Role of Nursing in Presence of Digital Applications in Health Facilities

Manar.I.Alziqarti[1], Fatimah.A.Alfarasani[2], Jawaher.M.Alghamdi[3], Ashwaq.H.Asiri[3], Dalal.M.Alharthi[4], Fowzeya.H.Alnadawi[5], Abeda.S.Alhothali[6], Muslehah.H.Alnadawi[7], Nujod.A.Alhothali[7]

Nurse specialist-Makkah Health Cluster[1]
Nurse technician - Jeddah first cluster[2]
Nursing Technician - Third Health cluster, Riyadh - Jaw Balbtain Health Center- Dhurma[3]
Nursing Technician - West Al-Hawiyah PHC[4]
Diploma in Nursing Technician - Mecca - Umm Al-Rakah Clinic[5]
Diploma in Nursing Technician - Mecca - Al-Husseiniya PHC[6]
Nursing Technician - Mecca - Umm Al-Rakah Clinic[7]

Abstracts

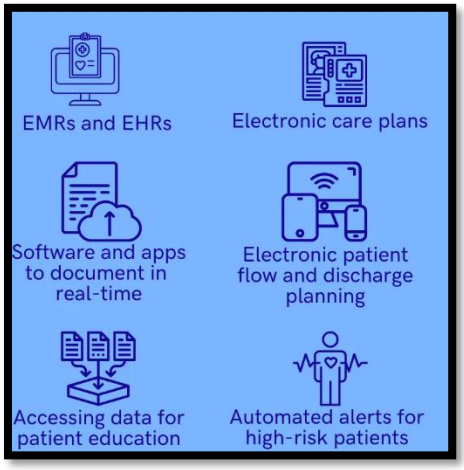
Technology offers great opportunities to solve many of the current problems and challenges in the health care and nursing industry. Many hospitals are facing challenges such as a shortage of skilled workers and an increasing need for long-term care due to demographic changes. Research on technology and care is increasing, with information technology expected to help caregivers maintain their independence, improve their quality of life and health, and provide support to formal and informal caregivers. This present study is based on the assessment of implementing information technology in the field of nursing and impact of the same on treatment plans and patient care. Study is based on secondary data and reviews are taken from the period of 2005 to 2023.

Keywords: Nursing, Information technology, AI, Hospitals, health facilities.

1. Introduction

Technology offers great opportunities to solve current problems and challenges in the nursing industry. Many hospitals are facing challenges such as a shortage of skilled workers and an increasing need for long-term care due to demographic changes. Research on technology and care is increasing, with information technology expected to help caregivers maintain their independence, improve their quality of life and health, and provide support to formal and informal caregivers. Paranjape et al (2019) Preliminary research suggests positive effects of electronic devices on issues such as patient safety and improved care processes, which may be most helpful in increasing investment.

This involves translating the potential of these technologies into nursing education. The first important step in the program is to evaluate various technologies designed to support the caregiver and to report evidence on the AEE of the technology by conducting this review. We appreciate the benefits of this dimension because they can see if the machine really has a chance of being translated into patient care. The scope of current medical and nursing curricula is broad. In this systematic review, we aim to gain a deeper understanding of all studies that include formal and informal AEE monitoring data. Du-Harpur X et al (2020)

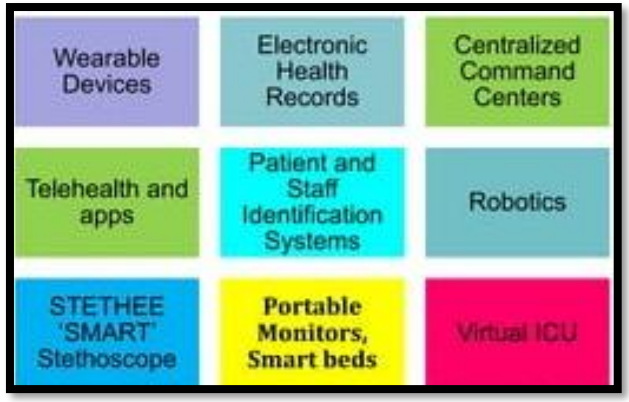


Source: https://dropstat.com/blog/healthcare-management/what-is-nursing-informatics/

Figure 1: Nursing Informatics

Education plays an important role. Darvish (2014) defines nursing knowledge as the use of information technology in nursing, including management, implementation, and education. It also includes the integration of clinical knowledge, computer science, nursing research, and data science to improve nursing practice. NLP (2018) Currently, medical records, medical procedures, and decision support systems in hospitals are all related to the collection of patient information. The medical environment is characterized by the integration of technology into daily work, improving the quality of patient care, and increasing work management. According to Cherry (2016), the use of information technology can lead to better access to evidence, positively affect patient care, and improve evidence-based care. McGrow et al (2019)

Many researchers have investigated the impact of nursing care on patient quality in different clinical settings and have obtained conflicting results regarding improvements in the quality of patient care. Amisha et al (2019) First, medical information can reduce medical errors, increase efficiency, improve communication, improve services, and enhance the work of physicians in all medical fields. This article focuses on the impact of nursing on the quality of nursing care across specific issues, including patient outcomes, patient satisfaction, medication misuse, and timely monitoring/diagnosis.



Source: https://www.slideshare.net/slideshow/digital-age-and-future-of-nursing-2662020/236251595

Figure 2: Digital Age and Future of Nursing

There are a few small studies in the literature that examine individual processes of informal and formal care, such as electronic point-of-care wound care for long-term care residents, noise sensor alerts for intensive care units, staff sharing for elderly care, or support for informal caregivers in many cities. VR technology is being tested in nursing education, where nursing homes are using electronic medical records to organize patient information to improve performance. Existing content often focuses on individual technologies or specific programs (e.g., stroke patients) and is often associated with a specific benefit (e.g., performance, recognition, or job quality). However, many quality reviews in technology and nursing have shown that there is no or little reliable evidence of technology effectiveness and efficiency. Sutton (2018)

To our knowledge, there are no review articles describing the types of technologies designed to support formal and informal care, and no research studies have reported on this current evidence for AEE in the general technology domain. This research contributes to the overall picture of research on digital technology and nursing, including all aspects of informal nursing, including nursing education. This study helps to identify which technological areas may have evidence for detailed evaluation and which areas warrant good research to improve AEE. Gunawan et al (2023)

Impact on Patients:

The availability of health information on the internet creates an e-patient phenomenon by synchronizing health information between doctors and patients. Nursing can improve information sharing between nurses and patients and create a unique relationship that results in better patient outcomes. Electronic medical records can improve quality and patient outcomes. Peisel et al. (2011) conducted a study to investigate how the integration of electronic medical records can provide greater benefits for patients and their caregivers. The authors used a

quantitative research design to conduct a time series analysis of primary care physicians who are knowledgeable about medical electronic devices. Shorey et al (2019) The results of the study show that electronic health records improve caregiver performance. In addition, the use of electronic health records increases compliance with basic standards of care. The authors also emphasized that nursing information systems can support patients in health care, educate patients and physicians, and improve good medical care. Nursing home information systems have improved management, information systems, communication, and computer-based decision making. Basically, the improvement in the health system is the end of the patient's outcome, and every progress leads to a good effect by improving the health of patients in the hospital. However, the problem of using medical information is still a difficult problem that affects all levels, including patients, doctors and medical institutions. These difficulties may cause a decrease in performance and the patient's needs may not meet the recommended standards, thus affecting the patient's basic health service, the cleanliness of the drink. patient outcomes in care, quality of care and health care are affected by technology, ICT and information research article shows. Trivedi et al (2023) Nursing helps manage time, time spent on nursing, recording time, information acquisition and efficiency, information change and application, the relationship between patient, family and patient education, communication and care. The benefits of information technology in nursing care mean improving patient outcomes.

Impact on patient satisfaction:

Healthcare and patient safety have been a problem for decades. However, promoting the role of nursing has proven to be the best way to solve the above problems. Lee et al. (2017) surveyed nurses and patients in hospitals in Taiwan to determine whether medical information improves patient safety and quality of care. Studies have shown that nursing records reduce medical errors while shortening the time required to complete electronic records. However, the findings showed that interest in electronic transition is increasing and nursing staff is decreasing. More importantly, nursing information increases patient satisfaction, which means improved patient care. Therefore, hospitals urgently need to improve their nursing information systems in order to provide quality service to patients in today's competitive environment. Ronquillo et al (2021) Similarly, electronic medical records increase efficiency by reducing the number of doctor visits. Similarly, this approach reduces drug costs and allows patients to access health information and records during diagnosis. Patients expressed satisfaction with patient-centered communication, physician-centered communication, and physician expertise. The results show that patients are satisfied with the services provided by physicians who use electronic data to track patient performance and deliver consistent messages to patients. Physicians who use electronic medical records are more efficient and supportive in-patient care than physicians who use charts. Therefore, patients expressed satisfaction with the short-term use of medications obtained from nursing care. Oka et al (2019)

Impact on Medication Errors:

One of the worst indicators of poor patient care is the wrong medication. The revelation that hospital malpractice is a leading cause of death sent shockwaves through the healthcare industry. Researchers have suggested several measures to combat stress. Improvements are needed in the way information is shared locally and globally to achieve a more comprehensive healthcare

system. Electronic medical records can be checked for errors and improve healthcare. An important issue that was caught was the illegal writings of the babysitter. Some of the instructions were not read properly; therefore, nurses often assume some points. The authors also noted that other factors such as time and workload also lead to errors in patient recording. Nurses are overwhelmed with workload, which often prevents them from attending to patient details. Hospitals use computer systems in care to reduce errors and improve quality of care. Khushhal et al (2017)

The role of nursing records in cultural management of emerging infectious diseases, especially covid-19, has been criticized. Nursing professionals in the United States are working remotely in healthcare facilities 24 hours a day to address the many healthcare facilities that need nursing aides or volunteers to achieve better patient outcomes. Dhruva et al (2021); Krauss et al (2021) At the same time, other nursing information workers focus on real-time data analysis and timely reporting of hospital treatment, equipment, disease patterns, etc. Since the information boards are connected to electronic medical records, clinics can track patient movements to track disease. The available data also provides information on the number of patients requiring intensive care to guide triage nurses. Therefore, the integration of information technology into electronic medical records can help healthcare staff manage and manage patients during the pandemic while also reducing diagnostic problems.

Impact on Patient Care:

Griffith et al. (2010) examined nursing staff work and computer use with a quantitative research design. The researchers identified the following four research objectives; The first was to measure the time supervisors used computers and other tasks. The second objective was to determine the background information about caregiver behaviors prior to the use of electronic health records. The third objective was to attack the enemy to penetrate. Alkhaqani et al (2023) The authors suggest that electronic health records reduce the workload of caregivers, such as data entry, allowing caregivers to focus on patients. Having accurate information has also been shown to help provide quality care to patients. Many researchers believe that the use of robotic automation processes in nursing care will reduce the role of nursing in managing electronic medical records.

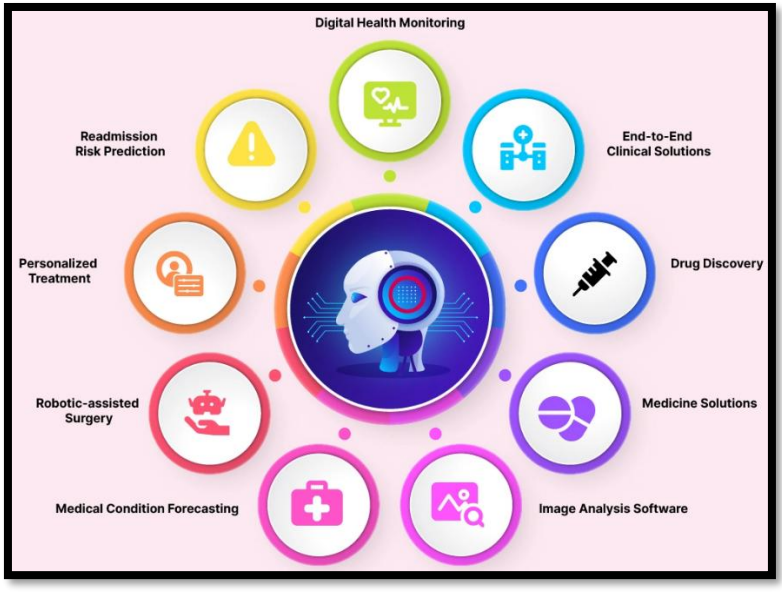
New applications and research on electronic medical records in healthcare, including nursing and occupational therapy, offer solutions for managing electronic medical records to maximize the value of effective and efficient nursing care. The use of technology such as robots is said to be effective in improving caregivers, medical procedures, and patient care. Electronic medical records have the potential to increase the overall cost of hospital support. Some researchers have calculated hospital costs for access, quality of care, and electronic health records. However, results from bivariate analysis showed higher rates in hospitals that use electronic medical records. Feig et al (2017); Green et al (2016): FAD (2023)

The use of electronic medical records in hospitals may reduce overall costs for hospitals. The strength of this study lies in the large amount of data used. Nursing information systems protect patient care by providing standardized language, documented information, choice, timely results, and new measurements. Nursing information systems support health care by providing

comprehensive data systems across a business or other large organization, answering questions about quality improvement, patient benefits, and efforts, and providing data for job description, work process design, and development. Nursing education tools enable nursing staff to see the impact of their education and activities on muted outcomes. Agarwal et al (2019); Shah et al (2021)

Usage of AI in Healthcare:

- The use of AI has made it easier to diagnose medical conditions like heart disease. AI-based wearable devices are being used to monitor people's health and provide audio alerts when they register abnormalities or health issues. Good examples of these devices include Fitbit, Samsung Watch, and Apple Watch.
- VR has the ability to immerse patients in a virtual environment, shifting their focus away from pain and discomfort, thus reducing the need for overdose. AI can enhance this experience and reduce pain by customizing the virtual environment to each patient's preferences.
- Some hospitals are using AI-based translation tools. This advanced technology enables effective communication between caregivers and patients who speak foreign languages.
- AI-based fall detection is especially important in-patient care for elderly or frail patients. These systems use advanced sensors and intelligent algorithms to detect movements or falls.



Source: https://www.bacancytechnology.com/blog/ai-in-healthcare

Figure 3: AI in Healthcare

- When detected, reports are immediately sent to supervisors for rapid response and assistance. This technology is now included in some smart watches that can not only detect loss but also open SOS systems and communicate with medical facilities.

2. Conclusion:

Patient information management is an important and expanding part of the medical profession. The benefits of electronic medical records are enormous, especially for patients and physicians. The process increases efficiency, reduces medical errors, helps manage time, improves communication, enhances the doctor-patient relationship, and simplifies the treatment process, resulting in better care. However, research shows that nursing care is dependent on innovation and requires specialized resources to provide effective nursing care. Specific competencies required for success in nursing include the integration of critical knowledge, attitudes, and skills that healthcare providers need to collect, store, interact with, and use information. In conclusion, technology plays a significant role in improving health and promoting wellness. The advancement of nursing and other technologies will continue to improve the healthcare environment.

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