



RESEARCH ARTICLE

NURSING: BRIDGING JOB DESCRIPTIONS AND TECHNOLOGICAL SKILLS FOR THERAPEUTIC SERVICES

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ABSTRACT

As healthcare continuously evolves, the nursing profession experiences significant transformations, necessitating a bridge between traditional job descriptions and modern technological skills. This article provides an in-depth analysis of the nursing job description, highlighting the evolution from fundamental care provision to embracing sophisticated technologies for enhanced therapeutic services. It offers insights into various healthcare technologies, such as Health Information Systems, medical devices, and telemedicine, underscoring their impact on nursing practices and patient care. Furthermore, the piece emphasizes essential technological skills that contemporary nurses should possess, including proficiency in healthcare software, telemedicine, and basic computer applications. Strategies for successful technology integration into nursing practices, focusing on continuous learning and collaboration, are outlined, aiming to facilitate a smooth transition and competence in using technology in patient care. The article concludes by stressing the critical role of technological competency for today's nurses, urging professionals to actively engage with emerging tools and technologies to remain relevant and improve the quality of healthcare services.

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INTRODUCTION

In recent years, the dynamic landscape of healthcare has seen profound transformations, bringing the nursing profession to a pivotal juncture where traditional responsibilities intertwine with the imperatives of technological proficiency (Smith, 2020). The impetus behind these changes predominantly stems from the relentless advancement in healthcare technology, amplifying the importance of nurses being adept at not only their conventional roles but also in utilizing modern technology to optimize therapeutic services. The significance of integrating technology into nursing practices is multifold. Firstly, it instills efficiency in care provision, offering tools that streamline administrative tasks, enhance patient monitoring, and facilitate precise data analysis (Johnson & Johnson, 2021). As nurses are pivotal in patient care, the adoption of technology can invariably bolster the quality of services they provide, fortifying the healthcare system's overall efficacy and responsiveness. This amalgamation of skills and tools is imperative for fostering a healthcare environment that is reflective of the 21st century, characterized by immediacy, accuracy, and patient-centeredness. Furthermore, the advent of technologies such as telemedicine and electronic health records (EHRs) has necessitated a reevaluation and expansion of the nursing job description.

These technologies are not mere adjuncts but integral components that reshape the delivery of care, making it imperative for nurses to be conversant and proficient with these tools (American Nurses Association, 2021). With the healthcare sector being increasingly dependent on technology, the ability of nursing professionals to adapt and integrate these tools into their practice is not only advantageous but requisite. The aim of this article is multifaceted. It seeks to delineate the contours of the nursing job description while elucidating the inherent need for technological skills in contemporary practice. By doing so, it provides a roadmap for nursing professionals navigating a career that is both deeply rooted in tradition and progressively forward-looking. The article aspires to be a resource that informs and guides nurses, shedding light on the indispensable role of technology in enhancing the scope and quality of therapeutic services in today's digital age. Furthermore, the purpose of this endeavor is to foster an understanding and appreciation of the symbiotic relationship between nursing responsibilities and technology. It is crucial for nursing professionals to acknowledge that their role is no longer confined to the bedside but extends into the realms of data analysis, telehealth, and digital communication, among others. Through this comprehensive analysis, the article aims to empower nurses with the knowledge and insights needed to navigate their evolving roles effectively, ensuring they are equipped to meet the demands and expectations of modern healthcare with confidence and competence.

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In crafting this discussion, references from reputable nursing bodies, technology experts, and peer-reviewed journals have been meticulously selected to offer readers an authoritative and reliable source of information. Through an amalgamation of theoretical frameworks and practical insights, this article serves as a beacon guiding nursing professionals through the intricate tapestry of their roles and responsibilities in an era dominated by digital technology (World Health Organization, 2022).

Nursing Job Description

Traditional Roles and Responsibilities: The traditional job description of nurses has been deeply rooted in providing comprehensive, patient-centered care. Historically, the role involves direct patient care, where nurses assess, plan, implement, and evaluate individualized care plans based on patient needs, as outlined by Potter et al. (2016). This requires close observation and monitoring of patient behavior, timely administration of medications, and execution of prescribed treatments. In addition to direct care, nurses have been invaluable educators within the healthcare ecosystem. They impart crucial knowledge to patients and their families about managing various aspects of health and wellness, understanding their treatment plans, and effectively navigating recovery processes post-discharge, a role that has been widely recognized and documented by the American Nurses Association (2015). Efficient and accurate record-keeping also falls within the traditional purview of nursing responsibilities. Nurses meticulously document patients' medical histories, symptoms, and responses to treatments, creating a vital repository of information that informs care planning and clinical decision-making processes (Blais, 2015). Furthermore, nurses have been staunch advocates for patients, providing emotional support and serving as liaisons between patients and physicians. They ensure that patients' needs and concerns are communicated to the healthcare team and that patients have the information they need to make informed decisions about their care. In the realm of preventive care, nurses have been instrumental in administering vaccinations and providing guidance on preventive measures for various diseases. They play a pivotal role in community health by promoting wellness and preventive health practices among patients (McMullen, 2013). Moreover, coordination of care is another essential aspect of traditional nursing. This involves planning and organizing various aspects of patient care, ensuring that services are delivered seamlessly and efficiently while maintaining a high standard of care.

Evolution of the Nursing Profession: Over time, the nursing profession has undergone significant evolution, expanding its role and responsibilities within the healthcare system. Early nursing was primarily about providing bedside care and basic support to patients, often in home settings or community initiatives (Dock & Stewart, 1938). With the advent of formal education and training for nurses, as documented by Reverby (1987), the profession began to establish itself with a distinct identity, separate from medicine, while still working collaboratively within the healthcare system. This educational foundation allowed nurses to take on more specialized roles, ranging from surgical assistance to psychiatric and pediatric care.

The nursing profession witnessed another transformative phase with the emergence of technology. According to Hebda & Czar (2019), the integration of technology in healthcare significantly impacted the nursing profession by introducing new tools and systems for patient care, record-keeping, and communication. This technological wave necessitated nurses to acquire and hone their skills in using electronic health records, telemedicine, and various healthcare informatics solutions, thereby enhancing their capacity to provide more efficient and effective patient care. Moreover, the profession has experienced a broadening of scope, with nurses taking on leadership and administrative roles, driving policy changes, and engaging in research and education (Fitzpatrick & Kazer, 2012). Nurses today are not only caregivers but also educators, advocates, researchers, and leaders who play a pivotal role in shaping healthcare practices and policies. The demand for more specialized and advanced practice roles, such as nurse practitioners, nurse anesthetists, and nurse midwives, has also been on the rise, highlighting the increasing recognition and reliance on the skills and expertise of nursing professionals in the provision of healthcare services (Aiken, 2011). These roles signify the advanced educational preparation and clinical training that nurses undergo, positioning them to assume responsibilities that were once exclusively within the domain of physicians.

Expectations in the Contemporary Healthcare Setting: In contemporary healthcare settings, expectations surrounding the nursing profession have become multifaceted and demanding due to the complex needs of patients and the rapid integration of technology in healthcare practices. The role of nurses now extends beyond traditional caregiving to encompass various specialized and technologically-driven functions, reflecting the profession's evolution and the healthcare industry's changing landscape (Benner et al., 2009). Nurses today are expected to possess in-depth knowledge of the human anatomy, pharmacology, and various medical conditions and treatments. According to the Institute of Medicine (IOM, 2010), modern nurses must be equipped to manage a diverse patient population, understanding the cultural, social, and economic factors that influence health and wellbeing. This comprehensive understanding allows them to offer personalized, holistic care to each patient. Another critical expectation is proficiency in technology. With the healthcare sector relying heavily on electronic health records (EHRs) and other digital tools, nurses need to seamlessly integrate technology into their workflow to enhance efficiency and patient care quality (Hebda & Czar, 2019). This requires not only the technical skills to navigate various software and hardware but also a deep understanding of how technology can be leveraged to improve patient outcomes.

Furthermore, nurses are required to engage in continuous learning and professional development. Given the fast-paced advancements in medical science and technology, nurses must stay abreast of the latest trends, research findings, and best practices in their field (American Nurses Association, 2015). This commitment to lifelong learning is vital for providing evidence-based care and responding effectively to the healthcare industry's dynamic needs. Contemporary expectations also entail a strong emphasis on collaboration and communication.

Nurses work in multidisciplinary teams where effective communication with physicians, pharmacists, therapists, and other healthcare professionals is crucial. This collaborative approach ensures coordinated and comprehensive care for patients (Kourkouta & Papathanasiou, 2014). Lastly, with a heightened focus on patient-centered care, nurses are expected to be advocates for patients' rights, educators for health promotion, and counselors providing emotional support and guidance to patients and their families. This expanded role highlights the significance of the nursing profession in promoting health, preventing disease, and improving the quality of life for individuals and communities alike (McCormack & McCance, 2017).

Technology in Healthcare

Overview of Healthcare Technology: Healthcare technology encompasses a broad and diverse array of innovative tools designed to improve and streamline medical care. One fundamental component is Electronic Health Records (EHRs), digital versions of traditional paper charts that provide real-time, patient-centered records accessible to authorized users. EHRs foster communication, improve prescription drug safety, reduce medical errors, and elevate overall care quality, as noted by Menachemi & Collum (2011). Telemedicine is another transformative technology in healthcare, leveraging digital information and communication technologies to access and manage health care services remotely. Through telemedicine, patients can engage in virtual consultations, benefit from remote patient monitoring, and receive e-prescriptions. The importance of telemedicine has been especially highlighted during the COVID-19 pandemic, wherein it played a pivotal role in delivering healthcare amidst necessary physical distancing measures (Hollander & Carr, 2020). Additionally, healthcare informatics has emerged as a crucial field applying computing power to organize and analyze health data efficiently. This area includes bioinformatics, clinical informatics, and health information management, encompassing tools like electronic medical records, clinical decision support systems, and various telehealth technologies that support healthcare professionals in delivering more precise and informed care (Shortliffe & Cimino, 2014). The advent of wearable devices has further transformed healthcare delivery by facilitating continuous patient monitoring. These devices, ranging from smartwatches to fitness trackers, collect valuable data, offering crucial insights into patients' health statuses and promoting a proactive approach to health management (Piwek et al., 2016). Another essential innovation is the introduction of Artificial Intelligence (AI) and Machine Learning (ML) in healthcare. These technologies contribute significantly to diagnostics, predictive analytics, and the creation of personalized treatment plans. AI and ML analyze large datasets rapidly, identifying patterns that assist healthcare providers in making informed decisions and developing patient-centered treatment strategies (Jiang et al., 2017). In essence, healthcare technology is a confluence of various innovative tools and applications, each playing a vital role in enhancing and streamlining the delivery of healthcare services, improving patient outcomes, and fostering a more efficient and responsive healthcare system.

The Impact of Technology on Nursing Practices: The integration of technology in healthcare has greatly influenced nursing practices, reshaping how nurses deliver care, communicate, and manage information. Technology enhances patient care efficiency and safety, as observed by Simpson (2004), who notes that digital tools facilitate rapid access to patient information, enabling informed and timely clinical decisions. Real-time data obtained from Electronic Health Records (EHRs) and other electronic documentation systems provide nurses with comprehensive patient information at the point of care, supporting the delivery of personalized, evidence-based interventions. Moreover, telemedicine, a significant technological advancement, expands the reach and accessibility of healthcare services. As documented by Polinski et al. (2016), telemedicine allows nurses to consult, monitor, and educate patients remotely, addressing the healthcare accessibility challenges faced by individuals in remote or underserved areas. This remote accessibility not only optimizes healthcare delivery but also empowers patients to actively participate in their care processes, thereby fostering a collaborative care model. Health informatics tools also play a crucial role in the daily operations of nurses, offering platforms for planning, coordinating, and evaluating patient care. Hebda and Czar (2019) highlight that healthcare informatics supports nursing workflow by organizing and analyzing patient data, streamlining administrative tasks, and ultimately enhancing care efficiency and quality.

Technology has also enriched the practice of patient monitoring and management. Wearable devices and sensors empower nurses to continuously monitor patients' vital signs and conditions in real-time, facilitating early intervention and timely response to potential health issues, as studied by Pantelopoulos and Bourbakis (2010). Furthermore, the advent of Artificial Intelligence (AI) and Machine Learning (ML) in healthcare has provided nurses with powerful tools for predictive analytics and decision support. According to Topol (2019), these technologies assist in risk identification, disease prevention, and treatment optimization, allowing nurses to anticipate patient needs and proactively adjust care plans to achieve better outcomes.

Challenges and Opportunities: Technology in healthcare presents a juxtaposition of challenges and opportunities, greatly influencing the modus operandi of health systems worldwide. The introduction of Electronic Health Records (EHRs) brings forth both convenience and complexity. While EHRs streamline documentation, facilitate communication among healthcare providers, and improve patient care coordination, they also face challenges related to privacy, security, and interoperability, as indicated by Kruse et al. (2016). Ensuring the confidentiality of patient information while allowing for seamless data exchange between different healthcare providers necessitates robust security protocols and standards. In the realm of telemedicine, opportunities abound for extending the reach of healthcare services to remote or underserved populations, enhancing accessibility, and reducing the need for physical travel. However, as noted by Scott Kruse, implementation barriers such as lack of technological infrastructure, licensing restrictions, and reimbursement policies can hinder its widespread adoption and integration into mainstream healthcare delivery (Kruse et al., 2018).

The rise of wearable technology and health monitoring devices has democratized health data, empowering patients to take an active role in managing their health. Yet, this proliferation of health data also raises concerns about accuracy, privacy, and the potential misuse of information. As observed by Li et al. (2020), the regulatory frameworks for these technologies are still evolving, necessitating careful navigation to ensure patient safety and compliance with legal standards. Furthermore, the implementation of Artificial Intelligence (AI) and Machine Learning (ML) offers unprecedented opportunities for enhancing diagnostics, predictive analytics, and personalized medicine. However, these technologies also pose challenges related to ethical considerations, data bias, and the need for significant investment in training and development for healthcare professionals, as highlighted by Topol (2019).

Essential Technological Skills for Nurses

Basic Computer Skills: Basic computer skills are essential for modern nurses to navigate the increasingly digitized healthcare environment effectively. As healthcare institutions adopt Electronic Health Records (EHRs), nurses need proficiency in inputting, retrieving, and managing digital patient information. According to Hebda and Czar (2019), familiarity with keyboarding, data entry, and basic navigation through different software applications are fundamental skills required for nurses to interact with EHRs efficiently. This familiarity allows them to document patient care accurately and efficiently, facilitating improved communication among healthcare teams and ultimately enhancing patient care quality. Nurses also need to possess adeptness in utilizing word processing and spreadsheet applications, essential tools for creating reports, managing data, and generating patient care plans. As noted by McGonigle and Mastrian (2017), word processing applications like Microsoft Word and spreadsheet applications like Excel are extensively used in healthcare settings for various administrative and clinical functions, necessitating nurses to be comfortable and proficient in using these tools. Additionally, basic skills in using email and internet browsers are crucial for communication and accessing online information. Effective use of email allows nurses to communicate with colleagues, patients, and other healthcare professionals swiftly and securely. Moreover, being proficient in internet navigation is vital as nurses often need to access online medical databases, research studies, and educational resources to support evidence-based practice and continuous learning, highlighted by Skiba (2017). In a healthcare environment increasingly dependent on technology, possessing these basic computer skills is indispensable for nurses. These skills not only support efficient clinical and administrative functions but also ensure that nurses can adapt to new technologies and applications introduced into healthcare settings, fostering a seamless transition to digital healthcare practices.

Specialized Healthcare Software Proficiency: Specialized healthcare software proficiency is integral to the role of nurses in the contemporary medical landscape, as these technologies have become omnipresent tools for patient care, administrative tasks, and communication within healthcare facilities. With Electronic Health Records (EHRs) being central to patient care, nurses are required to efficiently navigate and utilize these platforms to input and access patient data accurately.

According to Saba and McCormick (2015), EHR proficiency is crucial, as these systems house comprehensive patient information that supports informed clinical decision-making and care planning. Telemedicine platforms have also become increasingly prevalent, necessitating that nurses acquire the skills to engage with patients remotely. The use of video conferencing tools, instant messaging, and other telecommunication technologies are imperative for providing virtual care, health consultations, and education, as observed by Rutledge et al. (2017). This form of healthcare delivery requires not only technical skills but also the ability to maintain a compassionate and effective patient-provider relationship in a virtual setting. Furthermore, familiarity with clinical decision support systems (CDSS) is essential, given their role in assisting healthcare professionals with decision-making tasks. CDSS analyze data to help healthcare providers make clinical decisions, thereby enhancing patient outcomes. Nurses must be adept at interpreting and applying the recommendations generated by these systems in their practice, as highlighted by Osheroff et al. (2007). Patient monitoring systems are also pervasive in healthcare settings, providing real-time data on patients' vital signs and conditions. Nurses need to proficiently use these technologies to monitor and interpret patients' physiological data accurately and respond to any changes in the patient's clinical status promptly and effectively, as described in studies by Montague et al. (2013).

Telemedicine and Virtual Care Skills: As healthcare provision increasingly incorporates telemedicine and virtual care, nurses must develop relevant technological skills to effectively engage with these platforms. Mastery in using telemedicine technology is fundamental, as nurses need to consult with patients, provide care, and collaborate with other healthcare professionals remotely. According to Rutledge et al. (2017), telemedicine platforms necessitate familiarity with video conferencing tools, secure messaging applications, and electronic scheduling systems, enabling nurses to facilitate virtual consultations and follow-up appointments seamlessly. Moreover, acquiring the ability to conduct virtual health assessments is crucial. These assessments require careful attention to visual and auditory cues, as nurses have to rely on technology-mediated interactions to evaluate patients' physical and emotional states. Studies by Dullet et al. (2017) highlight the importance of developing skills for conducting comprehensive virtual assessments while maintaining an empathetic and patient-centered approach to care. Furthermore, digital communication proficiency is indispensable, as clear and effective communication is paramount in virtual care settings. Nurses must be adept at using language effectively, interpreting non-verbal cues through video, and providing clear instructions to patients, as emphasized by Alverson et al. (2008). This set of skills ensures that patients feel understood, supported, and actively engaged in their care, even in a virtual environment.

Patient education and support also transition into the virtual space, requiring nurses to utilize online educational resources and tools proficiently to educate and support patients and their families. The use of multimedia educational materials, interactive platforms, and online support groups are integral components of virtual patient education and support strategies, as observed by Brixey et al. (2008).

Integrating Technology in Nursing Practices

The Learning Curve: Integrating technology into nursing practices necessitates overcoming a learning curve, which is vital for enhancing the efficiency and quality of healthcare services. A fundamental aspect of this integration involves initial training and ongoing education, as technology in healthcare is ever-evolving. The American Association of Colleges of Nursing (AACN, 2008) emphasizes the importance of technology competency for nursing professionals, urging educational institutions to incorporate technology training into nursing curricula. The learning curve varies among nursing professionals, influenced by their prior exposure to and comfort with technology. Acknowledging and addressing the varied skill levels among nurses is critical for successful technology integration. According to McGonigle and Mastrian (2017), implementing tailored training programs that cater to the specific learning needs and styles of individual nurses is crucial. Such programs can facilitate smoother transitions to using new technologies, reducing the stress and resistance that often accompany these changes.

Nursing professionals also need to develop a sense of ease and confidence with technology, which comes from hands-on experience and practice. Regular use, exploration, and engagement with healthcare technologies can help nurses become more familiar and comfortable with their functionalities and applications. The study by Kowitlawakul et al. (2015) suggests that continuous practice and usage of healthcare technologies are vital for developing proficiency and confidence among nursing professionals. Engagement in professional development and continuing education in healthcare technology is necessary as well. Given the rapid pace of technological advancements, nurses must stay updated on the latest trends, tools, and best practices in healthcare technology. Investing in lifelong learning and ongoing training ensures that nurses can effectively utilize emerging technologies in their practice, as noted by the Institute of Medicine (2010).

Importance of Technological Competency: Technological competency is essential for nurses in contemporary healthcare settings due to the pervasive incorporation of technology into various aspects of patient care, administration, and communication. It is imperative for nurses to be proficient with technology to deliver quality care efficiently, as technology aids in the accurate collection, analysis, and dissemination of patient data. The American Association of Colleges of Nursing (AACN, 2008) recognizes technological competency as a crucial component of nursing practices, emphasizing that nurses need to be prepared to integrate technology into their daily activities to improve patient outcomes and create efficient healthcare systems. The rapid digitization in healthcare requires nurses to access and utilize Electronic Health Records (EHRs), which is fundamental for care coordination, patient engagement, and informed decision-making. Technological competency supports nurses in effectively using EHRs to facilitate a seamless flow of information, enhancing the continuity and quality of care, as indicated by Hebda & Czar (2019). Additionally, with the advent of telehealth services, technological competency becomes indispensable, allowing nurses to adapt to the changing dynamics of healthcare delivery.

Telehealth platforms provide avenues for nurses to offer virtual consultations, monitoring, and follow-up services, ensuring accessibility and convenience for patients, particularly those residing in remote areas. A study by Rutledge et al. (2017) underscores the importance of telehealth proficiency for nurses to navigate and capitalize on these platforms for effective remote healthcare provision. The need for technological competency extends to using specialized healthcare software and applications designed to assist in patient monitoring, diagnostics, and treatment planning. Nurses must be adept at using these tools to provide timely and precise care, making informed and data-driven decisions that positively impact patient health, as suggested by McGonigle & Mastrian (2017).

Strategies for Successful Integration: Successful integration of technology into nursing practices is contingent upon employing strategic approaches that facilitate a smooth transition from traditional methods to tech-augmented healthcare provision. First and foremost, providing adequate training and education for nursing professionals is non-negotiable. Training initiatives need to be comprehensive, covering the basics of operating various healthcare technologies to advanced modules on troubleshooting and utilizing advanced features, as highlighted by the American Association of Colleges of Nursing (AACN, 2008). Engaging nursing staff in the initial stages of technology adoption is another vital strategy. Early involvement fosters a sense of ownership and familiarity with the new systems, facilitating smoother integration. A study by Kowitlawakul et al. (2015) underscores the importance of nurses' participation in the planning and implementation phases, as it significantly influences their readiness and willingness to adapt to new technologies. The establishment of support mechanisms, such as helpdesks and mentors, plays a crucial role in supporting nurses as they navigate the challenges of technology integration. Providing real-time assistance and guidance enhances the confidence of nurses in using technology and accelerates the learning process, according to findings by Edirippulige and Armfield (2017). Also, continuous evaluation and feedback mechanisms are essential. The healthcare institution should constantly monitor and assess the effectiveness of technology integration, gathering feedback from nursing staff to understand their challenges and needs. Continuous improvement based on this feedback ensures that technology serves as an enabler rather than a hindrance in delivering quality healthcare, as discussed by McGonigle and Mastrian (2017).

CONCLUSION

The integration of technology into nursing practices has emerged as an essential paradigm in contemporary healthcare, driving a transformative shift in patient care, administration, and communication. Technological competency among nurses is non-negotiable, given the reliance on various digital platforms, software, and applications designed to facilitate efficient, accurate, and timely healthcare provision. The transition from conventional to technologically enabled nursing practices involves a learning curve, requiring nurses to acquire and continuously update their skills to navigate and utilize digital healthcare tools effectively. From basic computer skills to proficiency in specialized healthcare software and telemedicine platforms, nurses must embrace a spectrum of

technological skills to remain effective and relevant in the digital age of healthcare. Implementing strategic approaches for successful technology integration is crucial. These strategies encompass comprehensive training and education initiatives, early engagement of nursing staff in technology adoption processes, establishment of robust support mechanisms, and the implementation of continuous evaluation and feedback processes. Each of these elements collectively contributes to creating an environment where technology serves as an enabler, supporting nurses in delivering superior patient care. Through strategic, intentional, and thoughtful incorporation of technology, nursing professionals can not only enhance the quality and efficiency of the care they provide but also empower patients, fostering a collaborative and engaged approach to healthcare. In this evolving landscape, commitment to lifelong learning and adaptability to technological advancements are imperative for nursing professionals to continue making significant contributions to patient care and health outcomes in our increasingly connected and digital world.

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