Digital Application Skills and Documentation Skills among Nurses in a Private Hospitals in Ormoc City

Giovanni N. Enero, MANM, RN and Joan P. Bacarisas, DM, MAN

University of the Visayas, College of Allied Health Sciences

ABSTRACT

This study explored the relationship between personal characteristics, digital application skills, and perceptions of electronic medical records (EMRs) among 208 registered nurses in four hospitals in Ormoc City, Leyte. Guided by the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA), it examined how factors like age, gender, education, clinical area, hospital classification, and digital training influence nurses' acceptance and use of EMRs in documentation. Key findings showed that stronger digital skills correlated with higher perceived utility of EMRs, aligning with TAM's principle of perceived usefulness (PU). Digital training positively influenced ease of use, reflecting TAM's perceived ease of use (PEOU), while clinical area and age significantly affected EMR perceptions. However, gender, education, and employment type had no significant impact on EMR utility. The study highlights the need for targeted digital training programs to improve EMR adoption and usage. Recommendations include a Nursing Digital Application and Documentation Skills Training Plan tailored to nurses' specific needs to enhance digital integration in workflows.

Keywords: Technology Acceptance Model, Theory of Reasoned Action, Digital Skills, Digital Documentation, Ormoc City.

INTRODUCTION

Digital application includes using digital services and information communication technologies (Youseff et al., 2023). It encompasses a wide range of abilities, from basic technical skills to advanced problem-solving and critical skills, that are required to engage with digital technologies effectively. Digital application includes technical proficiency, information management, communication and collaboration, content creation, and cybersecurity (Laar et al., 2020; Oreo-Blat et al., 2022; Rubach & Luzarides, 2021; Pawlicka et al., 2023). Advanced digital application includes programming and coding, data analysis and visualization, web development, network system administration, and usage of Artificial Intelligence (Lyu & Liu, 2021; Sergies, 2017). Another critical nurse skill is documentation skills, which refers to creating, managing, and storing documents in electronic formats (Buckland, 1998). Digital application and documentation skills are also used in the hospital, such as managing Electronic Health Records (EHRs), Telemedicine, Diagnostic and Imaging Technologies, Patient Management Systems for scheduling and billing, Clinical Decision Support Systems (CDSS), Mobile Health (mHealth), and Cybersecurity, such as data protection of patients' sensitive information.

A systematic literature review by Laar et al. (2020) revealed a strong need for research on communication and collaboration skills. In the digital context, creativity and critical thinking are being hard studied. Furthermore, 21st-century skills are limited to personality and psychological determinants. Although digital application studies have shown variety, they only mostly cover demographic and socioeconomic determinants. In addition, in the study of Sharma et al. (2019) revealed that nursing students had a moderate self-perceived level of eHealth literacy. Related factors are the frequency of internet use for health purposes,

their internet skills, and self-perception of the usefulness and importance of the internet. Qin et al. (2024), the study's results arrived at 12 items to measure digital application skills with acceptable convergent validity tests, composite reliability values, and principal component analyses.

The researcher's experience as a nurse at Ormoc Sugarcane Planters Association-Farmers Medical Center (OSPA-FMC) Hospital in the Intensive Care Unit, Coronary Care Unit, Emergency Room has been challenging because we had to manually encode the patients' records ten years ago. Currently, hospitals in Ormoc have acquired Electronic Health Records and ventilator Management Systems in the ICU. The Emergency Room has a Radiology Information System (RIS), Emergency Department Information Systems, and Computerized Provider Order Entry. The General Wards have a Medication Administration System and Clinical Workflow Management Systems. However, these digital tools vary across private and public hospitals. In Ormoc City, digitalization in nursing practice and services has profoundly transformed healthcare, enhancing efficiency, accuracy, and patient outcomes. Nurses now rely on Electronic Health Records (EHRs) to document patient information, track medical histories, and update treatment plans, providing real-time access to data and reducing errors. Medication administration systems, such as automated dispensing machines, reduce the risk of errors by ensuring accurate medication delivery. Mobile health applications (mHealth) support patient education, progress tracking, and communication, while Radiology Information Systems (RIS) and Picture Archiving and Communication Systems (PACS) facilitate quick access to imaging results, improving diagnosis and treatment planning. Patient management systems streamline appointment scheduling and billing, enhancing resource allocation and patient care efficiency.

In emergency settings, nurses use Emergency Department Information Systems (EDIS) to manage patient information and prioritize care, improving response times. Digital training and simulation tools, such as virtual simulations and e-learning platforms, enhance nursing education by allowing nurses to practice clinical skills in a safe environment. Cybersecurity measures are critical, as nurses must adhere to protocols to protect sensitive patient data. Interdisciplinary collaboration platforms enable real-time communication and coordination among healthcare professionals, ensuring comprehensive care. Digital workflow management systems help nurses prioritize tasks and reduce administrative burdens, allowing more focus on patient care. This study has substantial value for the nurses in Ormoc and clinical instructors like me. As for the nurses, the survey results might increase their self-awareness, digital application development, and improved documentation skills through targeted training. It would also improve the patient's quality of care by ensuring better patient records and documentation processes, allowing nurses to devote more time to patients. For the clinical instructors, it can be helpful for curriculum development, such as data-driven curriculum and digital training programs for the students.

Laar et al. (2020) highlighted a strong need for more research on communication and collaboration skills. Furthermore, literature on how nurses develop and apply creativity using digital tools and platforms is scarce. The current study is often limited to personality and psychological determinants. Therefore, there is a need to determine how various personal characteristics influence digital nursing application and documentation. In addition, it is crucial to address factors like hospital ownership, type of unit, and digital course training, which might impact the nurses' digital application. Qin et al. (2024) study revealed that there is a need to apply this instrument in different settings and populations to validate its robustness and adapt it for universal use. Since new digital tools are available in the Hospitals in Ormoc, it is also essential to quantify the nursing staff's digital application and documentation skills in the City.

The researcher aims to contribute to their achievement since the United Nations' Sustainable Development Goals will conclude in 2030. The most relevant SDG for this study is SDG 3: Good Health and Wellbeing., and SDG 9 Industry, Innovation and Infrastructure. The researcher believes that if nurses can save time on transactions and documentation through digital application, it would positively impact patient outcomes, ultimately benefiting their well-being. The researcher has extensive experience in professional nursing: 14 years as a nurse, 1 year in a private hospital (OSPA-FMC), and 10 years as a Community Nurse at the Department of Health, and almost 3 years as a Clinical Instructor at Western Leyte College. The researcher

underwent training and seminars such as Paving the Way for the Future of Perioperative Nursing Practice held in Mindoro, Philippines; Preceptorship Training in the Center for Behavioral Science at Vicente Sotto Memorial Medical Center, Cebu, Philippines; and the 7th Nursing Summer Conference "Our Nurses, Our Future" at Golden Peak Hotel, Cebu, where it tackles relevant nursing skills to be developed in the future, including digital application and documentation skills. With these experiences, the researcher believes that they serve as collective competence to pursue the study.

RESEARCH OBJECTIVES

This study Aimed to assess the interrelationship among personal characteristics, digital application skills, and digital documentation skills of nurses in Private and Public Hospitals in Ormoc City, Leyte, for the year 2024.

Specifically, it will answer the following questions:

1. What are the personal characteristics of the nurses in terms of:
   - age;
   - gender;
   - educational attainment;
   - hospital classification;
   - clinical area;
   - employment type; and
   - digital course training?
2. What was the digital application skills of the nurses?
3. What is the level of digital documentation skills of the nurses in terms of:
   - EMR utility;
   - EMR concerns; and
   - overall perceptions on documentation
4. Is there significant relationship between:
   - personal characteristics and digital application skills of the nurses;
   - personal characteristics and digital documentation skills of the nurses;
   - digital application skills and digital documentation skills of the nurses; and
5. What nursing documentation management enhancement plan?

Statement of Null Hypothesis

Ho1: There was no significant relationship between personal characteristics and nursing digital application skills of the nurses

Ho2: There was no significant relationship between personal characteristics and nursing digital documentation skills of the nurses

Ho3: There was no significant relationship between nursing digital application skills and digital documentation skills of the nurses

REVIEW OF RELATED LITERATURES AND STUDIES

Digitalization:- Digitalization refers to the process of converting information into a digital format, where information is organized into bits, or binary data, that can be easily processed, stored, and transmitted by digital devices like computers and smartphones (Neugebauer, 2019). Beyond this basic conversion, digitalization also encompasses the transformation of business processes and services through digital technologies, which can improve efficiency, enhance user experiences, and enable new business models (Lang, 2021; Plekhanov et al., 2022). The concept of digitalization is not attributed to a single inventor, as it

evolved through various technological advancements over time (Bernardino et al., 2022). However, key figures played significant roles in its development. Charles Babbage, often considered the "father of the computer," conceptualized the first mechanical computer, laying the groundwork for later digital systems (Strawn, 2023; Bruderer & Bruderer, 2020). Claude Shannon, known as the "father of information theory," laid the foundation for digital communication with his work in the 1940s (Shannon, 1948; Shannon, 2023). Alan Turing's theoretical work on computation and algorithms was also fundamental in the development of modern computers (Lara et al. 2022; Al-Hashimi, 2023).

The development of digitalization can be traced through several historical milestones. In the 1830s, Charles Babbage designed the Analytical Engine, an early mechanical general-purpose computer (Orth, 2020). The 1940s saw the development of the first digital computers, like ENIAC, marking the beginning of digital computing (Haigh & Ceruzzi, 2021). The 1960s and 1970s witnessed the rise of mainframe computers and the development of microprocessors, leading to the digital revolution (da Motta e Albuquerque, 2023). The 1980s brought personal computers into homes and offices, while the 1990s marked a major leap in digitalization with the proliferation of the internet, enabling global connectivity (Tarnoff, 2022). The 2000s saw the digitalization of media, such as music, video, and print, and the rise of smartphones, which transformed industries and daily life (Kawashima, 2020). In healthcare, digitalization has led to the adoption of various technologies. Electronic Health Records (EHRs) are digital versions of patients' paper charts, accessible across healthcare settings (Cerchione et al., 2023; Patel et al., 2023). Telemedicine uses digital communication tools to provide remote healthcare services (Haleem et al. 2021; Mohammadzadeh et al., 2023). Wearable health devices, like smartwatches, monitor health metrics such as heart rate and activity levels (Prieto-Avalos et al. 2022; Li et al. 2023; Tiexiera et al. 2021). Artificial Intelligence (AI) is used for diagnostic imaging, predictive analytics, and personalized medicine (Johnson et al. 2021; Blasiak et al. 2020; Ahmed et al. 2020). Blockchain technology is employed for the secure sharing of medical data, and robotic surgery enables precision surgery with the help of robotic systems (Chaujadry et al. 2022; Siripurapu et al. 2023). Digitalization is useful for several reasons. It streamlines processes and reduces manual errors, making operations more efficient (Adrita et al., 2021; Aslam, 2023). It also makes information and services more accessible to a broader audience (Yurchuk, 2021). Digitalization drives innovation, enabling the development of new products, services, and business models (Wang et al., 2023; Mostaghel et al., 2022; Riter & Pedersen, 2020). It reduces operational costs in various industries and facilitates better storage, analysis, and use of data for decision-making (Cagle et al. 2020; Hadud & Khare, 2020).

Globally, digitalization has had a profound impact. As of 2023, there are over 5.4 billion internet users worldwide, representing about sixty three percent (63%) of the global population (Petrosyan, 2024). The global digital economy is estimated to be worth over $11.5 trillion, contributing to approximately 15.5% of global GDP (Shevchenko et al. 2023). Over 6.8 billion people use smartphones, making them one of the most ubiquitous digital devices. Online shopping continues to grow rapidly, with global e-commerce sales expected to reach $6.4 trillion by 2024 (Taylor, 2024). Digital payment methods, such as mobile payments and cryptocurrency, are also becoming increasingly prevalent, with over 4 billion people using digital payment systems globally (Juniper Research, 2022).

Digitalization in Nursing and Healthcare:- Healthcare digitization is a key solution to global healthcare systems' increasingly complicated issues. Demographic trends and the rise of chronic and complex health issues have increased healthcare demand. To leverage the benefits of new technologies, digitalization in healthcare must integrate well-designed processes and cultivate a competent workforce. Research emphasizes the need of properly integrating digital services targeted to healthcare practitioners and patients. Digitalization can improve service delivery, patient outcomes, and healthcare system sustainability if managed well (Lapao, 2019).

As healthcare organizations adapt to rapid technological advancements and increased competition from digital health startups and non-traditional healthcare companies, digitalization is increasingly recognized as a key factor in improving performance and sustainability. Van Velthoven et al. (2019) suggested Claude

Shannon's information theory-based paradigm to comprehend healthcare's digital potential and competitiveness. This framework suggests four ways healthcare businesses can stay competitive: accelerating new capability development, cooperating with technology companies, forging alliances with conventional competitors, and innovating new business models. A Swiss case study shows that security, interoperability, cost-effectiveness, and user adoption are crucial to digital health initiatives. However, legislation, stakeholder interests, and digital health innovation sustainability remain, requiring strategic navigation to maximize healthcare organizations' strengths and manage their weaknesses in a quickly digitizing environment.

Birkland (2019) discusses the challenges of deploying national electronic health records (EHRs) and how they typically fail to deliver on their claimed benefits owing to disrupting healthcare moral orders. Birkland uses Hughes's (1963) moral orders to identify four orders that impact healthcare environments: home, industrial, market, and civic. Despite their technical sophistication, EHRs can collide with moral orders, hindering implementation. Birkland uses case studies in Australia and England to demonstrate these disruptions and call for a better understanding and management of moral conflicts to improve digital health programs. Future EHR installation must consider moral dimensions to avoid disruptions and improve system efficacy. Middle management is vital to healthcare service digitalization, according to Gjellebaek et al. (2020). EHealth is widely recognized as a viable answer to modern healthcare concerns, but a lack of knowledge, training, and collaboration hinders its proliferation. Middle managers—between frontline workers and executives—influence workplace learning and digitalization management methods. Gjellebæk et al. propose a move towards learning-oriented leadership and adaptive management, emphasizing employee interaction and ongoing learning. Scenario planning and backcasting can assist managers and staff make sense of changing work practices in complex healthcare organizations. For digital transformation to succeed, middle managers must create a participative learning environment that responds to changing healthcare demands, according to the report.

The National Health Insurance Fund is the center of Gavrilov et al.'s (2020) case study on healthcare system digitalization and service quality. Digitalizing internal processes and exchanging data with external government agencies are essential for business intelligence systems and e-services, according to the report. Digitalization has improved administrative tasks and healthcare rights for insured persons, healthcare providers, and companies, according to an exploratory study supported by documentary analysis. The findings imply that Health Insurance Fund methods can help healthcare authorities make predictive analytics and decisions. This case study shows how digitalization improves healthcare efficiency and effectiveness, making it a crucial part of healthcare system planning, finance, and development. Kukhtevich et al. (2020) study healthcare digitalization and telecommunication support systems in telemedicine and teleneurology. Digitization and information integration improve healthcare management operations through telemedicine, according to the study. The authors explore telecommunication attempts to automate digital medical records and integrate intelligent decision support systems. The research examines knowledge representation in teleneurology, notably rule-templates for patient data comparison and diagnostic hypothesis development. The difficulties of structuring and maintaining huge amounts of medical knowledge makes conceptual analysis a "bottleneck" in intelligent system development. By tackling these obstacles, the study sheds light on the creation of advanced telemedicine systems that could improve healthcare diagnosis and decision-making.

Moro Visconti and Morea (2020) examine how pay-for-performance (P4P) incentives affect healthcare digitalization and public-private partnerships (PPPs) for smart hospital projects. The study found that digital platforms improve healthcare network scalability and efficiency, improving stakeholder relationships and value co-creation. This digital transformation reduces healthcare bottlenecks and saves money for private investors, public organizations, and patients. Traditional healthcare technology have high costs and long payback times, whereas digital investments have faster returns and greater economic benefits, according to the authors. A sensitivity study of a Northern Italian healthcare PPP scenario shows that digital savings can boost economic and financial margins, making healthcare projects more sustainable and bankable. Digital

technologies in PPP frameworks improve patient-centered treatment, value for money, and healthcare ecosystem sustainability, according to the study. Balta et al. (2021) examine how digitization empowers stakeholders and facilitates value co-creation in the healthcare system, notably in OH services. In the instance of the English Occupational Health Adviceline (OHA), the authors examine how digital technologies improve interactions between employees, employers, contact center advisers, and OH nurses, improving healthcare value. The study uses Service-Dominant (S-D) Logic and affordances theories to show how digitalization gives stakeholders new ways to behave, improving care efficiency and safety. Digitalization organizes and reconfigures stakeholder relationships and brings new visibility management, improving healthcare self-management and control, according to the authors. This study shows how digital technology may change patient-provider relations into a value co-creation framework that empowers all parties. The findings emphasize the necessity of stakeholder interactions in digitization programs for maximizing healthcare value co-creation.

Brönneke and Debatin (2022) examine how healthcare digitalization affects Germany's statutory health insurance system's quality. Recent laws including the Patient Data Protection Act (PDSG), Digital Care Act (DVG), and Hospital Future Act (KHZG) aim to improve healthcare quality through digital solutions like electronic patient records and telematics infrastructure. Digitalization's ability to capture complete data and make it available 24/7 makes it a promising quality assurance tool, according to the authors. They underline that these digital tools' quality assurance efficacy depends on use case. This research shows the potential and constraints of digital healthcare solutions in increasing service quality, noting that their success depends on careful implementation adapted to unique healthcare demands. Carboni et al. (2021) use metaphor-based Critical Interpretive Synthesis (CIS) to examine healthcare job digitalization from STS, sociology, and medicine perspectives. The study illustrates digitalization's complexity with slime mold, theatrical performances, and river engineering. Health care is fluid and networked (slime mold), digital technologies affect visible and invisible labor (theatrical performances), and digital treatments are efficiency-driven but often problematic (river engineering). The study shows a conflict between technology directionality and practice's unpredictability. It stresses "technological scripts" and "invisible work" as crucial concepts to understanding how intended advancements are implemented. Recognizing and supporting the hidden work needed for digital technologies, keeping informal spaces for critical interactions, and understanding technological integration as a relational process are the authors' recommendations.

Paul et al. (2023) analyze how digitalization has affected healthcare, focusing on privacy and security. The growing adoption of digital tools like EHRs, telemedicine, and the IoMT has transformed patient care by enhancing efficiency and accessibility. These advances present vulnerabilities like data leaks and cyberattacks that threaten patient privacy and healthcare system integrity. Despite efforts to protect patient data, cyber risks like ransomware assaults are becoming increasingly common in healthcare. Paul et al. stress the importance of encryption, authentication, and privacy-preserving solutions for medical data. The study also recommends more research on the privacy and security of healthcare technologies like AI and blockchain and emphasizes patient engagement in data security. Finally, Minartz et al. (2024) conducted a scoping assessment on emotional and psychological safety in healthcare digitization. The study shows that as digital technologies are integrated into healthcare, they can dramatically impact people's safety and well-being, especially those with little digital experience. The review analyzes 32 publications to determine that healthcare practices, digital literacy, technology design, and user-centered digital tool design affect perceived safety. The data show that psychological safety is underrepresented in the literature despite emotional safety's rise. Minartz et al. argue that knowing the relationship between these influencing factors and safety is vital since it affects user behavior and healthcare digital technology adoption. This highlights the need for a more holistic approach to emotional and psychological safety in healthcare digitization.

The preceding literature shows how digitization might alter healthcare, showing both opportunities and concerns. Moral, organizational, technical, privacy, security, and stakeholder engagement are crucial to digital technology implementation. The underrepresented areas of emotional and psychological safety in digital healthcare should be the focus of future research.

Digitalization in the Philippine Health Care:- The Philippine healthcare business strives to deliver high-quality care to all. Technology drives industry players to innovate and adapt to healthcare's changing needs. Ebardo and Celis (2019) examined Philippine hospitals' EMR adoption hurdles. Using the Technology-Organization-Environment framework, they examined healthcare provider problems through case studies. Complex EMR systems, insufficient infrastructure, and poorly designed interfaces were technological impediments. User resistance and healthcare worker skill gaps were the main organizational hurdles. Environmental obstacles included regulatory compliance and Medical Education EMR orientation issues. The paper recommends overcoming these barriers to promote EMR adoption and efficacy in the Philippine healthcare system and suggests future research.

Ansell (2020) explored a technologically enabled method to improve primary care in rural and remote low-resource settings in Western Visayas, Philippines. Public health services, private sector partners (pharmaceutical, insurance, and telecom firms), and community networks collaborate on a multisectoral digital platform. This technology enables virtual primary care systems and orders and delivers low-cost insurance and medicines to cut out-of-pocket costs and supplement public healthcare. The study analyzes qualitative stakeholder interviews and quantitative project outcomes using mixed techniques. The 'big-data' precision of epidemiological profiling in the digital health solution provides targeted interventions and improves community access to affordable drugs and treatment. The program is limited by local healthcare staff shortages and strict eHealth legislation. This strategy could be scaled up to support Philippine UHC ambitions, according to studies.

In light of the COVID-19 epidemic, Dela Cruz and Tolentino (2021) examine the limitations of telemedicine in underdeveloped Philippine communities. The report emphasizes the necessity for a strong national telemedicine framework because the Philippines is a developing and archipelago with infrastructure issues. A nationwide broadband network and better healthcare are needed. Telemedicine deployment requires raising the medical professional-to-population ratio and reducing migration, according to the authors. They also support a national policy to secure funds, promote transparent processes and standards, and preserve digital information. These technological and administrative deficiencies must be addressed to increase public participation in national health plans and stakeholder engagement in telemedicine.

Macabasag et al. (2022) also examine the difficulties of standardizing electronic medical records (EMRs) in rural health facilities as the Philippine health system digitizes. The study uses sociotechnical transition theory and the Normalisation Process Theory (NPT) to evaluate how the shift from paper-based to electronic health information management (HIM) affects EMR implementation and normalisation in routine healthcare. The HIM regime's ambiguity between paper-based and computerized records puts health personnel under pressure. Technologically adept staff selectively implement EMRs while others use paper records, resulting in limited EMR adoption in areas of healthcare where it is most effective. The study shows the difficulty of integrating healthcare innovations into a changing system and implies that institutional pressures and sociotechnical environment affect success.

Madrid and Cagadas (2023) created a Remote Health Monitoring Device to help understaffed Philippine hospitals monitor in-patient vital signs. A glove containing an Arduino Uno and Raspberry Pi 3 Model B CPU and medical sensors for body temperature, heart rate, and oxygen rate monitors a patient's vital signs. Real-time data is updated every 1.5 seconds and sent to a data server, where healthcare practitioners can use an Android app to respond quickly to critical changes. This technology optimizes staff efficiency by decreasing nurse in-person checks, improving patient care. The existing system is successful, but the authors advise adding blood pressure and sugar sensors, adopting advanced data encryption for security, and studying the 6G network for better communication. The study shows that IoT can provide continuous and automated patient monitoring in resource-limited healthcare settings.

Finally, Tinam-isan and Naga (2024) used PRISMA to assess 28 relevant publications among 313 to analyze Health Information Systems (HIS) in the Philippines. Patient profiling, notification systems, membership verification, laboratory result production, and electronic appointment booking are among the HIS features in

the Philippine healthcare system, according to their study. Healthcare delivery efficiency and accessibility depend on these aspects. The study also finds that HIS adoption and implementation are hindered by a lack of human resources, infrastructure, and funds. The report also examines how regional strategies and policies affect HIS success, underlining the necessity for Philippine-specific solutions to healthcare concerns. This study helps policymakers and healthcare administrators plan and make decisions to improve HIS in the Philippines.

Nursing Digital Application Skills:- As the healthcare industry increasingly uses digital technologies, nurses must improve their digital skills. Digital professionalism, eHealth literacy, and continual education are crucial to incorporating digital tools into nursing practise, as shown by studies across contexts. These studies show that digital competency improves patient care and prepares nurses for the changing healthcare technology landscape.

Mather and Cummings (2019) argue that Australian nurses must adopt digital professionalism to keep up with healthcare's rapid technology changes. Their research shows that nurses adopt digital technology later than other professions, despite its potential to improve patient outcomes. To fill this gap, the authors created the 4E3P digital professionalism model to measure and improve organizational and individual digital technology readiness. For digital professionalism, the paradigm relies on equipment, electronic access, engagement, and education (4E). These components follow a continuum from prepared to proficient to professional (3P). The concept emphasizes the requirement for a supportive physical and social environment for this evolution. The authors believe this paradigm can help nurses use digital technology professionally while maintaining high standards of care. The study emphasises the need to integrate digital professionalism into education and healthcare to prepare the workforce for future problems.

Sharma et al. (2019) examined eHealth literacy in Nepalese nursing students at Kathmandu Medical College Teaching Hospital in a cross-sectional study. The 152 nursing students were assessed using the eHealth Literacy Scale (eHEALS) to assess their ability to find, evaluate, and use electronic health information. Students' median eHealth literacy score was 3.69 on a 5-point scale, indicating modest literacy. EHealth literacy was affected by students' self-perception of their online skills, their frequency of using the internet for health-related goals, and the internet's perceived utility and value in health decision-making. The study found that nursing students require stronger eHealth literacy instruction to prepare them for modern healthcare environments, notwithstanding moderate levels. The findings provide a foundation for nursing eHealth literacy research and curricula.

Brown et al. (2020) examined 17 studies to determine what characteristics affect nurses' digital device use at work. Results showed that nurses' digital competency is crucial to technology integration in nursing. Evidence-based information and electronic medical records are mostly accessed using technology at the point of service. However, nurses worried about technology's usability, its capacity to disturb patient relationships, and its overuse, which could impair clinical judgment. The assessment suggests investing in user-friendly digital technologies and continuing professional development to improve nurses' digital skills. To successfully integrate technology into healthcare, nurses must be involved in the design and implementation of digital systems and supported in their continuous learning to adapt to the changing digital landscape, according to the study.

Marković's (2021) paper at the 13th International Conference on Education and New Learning Technologies highlights the significance of ICT skills and digital literacy in nursing. Nursing efficiency and patient care improve in the 21st century when nurses may spend less time on administrative activities and more on direct patient care. Nursing knowledge must be integrated with ICT and information management abilities in clinical practice, administration, teaching, research, and knowledge dissemination. The study also emphasizes informatics' daily use in clinical settings and other areas of nursing, beyond documentation. Nursing requires ongoing professional growth to ensure patient safety and efficacy. To assess nurses' ICT abilities and digital literacy, Marković used theoretical study, curriculum analysis, observation,

measurement, and questionnaires. The study suggests improving formal and lifelong nursing education to better prepare nurses for ICT.

In addition, Ma et al. (2022) evaluated Chinese older individuals' desire to utilize cellphones and enhance their digital abilities, emphasizing the importance of nursing in bridging the digital divide and encouraging digital inclusion. Qualitative analysis of 23 older persons' interviews reveals four major themes: smartphone use, digital difficulties, social support for digital skill development, and willingness to learn. Older Chinese seniors are often willing to utilizing cellphones for minor activities, and peer learning is an excellent way to improve digital abilities. The study stresses the importance of community assistance in teaching older persons digital skills to close the digital divide. It also shows how nursing may promote digital inclusion by recognizing and meeting older individuals' digital requirements, improving health services and social involvement. Nursing can assist digital empowerment and inclusion strategies for older persons in China and abroad, as this research shows.

Finally, Qin et al. (2024) established the Nursing Digital Application Skill Scale (NDASS) to assess nurses' digital skills for healthcare's digital transformation. The NDASS was developed through literature analysis, expert validation, and psychometric testing with 424 nurses. The resulting scale has 12 items and a single-factor structure explaining 74.794% of the variation, confirmed by exploratory and confirmatory factor analyses. The NDASS's Cronbach's alpha of 0.968 and outstanding test-retest reliability make it a reliable tool for assessing nurses' digital competencies in clinical settings. This measure helps nurses self-assess their digital skills and nursing managers build focused digital skill training programs to close the digital gap in nursing. The NDASS contributes to healthcare digitalization by providing a valid measure to support nurses' digital competency, despite its geographical concentration on Northwest China.

 Nurses need strong digital abilities to provide high-quality patient care as healthcare integrates digital technologies. Research emphasizes digital professionalism, with frameworks like the 4E3P model improving organizational readiness and individual capacity. Studies suggest that nursing students and professionals have moderate eHealth literacy and digital competency, but they need ongoing education and user-friendly tools to engage digitally. The Nursing Digital Application Skill Scale (NDASS) helps nurses assess and improve digital abilities, which are essential for technology integration. Nurses need digital skills to improve patient care, reduce the digital divide, and promote healthcare inclusion.

Nursing Digital Application Skills in the Philippines:- Digital literacy, eHealth literacy, and nursing technology integration have become more important in Philippine healthcare education and practice. Several studies have examined how successfully nurses and nursing students are responding to these changes, particularly in the setting of e-learning, telenursing, and EHRs. These studies examine nurses' digital tool self-efficacy, nursing students' online health information literacy, and healthcare workers' preparedness to use new technologies. This literature study will discuss the challenges and successes of adopting digital education and technology in healthcare settings and the factors that affect technology acceptability and competency among nurses and other healthcare professionals.

After nurse shortages and high turnover rates rendered traditional training techniques impractical, Aventurado's (2019) study examines operating room nurses' e-learning self-efficacy at a Cebu, Philippines, hospital. E-learning is advocated as an alternative, however informatics education gaps and a lack of recognized competences raise worries regarding nurses' preparation. The study assessed nurses' self-efficacy in computer, internet, and software use using a descriptive-survey approach and the Modified E-learning Readiness Assessment Tool (MERAT). The nurses' e-learning self-efficacy ranged from 3.29 to 4.58 on a 5.0 scale, indicating "Very Good" proficiency in complex computer skills, online etiquette, troubleshooting, and e-learning platform usage and "Excellent" proficiency in basic computer and online skills. The study demonstrates that e-learning could improve operating room nurse education and training despite personnel and competency issues. Future studies should examine additional areas of e-learning preparedness and healthcare education.

Oducado (2020) examined Filipino nursing students' eHealth literacy and website selection criteria. EHealth literacy is becoming more important in nursing education. This cross-sectional study used questionnaires to obtain self-reported data from 66 nursing students. Student eHealth literacy was strong, with usability and accuracy being the most significant consideration for picking health websites. EHealth literacy did not differ between male and female students or between first- and second-year students. However, eHealth literacy was substantially connected with Internet use for health information, perceived Internet utility for health decision-making, and perceived relevance of online health resources. The study stresses the necessity for nursing students to improve their digital health literacy to fully benefit from online health information.

Oducado et al. (2021) examined Internet use, eHealth literacy, and COVID-19 anxiety among Philippine nursing students during the pandemic's early phases. The research used the eHealth Literacy Scale (eHEALS) and Fear of COVID-19 Scale (FCV-19S) to examine these variables in a cross-sectional online survey of 1,367 nursing students. Nursing students were somewhat to very afraid of COVID-19, with significant differences by sex, year level, and region. An inverse connection was identified between average daily Internet use and COVID-19 fear, suggesting that more frequent Internet use may reduce fear. No significant association was discovered between eHealth literacy and COVID-19 fear. The study highlights the psychological impact of the pandemic on nursing students and argues that while the Internet can be useful during health crises, it must be used responsibly. Nursing schools should also address mental health issues and reduce student fear during epidemics.

Ballano et al. (2022) examines Filipino tertiary instructors' digital literacy, competency, and pedagogical digital competence during the COVID-19 epidemic. The chapter discusses logistical support, inconsistent Internet connections, and limited digital device access as the Philippines' Commission on Higher Education (CHED) mandates online instruction. It recommends increased institutional support and ICT training to improve educators' PDC and digital teaching preparation. The authors emphasize the need to resolve these impediments to achieve CHED's mandates and call for more research.

Thus, Lacuarin et al. (2023) examined nurses' telenursing ability, which has become increasingly important during the COVID-19 pandemic. The study examined nurses' telenursing knowledge, abilities, and attitudes using exploratory observational quantitative methods. Telenursing knowledge and experience were adequate, with better proficiency levels reported in individuals with more experience and education. The study stressed the importance of telenursing training for safe and effective digital care. Thus, the researchers created "Tech, Talk, and Tour," an e-training program to improve nurses' technology skills, communication skills, and awareness of electronic health information while protecting patient privacy. Gender and age did not affect telenursing quality, according to the study.

Finally, De Mesa et al. (2023) examines Philippine healthcare personnel' EHR acceptability in urban, rural, and distant areas. Using the Unified Theory of Acceptance and utilize of Technology paradigm, the study polled 128 EHR users—physicians, nurses, midwives, and administrative staff—about their intent to utilize the system. Over 94% of users across all sites intended to utilize the EHR soon, with self-efficacy being the sole significant predictor. In particular, intent-to-use increased by 31% for each unit increase in self-efficacy score, demonstrating that users' confidence in their technological navigation skills is crucial to its adoption. According to the study, designing EHR systems with primary care professionals' input rather than policymakers' needs increases adoption and effectiveness.

Nursing Documentation Skills :- Nursing documentation plays a critical role in ensuring the quality and continuity of patient care, yet challenges in documentation practices persist across various healthcare settings. Recent studies have explored the effectiveness of different training programs, documentation models, and technological interventions in enhancing nurses' documentation skills. For instance, research conducted by Gaber Abd-Elsattar Saker et al. (2019) and Mosaad Mohammed Elghabbour et al. (2020) demonstrates that structured training significantly improves nurses' knowledge and performance in documentation, with sustained benefits over time. Similarly, studies by Siokal (2021) and Cocchieri et al. (2023) emphasize the positive impact of computerized documentation and the Primary Nursing Model on

documentation accuracy and overall nursing care. Additionally, systematic reviews, such as the one by Bunting and de Klerk (2022), highlight the effectiveness of personalized feedback and audit strategies in improving compliance with documentation guidelines. Despite these advancements, research by Jasem and Younis (2024) indicates ongoing gaps in documentation practices, particularly in specialized areas like pediatric care, underscoring the need for continued education and targeted interventions.

Gaber Abd-Elsattar Saker et al. (2019) results showed that before the training, only slightly more than two-fifths of nurses had a high level of knowledge about documentation, with the majority displaying low performance levels. However, after the training, all nurses showed significant improvements in both knowledge and performance, with the majority maintaining high levels even three months post- training. The study concludes that training significantly enhances nurses' documentation skills, supporting the hypothesis that such interventions are effective. The authors recommend the creation of a documentation skills manual for new nurses and the online dissemination of research findings to improve utilization. Mosaad Mohammed Elghabbour et al. (2020) showed that before the training, only slightly more than two-fifths of nurses had a high level of knowledge regarding documentation, with the majority displaying low performance levels. After the training, there was a significant improvement in both knowledge and performance, with four-fifths of nurses achieving high performance levels immediately post-training, and three-quarters maintaining these levels two months later. The study concludes that the documentation training program significantly enhances nurses' documentation skills and recommends expanding such programs, disseminating research findings online, and including documentation skills in manuals for new nurses. Siokal (2021) findings indicated that computerized documentation positively affects several indicators, including time management, quality of documentation, nurse autonomy, interprofessional collaboration, and nurse-patient relationships. It also enhances care planning, patient education, and communication, leading to improved nursing competencies and patient outcomes. Additionally, the review highlighted mixed results regarding nurse and patient satisfaction with computerized documentation. The study emphasized the importance of computerized nursing documentation in enhancing the quality and efficiency of nursing care, while also noting areas for further research and improvement.

The systematic review by Bunting and de Klerk (2022) suggested that documentation audits with personal feedback are particularly effective in improving compliance, especially when combined with other context-specific strategies. The review highlights the potential of EHRs to enhance the efficiency of audits, though it also notes that introducing EHRs alone may not guarantee meaningful improvements. While the review underscores the effectiveness of personalized feedback and audit strategies, it also points out the need for further research due to the low certainty of the evidence. The study's implications suggest that incorporating audit and personal feedback should be a key strategy in efforts to enhance nursing documentation quality. The quasi-experimental study by Cocchieri et al. (2023) revealed that the Primary Nursing Model significantly improved documentation accuracy in areas such as assessment on admission, nursing diagnosis, nursing intervention, and patient outcomes. However, no significant differences were observed between the two models in terms of record structure accuracy and legibility from post-test to follow-up. The study concludes that the Primary Nursing Model has a positive and lasting impact on nursing documentation accuracy. The study by Jasem and Younis (2024) revealed that the majority of participants were aged 30-34 years, with 60% being women, and 40% being graduates of nursing schools. Notably, 53% of the nurses had not participated in any training courses specializing in nursing documentation. The study concluded that both the knowledge and practice of nursing documentation among the nurses were poor, indicating a need for targeted training and education to improve documentation standards in pediatric care.

Personal Characteristic on Digital Application Skills. The demographic profiles can significantly influence digital application skills. For instance, gender differences may affect access to and comfort with technology, such as the study of West et al. (2019) suggesting that men may have more confidence in the digital application skills in their paper the gender divide in digital application skills through education. However, these differences are diminishing as digital literacy becomes more widespread. Educational attainment also plays a crucial role, as higher education levels are generally associated with better digital application skills

due to increased exposure to technology during academic pursuits (Correa, 2016; Spante et al., 2019). Conversely, those with lower educational attainment may have less familiarity with digital tools, limiting their proficiency. The type of hospital ownership whether public or private can impact digital application skills as well, with private hospitals potentially having more resources to invest in advanced technology and training programs, leading to better digital application skills among their staff (Rodríguez-Hevía et al., 2020; Raimo et al., 2023). In contrast, public hospitals might face resource constraints that limit access to such tools and training (Manyisa et al., 2017). Additionally, the type of unit within a hospital, such as ICU, emergency, or outpatient, can influence the required level of digital application skills, with units that rely heavily on electronic health records, telemedicine, or advanced diagnostic tools necessitating higher digital literacy (Da Rosa et al. 2021). Employment type also affects digital application skills, as permanent employees often have more opportunities for ongoing digital training and development than temporary or part-time staff, which can result in enhanced digital application skills over time (Van Laar et al. 2019). Finally, digital course training is directly linked to digital application skill proficiency; individuals who have received formal training in digital tools are more likely to possess strong digital application skills, as they have been explicitly taught how to use relevant technologies effectively (McDonald & Boulton, 2018; Mayara-Tibes et al., 2017).

Personal Characteristic on Digital Documentation Skills :- Demographic profiles can significantly influence the quality and efficiency of documentation skills (Shanafelt et al., 2016). Gender may play a role in documentation skills practices, such as the study of Mert (2021) indicating that women may be more detail- oriented and meticulous in documentation tasks, though this can vary widely based on individual traits rather than gender alone. Educational attainment is another critical factor, as those with higher education levels are often better equipped with the necessary writing, analytical, and organizational skills required for thorough and accurate documentation skills (McCaffery, 2018). Individuals with advanced degrees may also have more experience with standardized documentation skills procedures, contributing to higher- quality records.

The hospital's ownership, whether public or private, can also affect documentation skills practices. Private hospitals might have more resources to invest in advanced documentation systems, training, and support, leading to more consistent and accurate records (Yew et al. 2020). In contrast, public hospitals might face resource limitations, which could impact the quality and consistency of documentation skills (Ouma et al. 2018). The type of unit within the hospital also influences documentation skills, as units like the ICU or emergency department may have more stringent documentation skills requirements due to the critical nature of the cases they handle. In these settings, documentation skills must be timely, detailed, and precise, with staff often needing to document under high- pressure conditions (Carayon et al., 2015). Employment type is another factor, as permanent employees might be more familiar with the documentation skills processes and more invested in maintaining high standards than temporary or part-time staff with less training or experience with the specific documentation skills systems (Zimmerman, 2019). Lastly, digital course training is directly related to documentation skills quality; individuals who have undergone formal training in digital documentation skills systems are more likely to be proficient in using these tools effectively, leading to better organized, more accurate, and more compliant records (Akhu-Zaheya et al., 2018).

Digital Application Skill on Digital Documentation Skills:- The relationship between digital application skills and documentation skills is crucial, especially in tech-reliant fields like healthcare. Strong digital application skills enable individuals to use tools like electronic health records (EHRs) effectively, ensuring accurate, efficient data entry and retrieval (Katehakis et al. 2021; Kanjo et al. 2019). Without these skills, users may struggle with documentation skills software, leading to errors and inefficiencies. High digital application literacy improves the accuracy and speed of documentation skills and helps users adapt to new technologies, maintain compliance with regulations, and protect data security (Mohammadyar & Singh, 2015; Tinmaz et al., 2022). Ultimately, the quality of digital documentation skills depends on digital application skills, those with strong skills produce more organized, detailed, and accessible records. In contrast, poor skills can result in incomplete or unclear documentation skills, affecting patient care and decision-making (Iordache et al. 2017; Akhu-Zaheya et al., 2018).

Synthesis

Today's technology-driven surroundings require digital application abilities, which demographic profiles greatly affect. Gender, education, and hospital ownership affect digital tool comfort. Men may be more tech-savvy, but this difference is shrinking as digital literacy rises. Due to academic technology exposure, higher education correlates with improved digital application skills. Private hospitals may provide more digital training tools than public hospitals, improving staff proficiency. Due to their crucial duties, ICU and emergency departments require better digital literacy. Permanent personnel and those with formal digital training have greater opportunities for ongoing learning and are expressly instructed to use relevant technology, so they gain stronger digital application abilities. Demographic considerations affect digital documentation skill quality and efficiency. Better digital application skills enable accurate and efficient data entry in electronic health record (EHR) systems. Digital application skill literacy speeds up and improves documentation, helps users adapt to new technologies, comply with rules, and secure data. Effective digital application skills lead to more organized, detailed, and accessible patient records, which aid decision-making. Poor digital application abilities can lead to insufficient or imprecise digital documentation, lowering care quality and raising error risk. Digital documentation skills in healthcare depend on digital application abilities.

RESEARCH METHODOLOGY

Design

This quantitative research utilized a descriptive-correlational research design. A descriptive-correlational design in research is a methodology that combines descriptive and correlational approaches to describe and identify relationships between variables without manipulating them. In application to the study, the descriptive design was used to determine the personal characteristics of the nurses along with their digital application skills and level of digital documentation skills. The correlational design was employed to assess the interrelationship among the personal characteristics, digital application skills, and nursing digital documentation skills of nurses for the year 2024.

Environment

The research environment was Ormoc City, Leyte, an independent city in the province of Leyte, with four hospitals and a total of 449 nursing staff. There are 4 hospitals in Ormoc City, Three of these facilities are private hospitals equipped with digital tools such as Electronic Health Records (EHR), Ultrasound Imaging, Wearable Devices, and Electronic Medication Administration Records (eMAR). However, the public hospital, is not fully equipped with digital documentation tools but has basic tools like the EHR. Hospital A classified as a Level 1 facility, has a bed capacity of 100 and provides specialized services, including a Malasakit Center, general surgery, minimally invasive surgery, orthopedic surgery, pediatrics, internal medicine, and obstetrics & gynecology. Hospital B also a Level 1 facility with a bed capacity of 75, serves up to 100 patients and offers similar services, including a Malasakit Center, general surgery, minimally invasive surgery, orthopedic surgery, pediatrics, internal medicine, and obstetrics & gynecology. Hospital C classified as a Level 3 facility with a bed capacity of 150, offers services such as General Surgery, Neurosurgery, Urology, Minimally Invasive Surgery, Orthopedic Surgery, Surgical Oncology, Pediatrics, Occupational Medicine, and Neurology. It also specializes in Internal Medicine, Gastroenterology, Infectious Diseases, Pulmonology, Obstetrics & Gynecology, Gyne-Oncology, Cardiology, and Psychiatry. Finally, Hospital D classified as a Level 2 facility, has a bed capacity of 100.

Respondents

Respondents of the study were the 208 registered nurses in Ormoc City, Leyte from the 4 Hospitals. Currently the total number of nursing staff in Ormoc is 449 comprising with 173 in Hospital A, 92 in Hospital B, 61 in Hospital C, and 123 in Hospital D. To scientifically calculate the recommended sample

size, a web-based calculator "raosoft" was used, setting margin of error to 0.5%, and confidence level to 95%, the recommended sample size is 208 samples.

Sampling Design:- To ensure that each hospital was proportionately represented in the sample, proportionate random sampling was deemed the most appropriate method. This approach guaranteed that the sample accurately reflected the distribution of nursing staff across the hospitals, which was crucial given that experiences, practices, or conditions might vary between different settings. With a recommended sample size of 208 nurses, scientifically calculated using a specific margin of error and confidence level, stratified random sampling helped maintain the representativeness of the population. The process involved dividing the nursing population into distinct groups, or strata, based on each hospital, and then calculating the sample size for each hospital according to its proportion of the total nursing population. For instance, the sample size for Hospital A is 81 or (39%), Hospital B is 42 or (20%), Hospital C is 27 or (13%), and lastly Hospital D is 58 samples or (28%). Within each hospital, randomly selected to participate, ensuring a representative sample of the nursing population across Ormoc City.

Inclusion and Exclusion Criteria:- The study included only registered nurses currently employed at one of the four hospitals in Ormoc City, focusing on those who were full-time or part-time employees actively working during the study period. Only nurses with at least six months of experience in their current hospital setting were included to ensure that participants were familiar with their hospital's systems and procedures. Additionally, participation was voluntary, requiring informed consent from the nurses. On the other hand, the study excluded non-registered nurses, such as nursing aides and assistants, as well as temporary or contract nurses, to focus on staff with consistent involvement in hospital operations. Nurses currently on leave, including maternity, sick, or extended vacation, were also excluded. Lastly, nurses with less than six months of experience in their current hospital were not considered, as they may not have been fully integrated into the hospital's routines and digital documentation skills practices. Participants were also allowed to withdraw if they felt uncomfortable continuing the survey.

Instrument:- The study employed a three-part instrument. Part one of the instrument addressed the personal characteristics of nurses, capturing data on gender, educational attainment, hospital ownership, type of unit, employment type, and digital course training. In Part One, which addresses personal characteristics, data collection relies on self-reported responses, making it susceptible to biases such as social desirability or misreporting. Additionally, the categories used, such as hospital ownership and type of unit, may fail to capture subtle contextual factors that could influence findings, limiting the depth of interpretation.

Part two of the questionnaire utilized the Nursing Digital Application Skill Scale (NDASS) developed by Quin et al. (2024), a validated tool designed to measure nurses' proficiency in digital applications within clinical settings. Initially consisting of 14 items, the scale was refined to 12 items based on expert feedback. Each item was rated on a five- point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The NDASS demonstrated strong psychometric properties, including a high content validity index (CVI) of 0.975. An item with a low item-level CVI (< 0.78) was removed to enhance content relevance. Exploratory Factor Analysis (EFA) supported a single-factor structure explaining 74.794% of the variance, with a Kaiser-Meyer-Olkin (KMO) measure of 0.954 and Bartlett's test yielding $\chi^2 = 3156.793$ (p < 0.001). Confirmatory Factor Analysis (CFA) validated this structure, showing good fit indices (RMSEA = 0.076, CFI = 0.979, GFI = 0.921, NFI = 0.964). Reliability testing showed high internal consistency (Cronbach's α = 0.968), split-half reliability of 0.935, and test-retest reliability with an ICC of 0.740. Convergent validity was confirmed with an AVE of 0.694 and CR of 0.964, indicating robust internal consistency. NDASS serves as a practical tool for nurses to assess their digital skills, enabling managers to identify training needs. While the scale was developed for use in Northwest China, its structure suggests applicability in other contexts with similar digital competency requirements. Limitations include the use of convenience sampling, which may affect generalizability, and the lack of a gold standard criterion for comparison, which restricted the measurement of criterion and predictive validity.

The Nursing Digital Application Skill Scale (NDASS) achieved a high content validity index (CVI = 0.975), but its applicability beyond its original development context in Northwest China may be constrained by differences in digital infrastructure, cultural expectations, and training priorities. The use of convenience sampling further limits the generalizability of the findings, as the sample may not adequately represent the broader target population. The absence of a gold standard criterion restricts the evaluation of criterion validity, while the lack of longitudinal studies prevents assessment of predictive validity for future performance or outcomes. Although NDASS relies on a single-factor structure that simplifies interpretation, this may overlook multidimensional aspects of digital competency, which could provide richer insights. Moreover, while psychometric testing demonstrates strong reliability (Cronbach's α = 0.968), the high internal consistency could indicate redundancy among items, potentially narrowing the breadth of the construct measured.

Part three of the questionnaire utilized the Perceptions of Digital Documentation Skills Scale, developed by Brunelli et al. (2021). Known as the Nurses' Perceptions of Electronic Documentation (NPED) Scale, this psychometric instrument measures nurses' attitudes and perceptions toward electronic medical records (EMR) in acute care settings. Validated through a confirmatory factor analysis (CFA), the NPED scale consists of 11 items across two factors: EMR Utility and EMR Concerns. Nine items assess perceptions of EMR utility (e.g., ease of use, impact on patient care), while two items measure EMR concerns (e.g., anxiety or apprehension). Items are scored on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), with five reverse-scored items to mitigate response bias. Reliability testing indicated high internal consistency, with a Cronbach's alpha of 0.92 for EMR Utility and 0.88 for EMR Concerns, and an overall reliability score of 0.93. The CFA results validated the two-factor structure, consistent with EFA findings from previous studies in the U.S., although some variations emerged due to contextual factors, such as hospital size and duration of EMR implementation.

The Nurses' Perceptions of Electronic Documentation (NPED) Scale measures two factors: EMR Utility and EMR Concerns. However, with only two items dedicated to EMR Concerns, the scale may not fully capture the spectrum of apprehensions or barriers to EMR adoption. While reverse-scored items mitigate response bias, they may confuse some respondents, especially if instructions are unclear, potentially affecting reliability. Contextual variations, such as hospital size, duration of EMR implementation, and local digital literacy levels, may also influence factor loadings, complicating cross-context comparisons. Similar to NDASS, the use of convenience sampling and the scale's validation in specific acute care settings limits its applicability to broader or non-acute care contexts.

Data Gathering Procedures:- The research process began with the submission of three proposed titles. Upon approval of a title, a Research Adviser was assigned to guide the study. Permissions were then obtained from the Dean of the College of Allied Health Science and the Medical Chief of the hospital. The study was subsequently presented to a panel of experts for a design review, and after incorporating their suggestions and recommendations, the manuscript was submitted to the University of the Visayas Institutional Review Board for ethical approval. Recruitment began as soon as the notice to proceed was issued by the University of the Visayas Institutional Review Board. The researcher sent a transmittal letter to the four hospitals in Ormoc, requesting permission and coordinating an available time for data collection. Upon receiving permission, the researcher conducted a one-on-one meeting with the Hospital Medical Director/Administrator to present the rationale and objectives of the study. Recruitment of respondents was carried out through face-to-face intercepts, with the researcher visiting the hospitals to gather data. Respondents were approached while at work, and participation was facilitated during their break periods, or if needed, before or after their shifts. This process continued until the target sample size was achieved. Respondents were able to complete the survey within 3- 10 minutes. All data were encoded in the google spreadsheet. Then statistical treatment via the institutional statistician. The printed survey questionnaire will be then shredded after the researcher graduates from the degree.

Statistical Treatment of Data:- The following statistical treatments was used to treat the collected data, to wit: (a) Frequency Distribution and Simple Percentage. This was used in presenting the personal

characteristics of the nurses in terms of gender, educational attainment, hospital ownership, type of unit , employment type and digital course training; (b) Mean and Standard Deviation. This was used to assess the level of perceptions among nurse's digital application skill, and digital documentation skills; (c) Chi Square. This was used to assess the significant relationship between the personal characteristics and digital application skills along with the personal characteristics and level of digital documentation skills of nurses, (d) Cramer's V. This was used to assess the strength of association should there be a significant relationship using the chi square; and (e) Pearson r. This was used to assess the significant relationship between the digital application skill and level of digital documentation skills of nurses.

Ethical Considerations:- The study was approved by the University of the Visayas-Institution Review Board (IRB). See the appendices for the ethical considerations.

Presentation, Interpretation And Analysis Of Data

Table 1:- Personal Characteristics of the Respondents

Profile	f	%
Age		
21-30 years old	100	48.10
31-40 years old	88	42.30
41-50 years old	20	9.60
Sex		
Male	60	28.80
Female	148	71.20
Educational attainment		
Bachelor's Degree	202	97.10
Graduate Degree (Master's and Doctorate)	6	2.90
Hospital classification		
Private	179	86.10
Public	29	13.90
Clinical area		
Medicine unit	69	33.20
Surgical unit	37	17.80
Obstetrics/gynecology	15	7.20
Pediatrics	12	5.80
Emergency room	23	11.10
Intensive care unit	9	4.30
Operating room	1	.50
Rehabilitation unit	1	.50
Other	41	19.70
Employment type		
Permanent	182	87.50
Temporary	26	12.50
Digital course training		
Yes	42	20.20
No	166	79.80

Note: n=208.

The findings from this study provide crucial insights into the demographic characteristics of nurses in Ormoc City hospitals and their implications for digital skill development in documentation. The study highlights a youthful nursing workforce, with a substantial proportion (90.4%) aged between 21 and 40, which suggests a strong potential for adaptability to digital tools due to generational familiarity with technology. However, from a contextual perspective, this demographic trend does not always translate to effective digital skills on the ground. Despite younger nurses' likely exposure to digital tools, observations reveal that the fast-paced clinical environment and limited opportunities for structured training mean that even younger nurses may struggle with fully integrating digital tools, such as electronic medical records (EMRs), into their daily practices. This observation aligns with Correa (2016) and West et al. (2019), who suggested that while younger professionals may be more digitally fluent, the healthcare context requires specific, targeted training to translate this familiarity into practical skills.

The gender distribution, predominantly female (71.2%), is consistent with the global nursing trend. Female nurses, as Mert (2021) suggests, may bring strong detail-oriented traits to documentation tasks, which can enhance documentation accuracy and thoroughness. However, this demographic advantage may be limited in Ormoc hospitals due to the lack of standardized training and support for digital skills, impacting both male and female nurses equally. Observations indicate that regardless of gender, nurses encounter similar challenges in navigating complex EMR interfaces and adapting to digital documentation demands, reinforcing Van Laar et al. (2019) findings that gender disparities in digital proficiency are diminishing, and both male and female nurses stand to benefit from dedicated digital training programs.

Educational attainment data shows that while most nurses hold bachelor's degrees, very few have pursued graduate-level education, potentially limiting exposure to advanced digital tools and specialized analytical skills. This foundational level of education generally supports basic digital competency but may not equip nurses with the critical skills required for complex digital documentation tasks in specialized units. In practice, observations in Ormoc hospitals suggest that nurses often rely on informal peer guidance to navigate digital tools, indicating a gap in formal training that could enhance analytical skills and adaptability, as McCaffery (2018) and Spante et al. (2019) advocate.

A key finding is the discrepancy in resources between private and public hospitals, with 86.1% of the respondents working in private institutions. While private hospitals may have access to advanced technology and better digital training resources, this disparity means that nurses in public hospitals face significant challenges in keeping pace with digital advancements. Observations in Ormoc City confirm that public hospital staff often lack access to the latest digital tools, affecting the consistency and quality of patient documentation. Rodríguez-Hevía et al. (2020) and Manyisa et al. (2017) support this observation, noting that resource limitations in public hospitals can impede digital skills development.

The clinical area was also found to influence digital skill requirements. Nurses in high-demand units like the ICU and emergency departments, where real-time monitoring systems are essential, require more advanced digital skills. However, this study's data reveals that only a small proportion of nurses work in these critical areas, implying limited exposure to advanced digital applications for most staff. This is evident in Ormoc hospitals, where critical care nurses report needing frequent, hands-on digital support to navigate the complex systems required in their units. This aligns with Da Rosa et al. (2021), who note the heightened need for digital skills in high-demand clinical areas. In others, which comprises of Outpatient Department (OPD), Ambulatory Care Unit, Cardiology Unit, Dialysis Unit, Geriatric Unit, and Neonatal Intensive Care Unit having 41 respondents.

Employment type, where 87.5% of respondents are permanent employees, was found to correlate with greater access to digital skills development, as permanent staff are often more likely to receive training opportunities. Observations show that permanent employees have better access to internal training and professional development programs, allowing them to build digital competencies over time. In contrast, temporary staff may miss these opportunities, potentially widening the skills gap, as indicated by Van Laar et al. (2019).

Lastly, the study found that only 20.2% of nurses reported receiving digital course training, a significant gap that limits digital skill acquisition across the workforce. This is a pressing issue in Ormoc hospitals, where nurses without formal digital training often struggle with EMR navigation, impacting both their documentation efficiency and overall patient care quality. McDonald & Boulton (2018) emphasize the role of structured training in enhancing digital skills, underscoring the need for targeted digital education initiatives to equip nurses with practical competencies in digital documentation.

While demographic factors such as age and gender theoretically suggest a readiness for digital adoption among nurses in Ormoc hospitals, practical challenges on the ground such as limited formal training, resource disparities between public and private institutions, and unit-specific documentation demands limit the full realization of digital documentation skills. The findings underscore the importance of implementing targeted digital training programs that address these contextual realities to ensure that all nurses, regardless of background, can effectively utilize digital tools for documentation, ultimately improving patient care outcomes.

Table 2:- Nursing Digital Application Skills

Statements	Mean score	SD	Interpretation
1. I can integrate existing digital content	3.53	.810	Agree
2. I can create new digital content that meets expectations	3.34	.812	Neither agree nor disagree
3. I can protect intellectual property when creating digital content	3.53	.873	Agree
4. I can use digital nursing equipment proficiently	3.54	.839	Agree
5. I can use digital skills to analyze nursing problems	3.48	.890	Agree
6. I can use statistical software to analyze nursing data	3.27	.825	Neither agree nor disagree
7. I can use digital skills to support nursing decision-making	3.47	.879	Agree
8. I can use digital skills to promote nurse-patient relationships	3.44	.909	Agree
9. I can use digital skills to collaborate with others	3.64	.856	Agree
10. I can use digital skills to participate in social activities	3.56	.904	Agree
11. I can use digital skills resources for continuous learning	3.66	.866	Agree
12. I can apply digital skills to promote innovative nursing practices	3.61	.911	Agree
Grand mean	3.51	.706	High

Note: n=208.

Legend: 1.00 – 1.80 is very low (strongly disagree), 1.81 – 2.60 is low (disagree), 2.61 – 3.40 is moderate (neither agree nor disagree), 3.41 – 4.20 is high (agree), and 4.21 – 5.00 is very high (strongly agree).

The findings highlight important aspects of digital proficiency among nurses in Ormoc City, with a grand mean score of 3.51, reflecting a generally high level of digital competency. This suggests that, on average, nurses are confident in their digital skills, particularly in areas related to continuous learning, collaboration, and innovation in nursing practices. These strengths align with observations in clinical settings, where nurses demonstrate adaptability in leveraging digital tools for professional growth and teamwork. This proficiency in collaborative and innovative digital use can be attributed to the current trends in nursing that prioritize efficiency and patient-centered care, as noted by Marković (2021), who emphasizes digital literacy as a means to improve patient interactions by reducing time spent on administrative tasks. In practice, nurses use digital tools effectively to streamline communication and enhance team coordination, supporting more responsive patient care.

However, the lower scores in "creating new digital content" and "using statistical software for data analysis" indicate that while nurses are comfortable with basic digital tools, they lack confidence in more advanced, specialized competencies. This gap mirrors what is observed in hospitals, where nurses are less inclined to use statistical software due to limited exposure and insufficient training in this area. These findings align with Sharma et al. (2019), who found similar moderate levels of eHealth literacy, highlighting a need for specialized training in data handling and analysis. In clinical settings, this gap can lead to missed opportunities for data-driven insights that could inform patient care practices, an essential skill in modern healthcare environments that increasingly value evidence-based practices.

In practical terms, nurses express confidence in using digital nursing equipment and leveraging digital tools to foster nurse-patient relationships, with mean scores of 3.54 and 3.44, respectively. This reflects a high level of adaptability in using digital technologies directly linked to patient care and supports Mather and Cummings' (2019) 4E3P model, which advocates for training environments that enhance nurses' readiness and capability in digital technologies. Observations in healthcare facilities show that nurses are generally adept at integrating digital tools into their workflows, such as using EMRs for streamlined patient tracking and digital communication tools for improved patient interaction. These skills are critical in high-demand units where real-time digital updates improve response times and patient outcomes, underscoring the practical relevance of digital readiness in delivering quality care.

The implications of these findings stress the need for targeted digital training, especially in the areas of content creation and data analysis, to further elevate nurses' digital skills. Observations suggest that many nurses encounter limitations with complex tools due to insufficient training, which could be mitigated through structured learning programs that incorporate user-friendly digital tools and regular workshops. Ma et al. (2022) emphasize the role of community support and structured learning in developing digital competencies, a concept that could be valuable for Ormoc City hospitals in fostering a continuous learning environment. Implementing a standardized digital skills curriculum in line with the 4E3P framework could provide a clear pathway for nurses to advance from basic proficiency to digital professionalism, equipping them with essential skills for an increasingly digital healthcare landscape.

While the study confirms a strong foundation of digital skills among nurses, the observed gaps in advanced competencies like statistical analysis and digital content creation suggest areas where enhanced training is essential. Addressing these skill gaps through targeted interventions would not only improve digital readiness among nurses but also support a more data-driven, efficient, and patient-centered healthcare environment. This focus on comprehensive digital training would enable nurses to fully utilize digital tools, resulting in better operational efficiency and enhanced patient outcomes in line with the evolving demands of modern healthcare.

Table 3:- Perceptions of Electronic Documentation

Dimensions	Mean score	SD	Interpretation
EMR Utility			
1. I find the Digital Documentation Skills system to be user-friendly.	3.47	.906	Agree
2. The Digital Documentation Skills will require too many steps to find the data	2.76	.973	Neither agree nor disagree
3. I will have the support I need to succeed with the digital documentation Skills	3.56	.790	Agree
4. The Digital Medical Records will make it easier to document patient care	3.61	.900	Agree
5. Using Electronic Medical Record will improve patient care	3.56	.951	Agree
6. The Digital Documentation Skills will interfere with the art of Nursing*	2.83	1.06	Neither agree nor disagree

7. If I had my way, nurses would never have to use the Digital Documentation Skills*	3.15	1.01	Neither agree nor disagree
10. I am excited to use any Digital Documentation Tools	3.54	.911	Agree
11. I am confident that I can operate Digital Documentation Skills effectively	3.69	.836	Agree
Factor mean	3.35	.416	Moderate
EMR Concerns			
1. I have anxiety using the Digital Documentation Skills*	3.06	1.17	Neither agree nor disagree
2. I am dreading using any Digital Documentation tools*	2.91	1.09	Neither agree nor disagree
Factor mean	2.99	1.09	Moderate
Grand mean	3.17	.540	Moderate

Note: n=208. *reversely scored items.

Legend: 1.00 – 1.80 is very low (strongly disagree), 1.81 – 2.60 is low (disagree), 2.61 – 3.40 is moderate (neither agree nor disagree), 3.41 – 4.20 is high (agree), and 4.21 – 5.00 is very high (strongly agree).

With an overall mean score of 3.17, nurses acknowledge that EMRs streamline documentation and improve patient care, corroborating existing literature by Cocchieri et al. (2023) and Bunting & de Klerk (2022) on the positive contributions of EMRs to accuracy and documentation quality. However, these moderate perceptions also indicate underlying concerns about EMR usability and its impact on clinical workflows, echoing broader themes in technology acceptance literature.

A prominent issue identified is the usability of EMRs, with nurses reporting that systems often require "too many steps to find data" and may "interfere with the art of nursing." These concerns highlight a gap between the theoretical efficiency of EMRs and their practical implementation in fast-paced clinical environments. For example, in high- demand units such as ICUs or emergency departments, where rapid decision-making is critical, cumbersome system navigation can delay patient care. This aligns with Brown et al. (2020), who emphasized that system design is a core determinant of EMR acceptance, particularly when usability challenges disrupt the balance between documentation and patient-centered care.

From the perspective of the Technology Acceptance Model (TAM), the findings suggest that while nurses perceive EMRs as useful (perceived usefulness, PU), the perceived ease of use (PEOU) is less favorable, creating friction in adoption. Nurses' frustrations with complex workflows directly impact their attitudes toward EMRs, reinforcing TRA's premise that negative perceptions can hinder behavioral intentions to fully embrace technology. This underscores the need for EMR systems to prioritize intuitive design, reducing unnecessary steps and streamlining navigation to support real- time clinical needs.

Despite usability challenges, the confidence level in operating EMRs, with a mean score of 3.69, reflects that nurses feel technically capable of using these tools once familiar with them. However, the moderate score for the "EMR Concerns" factor (2.99) reveals latent anxieties that may affect full engagement with digital documentation. These concerns often stem from inadequate or sporadic training and insufficient institutional support, as highlighted by Jasem & Younis (2024). In the Ormoc setting, the lack of structured training programs exacerbates these issues, leaving nurses to rely on informal peer support or self-directed learning, which may not adequately address the complexities of EMR systems.

Furthermore, nurses' moderate enthusiasm for digital tools suggests a readiness to adopt EMRs if supported by resources such as ongoing training, simplified interfaces, and responsive technical support. This finding aligns with Siokal's (2021) emphasis on the role of a supportive work environment in fostering technology

acceptance. Structured and regular training tailored to specific clinical contexts, especially in high-demand units, is critical to building both competence and confidence in digital documentation practices.

To address these concerns, healthcare institutions must adopt a multi-faceted approach. First, system developers should collaborate with clinical stakeholders to create user-friendly EMR interfaces that align with nurses' workflows. Simplifying navigation, minimizing redundant steps, and enhancing real-time data access will significantly improve PEOU. Second, institutions should implement structured, continuous digital training programs, targeting specific challenges identified by nurses in different clinical settings. Such programs should integrate practical, scenario-based learning to boost confidence and reduce apprehension.

Third, regular usability audits and feedback mechanisms, as recommended by Bunting and de Klerk (2022), can ensure that EMR systems remain aligned with clinical needs and address evolving challenges. Incorporating nurse feedback into system updates will not only enhance usability but also foster a sense of ownership and collaboration among users, reinforcing positive attitudes toward EMRs. Lastly, fostering a culture of technological support through dedicated IT teams and peer champions can mitigate on-the- ground frustrations and promote sustained engagement with digital tools. While nurses recognize the potential of EMRs to enhance documentation and patient care, significant challenges related to usability, training, and support hinder their full acceptance. Addressing these issues requires a holistic approach that combines intuitive system design, targeted training, and responsive institutional support. By bridging these gaps, healthcare institutions can maximize the benefits of EMRs, improve nurses' documentation practices, and ultimately enhance patient care outcomes. This study reinforces the importance of aligning technological solutions with practical realities to achieve meaningful adoption and impact in clinical settings.

Table 4:- Relationship between Personal Characteristics and Nursing Digital Application Skills

Dimensions	chi value	p value	Cramer's V	Decision	Interpretation
Age	1.169E2	.000	.530	Reject Ho	Significant
Gender	77.246	.000	.609	Reject Ho	Significant
Educational attainment	70.082	.000	.580	Reject Ho	Significant
Hospital classification	54.794	.013	.513	Reject Ho	Significant
Clinical area	4.465E2	.000	.518	Reject Ho	Significant
Employment type	34.178	.459	--	Failed to reject Ho	Not significant
Digital course training	40.328	.211	--	Failed to reject Ho	Not significant

Legend: Significant if p value is < .05. Cramer's V values: A value of >0.25 is very strong, >0.15 is strong, >0.10 is moderate, >0.05 is weak, and >0 is no association.

These findings suggest that these demographic factors strongly influence the development of digital proficiency among nurses, with positive correlations indicating that as one variable increases, so does the associated digital skill level. The analysis of these relationships provides a deeper understanding of how demographic factors shape digital competency, as well as the practical implications of these trends in nursing practice. The significant positive correlation between age and digital application skills (Cramer's V = 0.530) suggests that older nurses generally exhibit higher digital competencies. This may be attributed to their accumulated professional experience, exposure to varied documentation systems, and the adaptability gained through years of practice (Brown et al., 2020). Older nurses often serve in mentoring or leadership roles, which may require them to use digital tools more frequently for documentation, coordination, and training. This finding underscores the value of experience in adapting to digital systems, aligning with theories that emphasize experiential learning as a pathway to skill acquisition (West et al., 2019). However, this trend also raises concerns about whether younger nurses, who are often perceived as more technologically adept, are receiving adequate opportunities to build hands-on digital proficiency, particularly in fast-paced clinical settings.

The strong positive correlation between gender and digital proficiency (Cramer's V = 0.609) highlights a noteworthy trend: female nurses tend to demonstrate greater confidence and competency in digital documentation tasks. This may reflect the traditional gender composition of nursing, where meticulous attention to detail an attribute often linked to documentation accuracy is emphasized (West et al., 2019). Additionally, female nurses may have greater familiarity with EMR systems due to their prevalent engagement in documentation-heavy roles. This finding aligns with research by Rodríguez-Hevía et al. (2020), which noted that female healthcare workers often excel in detailed, structured digital tasks, reinforcing the importance of leveraging these strengths in training programs. The implications suggest that while both genders are capable of excelling in digital documentation, tailored training approaches that address specific needs could further enhance overall competency.

The positive correlation between educational attainment and digital proficiency (Cramer's V = 0.580) reflects the impact of advanced education on developing digital skills. Nurses with higher educational qualifications often have greater exposure to technology during their academic training, equipping them with foundational knowledge of digital tools and systems (Mather & Cummings, 2019). Additionally, advanced education fosters critical thinking and problem-solving skills that are essential for navigating complex EMR systems. This trend emphasizes the role of continuing education and professional development programs in enhancing digital competencies among nurses at all levels.

Hospital classification also demonstrated a strong positive correlation with digital application skills (Cramer's V = 0.513), suggesting that nurses in private hospitals tend to have stronger digital skills than those in public hospitals. This disparity may be due to the availability of resources, as private hospitals often invest more in advanced technologies, infrastructure, and training programs (Brown et al., 2020). In contrast, public hospitals may face budget constraints that limit access to updated digital tools and comprehensive training. This finding highlights the need for equitable investment in digital infrastructure and training across healthcare institutions to ensure that all nurses, regardless of workplace setting, can effectively engage with EMRs and other digital tools.

The clinical area showed a significant correlation with digital application skills (Cramer's V = 0.518), indicating that nurses working in certain units, such as ICUs, emergency departments, or medicine units, tend to have higher digital proficiency. These high-demand units require frequent and precise documentation, fostering the development of digital skills through consistent practice (Rodríguez-Hevía et al., 2020). Nurses in these areas may also face greater pressure to use EMRs efficiently, driving skill acquisition out of necessity. This finding underscores the importance of tailoring digital training programs to the unique demands of each clinical area to ensure that all nurses can meet the specific requirements of their roles.

In contrast, no significant correlations were found between employment type or digital course training and digital proficiency. This lack of correlation suggests that employment stability and prior training do not necessarily translate to stronger digital skills in practice. One possible explanation is that existing digital courses may focus on theoretical knowledge rather than practical application, leaving nurses unprepared for the realities of clinical documentation (Van Laar et al., 2019). Similarly, employment type may not influence digital competency if access to training and resources is inconsistent across roles.

The findings have important implications for both practice and policy. Positive correlations between age, gender, education, hospital classification, and clinical area indicate that certain demographic factors inherently support digital skill development. However, systemic issues, such as gaps in practical training and resource allocation, limit the potential impact of other factors like employment type and digital course participation. To bridge these gaps, healthcare institutions must prioritize tailored, hands-on training programs that address the specific needs of diverse nurse demographics and clinical areas (Cocchieri et al., 2023). Regular feedback and investment in digital infrastructure, especially in resource-limited settings, are critical to fostering equitable digital competency among nurses.

Table 5:- Relationship between Personal Characteristics and Perceptions on Electronic Documentation

Dimensions	chi value	p value	Cramer's V	Decision	Interpretation
EMR utility					
Age	1.144E2	.000	.524	Reject Ho	Significant
Gender	26.734	.084	--	Failed to reject Ho	Not significant
Educational attainment	23.856	.160	--	Failed to reject Ho	Not significant
Hospital classification	30.385	.034	.382	Reject Ho	Significant
Clinical area	3.227E2	.000	.440	Reject Ho	Significant
Employment type	24.965	.126	--	Failed to reject Ho	Not significant
Digital course training	37.104	.005	.422	Reject Ho	Significant
EMR concerns					
Age	17.548	.351	--	Failed to reject Ho	Not significant
Gender	13.769	.088	--	Failed to reject Ho	Not significant
Educational attainment	4.941	.764	--	Failed to reject Ho	Not significant
Hospital classification	10.909	.207	--	Failed to reject Ho	Not significant
Clinical area	1.005E2	.002	.246	Reject Ho	Significant
Employment type	8.322	.403	--	Failed to reject Ho	Not significant
Digital course training	10.559	.228	--	Failed to reject Ho	Not significant
Overall perceptions on electronic documentation					
Age	1.571E2	.000	.615	Reject Ho	Significant
Gender	70.943	.027	.584	Reject Ho	Significant
Educational attainment	31.728	.980	--	Failed to reject Ho	Not significant
Hospital classification	60.876	.139	--	Failed to reject Ho	Not significant
Clinical area	5.748E2	.000	.588	Reject Ho	Significant
Employment type	60.827	.140	--	Failed to reject Ho	Not significant
Digital course training	68.200	.044	.573	Reject Ho	Significant

Legend: Significant if p value is < .05. Dependent variable: Roles and support. Cramer's V values: A value of >0.25 is very strong, >0.15 is strong, >0.10 is moderate, >0.05 is weak, and >0 is no association.

The analysis of the relationship between demographic dimensions and Electronic Medical Record (EMR) utility reveals significant insights into the factors shaping nurses' perceptions of EMR usefulness and efficiency. Using chi-square tests and Cramer's V as measures of association, the results highlight key correlations and their implications for practice and policy. A strong positive correlation between age and EMR utility (Cramer's V = 0.524) suggests that older nurses perceive EMRs more favorably. This may be attributed to their accumulated experience and familiarity with documentation processes, allowing them to recognize the long-term benefits of structured digital tools. Older nurses often hold senior roles that require frequent interaction with EMRs, further enhancing their confidence in navigating such systems. This finding underscores the value of experience and suggests the importance of mentorship programs where experienced nurses can support younger colleagues in building digital competencies.

In contrast, the relationship between gender and EMR utility was not statistically significant, indicating that both male and female nurses have similar perceptions of EMR usefulness. While previous research has highlighted potential differences in documentation styles by gender, this study suggests that other factors, such as training and clinical exposure, play a more influential role in shaping EMR perceptions. Similarly, educational attainment did not show a significant correlation with EMR utility. This result implies that

formal education levels alone do not directly influence perceptions, reinforcing the importance of practical experience and training in clinical settings.

A moderate positive correlation between hospital classification and EMR utility (Cramer's V = 0.382) indicates that nurses in private hospitals tend to view EMRs more favorably than those in public hospitals. Private hospitals often have access to advanced digital infrastructure and provide more frequent training opportunities, enhancing the user experience. In contrast, public hospitals may face resource limitations, including outdated systems and insufficient technical support, which can negatively impact nurses' perceptions of EMR utility. This disparity highlights the need for equitable investment in digital infrastructure and training across healthcare settings. This reflects Yew et al. (2020) and Ouma et al. (2018), who observed that advanced EMR systems and consistent training enhance the user experience, particularly in resource-rich private hospitals that invest in digital infrastructure.

The clinical area also showed a moderate-to-strong positive correlation with EMR utility (Cramer's V = 0.440). Nurses in high-demand units, such as ICUs and medicine departments, tend to find EMRs more useful due to the need for frequent and detailed documentation. However, the high workload in these areas may also amplify the importance of efficient EMR systems. Tailoring EMR features to meet the specific needs of high-demand units such as simplifying data entry and improving navigation could further enhance their utility and reduce workflow bottlenecks. This aligns with Carayon et al. (2015), who highlighted that high-demand clinical areas face unique documentation challenges that impact perceptions of EMR functionality.

No significant correlation was observed between employment type and EMR utility, suggesting that nurses' perceptions of EMR usefulness are not significantly influenced by whether they are employed on a permanent or contractual basis. This may indicate consistent exposure to EMRs across employment types. However, it also highlights a need for role-specific training to ensure all nurses can maximize the potential of EMRs in their practice.

Finally, a positive correlation between digital course training and EMR utility (Cramer's V = 0.422) underscores the critical role of structured training programs. Nurses who have undergone formal digital training are better equipped to navigate EMRs, demonstrating greater confidence and appreciation for their benefits. This finding emphasizes the importance of accessible, comprehensive training to ensure nurses can fully utilize EMR systems, regardless of their prior experience or clinical setting.

The findings indicate that perceptions of EMR utility are significantly influenced by factors such as age, hospital classification, clinical area, and digital course training. Older nurses and those in private hospitals or high-demand units are more likely to recognize the benefits of EMRs, while structured training programs play a crucial role in fostering positive perceptions across all demographics. Addressing disparities in EMR training and system quality, particularly in public hospitals, is essential to improving perceptions and facilitating broader acceptance of EMRs. Tailored interventions, such as role-based training programs and unit-specific system enhancements, are necessary to optimize EMR adoption and ensure effective usage in diverse clinical environments.

In terms of the Electronic Medical Record (EMR) concerns, it reveals limited significant correlations, highlighting that most apprehensions stem from broader systemic or institutional factors rather than individual demographics. Age, gender, educational attainment, hospital classification, employment type, and digital course training did not show statistically significant correlations with EMR concerns. This suggests that nurses, regardless of these characteristics, face similar challenges with EMRs, such as system inefficiencies, usability issues, and workflow disruptions.

The lack of a significant correlation between age and EMR concerns indicates that apprehensions about EMRs are not age-specific. Nurses of all age groups encounter similar challenges, emphasizing that concerns likely arise from factors such as inadequate system design or insufficient training rather than age-related

differences. Similarly, gender did not significantly influence EMR concerns, reinforcing the idea that both male and female nurses experience comparable levels of frustration with EMRs, shaped more by their clinical responsibilities and exposure to digital tools than by gender differences.

Educational attainment also showed no significant correlation with EMR concerns, suggesting that higher levels of formal education do not necessarily reduce apprehensions. This points to practical challenges, such as system complexity and inadequate preparation for real-world use, as the primary drivers of concern. Likewise, the lack of significant correlation with hospital classification implies that both public and private hospital nurses face similar issues with EMR systems. Even in private hospitals with better resources, usability concerns persist, underscoring the universal need for user-friendly EMR designs.

A significant correlation was observed between clinical area and EMR concerns, highlighting that nurses in high-demand units, such as ICUs and medicine departments, face heightened challenges. These areas require extensive documentation under time constraints, which can exacerbate frustrations with complex navigation or inefficient workflows. Tailored interventions, such as unit-specific EMR customizations or streamlined data entry processes, could help address these issues and reduce nurses' concerns in these high-pressure environments.

Finally, the absence of significant correlations with employment type and digital course training suggests that these factors do not substantially impact nurses' EMR concerns. However, the lack of impact from digital training may point to inadequacies in the training itself, such as insufficient emphasis on practical problem-solving or real-world application.

The findings underscore the critical need for targeted interventions to reduce EMR concerns, particularly in high-demand clinical areas where frustrations are most pronounced. Simplifying workflows, optimizing system design, and incorporating unit-specific features can help mitigate usability challenges. Moreover, enhancing EMR training programs to focus on practical, hands-on problem-solving and system navigation could address shared concerns across all demographic groups, fostering greater confidence and satisfaction among nurses. These efforts are essential to improving nurses' experiences with EMRs and ensuring their effective integration into clinical practice.

In the analysis of the relationship between demographic factors and nurses' overall perceptions of electronic documentation highlights several significant correlations that provide valuable insights into how different characteristics influence views on Electronic Medical Records (EMRs). The findings reveal that age, gender, clinical area, and digital course training significantly shape nurses' perceptions, while educational attainment, hospital classification, and employment type do not show notable correlations.

A strong positive correlation between age and overall perceptions indicates that older nurses tend to have more favorable views of EMRs. This can be attributed to their extensive experience with manual and digital documentation systems, enabling them to appreciate the efficiency and accuracy of EMRs. Additionally, older nurses often hold leadership or mentoring roles, requiring familiarity with digital tools and further reinforcing positive attitudes. Leveraging the expertise of senior nurses through mentorship programs could promote EMR acceptance and competence among younger staff.

The significant correlation between gender and overall perceptions reveals that female nurses are more likely to perceive electronic documentation positively. This may reflect their familiarity with detail-oriented tasks inherent in nursing, aligning well with the structured nature of EMRs. Female nurses' meticulous approach to documentation may contribute to their favorable perceptions of EMRs as tools for ensuring accuracy and organization. This finding underscores the importance of recognizing gender-based strengths in designing training programs and workflows.

No significant correlation was found between educational attainment and overall perceptions, suggesting that academic qualifications have limited influence on nurses' views of EMRs. Practical experience and direct

exposure to digital tools in clinical settings seem to play a more critical role in shaping perceptions. Similarly, the lack of significance in hospital classification implies that nurses in public and private hospitals face comparable challenges with EMRs, likely stemming from shared usability and workflow integration issues, regardless of resource differences.

A strong correlation between clinical area and overall perceptions highlights the distinct needs and challenges faced by nurses in specific units such as ICUs and medicine departments. These high-demand areas require frequent, detailed documentation, making EMRs invaluable for streamlining workflows. However, these same units may also experience heightened usability challenges due to time pressures and complex cases. Tailored EMR solutions that address the specific needs of these clinical areas could significantly enhance perceptions and user experiences.

The absence of a significant correlation between employment type and overall perceptions suggests that both permanent and contractual nurses share similar views on EMRs. This reflects uniform exposure to these systems, regardless of employment status. However, the strong correlation between digital course training and overall perceptions underscores the critical role of structured training programs in building confidence and competence in EMR use. Nurses with formal training are more likely to perceive EMRs positively, emphasizing the need for comprehensive, accessible training initiatives.

The findings suggest that tailored interventions are essential to improving perceptions of electronic documentation. Training programs should target younger nurses to build their confidence and competence, while unit-specific solutions should address the unique demands of high-pressure clinical areas. Expanding access to practical, hands-on training programs across all demographics can enhance nurses' overall perceptions, fostering broader acceptance and more effective use of EMRs. These efforts can ultimately contribute to improved documentation practices and better patient care outcomes in increasingly digital healthcare environments.

Table 6:- Relationship between Nursing Digital Application Skills and Perceptions on Electronic Documentation

Variables	r value	p value	Decision	Interpretation
Nursing digital application skills vs. EMR Utility	.629	.000	Reject Ho	Significant
Nursing digital application skills vs. EMR concerns	-.354	.000	Reject Ho	Significant
Nursing digital application skills vs. Perceptions on electronic Documentation	-.114	102	Failed to reject Ho	Not significant

Legend: Significant if p value is < .05. Pearson r value: A value of .90 to 1.00 (-.90 to -1.00) is very high positive (negative) correlation, .70 to .90 (-.70 to -.90) is high positive (negative) correlation, -50 to .70 (-.50 to -.70) is moderate positive (negative) correlation, .30 to .50 (-.30 to -.50) is low positive (negative) correlation, and .00 to .30 (.00 to -.30) is negligible correlation.

Results of the relationship between nursing digital application skills and perceptions of electronic documentation is presented in table 6. The findings reveal critical insights into how nursing digital application skills influence perceptions of EMR utility and concerns, which are highly relevant in the real-world context of clinical practice. The positive and moderate correlation between digital application skills and perceived EMR utility (r = .629, p < .05) suggests that nurses with stronger digital skills are more likely to find EMRs functional and valuable in their roles. This aligns with what is observed in practice, where nurses who are more digitally adept seamlessly navigate EMRs, efficiently retrieve and document patient data, and make fewer errors, resulting in a smoother workflow. In Ormoc hospitals, for instance, nurses with high digital competence demonstrate greater ease in using EMRs for real-time updates and clinical decisions, which reinforces the findings of Katehakis et al. (2021) and Kanjo et al. (2019), who emphasize that digital fluency directly enhances the efficiency of digital documentation.

Conversely, the negative, albeit low, correlation between digital skills and EMR concerns (r = -.354, p < .05) reflects that nurses with limited digital proficiency often face challenges with EMRs, leading to higher levels of frustration and apprehension. Observations in hospital settings confirm this reality: nurses with weaker digital skills report that EMRs slow down their workflow and increase the likelihood of documentation errors. These nurses are often observed struggling with EMR interfaces, which can lead to inefficient data entry and retrieval, a finding supported by Mohammadyar AND Singh (2015) and Tinmaz et al. (2022). On the ground, this translates into a reliance on colleagues for assistance or even a tendency to bypass certain EMR functionalities, resulting in incomplete documentation and, in some cases, jeopardizing data security. This emphasizes the need for robust digital training, as enhanced digital skills could significantly reduce these concerns, allowing nurses to engage with EMRs more confidently and effectively.

Interestingly, the lack of a significant correlation between digital skills and overall perceptions of EMRs (r = -.114, p > .05) suggests that, irrespective of their digital proficiency, nurses maintain a positive general view of electronic documentation. This finding highlights a critical contextual reality: nurses recognize the inherent value of EMRs for improving patient care and enhancing clinical workflows, as reflected by Iordache et al. (2017) and Akhu-Zaheya et al. (2018). Even nurses who encounter difficulties with digital documentation express an appreciation for EMRs' potential to streamline processes and support better patient outcomes. In practice, this intrinsic appreciation is evident as nurses view EMRs as necessary tools for modern healthcare, with benefits like easier access to patient histories and quicker information sharing among departments.

The implications of these findings emphasize the importance of targeted digital training to build digital application skills, particularly for nurses with low digital proficiency. On the ground, many nurses acknowledge the value of additional training but report that existing programs are often insufficient, either lacking practical relevance or not focusing on the EMR-specific skills they need daily. Implementing training that directly addresses EMR navigation, data security, and efficient data entry could empower nurses to use EMRs more confidently, reducing the frustration and apprehension seen among those with lower digital skills. Furthermore, for specialized units with complex documentation requirements, such as ICU or medicine, customized training could address specific EMR functionalities relevant to high-stakes, high-volume documentation, allowing for smoother workflows and better support for patient care.

While nursing digital application skills significantly shape perceptions of EMR utility and alleviate concerns about usability, the generally positive perception of EMRs, regardless of skill level, points to an overarching professional acknowledgment of their role in enhancing patient care. This insight underscores the need for a dual approach: targeted digital skill-building initiatives to address specific usability issues and continuous support to reinforce the intrinsic value nurses see in EMRs.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concludes that investing in targeted digital training, addressing system usability concerns, and aligning EMR features with the unique demands of clinical areas are essential to improving nurses' adoption and effective use of electronic documentation systems. These efforts can foster greater confidence in EMRs, streamline workflows, and ultimately enhance the quality of patient care in increasingly digitalized healthcare environments such as the 4 hospitals in Ormoc City, Leyte.

The study concluded that the study's conclusions confirm that the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA) effectively explain nurses' acceptance and use of digital documentation tools in the healthcare setting, specifically in the four hospitals in Ormoc City. TAM's concepts of perceived usefulness (PU) and perceived ease of use (PEOU) were validated, as nurses with stronger digital skills reported higher utility perceptions of electronic medical records (EMRs). Nurses who had formal digital training found EMRs easier to use and demonstrated greater confidence, aligning with

TAM's PEOU. Additionally, TRA's focus on intention and behavior was evident, as factors like age, educational attainment, and clinical area influenced nurses' attitudes toward digital documentation, particularly in high-documentation units, where EMRs were perceived as more useful due to workplace demands.

Recommendations

Practice :- To enhance nursing practice in digital documentation, hospitals should implement comprehensive, ongoing digital training programs aimed at strengthening nurses' digital application and documentation skills, with a particular focus on electronic medical record (EMR) systems. These programs should address specific challenges, such as statistical analysis and digital content creation, which are essential for effective data management. Additionally, given the varied documentation demands across clinical areas, unit-specific EMR support tailored to the needs of high-demand units, such as medicine and ICU, can improve EMR usability and effectiveness by aligning resources with unit-specific documentation requirements. Establishing peer support networks within hospitals, where digitally proficient nurses mentor their colleagues, particularly in these high-demand units, can facilitate informal, on-the-job learning and build confidence in digital documentation practices.

Policy :- On a policy level, establishing standardized digital competency requirements for nursing staff across both private and public hospitals can ensure a consistent baseline of digital skills necessary for effective care. Policymakers could further support digital competency through incentivized training programs, offering certification or continuing education credits to encourage participation and enhance digital documentation skills among nursing staff. Regular EMR usability audits, incorporating feedback from nursing staff, could inform policy improvements aimed at reducing system complexity and making EMRs more user-friendly, ultimately improving compliance and reducing documentation errors.

Education:- In nursing education, integrating digital documentation courses into curricula would equip future nurses with foundational EMR skills prior to entering the workforce. Interdisciplinary digital literacy modules covering topics such as data security, digital professionalism, and ethical considerations are essential to address the multifaceted digital demands in healthcare. For in-service nurses, accessible continuing education in advanced digital documentation and EMR use, offered in online or hybrid formats, could provide flexible learning options that accommodate professional schedules.

Research:- Future research should explore specific barriers to EMR adoption among nurses, such as technological complexity, lack of training, or workflow disruptions, to generate targeted insights for improving EMR acceptance and usability. Additionally, investigating the impact of enhanced digital training programs on patient outcomes would help determine whether improved documentation skills contribute to better quality of care and fewer documentation errors. Comparative studies examining EMR perceptions and usability across different hospital settings, particularly between private and public hospitals, could provide valuable insights into how resource availability and infrastructure influence digital documentation practices, guiding tailored EMR adoption strategies based on the unique challenges of each hospital environment.

Recommended Research Titles for Future Studies

- "Barriers to Electronic Medical Record (EMR) Adoption Among Nurses: An Analysis of Technological, Training, and Workflow Challenges"

- "Evaluating the Impact of Digital Training Programs on Nursing Documentation Accuracy and Patient Outcomes"

- "A Comparative Study of EMR Perceptions and Usability in Public and Private Hospitals: Implications for Digital Documentation Strategies"

- "The Role of Digital Literacy in Enhancing EMR Efficiency and Reducing Documentation Errors in High-Demand Clinical Units"

NURSING DOCUMENTATION MANAGEMENT ENHANCEMENT PLAN

Rationale

The study found gaps and limitations in nurses' digital application and documentation skills in private and public hospitals in Ormoc City, Leyte, prompting the suggested nursing documentation program. The study found that nurses struggle with digital documentation, notably EMR use, statistical analysis, content generation, and sophisticated EMR interfaces. It also found significant differences in digital competency by age, education, clinical area, and availability to digital training, emphasizing the necessity for personalized, continual training programs. The study found that nurses lack trust in digital documentation skills and struggle to navigate EMR systems due to poor digital training. This supports the Technology Acceptance Model (TAM), which emphasizes perceived ease of use and utility in technology adoption. Nurses who find EMRs difficult or onerous may be less likely to use them, which can affect documentation and patient care. Thus, the program emphasizes digital training, particularly in underrepresented abilities like statistical analysis and content production, to boost nurses' confidence and digital proficiency, improving documentation accuracy and efficiency.

The survey also indicated that high-demand clinical fields like medicine and intensive care require specialist EMR support for documentation. These nurses need significant digital abilities to handle complicated and time-sensitive patient data. Unit-specific EMR support and peer mentorship networks allow digitally savvy nurses to help their colleagues. This strategy fosters a collaborative learning environment and tailors documentation to each unit, improving EMR utility and helping nurses in high-pressure circumstances. Lack of hospital-wide digital proficiency requirements also hindered documentation quality. The program establishes basic digital competency criteria to ensure that all nurses, regardless of demographic background or clinical context, can document effectively. To address nurses' concerns about EMR interface complexity, the initiative includes regular EMR usability audits and feedback methods. Continuous input will make EMR systems more user-friendly and meet nurses' needs.

General Objective

The primary objective of the nursing documentation program is to enhance nurses' digital documentation skills and improve the usability and effectiveness of electronic medical records (EMRs) within hospital settings, thereby supporting accurate, efficient, and patient-centered documentation practices.

Specific Objectives

1. To increase nurses' digital competency in documentation-related skills

- Equip nurses with essential skills in statistical analysis, content creation, and efficient data entry for accurate
- Ensure that nurses understand and can effectively use EMR systems in their respective

2. To tailor EMR support to meet the specific documentation needs of high-demand clinical areas

- Identify and address unique EMR requirements within high-pressure units, such as medicine and ICU, to streamline workflow and improve documentation accuracy.
- Establish peer support networks where digitally proficient nurses mentor colleagues within high-demand units to enhance confidence and skill-sharing.

3. To establish standardized digital competency requirements for consistent documentation practices

- Define baseline digital skills and documentation competencies for all nursing staff to ensure a consistent standard of care across clinical settings.

- Conduct regular competency assessments and provide feedback to align staff skills with established documentation

4. To reduce nurses' concerns and improve the usability of EMR systems through regular usability audits and feedback mechanisms

- Conduct regular audits of EMR systems, gathering feedback from nursing staff to identify and address system
- Implement system adjustments based on audit results to enhance EMR user-friendliness, streamline documentation processes, and align with the practical needs of nursing workflows.

5. To promote a culture of continuous learning and support for digital documentation skills

- Provide accessible, ongoing training and development opportunities, including online modules and in-person workshops, for continuous skill enhancement.
- Encourage interdisciplinary collaboration and training to build comprehensive digital literacy, including data security, digital professionalism, and ethical considerations in documentation

Concerns	Specific Objectives	Activities	Persons Responsible	Resources	Budget (with Justifications)	Time Frame
Limited digital skills, particularly in statistical analysis and content creation	Improve nurses' digital application skills, specifically in statistical analysis and content creation Create Digital Contents Usage of Statistical Software in analyzing patient data	Personally-Initiated: Self-paced online tutorials and certification courses in statistical software and content creation Hospital-Initiated: Workshops with digital experts	Nurse Educators IT Department Nurse Managers	Digital course subscriptions, workshop materials	PHP 50,000 - for online course fees and workshop materials	6 months
Challenges with EMR usability in high-demand units (e.g., ICU, medicine)	Tailor EMR support and usability enhancements to meet specific needs in high- demand clinical areas	Personally-Initiated: User feedback surveys on EMR usability in different units Hospital-Initiated: EMR usability workshops and focused group discussions	Unit Heads, IT Department Nurse Managers	Survey platform, workshop space	PHP 20,000 - to cover survey tools, feedback analysis, and space for group discussions	4 months
Challenges with EMR usability in high-demand units (e.g., ICU, medicine)	Tailor EMR support and usability enhancements to meet specific needs in high- demand clinical areas	Personally-Initiated: User feedback surveys on EMR usability in different units	Unit Heads, IT Department Nurse managers	Survey platform, workshop space	PHP 20,000 - to cover survey tools, feedback analysis, and space for group discussions	4 months

		Hospital-Initiated: EMR usability workshops and focused group discussions				
Lack of confidence due to limited digital documentation training	Establish continuous digital documentation training and provide access to ongoing educational resources	Personally-Initiated: Online modules for nurses to complete on-demand Hospital-Initiated: Monthly training sessions on EMR documentation best practices	Nurse Trainers, External Trainers, IT Department Nurse Managers	Learning Management System, training software, online resources	PHP 75,000 - for digital resources and external trainer fees	1 year (ongoing)
Concerns over EMR complexity impacting patient care quality	Simplify EMR interface in collaboration with user feedback, reduce non- essential steps in documentation workflow	Personally-Initiated: Feedback on documentation workflow during EMR use Hospital-Initiated: Collaborate with EMR providers to streamline interface and integrate feedback from high-demand units	Nurse Managers, IT Dept, EMR Provider	Collaboration tools, feedback analysis software	PHP 100,000 - allocated for EMR provider interface customizations, including ongoing technical support from EMR provider	8 months
Inconsistent documentation due to lack of standardized digital competency requirements	Develop and implement standardized digital competency requirements for documentation across private and public hospitals	Personally-Initiated: Self-assessment digital skills quizzes available to all nurses Hospital-Initiated: Formal assessments and competency evaluations to establish baseline skills requirements	HR Department, Nurse Educators	Self-assessment tools, competency evaluation software	PHP 30,000 - for assessment tools, digital quizzes, and resource licenses	6 months
Limited peer support for on- the-job	Create a peer support system for nurses to receive real-time	Personally-Initiated: Nurse-led digital	Peer Mentors, Nurse Leaders	Collaboration space, training	PHP 15,000 - for materials, incentives for	6 months (ongoing)

digital documentation skill enhancement	assistance with digital documentation issues, fostering a collaborative learning environment	mentorship program pairing proficient users with those needing support Hospital-Initiated: Bi-monthly peer review sessions and open forums for sharing documentation tips		materials	mentors	
Need for continuous digital skills and documentation skill enhancement for patient care	Equip nurses with ongoing access to up-to-date training and resources, ensuring sustained digital skill proficiency	Personally-Initiated: Access to online learning portals with digital skills courses and patient care documentation Hospital-Initiated: Regularly updated library of best practices and digital guides for documentation	IT Dept, Nurse Educators, Nurse Managers	Online library subscriptions, e-learning platform	PHP 45,000 - annual subscription for online learning platforms	1 year (renewable)

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