improved as a result of the significant improvements made to patient information efficiency and accessibility through the use of electronic health records, or EHRs. This thorough analysis looks at how EHRs affect efficiency and accessibility, emphasizing improved patient information access, streamlined record-keeping and documentation, and a decrease in test duplication and medical errors. A major advantage of EHRs is the enhanced patient data accessibility. No matter where they are, healthcare providers may quickly and easily access patient records because to EHRs. This accessibility is especially important when there is an emergency since it can save lives to have quick access to critical

patient data (Neves et al., 2020; Tapuria et al., 2021). Furthermore, electronic health records (EHRs) provide a thorough perspective of a patient's historical health information, including diagnoses, prescriptions, allergies, and test results. Healthcare professionals are able to make better judgments about patient care and treatment when this information is easily accessible (Abdulkadir et al., 2022).

Electronic Health Records (EHRs) have improved efficiency and decreased the possibility of errors by streamlining the paper work and record-keeping process. Healthcare practitioners can do away with paper-based data by using EHRs to electronically enter and update patient information (Tapuria et al., 2021; Victor & Great, 2021). Error risk is decreased since electronic documentation is easier to read and more readable than handwritten notes. Additionally, electronic health records (EHRs) offer a single location for all patient data, saving medical professionals time and effort by eliminating the need to search through numerous paper documents. To further increase productivity, EHRs can also automate some documentation tasks, like coding and billing. Additionally, the number of medical errors and test duplications has decreased because to EHRs. EHRs lower the likelihood of errors by enabling healthcare providers to make more accurate diagnoses and treatment decisions by giving them access to comprehensive patient information (Melton et al., 2021; Johnson et al., 2023). EHRs further reduce the chance of unfavorable occurrences by informing medical professionals about possible drug interactions or allergies. Furthermore, EHRs decrease test duplication by giving healthcare practitioners access to prior test findings, enabling them to evaluate older tests before requesting new ones. By ensuring that tests are only repeated when necessary, this approach lowers expenses, lowers the possibility of needless treatments, and perhaps protects patients from injury (Rozental & White, 2024).

Patient outcomes and care have been greatly improved by the efficiency and accessibility that EHRs provide. EHRs have revolutionized healthcare delivery by enhancing patient information access, expediting record-keeping and documentation, and lowering medical errors and test duplication. The influence of EHRs on patient care and outcomes will increase with ongoing efforts to enhance EHR systems and resolve outstanding issues (Adane et al., 2024; Ezeigweneme et al., 2023; Mehta et al., 2020). Electronic health records (EHRs) have improved patient care and outcomes by revolutionizing communication and care coordination within healthcare settings. EHRs increase continuity and coordination of care, foster better provider-to-provider communication, and have an impact on patient engagement and involvement in treatment. Improved provider communication is one of the main advantages of electronic health records. EHRs make it possible for medical staff to quickly and readily access patient data, which promotes better teamwork and communication. For example, EHRs allow healthcare practitioners to more effectively coordinate patient care by providing real-time updates on their illnesses.

According to several studies (Gatiti et al., 2021; Hornik et al., 2024; Nordo et al., 2024), electronic health records (EHRs) also enhance communication by providing a common repository for patient information, enabling healthcare providers from different disciplines and locations to access the same data. This promotes more coordinated treatment (Ibekwe et al., 2024). EHRs further improve provider collaboration by facilitating communication through functions like electronic referrals and secure messaging. By offering a thorough perspective of a patient's medical history, including past medical problems, prescriptions, allergies, and test results, electronic health records (EHRs) enhance care coordination and continuity. Healthcare professionals may more efficiently organize patient care and guarantee continuity of treatment across various venues and providers thanks to this easily accessible information. By sending

out warnings and reminders for screenings and preventative care, EHRs also improve care coordination (Mallozzi et al., 2020; Schrembs, 2023).

To guarantee the prompt implementation of preventive care measures, EHRs, for instance, can notify clinicians when a patient is scheduled for a screening or immunization. By enabling patients to access their health records and play an active role in managing their health, electronic health records (EHRs) have a favorable impact on patient engagement and involvement in care. Through encrypted messaging platforms, patients may interact with their healthcare providers and access their medical history, prescriptions, and test results. By giving patients access to individualized health information and instructional materials, EHRs help increase patient engagement. To help patients make educated decisions about their health, EHRs, for example, can provide information on their illness, available treatments, and self-care techniques (Etukudoh et al., 2024; Willis et al., 2022). To sum up, electronic health records (EHRs) have greatly facilitated care coordination and communication in hospital settings, which has improved patient outcomes. EHRs have revolutionized the way that healthcare is delivered by enabling improved communication between healthcare providers, enhancing care coordination and continuity, and enabling patients to take an active role in their care. EHR systems' influence on patient care and results will continue to improve with ongoing attempts to improve them and solve any outstanding issues.

2.1.5 EHR and Clinical Decision

Clinical decision-making and treatment outcomes in healthcare settings have been significantly impacted by Electronic Health Records (EHRs) (Lee et al., 2020; Lewkowicz et al., 2020; Patterson et al., 2024). The fact that EHRs promote evidence-based procedures is one of their main advantages. At the point of care, electronic health records (EHRs) can give healthcare professionals with up-to-date, evidence-based information by integrating clinical guidelines

and procedures directly into the system. By assisting providers in making better decisions regarding patient care, this integration improves results. Clinical decision support systems, which assist healthcare practitioners in identifying possible drug interactions, allergies, and other factors that may affect treatment decisions, are another way that EHRs promote evidence-based practices. EHRs help make treatment decisions that are safer and more effective by providing this information in real-time. (Wasylewicz et al., 2024; Ostropolets et al., 2020; Khalifa et al., 2024). EHRs make it easier to use clinical decision support systems, which improve treatment results and clinical decision-making. These tools might be as basic as reminders and alerts or as complex as algorithms that make suggestions based on patient information.

EHRs, for instance, have the ability to recommend preventative care based on a patient's medical history or notify healthcare professionals about possible drug interactions. By reminding patients to get frequent screenings or tests, these decision support tools in EHRs also contribute to better chronic condition management by making sure patients receive the right care. Patient safety and treatment outcomes are significantly impacted by EHRs. EHRs help healthcare providers make more accurate diagnoses and treatment decisions by providing access to extensive patient data. This can improve treatment outcomes and save healthcare costs. Because they reduce the possibility of pharmaceutical errors, EHRs also improve patient safety. They are able to notify users of possible drug interactions, allergies, and other issues that could jeopardize the security of their medications. (Hydari et al., 2024; Tubaishat, 2024) These alerts contribute to the improvement of overall patient safety by preventing adverse medication events. Electronic Health Records (EHRs) have greatly revolutionized the way healthcare is delivered by promoting evidence-based practices, enabling clinical decision support tools, and improving treatment outcomes and patient safety. The influence of EHR

systems on treatment outcomes and clinical decision-making will be further enhanced by ongoing attempts to integrate new technologies and improve existing ones.

2.1.6 Challenges and Barriers of EMR

With so many advantages for patient outcomes and care, electronic health records, or EHRs, have completely changed the way healthcare is delivered. However, there have been a number of difficulties and obstacles in their usage and execution. Examining how EHRs affect patient care and results, this thorough assessment focuses on interoperability problems, privacy and security difficulties, and acceptance and resistance issues from providers. Interoperability, or the capacity of various EHR systems to exchange and use patient data, is one of the main problems with EHRs. Fragmented care can result from a lack of interoperability since medical professionals might not have access to all patient data. Due to this, there may be gaps in care, drug mistakes, and unnecessary testing (Rudin et al., 2020; Wyatt et al., 2020). Disparities in healthcare providers' data standards and systems can give rise to interoperability problems. Data transmission and storage formats used by different EHR systems can differ, which makes seamless information interchange challenging. Furthermore, it's possible that EHR providers use proprietary systems that are difficult to integrate with other systems.

Another significant obstacle to the effectiveness of EHRs in improving patient care and outcomes is privacy and security concerns. Cyberattacks target electronic health records (EHRs) because they hold sensitive patient data, such as test results, prescriptions, and medical histories. Patient privacy and safety may be jeopardized by data breaches that result in unauthorized access to patient information (Benson et al., 2021; Lehne et al., 2024; Schulz et al., 2024). Healthcare providers need to put strong security measures in place, like encryption, access controls, and frequent audits, to allay these worries. But putting these policies into

practice may be expensive and time-consuming, which presents a problem for medical professionals, especially smaller practices with fewer resources.

The influence of EHRs on patient care and outcomes is also significantly hampered by provider resistance and adoption issues (Niazkhani et al., 2020; Tsai et al., 2020). EHR adoption may be resisted by healthcare professionals because of worries about more paperwork, disruptions to productivity, and perceived lack of value. Adoption may also be more difficult because elderly providers might not be as accustomed to new technologies. Healthcare companies need to give healthcare providers the necessary assistance and training to overcome these obstacles. This could involve giving continual help to handle any problems or queries that come up in addition to teaching on how to use EHR systems efficiently. In order to minimize disruption, healthcare companies also need to make sure that EHR systems are easy to use and smoothly integrate into current workflows. Furthermore, the adoption of electronic health records (EHRs) may have some challenges and in order to set standardized data standards, improve security measures, and give healthcare providers the assistance and training they need, it will be necessary for legislators, EHR companies, and healthcare providers to work together. They can optimize the benefits of EHRs on patient care and outcomes by tackling these obstacles, which will eventually raise the standard and safety of healthcare delivery.

2.1.7 Future of EMR

Electronic Health Records (EHRs) have already significantly impacted healthcare delivery, but their full potential is yet to be realized. The following explores the future directions and opportunities of EHRs in impacting patient care and outcomes, focusing on advances in technology and interoperability, potential for integration with telemedicine and remote monitoring, and their role in population health management and research.

2.1.7.1 Advances in Technology and Interoperability

Advancements in technology, such as artificial intelligence (AI), machine learning, and blockchain, are poised to revolutionize EHRs and their impact on patient care and outcomes. AI and machine learning can analyze vast amounts of patient data to identify patterns and trends, helping healthcare providers make more informed decisions and improve treatment outcomes. These technologies can enhance predictive analytics, assist in diagnosing diseases earlier, and personalize treatment plans based on individual patient data (Chattu, 2021; Kumar et al., 2022). Blockchain technology, with its ability to securely store and share data, can enhance the interoperability of EHR systems, enabling seamless exchange of information among healthcare providers. Blockchain can ensure the integrity and security of patient data while making it easily accessible across different healthcare platforms (Tagde et al., 2021). Furthermore, the development of standardized data formats and protocols can improve interoperability among EHR systems, facilitating better coordination of care and continuity of care for patients across different healthcare settings.

2.1.7.2 Integration with Telemedicine and Remote Monitoring

EHRs have the potential to integrate seamlessly with telemedicine and remote monitoring technologies, expanding access to care and improving patient outcomes. Telemedicine allows healthcare providers to deliver care remotely, which can be particularly beneficial for patients in rural or underserved areas. EHRs can facilitate telemedicine by providing access to patient information and enabling secure communication between patients and providers (Ahmad et al., 2021; Dinh-Le et al., 2024). Similarly, EHRs can support remote monitoring of patients with chronic conditions, allowing healthcare providers to track patient data in real-time and intervene proactively when necessary. Remote monitoring can lead to better management of chronic conditions, such as diabetes and hypertension, by continuously tracking vital signs and other health metrics, thereby improving outcomes for patients (Jat & Grønli, 2023).

2.1.7.3 Role in Population Health Management and Research

EHRs play a crucial role in population health management and research by providing access to large amounts of patient data. This data can be used to identify trends and patterns in disease prevalence, track outcomes of interventions, and identify areas for improvement in healthcare delivery. EHRs also enable personalized medicine by providing access to genetic and other patient-specific information, allowing healthcare providers to tailor treatment plans to individual patients for more effective and efficient care (Bardhan et al., 2020; Barrett et al., 2019). Furthermore, EHRs can support population health management efforts by providing tools for tracking and managing population health indicators, such as immunization rates, chronic disease prevalence, and health disparities. These tools can help healthcare organizations identify areas where interventions are needed and allocate resources accordingly (Braunstein, 2022; Hatef et al., 2024).

For example, EHRs can facilitate the identification of populations at risk for certain conditions and ensure they receive timely preventive care and screenings (Hohman et al., 2023). The future of EHRs in impacting patient care and outcomes is promising, with advances in technology, interoperability, and integration with telemedicine and remote monitoring. EHRs have the potential to revolutionize healthcare delivery by providing access to timely and accurate patient information, enabling personalized medicine, and supporting population health management efforts. Continued investment in EHR technology and infrastructure will be key to realizing these opportunities and improving patient care and outcomes. By addressing the challenges of interoperability, privacy, and security, and enhancing provider adoption through training and support, the healthcare industry can maximize the benefits of EHRs and ensure their full potential is realized.

2.2 Theoretical Review

This is based on Technology Acceptance Model (TAM)

2.2.1 Technology Acceptance Model (TAM)

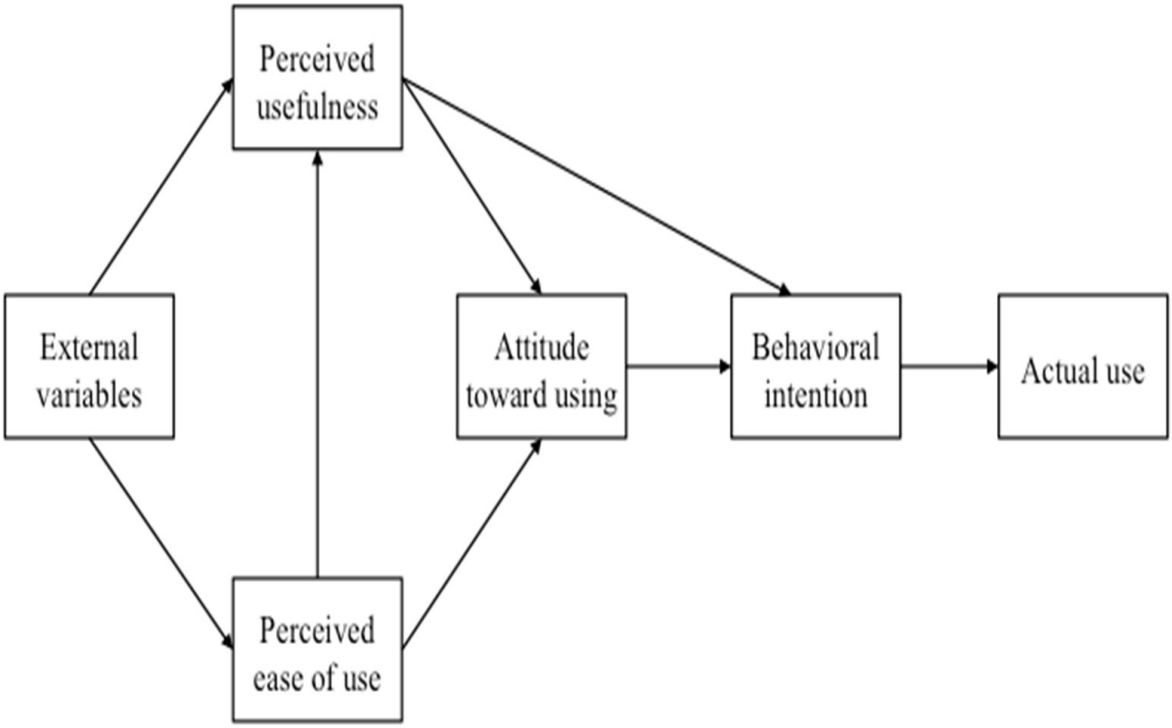

Fig 2.1: Original technology acceptance model (adapted from Davis et al., 1989).

The technology acceptance model (TAM) was first introduced in the 1980s and has widely been used by researchers to study technology acceptance (Davis, 1989). TAM provides a foundation to investigate how external variables affect intention to use a particular technology. The original TAM has five key determinants: perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), behavioral intention to use (ITU), and actual use (AU) of a computer system. External variables such as social factors affect individuals' initial perceptions of new technologies and influence PU (the degree to which an individual believes the technology will improve their performance) and PEOU (the degree to which an individual

believes the technology will be low-effort to use). These factors subsequently affect attitudes toward technology and ultimately predict actual use. Researchers have utilized TAM to investigate how medical professionals and patients accept and use various kinds of technology, such as EHRs, software products, mobile information technology, and telemedicine technology (eICU). Additionally, previous studies have used TAM as a theoretical framework to explore the students' acceptance of technology in educational settings, such as web-based learning, online courses, and clinical imaging portal for developing healthcare education.

2.3.2 Applications to the Study

For this study, TAM will be utilized with constructs of self-efficacy, general computer skills, and training on electronic documentation system to study nurses' technology training and how it affects their intentions to use EHRs. TAM's constructs of perceived usefulness, perceived ease of use, and behavioral intention to use will also be examined in this study with respect to EHRs.

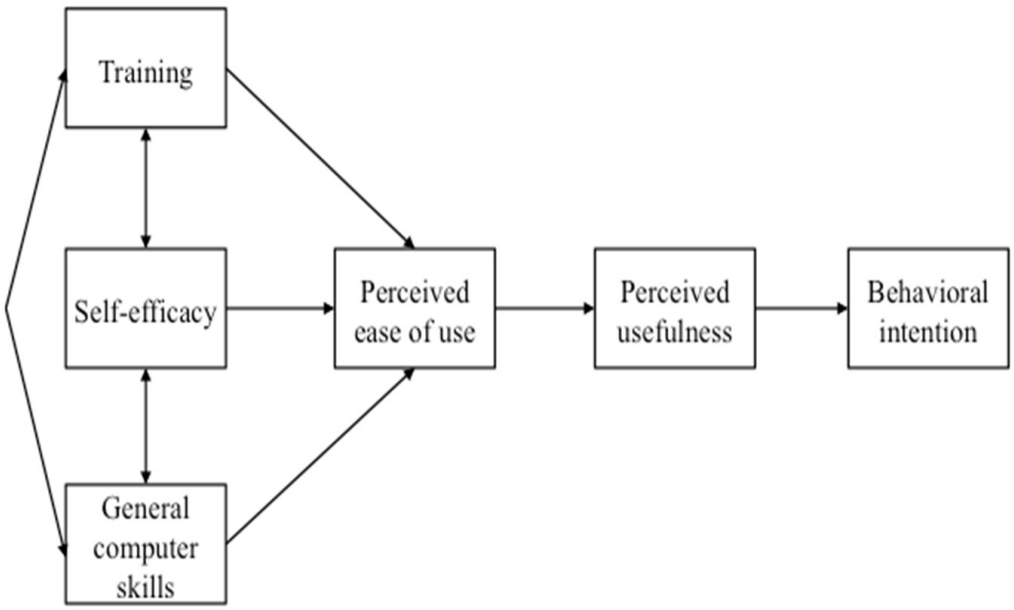

Fig 2.2: Application of Technology Acceptance Model

The proposed model has been modified to develop TAM in the context of an electronic documentation system used by nurses in clinical practice. The modified model describes nurses' computer skills, training and self-efficacy in electronic documentation systems that could affect their perceptions in using these systems. In our model, training to use an electronic documentation system has been added along with computer skills for testing the hypotheses that they affect perceived ease of use in EHR. Compared to models of prior studies (Gagnon et al., 2024; Kowitlawakul et al., 2020), this model compares the predictive performance of the external factors: nurses' computer skills, electronic documentation system training, and its self-efficacy to investigate their effects on nurses' perceptions of using electronic documentation systems. They includes;

Perceived usefulness: The degree to which a person believes that using a particular system would enhance his or her job performance. Perceived usefulness refers to the degree to which an individual believes that using a particular system will enhance their job performance. In the context of EHRs in Nigeria, several studies have highlighted the perceived usefulness of EHRs among nurses:

i. **Improved Patient Care:** Nurses in Nigeria perceive EHRs as a tool that can significantly improve the quality of patient care. They believe that EHRs can reduce medical errors, enhance communication among healthcare providers, and provide timely access to patient information
ii. **Efficiency and Accuracy:** EHRs are seen as a means to streamline documentation processes, reduce paperwork, and improve the accuracy of patient records. This can lead to more efficient and effective patient care
iii. **Research and Surveillance:** EHRs can also support research and surveillance activities, which are crucial for public health initiatives. Nurses recognize the potential of EHRs to contribute to these efforts

Perceived ease of use: The degree to which a person believes that using a system would be free of effort. Perceived ease of use is the degree to which an individual believes that using a particular system will be free of effort. For nurses in Nigeria, the ease of using EHRs is influenced by several factors:

i. **Training and Support:** The extent to which educators train nursing students on practical skills and deliver knowledge related to developing a person's specific competence. (Based on classes in nursing training, the depth, quantity, and quality of the training, and the attitude of educators towards EHR software). Adequate training and ongoing support are critical for nurses to feel confident in using EHRs. Studies have shown that lack of proper training and support can hinder the adoption and effective use of EHRs

ii. **User-Friendly Interface:** The design and user-friendliness of the EHR system play a significant role in its acceptance. Nurses are more likely to use EHRs if the system is intuitive and easy to navigate

iii. **Technical Issues:** Frequent technical issues, such as system outages and slow performance, can negatively impact the perceived ease of use. Ensuring a stable and reliable system is essential for sustained use

2.3 Empirical Review

2.3.1 Perception towards electronic medical record and documentation system

According to a study carried out by Hendy et al. (2025) aimed to evaluate the knowledge, attitudes, and acceptance of Electronic Health Records (EHRs) among nurses in Egypt. A descriptive cross-sectional study was conducted involving 1,217 nurses from 33 public and private hospitals. Data were collected using a self-administered online questionnaire, which assessed knowledge, attitudes, and acceptance of EHRs. The data were analyzed using Spearman's rank correlation and binary logistic regression. Their result revealed that significant

positive correlations were identified between nurses' knowledge and attitudes towards EHRs ($r=0.72$, $p<0.001$), knowledge and acceptance ($r=0.67$, $p<0.001$), and attitudes and acceptance ($r=0.79$, $p<0.001$). Key predictors of HER acceptance included higher education (postgraduate) ($p=0.004$), good computer skills ($p<0.001$), satisfactory knowledge ($p<0.001$), and positive attitudes ($p<0.001$). They further concluded that Nurses' knowledge and attitudes play a crucial role in their acceptance of EHRs. These findings underscore the importance of targeted education and skill development programs to support the effective implementation of HER systems in Egyptian healthcare settings. Healthcare leaders and policy makers must champion the adoption of EHRs by creating policies that support their implementation. Creating a supportive environment that encourages the use of EHRs can significantly enhance their acceptance.

According to a study carried out by Ismail et al. (2022), to identify trained nurses' perception toward using EMR in the wards. A non-experimental cross-sectional survey covered the multi-discipline area. A stratified random sampling method in which the population in this research consisted of n= 138 trained nurses. Their results found that the trained nurses tended to document the data at the nurse's station compared to the bedside entry. It's also shown that the demographics variable significantly correlated with attitude domains. Hence with the research results, it is envisaged to benefit the nurses and organization and hopefully can become the catalyst for the Ministry of Health in further improving and elevating the system throughout all hospitals in Malaysia.

According to a study carried out by Jayalakshmi et al. (2022), to assess perception and attitude on Electronic Health Record Monitoring & computer application in Health care among the staff nurses. Quantitative approach with descriptive research design was used. Non- Probability convenient sampling technique was used to select 70 staff nurses working in Shri Vinoba

Bhave Civil Hospital, Silvassa. Self-administered semi structured questionnaire which consists of five sections. It includes socio-demographic variables, perception & preference on EHRM & Attitude by PATCH Scale. Their findings show that 27 of them had very low positive attitude, 12 of them had low positive attitude, 12 of them had very low negative attitude & 19 of them had low negative attitude. According to PATCH Scale 3 of them had uneasiness to use computers in health care, 30 of them got limited awareness, 35 of them got realistic view & only 2 of them had enthusiastic view. They further concluded that majority of the staff nurses are not having positive attitude towards EHRM. They are more comfortable with Case sheet method. This view can be changed by various method example in-service education programme on EHRM.

Also, according to a study carried out by Ramoo et al. (2023), to assess the perception and satisfaction of nurses toward the electronic medical record system in a teaching hospital. A cross-sectional study was conducted among 350 nurses in a teaching hospital via a self-administered questionnaire between May to October 2019. Descriptive analysis, independent t-test, analysis of variance, and hierarchical multiple regression were used to analyze the data using Statistical Package for Social Sciences software version 25. In addition, a The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) was used as guide in reporting the results of this study. Their result revealed that almost all the nurses (98%, n = 343) had a positive perception toward the electronic medical record system, though their perceptions significantly differ across work units, computer or laptop ownership, and daily time spent on the system (all $p < .05$). Nurses who had received training reported better satisfaction with the system. They further concluded that among the issues highlighted by the participants that warrant attention were system development and connectivity. This study, therefore, emphasizes the involvement of nursing personnel in system development to ensure an appropriate approach for nursing care delivery.

Furthermore, according to a study carried out by Adamu et al. (2024), to assess the knowledge, attitude, and perception of healthcare professionals regarding EMRs at the National Ear Care Center (NECC) in Kaduna, Nigeria. A cross-sectional survey was conducted among healthcare professionals, including doctors, nurses, pharmacists, and other allied healthcare staff, working at NECC. A structured questionnaire was used to collect data on participants' demographic characteristics, knowledge of EMRs, attitude towards their implementation, and perceptions of their benefits and challenges. Data were analyzed using descriptive statistics. Their results revealed that a total of 109 healthcare professionals participated in the study, with a response rate of 83.9%. The majority of respondents (92.6%) had a high level of knowledge about EMRs, while only 7.2% had a low level of knowledge. Regarding attitude, 65% of participants expressed a positive attitude towards the implementation of EMRs in NECC. However, concerns were raised that healthcare workers prefer paper based type than EMR (75.3%) due to the potential for privacy breaches. Perceived benefits of EMRs included increased work productivity (92.6%), enhanced patient care and safety (87.2%), and it enables tasks to be accomplished more quickly (85.3%). They further concluded that the study found a positive attitude towards EMR implementation among healthcare professionals at NECC, but highlighted the need for education and training. Concerns were raised about EMRs negatively impacting doctor-patient relationships, suggesting strategies for maintaining strong communication and patient-centered approaches to improve healthcare delivery and efficiency.

2.3.2 Attitudes towards utilization of electronic medical record and documentation system

According to a study carried out by Okonkwo et al. (2022), to assess health information managers' attitude and perception of the transition from traditional paper-based records to Electronic Medical Records at Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State, Nigeria. The huge advantages of EMR systems, such as the removal of

unnecessary paper-based operations, simple access to patient information, a reduction in medication errors, etc., are largely responsible for the positive outcomes in healthcare. Despite these significant advantages, major healthcare facilities still register and document patients using pen and paper or a manual approach combined with an electronic system. Their research focuses on analyzing health information managers' attitudes and perceptions concerning the switch from manual to electronic medical records. 57 certified health information managers working at the Nnamdi Azikiwe University Teaching Hospital in Nnewi, Anambra State, participated in the descriptive survey study. Descriptive statistics were employed to assess the data, and the chi-square (x2) test was utilized to examine the relationship between the variables. The results showed that the respondents' attitudes and perceptions were overwhelmingly positive, which contributed to their complete acceptance of EMR. EMR was favored because it was simple to use and time-saving, which led to good work production. Lack of computer knowledge, the possibility of power outages, and poor network performance are all things that affect how information managers feel about using electronic medical records. EMR adoption has the ability to decrease patient wait times and boost patient satisfaction. As a result, medical records department employees need to become more computer literate in order to use computers easily and productively.

According to a study carried out by Hussein et al. (2021), to determine the knowledge and attitudes of registered nurses toward electronic nursing process documentation. This cross-sectional study was conducted among 189 registered nurses who work in medical wards at a teaching hospital in Kuala Lumpur. Simple random sampling was used. Respondents' knowledge of electronic nursing documentation was measured using a questionnaire developed by Guedes, and their attitudes toward electronic nursing documentation were measured using a questionnaire developed by Hagos. Data analysis was performed using Statistical Package for the Social Sciences Statistics 26.0 for Windows and $p < 0.05$ was considered significant.

Their results revealed that, 50.8% of the respondents have a low knowledge level of electronic nursing documentation, and 89.4% have a positive attitude toward electronic nursing documentation. No significant relationship was found between sociodemographic factors, such as age, education level, working experience, knowledge level, and attitude, and electronic nursing documentation. They further concluded that nurses had a higher knowledge level of and positive

According to a study carried out by Mu'awiyyah et al. (2021), to assess level of knowledge, attitude and perception of health care workers on the use of EMR in Ahmadu Bello University Teaching Hospital, Zaria. Cross sectional study was conducted in May 2019 among 128 healthcare workers that were randomly selected using stratified sampling technique. Pre-tested structured self-administered questionnaire was used for data collection. Data was cleaned and analyzed using IBM SPSS version 21.0. Univariate analysis to generate summary statistics, proportions and frequency tables was conducted. While Bivariate analysis was conducted to identify variables that were significantly associated with respondents knowledge, attitude and perception at a P-value of <0.05. Their result revealed that majority (46.1%) of the respondents had fair knowledge of EMR and 35.1% had good knowledge. All the respondents had positive attitude towards EMR while 96.9% of them had positive perceptions on EMR. Doctors were 85.0% less likely to be knowledgeable about EMR than other healthcare workers (aOR 0.150; 95% CI 0.030 - 0.748). Respondents that were computer literate were 30.0% more likely to be knowledgeable than those who were not (aOR 1.297; 95% CI 3.885 – 4.330) and those that had computer training were 13.0% more likely to be knowledgeable than those who were not (aOR 1.126; 95% CI 0.032 – 0.501). They further concluded and recommended that majority of respondents have at least fair knowledge and good perception regarding EMR despite all of them having good attitude towards it. Respondents' cadre, being computer literate and having computer training have a statistically significant association with respondents' knowledge on

EMR. EMR should be introduced in ABUTH Zaria by the hospital management as there are positive signs from the healthcare workers pointing towards its favourable and seamless implementation.

Also, according to a study carried out by Smyth et al. (2024), to describe the impact that electronic medical record (EMR) documentation has on nurses' and midwives' practice. A cross-sectional survey design was used. An anonymous questionnaire was distributed in electronic and paper formats to identify nurses' and midwives' opinions of the impact of EMRs and computers on their practice and patient relationships in a regional tertiary-level hospital. Quantitative data was analysed descriptively; free text responses were analysed thematically. Their results revealed that nurses (n = 31) and midwives (n = 49) responded. Both respondent groups disagreed that the EMR had improved teamwork with other health professionals. Overwhelmingly, midwives disagreed that EMRs had improved the quality of care (n = 43, 87.8%). Nurses agreed EMRs had improved documentation standards (n = 24, 77.4%) and patient safety (n = 22, 71%). However, midwives responded that EMRs had not improved women's safety (n = 31, 63%). Three themes emerged from the data: computers affect my productivity; computers affect my relationship with the patient/woman; the EMR increases my frustration and stress levels. Nurses and midwives felt the heavy documentation load and lack of integration across the EMR platform reduced efficiency, discouraged teamwork, and further excluded patients/women from participating in their care. Although nurses and midwives agreed that the accessibility of EMRs to all health care staff is advantageous, the documentation demands of each clinical area are vastly different. The hybrid system of paper and electronic documentation increases documentation workload. Generally, midwives were more critical of the impact of EMRs on their practice.

Furthermore, according to a study carried out by Nanle et al. (2021), to evaluate the perception and utilization of standardized electronic health records among nurses in Jos University Teaching Hospital (JUTH), Jos, Nigeria. The target population was 528 nurses in JUTH, Nigeria. A descriptive survey was adopted for the study. Data was collected using questionnaire as the instrument for the study, which was validated and found reliable with a Content Validity Index of 0.75 and a reliability coefficient of 0.98. Sample size of 228 was obtained using Slovin's formula. Participants were selected using stratified random sampling technique. 228 questionnaires were distributed and 228 were retrieved. This formed a response rate of 100%. Statistical Package for the Social Sciences (SPSS) version 24 and Microsoft excel 2018 version were used for the analysis in order to avoid errors due to manual calculations. Data generated from the study were analyzed and presented using descriptive statistics such as frequency tables, percentages, and mean; and inferential statistics such as chi-square to test hypotheses. Findings revealed that majority of the respondents (85.1%) were females between 31-52years with a mean age of 45.6years, with a working duration of 11-30 years (Mean working duration=18years). Further findings revealed that majority of the respondents (76.8%) had positive perceptions about standardized electronic health records. However, majority of the respondents (75.4%) were not utilizing standardized electronic health records. Chi-square analysis ($X2 = 0.812$, $df = 2$, significant level of 0.05, critical value of 5.991) revealed that there was no significant relationship between Nurses' perception and utilization of standardized electronic health records in Jos University Teaching Hospital. It is therefore recommended that the teaching hospital should adopt standardized electronic health record as a standard for documentation practice.

2.3.3 Factors that influences utilization of electronic medical record and documentation system

According to a study carried out by Ay & Polat (2024), to determine the usage of the electronic patient record system, the reasons and limitations behind the system not being used, the opinions and beliefs of the nurses about the system. A questionnaire prepared by the authors was used as an instrument of data collection. The data obtained from the questionnaires was evaluated in a computer medium. Frequency presentation was used for the descriptive statistics of the data, while the Anova test was used for comparisons between groups. Their results revealed that a majority of the nurses who participated in the study were female, between 20-30 years of age, have a bachelor's degree. While the nurses reported using the medicine requisition screen on the system the most, they pointed out the automation system and the insufficient number of computers as the greatest problems. Most of the nurses thought that the system was insufficient and had to be changed and improved. While nurses between the ages of 31 and 40 mostly thought that electronic records reduced the orderliness in nursing applications and patient care, those who have been working for between 1 and 5 years thought otherwise. They further concluded that while the nurses have positive inclinations about the electronic patient record system, they think that the current system is not appropriate for recording their professional applications and should be changed and improved. According to the findings of their study, especially age and the duration for which they have worked in this occupation affect their opinions and beliefs on the usage of electronic records.

According to a study carried out by Asiri et al. (2024), to explore the direct and indirect effects of the Organizational factors (i.e. Organizational Support, Adequate Training, and User Involvement) and the Professional factors (i.e. Nurse Autonomy, Organizational Citizenship Behavior, and Nurse-Client Relationship) on nurses' attitude and acceptance of the Electronic Medical Record (EMR) system using the proposed model. The study is cross-sectional in

nature and gathered sample data from nurses working in a regional hospital in Riyadh (i.e. King AbdulAziz Medical City KAMC), KSA. A hard copy of the questionnaire was randomly distributed among the staff constituting the sample of 333 nurses using a Stratified Random Sampling method that stratified the sample according to their nursing units/departments in the organization. Their study's sampling frame was taken from among nurses working in a hospital which has already implemented an EMR system, in which nursing personnel with more than 6-month experience using the EMR system were recruited to ensure enough experience among nurses. The study unit of analysis is the individual nurse. The conducted correlation showed that both perceived usefulness and perceived ease of use have a positive moderate significant relationship with attitude. Nurse involvement, adequate training, and nurse client relationship have a positive weak, yet statistically significant relationship with attitude. Based on the result of this study, nurses have a positive attitude towards the EMR system. Yet, a source of conflict with management might be present. Perceived usefulness was found to be the factor most strongly related to the dependent variable attitude towards EMR usage and acceptance. The results also showed that nurses preferred group setting training and felt that both nurses and executives are in consensus regarding their attitude towards EMR adoption. Nurses repeatedly indicate their need for more support from their management and the need for another form of training that adapt to each user individual needs and method of learning.

According to a study carried out by Ayamolowo et al. (2023), to assess the utilization of EHRs and associated factors among nurses in a faith-based teaching hospital. This sequential explanatory mixed-methods study involved a sample of all 240 nurses from a teaching hospital where EHRs have been introduced. Quantitative data through semistructured questionnaires were collected and analyzed using Chi-square and logistic regression. Qualitative data were collected from 10 purposively selected nurses using an in-depth interview guide and analyzed through content analysis. Their results further revealed that the majority of participants reported

availability of EHR computer software (62.8%), internet facility (84.2%), and desktops (76.3%), but EHR was poorly utilized (27.3%). Factors significantly associated were nurses who were females [OR (odds ratio) ¼ 1.5, 95% CI (confidence interval), 0.21–11.24], BNSc degrees holders [OR ¼ 4.3; 95% CI, 1.06–17.43]; had computer EHR software [OR ¼ 7.4, 95% CI, 0.83–3.81], and sponsored EHR training [OR ¼ 2.10; 95% CI, 0.24–18.6]. Non-capturing of nursing tasks and nursing standardized language by EHR software, lack of institutional enforcement on EHR use, and absence of clear EHR policies were the main identified themes for the key barriers to using EHRs. They further concluded that EHR was poorly utilized among nurses. Gender, educational qualification, EHR resources, and sponsored training were factors significantly associated with the use. There is an urgent need for comprehensive EHR packages, sustained sponsored training, and formulation of EHR policy for effective EHR implementation.

Also, according to a study carried out by Maawati et al. (2024), to collect and synthesize the most credible evidence on nurses' perception of EMRs, along with the barriers and facilitators that influence their acceptance. Searching for relevant studies was carried out across three electronic databases, namely PubMed, Scopus and ProQuest in Dec 2023. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was followed in this study report. The selected studies were then analyzed narratively and organized thematically for presentation. Their results revealed that out of the 4,382 articles identified through comprehensive database searches, only 19 met the criteria for inclusion and reviewed. Through the synthesis of findings, two primary themes emerged, including nurses' perceptions and experiences with EMRs and facilitators & barriers for nurses’ in utilizing EMRs. They further concluded that nurses' perspectives are shaped by their computer skills, confidence in their abilities, and training. Despite obstacles such as nurse stress, EMRs present advantages such as enhanced patient care and decreased errors. Augmenting computer competency, delivering

training, and guaranteeing support are essential for effective EMRs integration, leading to enhanced healthcare provision and better patient results.

Furthermore, according to a study carried out by Alrasheeday et al. (2023), to assess nurses' attitudes toward EHRs and associated factors that affect the implementation of EHRs in different hospitals in Saudi Arabia. A cross-sectional study was utilized to collect data from 297 nurses working in public hospitals and primary healthcare centers in Ha'il Province from January to May 2023. Data were collected using the Nurses' Attitudes Towards Computerization questionnaire and a sociodemographic and work-related characteristics sheet. Their results revealed that most of the participants' attitude scores (81.1%, n = 241) were more than or equal to 60, representing positive attitudes, whereas 18.9% (n = 56) of the nurses' scores were less than 60, which is interpreted as negative attitudes. There was a significant relationship between nurses' attitudes toward EHRs and a participants' sex, where males had a more positive attitude than females ($p < 0.001$). Particularly, young nurses and those who had previous computer experience had a more positive attitude than older nurses and those who had no computer experience ($p = 0.044$ and < 0.001, respectively). Saudi nurses holding a master's degree had significantly more positive attitudes toward EHRs than non-Saudi nurses holding a bachelor's or diploma degree ($p = 0.007$ and 0.048, respectively). Nurses with less experience (less than five years) in the nursing field had a significantly positive attitude. Multiple linear regression showed that sex ($p = 0.038$), level of education ($p = 0.001$), and previous computer experience ($p < 0.001$) were independent factors of nurses' knowledge of EHRs. They further concluded that the majority of nurses had positive overall attitudes toward using EHRs. Nurses who are Saudi nationals, male, younger, have previous computer experience, and have less than five years of experience had a more positive attitude toward EHRs than nurses who are non-Saudi, female, older, have no computer experience, have bachelor's or diploma degree, and have less than five years of experience, respectively. Sex,

education level, and previous computer experience were independent factors of nurses' knowledge of EHRs.

2.4 Summary of Literature Review

Electronic Health Records (EHRs) have significantly transformed healthcare delivery, offering numerous benefits for patient care and outcomes. EHRs improve accessibility and efficiency by providing quick and easy access to patient information, streamlining documentation, and reducing medical errors and test duplications. They enhance communication and coordination among healthcare providers, leading to more cohesive patient care and fewer medical errors. Additionally, EHRs support clinical decision-making through integrated decision support tools that aid in evidence-based practices, improving treatment outcomes and patient safety. However, the implementation and use of EHRs are not without challenges. Interoperability issues, stemming from differences in data standards and proprietary systems, can lead to fragmented care. Privacy and security concerns are significant, given the sensitive nature of patient information and the risk of cyberattacks. Provider resistance due to workflow disruptions and increased documentation burden also poses a barrier to EHR adoption. Despite these challenges, advancements in technology, such as AI, machine learning, and blockchain, promise to further enhance the capabilities of EHRs. These technologies can improve data analysis, interoperability, and secure data sharing. The integration of EHRs with telemedicine and remote monitoring can expand access to care and improve the management of chronic conditions. Continued investment in EHR technology and infrastructure will be key to realizing these opportunities and further improving patient care and outcomes. To further substantiate the study, the theoretical framework utilized was Technology Acceptance Model (TAM) (Davis et al., 1989) in achieving this purpose.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter was discussed under the following subheadings: Research design, Research setting, Target population, Sample size, Sampling technique, Instrument for data collection, Validity of instruments, Reliability of instruments, Ethical consideration, Method of data collection and Method of data analysis.

3.1 Research Design

This study is aimed at assessing the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state. The cross-sectional descriptive non-experimental survey research design was adopted for this study because it helped the researcher to have an adequate information regarding the research problem.

3.2 Research Setting

This study was carried out among nurses in University of Benin Teaching Hospital (UBTH), Benin city, Edo state. The study includes nurses working as healthcare professionals rendering healthcare services at the University of Benin Teaching Hospital (UBTH), Benin city, Edo state.

Geographically, the University of Benin Teaching Hospital (UBTH) is a health care institution founded in 1973. It provides healthcare, teaching and research services. The hospital is situated along Ugbowo road in the heart of Benin city, Edo state. University of Benin Teaching Hospital (UBTH) is made up of various departments to render specialized care to patients with varied problems. It is in charge of curative health care and training of personnel. It provides healthcare, teaching and research services. It comprises of various units such as medical, surgical and emergency units, outpatient departments/clinics, medical departments, nursing service

department, X-ray department, catering department, recreational therapy department e.t.c. It also has school of learning among which are; School of Nursing, School of Midwifery, School of Post Basic Nursing, School of information and health technology management e.t.c

3.3 Target Population

The target populations for this study consisted of nurses in selected wards(units) who are currently rendering healthcare services at University of Benin Teaching Hospital (UBTH), Benin city, Edo state. The nurses in selected wards(units) at University of Benin Teaching Hospital (UBTH) consist of 689 nurses who are currently working in the following units as stated below where nursing services are needed. The table below shows the total numbers of respondents that were used for the study;

Table 3.1: Study of the target population

S/N	Institution	Total number of Nurses
1.	Accident and Emergency Unit A	78
2.	Accident and Emergency Unit B	76
3.	Surgical Unit	92
4.	Obstetrics and Gynaecology	90
5.	Medicine Unit A	72
6.	Medicine Unit B	67
7.	Theatre complex	63
8.	Paediatrics	73
9.	Clinic Unit A	45
10.	Clinic Unit B	33
	Total	**689**

3.4 Sample Size

The sampling size is the numbers of subjects or participant required and to which the study findings was generalized. The size was estimated from a population of 689 respondents using Taro Yamane (1967) formula.

$$n = \frac{N}{1 + Nd^2}$$

Where n = sample

N= population size

D= level of precision (confidence interval)

N= 689

D= 0.05

Thus;

$$N = \frac{689}{1+689(0.05)^2}$$

$$\frac{689}{1+ 689(0.0025)}$$

$$\frac{689}{1+1.7225}$$

$$\frac{689}{2.7225}$$

Therefore, n = 253

10% attrition = 25

Therefore, the minimum sample size is 278

Table 3.2: Sample Size Determination

S/N	Institution	Total number of Nurses	Number of Nurses to be Sample	Approximate number of Nurses to be Sample
1.	Accident and Emergency Unit A	78	(78÷689)×278	31
2.	Accident and Emergency Unit B	76	(76÷689)×278	31
3.	Surgical Unit	92	(92÷689)×278	37
4.	Obstetrics and Gynaecology	90	(90÷689)×278	36
5.	Medicine Unit A	72	(72÷689)×278	29
6.	Medicine Unit B	67	(67÷689)×278	27
7.	Theatre complex	63	(63÷689)×278	25
8.	Paediatrics	73	(73÷689)×278	30
9.	Clinic Unit A	45	(45÷689)×278	18
10.	Clinic Unit B	33	(33÷689)×278	14
	Total	**689**		**278**

3.5 Sampling Technique

The researcher used convenient sampling technique in selecting the respondent into the study at the University of Benin Teaching Hospital (UBTH), Benin city, Edo state. Convenient sampling technique is a non-probability method in which the researcher is at will to choose the most conveniently and economically available persons or objects as sample for the study, that is, according to who is available in no particular order (Nikolopoulou, 2023). The researcher selects this method because the nurses might not always all be available at the same time, therefore the instruments was distributed to the available nurses rendering healthcare service at the University of Benin Teaching Hospital (UBTH), Benin city, Edo state. She selects whosoever was closest and easiest.

3.6 Instrument for Data Collection

Structured questionnaire was the instrument that was used for data collection for this study. The items were constructed in a close-ended form where the respondents had to tick appropriately the option that suits their best knowledge. The questionnaires were divided into section A, B, C, and D to address the research objectives under investigation. Likert scale and closed ended question format were used in constructing the instrument that were used for this study.

Section A: Contained demographic information of the respondents

Section B: Contained research data of the respondents on the perception of nurses towards electronic medical record and documentation system

Section C: Contained research data of the respondents on the attitudes of nurses towards utilization of electronic medical record and documentation system

Section D: Contained research data of the respondents on the factors that influences utilization of electronic medical record and documentation system

3.7 Validity of Instruments

Validity refers to how accurately a method measures what is intended to measure. If a research has high validity that means it produces results that correspond to real properties, characteristics, and variations in the physical or social world (Middleton, 2023). High validity is one indicator that a measurement is valid. If a method is not reliable, it probably is not valid. Validity can be assessed by comparing the results to other relevant data or theory. Face and content validity was ensured. The questionnaire that was adopted was properly organized, structured and simplified by the researcher under the guidance of the supervisor and public health officers before it was distributed.

3.8 Reliability of Instruments

Reliability refers to how consistently a method measures something. If the same result can be consistently achieved by using the same methods under the same circumstances, the measurement is considered reliable (Middleton, 2023). A reliable instrument is one that can produce the same results when different versions of the same measurement scale is being compared (Middleton, 2023). A pilot study was carried out using split half method to test the reliability of the questions by administering same questionnaire to 28 nurses rendering healthcare services at Edo Specialist Hospital, Benin city, Edo state. The data were collected, analysed using Chronbach Alpha. Using this method, if a correlation coefficient of 0.78 was seen and this shows that the instrument is reliable.

3.9 Method of Data Collection

278 well-structured questionnaires containing questions relating to the research study were self-administered to sample survey at University of Benin Teaching Hospital (UBTH), Benin city, Edo state. While responses (data) being filled out in the questionnaire were formally and immediately gathered as they were guarded on how to answer the questions. The researcher approached each nurse with information on the research, as well as the objectives of the study were given. Those who were interested were approached and given the questionnaire with basic explanation of what is required of them. All respondents were assured of confidentiality and anonymity. The researcher was also present during the process of the respondents answering the questionnaires, and the questionnaires were retrieved from the respondents as soon as they indicated they had completed them.

3.10 Method of Data Analysis

This study employ descriptive statistics using mean, standard deviation, frequency and percentage distribution, while Chi-square statistical analysis techniques were used to test the

research hypotheses with the aid of the Statistical Package for Social Science (SPSS) version 28.0 for windows. The level of significance was set at $p<0.05$.

3.11 Ethical Consideration

The researcher is aware of the ethical and moral principles when it comes to the collection of information from respondents. Privacy which is one of the most important aspects of human rights were observed. Permission was sorted from the ethical clearance committee at University of Benin Teaching Hospital (UBTH), Benin city, Edo state, before collection of data. The major ethical principles that were upheld during this study were:

1. **Autonomy:** The individuals were not forced into participating in the research project. The respondents were allowed to make decisions for themselves without duress.

2. **Maintenance of confidentiality:** Throughout this study, the researcher did not disclose personal details of the participants like name, phone number and address. Confidentiality was ensured by not divulging the information to others and giving access or control to just the supervisor and the statistician.

3. **Informed consent:** The researcher ensured that the participants had full knowledge of the study, purpose and procedures to be followed, the possible risks and benefits. The researcher also ensured that the participants gave their full consent before they took part in the study.

4. **Avoidance of plagiarism:** Studies that were used were properly referenced.

5. **Right to fair treatment:** All participants were treated fairly without discrimination.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the analysis of data collected through questionnaires administered to nurses at the University of Benin Teaching Hospital (UBTH), Edo State. The study investigated the perception and attitudes of nurses towards electronic medical record and documentation systems. A total of 278 questionnaires were distributed, with 265 properly completed and returned, representing a response rate of 95.3%. Data were analyzed using descriptive statistics (frequencies and percentages) and inferential statistics (Chi-square) to test the hypotheses.

4.1 Socio-Demographic Characteristics of Respondents

Table 4.1: Distribution of Respondents According to Socio-Demographic Characteristics (n=265)

Variables	Categories	Frequency	Percentage
Gender	Male	58	21.9
	Female	207	78.1
Age (years)	Less than 30 years	46	17.4
	30-39 years	98	37.0
	40-49 years	72	27.2
	50-59 years	43	16.2
	60 years & above	6	2.2
Marital Status	Single	52	19.6
	Married	198	74.7
	Divorced	7	2.6
	Widowed	8	3.0
Highest Educational Qualification in Nursing	Diploma	103	38.9
	BSc	135	50.9
	MSc	25	9.4

	PhD	2	0.8
Ethnicity	Bini	112	42.3
	Esan	46	17.4
	Hausa	6	2.3
	Igbo	37	14.0
	Yoruba	31	11.7
	Others	33	12.3
Religion	Christian	244	92.1
	Muslim	19	7.2
	Others	2	0.7
Length of Post-Qualification Nursing Experience	Less than 1 year	11	4.2
	1-5 years	38	14.3
	6-10 years	54	20.4
	11-15 years	76	28.7
	16 years and above	86	32.4
Length of Experience on Current Hospital Unit	Less than 1 year	25	9.4
	1-5 years	89	33.6
	6-10 years	72	27.2
	11-15 years	47	17.7
	16 years and above	32	12.1
Rank (Position of the Nurse)	Nursing Officer	57	21.5
	Senior Nursing Officer	62	23.4
	Principal Nursing Officer	74	27.9
	Assistant Chief Nursing Officer	43	16.2
	Chief Nursing Officer	29	11.0

Unit	Accident and Emergency Unit A	30	11.3
	Accident and Emergency Unit B	29	10.9
	Surgical Unit	35	13.2
	Obstetrics and Gynaecology	34	12.8
	Medicine Unit A	27	10.2
	Medicine Unit B	26	9.8
	Theatre Complex	24	9.1
	Paediatrics	29	10.9
	Clinic Unit A	17	6.4
	Clinic Unit B	14	5.3

Table 4.1 presents the socio-demographic characteristics of the respondents. The majority of the respondents were female (78.1%), while males constituted 21.9%. The age distribution shows that the Highest proportion of respondents (37.0%) were between 30-39 years, followed by those between 40-49 years (27.2%). Regarding marital status, the majority (74.7%) were married. Most of the respondents had a BSc degree in Nursing (50.9%), followed by Diploma holders (38.9%). The ethnicity distribution shows that Bini constituted the Highest proportion (42.3%), followed by Esan (17.4%) and Igbo (14.0%). The majority of the respondents were Christians (92.1%). Regarding post-qualification nursing experience, 32.4% had 16 years and above of experience, while 28.7% had 11-15 years of experience. For the length of experience on the current hospital unit, 33.6% had 1-5 years of experience, followed by 27.2% with 6-10 years. The distribution according to rank shows that Principal Nursing Officers constituted the Highest proportion (27.9%), followed by Senior Nursing Officers (23.4%) and Nursing Officers (21.5%). Regarding the unit of practice, the respondents were fairly distributed across

the ten units of the hospital, with the Highest proportion from the Surgical Unit (13.2%), followed by Obstetrics and Gynaecology (12.8%).

4.2 Perception of Nurses towards Electronic Medical Record and Documentation System

Table 4.2: Perception towards Electronic Medical Record and Documentation System (n=265)

S/N	Items	Yes		No		Don't Know	
		Freq	%	Freq	%	Freq	%
1	Easy to access patient records using the EMR system	221	83.4	27	10.2	17	6.4
2	Easy to understand the information from the system	208	78.5	43	16.2	14	5.3
3	The patient record is displayed in a structured format	227	85.7	21	7.9	17	6.4
4	Easy to record patient data through EMR system	183	69.1	62	23.4	20	7.5
5	EMR system improves the quality of patient care	219	82.6	24	9.1	22	8.3
6	Patient information is more confidential with EMR system than manual records	175	66.0	67	25.3	23	8.7
7	Manual records are easy to store and retrieve than EMR system	53	20.0	194	73.2	18	6.8
8	EMR system reduces a lot of paper works	236	89.1	21	7.9	8	3.0
9	Patient information and lab results can be retrieved or accessed in a timely manner	212	80.0	42	15.8	11	4.2
10	Communication with other healthcare teams is easier with EMR	224	84.5	29	10.9	12	4.5

Table 4.2 shows the perception of nurses towards the electronic medical record and documentation system. A Positive proportion of respondents (83.4%) agreed that it is easy to access patient records using the EMR system, 78.5% found it easy to understand information from the system, and 85.7% agreed that patient records are displayed in a structured format.

Furthermore, 69.1% found it easy to record patient data through the EMR system, 82.6% believed that the EMR system improves the quality of patient care, and 66.0% felt that patient information is more confidential with the EMR system than manual records. Only 20.0% thought that manual records are easier to store and retrieve than the EMR system, while 73.2% disagreed with this statement. A significant majority (89.1%) agreed that the EMR system reduces paperwork, 80.0% believed that patient information and lab results can be retrieved or accessed in a timely manner, and 84.5% agreed that communication with other healthcare teams is easier with EMR.

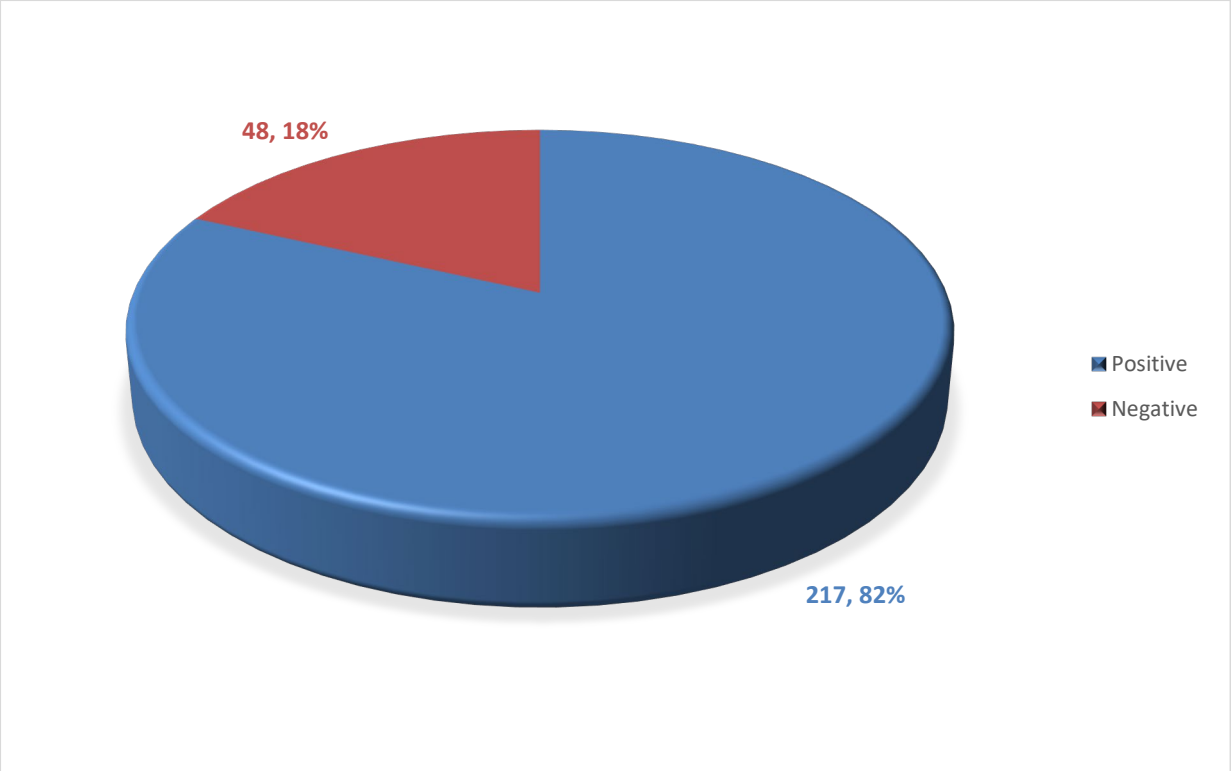

Figure 4.1: Level of Perception of Nurses towards Electronic Medical Record and Documentation System (n=265)

Figure 4.1 categorizes respondents' overall perception into positive and negative. The results show that the majority of the nurses (81.9%) had a positive perception towards the electronic medical record and documentation system, while only 18.1% had a negative perception.

4.3 Attitudes of Nurses towards Utilization of Electronic Medical Record and Documentation System

Table 4.3: Distribution of Respondents' Attitudes towards Utilization of Electronic Medical Record and Documentation System (n=265)

Items	Always	Most of the time	Sometimes	Rarely	Mean	Remark
I find it difficult to understand the technical aspects of EMR system applications (e.g., instruction and key)	23(8.7)	47(17.7)	119(44.9)	76(28.7)	2.06	Negative
I spent less time on documentation with EMR system	118(44.5)	87(32.8)	46(17.4)	14(5.3)	3.17	Positive
I am able to follow patient progress better with EMR system	131(49.4)	96(36.2)	32(12.1)	6(2.3)	3.33	Positive
I feel confident following the direction presented in EMR system	109(41.1)	112(42.3)	36(13.6)	8(3	3.21	Positive
I can retrieve information from EMR system easily	127(47.9)	98(37	32(12.1)	8(3	3.3	Positive
Electronic medical records will make patient management and follow up easier	145(54.7)	89(33.6)	26(9.8)	5(1.9)	3.41	Positive
EMR when introduced aids faster patient care	138(52.1)	91(34.3)	29(10.9)	7(2.6)	3.36	Positive
Healthcare workers prefer EMR than the paper based type	112(42.3)	101(38.1)	41(15.5)	11(4.2)	3.18	Positive
Using e-health system improves my work performance	124(46.8)	109(41.1)	26(9.8)	6(2.3)	3.32	Positive
Training healthcare workers on EMR should be mandatory	168(63.4)	67(25.3)	24(9.1)	6(2.3)	3.5	Positive
Using e-health system improves the quality of the work I do	129(48.7)	103(38.9)	27(10.2)	6(2.3)	3.34	Positive
EMR is detrimental to healthcare in the long run	14(5.3)	27(10.2)	86(32.5)	138(52.1)	1.69	Negative

Note: For items 1-11, Always = 4, Most of the time = 3, Sometimes = 2, Rarely = 1; For item 12 (negative statement), scoring was reversed. Mean score ≥ 2.5 = Positive, < 2.5 = Negative

Table 4.3 presents the attitudes of nurses towards the utilization of electronic medical record and documentation systems. Only two items had mean scores below 2.5 (indicating negative

attitudes): “I find it difficult to understand the technical aspects of EMR system applications” (mean = 2.06) and “EMR is detrimental to healthcare in the long run” (mean = 1.69, after reverse scoring). Notably, a Positive percentage of respondents indicated that they “Always” or “Most of the time” spend less time on documentation with EMR (77.3%), follow patient progress better (85.6%), feel confident using the system (83.4%), can retrieve information easily (84.9%), and believe EMR makes patient management easier (88.3%) and aids faster patient care (86.4%). The Highest mean score was for the item “Training healthcare workers on EMR should be mandatory” (mean = 3.50), with 63.4% of respondents choosing “Always” for this item, indicating strong support for EMR training.

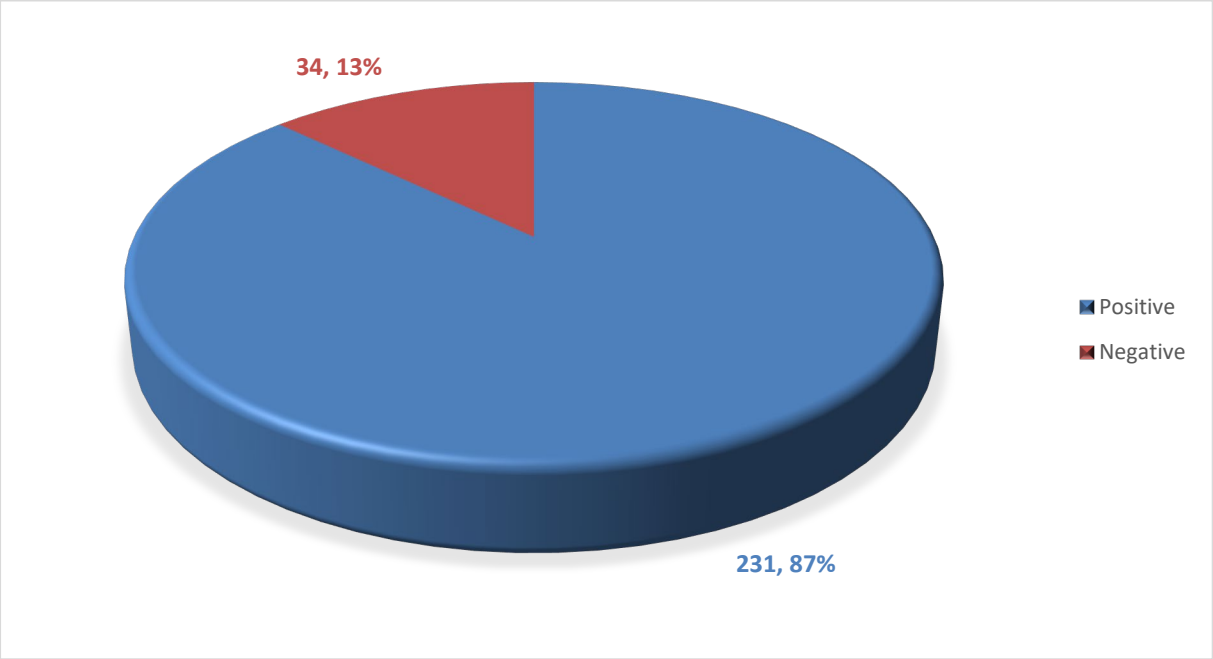

Figure 4.2: Level of Attitude of Nurses towards Utilization of Electronic Medical Record and Documentation System (n=265)

Figure 4.2 categorizes respondents’ overall attitudes into positive and negative based on their mean scores across all attitude items. The results show that the vast majority of the nurses (87.2%) had a positive attitude towards the utilization of electronic medical record and documentation systems, while only 12.8% had a negative attitude.

4.4 Factors that Influence Utilization of Electronic Medical Record and Documentation System

Table 4.4: Distribution of Respondents' Responses on Factors that Influence Utilization of Electronic Medical Record and Documentation System (n=265)

Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Remark
Lack of training	98(37.0)	114(43.0)	41(15.5)	12(4.5)	3.12	Positive
Technical issues (e.g., Negative system, frequent crashes)	112(42.3)	107(40.4)	37(14.0)	9(3.4)	3.21	Positive
Complexity of the software	76(28.7)	117(44.2)	59(22.3)	13(4.9)	2.97	Positive
Lack of support from colleagues or management	67(25.3)	121(45.7)	63(23.8)	14(5.3)	2.91	Positive
Insufficient time to use EMR	72(27.2)	126(47.5)	57(21.5)	10(3.8)	2.98	Positive
Lack of clear policies on EMR use	86(32.5)	119(44.9)	48(18.1)	12(4.5)	3.05	Positive
EMR system is user-friendly	73(27.5)	123(46.4)	58(21.9)	11(4.2)	2.97	Positive
EMR system is reliable	81(30.6)	138(52.1)	39(14.7)	7(2.6)	3.11	Positive
EMR system supports teamwork and communication among healthcare professionals	95(35.8)	136(51.3)	27(10.2)	7(2.6)	3.2	Positive

Internet connection reliable in your work setting	42(15.8)	97(36.6)	89(33.6)	37(14.0)	2.54	Positive
Enough staff to manage the workload and use EMR effectively	37(14.0)	89(33.6)	107(40.4)	32(12.1)	2.49	Negative
Penalties for not using EMR	45(17.0)	103(38.9)	87(32.8)	30(11.3)	2.61	Positive
Prior experience with computers or technology	91(34.3)	127(47.9)	38(14.3)	9(3.4)	3.13	Positive

Note: Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1; Mean score ≥ 2.5 = Significant factor, < 2.5 = Not significant factor

Table 4.4 presents the factors that influence the utilization of electronic medical record and documentation systems among nurses. The most significant factors identified were “Technical issues” (mean = 3.21), “EMR system supports teamwork and communication” (mean = 3.20), “Prior experience with computers or technology” (mean = 3.13), and “Lack of training” (mean = 3.12). A Positive percentage of respondents either “Strongly Agreed” or “Agreed” that these factors influence EMR utilization. The only factor that was not considered significant was “Enough staff to manage the workload and use EMR effectively” (mean = 2.49), with 52.5% of respondents either disagreeing or strongly disagreeing with this statement, indicating that staffing issues may be a challenge in the effective utilization of EMR systems. Other significant factors include “Lack of clear policies on EMR use” (mean = 3.05), “EMR system is reliable” (mean = 3.11), and “Complexity of the software” (mean = 2.97). The factor with the lowest mean score among the significant factors was “Internet connection reliable in your work setting” (mean = 2.54), suggesting that internet connectivity remains a challenge in the hospital.

4.5 Hypothesis Testing

Hypothesis 1:

H_0: There is no significant relationship between the sociodemographic data (age, gender, years of experience) and the attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

Table 4.5: Relationship between Age and Attitudes of Nurses towards EMR (n=265)

Age (years)	Positive		Negative		χ^2	P
	Freq	%	Freq	%		
Less than 30 years	43	93.5	3	6.5	9.427	0.049
30-39 years	89	90.8	9	9.2		
40-49 years	63	87.5	9	12.5		
50-59 years	32	74.4	11	25.6		
60 years & above	4	66.7	2	33.3		
Total	**231**	**87.2**	**34**	**12.8**		

Significant at $p < 0.05$

Table 4.5 shows the relationship between age and attitudes of nurses towards electronic medical record and documentation systems. The chi-square analysis indicates a significant relationship ($\chi^2 = 9.427$, df = 4, $p = 0.049$). Younger nurses (less than 30 years) had the Highest proportion of positive attitudes (93.5%), while older nurses (60 years & above) had the lowest proportion (66.7%).

Table 4.6: Relationship between Gender and Attitudes of Nurses Towards EMR (n=265)

Gender	Positive		Negative		χ^2	p-value
	Freq	%	Freq	%		
Male	53	91.4	5	8.6	1.272	0.259
Female	178	86.0	29	14.0		
Total	**231**	**87.2**	**34**	**12.8**		

Not significant at $p < 0.05$

Table 4.6 shows the relationship between gender and attitudes of nurses towards electronic medical record and documentation systems. The chi-square analysis indicates no significant relationship ($\chi^2 = 1.272$, df = 1, p = 0.259). Although a slightly Lower proportion of male nurses (91.4%) had positive attitudes compared to female nurses (86.0%), this difference was not statistically significant. This suggests that gender does not significantly influence nurses' attitudes towards EMR systems.

Table 4.7: Relationship between Years of Experience and Attitudes of Nurses towards EMR (n=265)

Years of Experience	Positive		Negative		χ^2	p-value
	Freq	%	Freq	%		
Less than 1 year	11	100.0	0	0.0	10.897	0.028
1-5 years	35	92.1	3	7.9		
6-10 years	49	90.7	5	9.3		
11-15 years	67	88.2	9	11.8		
16 years and above	69	80.2	17	19.8		
Total	**231**	**87.2**	**34**	**12.8**		

Significant at $p < 0.05$

Table 4.7 shows the relationship between years of experience and attitudes of nurses towards electronic medical record and documentation systems. The chi-square analysis indicates a significant relationship ($\chi^2 = 10.897$, df = 4, p = 0.028). Nurses with less experience had Lower proportions of positive attitudes, with 100% of nurses with less than 1 year of experience having positive attitudes, compared to 80.2% of nurses with 16 years and above of experience. Based on the above analyses, the null hypothesis that there is no significant relationship between sociodemographic data and attitudes of nurses towards EMR is partially rejected. While gender showed no significant relationship with attitudes, both age and years of experience showed significant relationships with nurses' attitudes towards EMR systems.

Hypothesis 2:

H_0: There is no significant relationship between the level of perception and the attitudes of nurses towards utilization of electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state.

Table 4.8: Relationship between Level of Perception and Attitudes of Nurses towards EMR (n=265)

Level of Perception	Positive		Negative		χ^2	p-value
	Freq	%	Freq	%		
Positive Perception	206	94.9	11	5.1	65.382	0.000
Negative Perception	25	52.1	23	47.9		
Total	**231**	**87.2**	**34**	**12.8**		

Significant at $p < 0.05$

Table 4.8 shows the relationship between the level of perception and attitudes of nurses towards electronic medical record and documentation systems. The chi-square analysis indicates a positively significant relationship ($\chi^2 = 65.382$, df = 1, p = 0.000). An overwhelming majority (94.9%) of nurses with positive perception had positive attitudes towards EMR, while only 52.1% of nurses with negative perception had positive attitudes. Based on this analysis, the null hypothesis that there is no significant relationship between the level of perception and the attitudes of nurses towards utilization of EMR is rejected.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

This chapter discusses the major findings of the research compared with the literature reviewed, the implication for nursing, summary, conclusion, recommendations and suggestions for further studies.

5.1. Discussion of Findings

The study investigated the perception and attitudes of nurses towards electronic medical record and documentation systems in University of Benin Teaching Hospital (UBTH), Edo state. A total of 278 questionnaires were distributed, with 265 properly completed and returned, representing a response rate of 95.3%. From the demographic statistics, it was observed that majority of the respondents were female (78.1%), while males constituted 21.9%. The age distribution shows that the Highest proportion of respondents (37.0%) were between 30-39 years, followed by those between 40-49 years (27.2%). Regarding marital status, the majority (74.7%) were married. Most of the respondents had a BSc degree in Nursing (50.9%), followed by Diploma holders (38.9%). The ethnicity distribution shows that Bini constituted the Highest proportion (42.3%), followed by Esan (17.4%) and Igbo (14.0%). The majority of the respondents were Christians (92.1%). Regarding post-qualification nursing experience, 32.4% had 16 years and above of experience, while 28.7% had 11-15 years of experience. For the length of experience on the current hospital unit, 33.6% had 1-5 years of experience, followed by 27.2% with 6-10 years. The distribution according to rank shows that Principal Nursing Officers constituted the Highest proportion (27.9%), followed by Senior Nursing Officers (23.4%) and Nursing Officers (21.5%). Regarding the unit of practice, the respondents were fairly distributed across the ten units of the hospital, with the Highest proportion from the Surgical Unit (13.2%), followed by Obstetrics and Gynaecology (12.8%).

5.1.1 Perception of nurses towards electronic medical record and documentation system

The findings revealed that a positive proportion of respondents (83.4%) agreed that it is easy to access patient records using the EMR system, 78.5% found it easy to understand information from the system, and 85.7% agreed that patient records are displayed in a structured format. Furthermore, 69.1% found it easy to record patient data through the EMR system, 82.6% believed that the EMR system improves the quality of patient care, and 66.0% felt that patient information is more confidential with the EMR system than manual records. Only 20.0% thought that manual records are easier to store and retrieve than the EMR system, while 73.2% disagreed with this statement. A significant majority (89.1%) agreed that the EMR system reduces paperwork, 80.0% believed that patient information and lab results can be retrieved or accessed in a timely manner, and 84.5% agreed that communication with other healthcare teams is easier with EMR. The results shows that the majority of the nurses (81.9%) had a positive perception towards the electronic medical record and documentation system, while only 18.1% had a negative perception.

Similar finding consistent with this study was seen in a study carried out by Ramoo et al. (2023), to assess the perception and satisfaction of nurses toward the electronic medical record system in a teaching hospital. Their result revealed that almost all the nurses (98%, n = 343) had a positive perception toward the electronic medical record system, though their perceptions significantly differ across work units, computer or laptop ownership, and daily time spent on the system (all $p < .05$).

Contrast to the findings from this study was seen in a study carried out by Smyth et al. (2024), to describe the impact that electronic medical record (EMR) documentation has on nurses' and midwives' practice. The midwives responded that EMRs had not improved women's safety (n = 31, 63%). Nurses and midwives felt the heavy documentation load and lack of integration

across the EMR platform reduced efficiency, discouraged teamwork, and further excluded patients/women from participating in their care. Although nurses and midwives agreed that the accessibility of EMRs to all health care staff is advantageous, the documentation demands of each clinical area are vastly different.

5.1.2 Attitudes of nurses towards utilization of electronic medical record and documentation system

The findings revealed that only two items had mean scores below 2.5 (indicating negative attitudes): “I find it difficult to understand the technical aspects of EMR system applications” and “EMR is detrimental to healthcare in the long run”. Notably, a Positive percentage of respondents indicated that they “Always” or “Most of the time” spend less time on documentation with EMR (77.3%), follow patient progress better (85.6%), feel confident using the system (83.4%), can retrieve information easily (84.9%), and believe EMR makes patient management easier (88.3%) and aids faster patient care (86.4%). The Highest mean score was for the item “Training healthcare workers on EMR should be mandatory” (mean = 3.50), with 63.4% of respondents choosing “Always” for this item, indicating strong support for EMR training. The results show that the vast majority of the nurses (87.2%) had a positive attitude towards the utilization of electronic medical record and documentation systems, while only 12.8% had a negative attitude.

Similar finding consistent with this study was seen in a study carried out by Okonkwo et al. (2022), to assess health information managers’ attitude and perception of the transition from traditional paper-based records to Electronic Medical Records at Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State, Nigeria. The results showed that the respondents' attitudes were overwhelmingly positive, which contributed to their complete acceptance of

EMR. EMR was favored because it was simple to use and time-saving, which led to good work production.

Contrast to the findings from this study was seen in a study carried out by Nanle et al. (2021), to evaluate the attitude toward utilization of standardized electronic health records among nurses in Jos University Teaching Hospital (JUTH), Jos, Nigeria. Findings revealed that majority of the respondents (75.4%) were not utilizing standardized electronic health records.

5.1.3 Factors that influences utilization of electronic medical record and documentation system

The findings revealed that the most significant factors identified were “Technical issues”, “EMR system supports teamwork and communication”, “Prior experience with computers or technology”, and “Lack of training”. The only factor that was not considered significant was “Enough staff to manage the workload and use EMR effectively”, with 52.5% of respondents either disagreeing or strongly disagreeing with this statement, indicating that staffing issues may be a challenge in the effective utilization of EMR systems. Other significant factors include “Lack of clear policies on EMR use”, and “Complexity of the software”. The factor with the lowest mean score among the significant factors was “Internet connection reliable in your work setting”, suggesting that internet connectivity remains a challenge in the hospital.

Similar finding consistent with this study was seen in a study carried out by Hendy et al. (2025) aimed to evaluate the knowledge, attitudes, and acceptance of Electronic Health Records (EHRs) among nurses in Egypt. Key predictors of ERM acceptance included higher education (postgraduate) ($p=0.004$), good computer skills ($p<0.001$), satisfactory knowledge ($p<0.001$), and positive attitudes ($p<0.001$).

Contrast to the findings from this study was seen in a study carried out by Ay & Polat (2024), to determine the usage of the electronic patient record system, the reasons and limitations

behind the system not being used, the opinions and beliefs of the nurses about the system. Their findings revealed that while the nurses reported using the medicine requisition screen on the system the most, they pointed out the automation system and the insufficient number of computers as the greatest problems. Most of the nurses thought that the system was insufficient and had to be changed and improved.

5.2 Implication to Nursing

1. **Improved accuracy and accessibility:** Evidence from this study shows that EMR systems enable nurses to access patient information quickly and accurately, reducing errors and improving patient care.
2. **Enhanced communication:** Evidence from this study shows that EMR systems facilitate communication among healthcare providers, ensuring that patients receive consistent and coordinated care.
3. **Better patient engagement and health outcomes:** EMR systems allow patients to access their medical records, participate in care planning, and take an active role in their healthcare. EMR systems has also be shown to facilitate data-driven decision making, enabling nurses to identify trends, patterns, and areas for improvement in patient care.
4. **Data-driven decision making:** EMR systems provide valuable data that can inform nursing practice, improve patient outcomes, and optimize resource allocation.
5. **Improved patient safety and satisfaction:** EMR systems reduce medication errors, adverse events, and other safety risks. EMR systems should also enable patients to access their medical records, participate in care planning, and receive timely and effective care.

5.3 Conclusion

This research has shed light on the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH),

Edo state. The findings reveal a vast majority of the nurses (81.9%) had a positive perception towards the electronic medical record and documentation system, while only 18.1% had a negative perception. It also showed that the vast majority of the nurses (87.2%) had a positive attitude towards the utilization of electronic medical record and documentation systems, while only 12.8% had a negative attitude. The study highlights the need for targeted health education interventions to address misconceptions, especially regarding the perceived effectiveness and usefulness of EMR in patient care. Nursing professionals can play a crucial role in promoting healthy use of EMR and creating a supportive environment for its adoption into nursing practice to promote effective nursing documentation, facilitate patient data accessibility, transmission, and storage, foster collaboration among healthcare professionals, and utilize patient data quickly and efficiently. Additionally, the study emphasizes the importance of incorporating comprehensive education on EMR usage to avoid poor use and loss of patients' data and healthcare information, into nursing curricula to equip future healthcare professionals with the knowledge and skills to address related issues.

5.4 Summary

Electronic Medical Records (EMR) are digital medical records that can be accessed by various healthcare providers to facilitate patient data accessibility, transmission, and storage, foster collaboration among healthcare professionals, and utilize patient data quickly and efficiently. The EMR are a comprehensive collection of patient information, including medical history, diagnoses, investigations and laboratory test results, medications, management plan, and other pertinent information. The creation of the EMR system allowed institutions to manage patient records in an intelligent, secure, and knowledgeable way. This research focused on the perception and attitudes of nurses towards electronic medical record and documentation systems. A total of 278 questionnaires were distributed, with 265 properly completed and returned, representing a response rate of 95.3%. Data were analyzed using descriptive statistics

(frequencies and percentages) and inferential statistics (Chi-square) to test the hypotheses providing valuable insights on the perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital (UBTH), Edo state. The study adopted descriptive design. A convenient sampling technique. The results from this study showed that the majority of the nurses (81.9%) had a positive perception towards the electronic medical record and documentation system, while only 18.1% had a negative perception. It also showed that the vast majority of the nurses (87.2%) had a positive attitude towards the utilization of electronic medical record and documentation systems, while only 12.8% had a negative attitude. Furthermore, the findings also revealed that the most significant factors identified, were technical issues, prior experience with computers or technology, and lack of training. Other factors such as staffing shortage, lack of clear policies on EMR use, complexity of the software, and internet connectivity issues were also considered as a challenge in the effective utilization remains of EMR in the hospital.

5.5 Limitations of Study

The data collected relied on self-reporting through questionnaires, which could introduce response bias. Participants may provide answers they believe are socially desirable rather than their true opinions or behaviors. Lack of availability of funds was also a limitation.

5.6 Recommendations

Based on the research findings and their implications, the following recommendations are made:

1. **Enhance Training Programs:** Nurses should receive comprehensive training on the functionalities and benefits of EMR systems to build their confidence and proficiency. This includes ongoing training to adapt to system updates and improvements.
2. **Incorporate User Feedback:** Regularly solicit feedback from nurses regarding the EMR

system's usability and functionality. Addressing their concerns and suggestions can lead to more user-friendly systems and higher adoption rates.

3. **Improve System Customization**: Customizing the EMR system to better fit the needs of nurses can increase their willingness to use it. This involves incorporating features that streamline their workflow and enhance patient care.
4. **Strengthen IT Skills in Medical Training:** Integrating information technology (IT) skills into medical training programs can prepare future healthcare providers for the digital transformation in healthcare.
5. **Address Infrastructure Challenges**: Ensure that hospitals have reliable internet connectivity and a constant power supply to support the consistent use of EMR systems.
6. **Promote Positive Attitudes:** Encourage a positive attitude towards EMR adoption by highlighting its benefits, such as improved patient care, reduced medical errors, and increased efficiency.
7. **Supportive Management:** Management should support nurses in their transition to EMR use by providing necessary resources and addressing any barriers to adoption.

5.7 Suggestion for Further Study

It would be worthwhile to conduct further research to monitor changes in perception and attitudes over time. This will broaden the overall understanding on perception and attitudes of nurses towards use of electronic medical record and documentation system. Further studies should be performed with consistent respondents' selection. While outside the scope of this study, more data is needed to determine the perception and utilization of electronic medical record and documentation system and factors that may influence its adoption into healthcare practice. Also there is need for evaluation of the effectiveness of implemented interventions and adjust strategies accordingly to address emerging trends and challenges.

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APPENDIX I

DEPARTMENT OF NURSING SCIENCE

SCHOOL OF BASIC MEDICAL SCIENCES

UNIVERSITY OF BENIN, BENIN CITY

Dear Respondent,

QUESTIONNAIRE

I am Obazee Victory; a 500L student in the above name institution. I am carrying out a research study on the topic: **"perception and attitudes of nurses towards electronic medical record and documentation system in University of Benin Teaching Hospital, Edo state".** Kindly assist me by indicating your opinion where necessary. This study is strictly for academic purpose and you are hereby assured that all information supplied will be treated in a strictly confidential manner.

Thank you.

Yours faithfully,

Obazee Victory

SECTION A: DEMOGRAPHIC DATA

1. Gender: (a) Male [ ] (b) Female [ ]
2. Age: (a) Less than 30 years [ ] (b) 30-39 years [ ] (c) 40-49 years [ ] (d) 50-59 years [ ] (e) 60 years & above [ ]
3. Marital status: (a) Single [ ] (b) Married [ ] (c) Divorced [ ] (d) Widowed [ ]
4. Highest educational qualification in Nursing: (a) Diploma [ ] (b) Bsc [ ] (c) Msc [ ] (d) Phd [ ]

5. Ethnicity: (a) Bini [ ] (b) Esan [ ] (c) Hausa [ ] (d) Igbo [ ] (e) Yoruba [ ] (f) Others (specify) _____
6. Religion: (a) Christian [ ] (b) Muslim [ ] (c) Others (specify) _____
7. Length of post-qualification nursing experience: (a) Less than 1year [ ] (b) 1–5 years [ ] (c) 6-10years [ ] (d) 11-15years [ ] (e) 16years and above
8. Length of experience on current hospital unit: (a) Less than 1year [ ] (b) 1–5 years [ ] (c) 6-10years [ ] (d) 11-15years [ ] (e) 16years and above
9. Rank (position of the nurse): (a) Nursing Officer [ ] (b) Senior Nursing Officer [ ] (c) Principal nursing officer [ ] (d) Assistant Chief Nursing Officer [ ] (e) Chief Nursing Officer [ ] (f) Others _____
10. Unit: Please specify_____

SECTION B: PERCEPTION OF NURSES TOWARDS ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM

Instruction: Select all that apply by ticking (√) either of the following in the column

1. Easy to access patient records using the EMR system ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
2. Easy to understand the information from the system ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
3. The patient record is displayed in a structured format ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
4. Easy to record patient data through EMR system ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
5. EMR system improves the quality of patient care ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]

6. Patient information is more confidential with EMR system than manual records ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
7. Manual records are easy to store and retrieve than EMR system ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
8. EMR system reduces a lot of paper works ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
9. Patient information and lab results can be retrieved or accessed in a timely manner ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]
10. Communication with other healthcare teams is easier with EMR ? (a) Yes [ ] (b) No [ ] (c) Don't Know [ ]

SECTION C: ATTITUDES OF NURSES TOWARDS UTILIZATION OF ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM

Instruction: Please indicate your choice in the section C by ticking (√) either of the following in the column; Always (A), Most of the time (M), Sometimes (S), Rarely (R)

S/N	Questions	Always	Most of the time	Sometimes	Rarely
1.	I find it difficult to understand the technical aspects of EMR system applications (e.g., instruction and key)				
2.	I spent less time on documentation with EMR system				
3.	I am able to follow patient progress better with EMR system				
4.	I feel confident following the direction presented in EMR system ?				

5.	I can retrieve information from EMR system easily ?				
6.	Electronic medical records will make patient management and follow up easier				
7.	EMR when introduced aids faster patient care				
8.	Healthcare workers prefer EMR than the paper based type				
9.	Using e-health system improves my work performance				
10.	Training healthcare workers on EMR should be mandatory				
11.	Using e-health system improves the quality of the work I do				
12.	EMR is detrimental to healthcare in the long run				

SECTION D: FACTORS THAT INFLUENCES UTILIZATION OF ELECTRONIC MEDICAL RECORD AND DOCUMENTATION SYSTEM

Instruction: Please indicate your choice in the section D by ticking (√) either of the following in the column; Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

S/N	**Questions**	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
1.	Lack of training				

2.	Technical issues (e.g., slow system, frequent crashes)				
3.	Complexity of the software				
4.	Lack of support from colleagues or management				
5.	Insufficient time to use EMR				
6.	Lack of clear policies on EMR use				
7.	EMR system is user-friendly				
8.	EMR system is reliable				
9.	EMR system supports teamwork and communication among healthcare professionals				
10.	Internet connection reliable in your work setting				
11.	Enough staff to manage the workload and use EMR effectively				
12.	Penalties for not using EMR				
13.	Prior experience with computers or technology				