Literature Review

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Literature Review

In this literature review, the nursing student will examine the effects technology has in professional nursing when it is present and lacking from the bedside to the classroom. Technology constantly evolves and keeping up with its ever-changing aspects can be challenging. Technology has become a necessity in professional nursing and has quickly become a critical advantage in providing optimal care. With the assistance of technology, nurses manage patient information and records across facilities and provide written and digital education to patients, among many other things. "The nursing profession finds many of these new medical technologies help with routine processes, as well as decrease human mistakes and errors that can come from too few nurses working long hours with too many patients" (Western Governors University, 2021). Technology brings value to professional nursing, and this literature review will prove its usage is more beneficial for nursing staff and patients.

Nurses' readiness for informatics competency in Afghanistan: A quantitative study

(Parlakkilic & Saribus, 2021)

The research article, "Nurses' readiness for informatics competency in Afghanistan: A quantitative study focused on nurses' evaluated informatics competence levels. In nursing, health informatics uses communications, computers, and information science to enhance, improve and optimize information and communication in the field. According to (Parlakkilic & Saribus, 2021), "all levels showed the participants are not ready and need some work to work effectively with informatics." The article focused on informatics competencies to establish the readiness of Afghan nurses through computer competency, information literacy, and information

management. "Most of the information and information services, from the medical interventions to health personnel training have supported the emergence of health informatics as a science" (Parlakkilic & Saribus, 2021).

Key Points

A total of sixty-eight nurses participated in the thirty-question quantitative questionnaire. Computer literacy had an expected competency mean of 3.4, about 66.6%, and results per this study yielded computer literacy at 2.36, about 47.2%. "Informatics competence has the potential to improve care for patients, collect data, provide communication, improve, and support public health" (Parlakkilic & Saribus, 2021). The competence questionnaire in this article gathered demographic information from the participants, which were gender, age, education status, marital status, years of experience, and branch of nursing. Education status was either high school, associate degree, or undergraduate degree; for the study, all levels are considered nurses in Afghanistan. According to Qarani et al., 2018, from 17 hospitals in Kabul, Afghanistan nurses "had only diploma in nursing; 84.9% of them has completed their nursing diploma before 2022, 11.6% of participants were currently studying; and all were in non-nursing disciplines." A diploma in nursing is equivalent to an associate degree in nursing. Perhaps more education should be required to promote nursing as an autonomous career instead of a mundane job. The competence levels evaluated were computer literacy, information literacy, information management, and general (informatics competence) with a p-value of <0.05. In summary, the author stated, "nurses in Afghanistan are inadequately prepared at this time, and the nursing informatics application area can provide nurses an advantage in their nursing competence, but

informatics education and infrastructure need significant improvements" (Parlakkilic & Saribus, 2021).

Assumptions

The author stated, "the use of computers and technology has the power to improve qualifications in terms of nursing services," which is an assumption this nursing student disagrees with (Parlakkilic & Saribas, 2021). This nursing student believes qualifications are improved with education first. Nurses should develop skills acquired from education during their progression and development of their craft.

Deficit/Conclusion

This student agrees with the author's line of reasoning. Afghan nurses are inadequate in the category of informatics. Every category tested yielded results below the acceptable mean and percentage values for competence. Failure to accept the author's line of reasoning and adopt new teaching and learning methods for Afghan nurses would further inhibit the growth of nursing in many cities in Afghanistan. Nursing is an in-demand practice that grows expeditiously with changing technology and demand. The changes accepted by the field should be required from hospital to hospital and state to country. Education and continuing education requirements for nurses and nursing students have become more intertwined with information technology.

Digital Teaching in Nursing Education: A Quantitative Study of Nursing Students' Views

(Honkavuo, 2020)

The research article, "Digital Teaching in Nursing Education: A Quantitative Study on Nursing Students' Views aimed to acquaint the reader with digitalization, globalization, and automation integration in the pedagogical nursing curriculum. Information technology is integrated into nursing studies as it supports students learning. "Skills in IT is considered general knowledge; today's societies expect individuals to confidently use computers and the internet to search knowledge, evaluate, save, produce, present, communicate, and exchange information between various collaborative contexts" (Honkavuo, 2020). Nursing education supports better patient outcomes. Nurses must be prepared to meet the needs of a diverse patient population, deliver safe care, function efficiently as leaders, and provide education to patients to empower the patient to improve their health status.

Key Points

The author Leena Honkavuo desired to delve into the connection between digital teaching and what embodies digital teaching and explain its' impacts on nursing education. Digitalization is the integration of digital material into the nursing students' lesson plans. Digitalization will reduce costs, increase efficiency, and satisfy the needs of healthcare institutions. "Globalization refers to the international economy's unification and development which also concerns nursing education" (Honkavuo, 2020). According to Honkavuo, 2020 "healthcare institutions view globalization as a political challenge that offers society opportunities to decrease cost," but globalization also offers a broader section of digital education material and can increase productivity. Automation is a technique that makes the system of nursing education function independently. Human input is minimal in automation which in healthcare, the use of different software promotes efficiency in the provision of medical services.

The author used a quantitative research method which allowed the study results to be generalized to a larger population rather than only the study's selection of participants. Inferential statistical analysis was used to gather data from 186 Norwegian final-year nursing students. The population of students consisted of 177 females and nine males ranging in age from 21 to 37. The participants' education levels were basic, secondary, and vocational. The author collected data through an electronic web questionnaire which took about twelve minutes to complete. The study analyzed "knowledge of, motivation for, and participation in digital promoting efforts, including discussing teaching and receiving descriptions from teachers" (Honkavuo, 2020). The study concluded that most students are reasonably involved in digital teaching through discussions on the content or describing digital teaching from their point of view. The data was significant because it proved "the hypothesis that nursing education can affect the digitalization of teaching and hence students' views on digital teaching" to be true (Honkavuo, 2020). This study had a p-value of 0.006. The author concluded the study "shows that most students are fairly often involved in digital teaching" (Honkavuo, 2020). Based on the study analysis, nursing students believe digital teaching significantly impacts their professional development. Digital technologies are integral to nursing teaching and learning activities to promote quality in nursing education.

Assumptions

The primary assumption by the author stated that "differences exist between digital material and applications in different nursing educations and healthcare institutions where students are in clinical training" (Honkavuo, 2020). This nursing student believes more research would need to

be performed to solidify such a claim. Nursing programs vary from institution to institution and degree type, but the knowledge obtained can vary from student to student.

Deficit/Conclusion

This nursing student accepts the authors' line of reasoning. "Digitalization teaching can be explained based on students' knowledge of and motivation for digitalization for professional development" (Honkavuo, 2020). Nursing education that lacks digitalization, globalization, and automation would also be deficient in producing educated and competent nurse leaders.

A study of the relationship between nurses' experience, structural empowerment, and attitudes toward computer use

(Rababah et al., 2021)

A cross-sectional quantitative study was conducted in a developing country, Jordan. The study included 184 nurses caring for critically ill patients with experience ranging from one to twenty-six years. Determining the effect structural empowerment and attitudes toward computer usage have on nurses' was the primary purpose of this article. The users' attitudes toward the technology are most important when changes, upgrades, and updates are needed to create a seamless working healthcare system. Technological advances occur continuously. Most healthcare facilities have transformed into electronic health records systems (EHR), making computer and technology usage essential to job performance.

Key Points

The authors wanted to express prolifically that an empowering work environment can facilitate the attitudes of nurses' toward the use of computers. The attitudes of nurses are essential to improving healthcare computer systems. Empowerment overall ranked at a moderate level for this study but access to opportunity ranked highest. "The correlation between nurses' structural empowerment and attitudes toward computer use was positive but weak," and "structural empowerment is described as the extent to which employees feel they have access to different structures in their work settings" (Rababah et al., 2021). The access to be part of change essentially makes the nurses feel empowered to become masters of their work, with technology at their fingertips. This study used non-probability sampling with a cross-sectional quantitative design. There was a total of 184 participants that were nurses from four hospitals. Before the study, only 45.11% felt comfortable using user-friendly computers. Data was collected using a demographics questionnaire, the Conditions for Work Effectiveness Questionnaire-II, and the Pretest for Attitudes Toward Computers in Healthcare (PATCH). This nursing student gathered data was significant for this study. Two p-values resulted in the conclusion of this study. The bivariate correlation between nurses' experience and attitudes toward computer use was $p < 0.05$, and $p < 0.01$ was the value obtained for the total structural empowerment score and attitudes toward computer usage. According to the authors, structural empowerment had a positive but weak correlation to nurses' perspectives, and the relationship between nurses' attitudes in correlation to computer usage and experience was negative. Ultimately, "positive change in nurses' attitudes toward computer use can facilitate computerized systems and lay the foundations for providing quality healthcare" (Rababah et al., 2021).

Assumptions

The primary assumption in the study had a variation in nurses' demographic and individual characteristics, thinking the unique features would be a significant factor in determining attitudes in nurses toward computer technology usage. Of the 184 participants and the two concerns addressed, the p-values rendered were very close in value, and empowerment was the only positive value generated. Empowerment is a matter of an individual's confidence which this nursing student feels occurs at any age and stage of one's career.

Deficit/Conclusion

This nursing student does accept the author's line of reasoning. A quantitative research design method causes the generalizability of its results to be limited. Conducting the research in a developing country where limited resources yielded results data worthy of further testing. Healthcare is pinnacle worldwide, and studies of this nature continue to point out where knowledge, healthcare systems, confidence, and care fall beneath the stellar line. If more research like this is not brought to light, there will continue to be a variance in care worldwide.

Conclusion

Each quantitative research article focused on a particular concern that has affected and continues to affect nursing practice; changing technology. Technology is intertwined with nursing care. As healthcare technology evolves, nurses apply the latest and newest advancements to serve patients with effectiveness and efficiency. Patients expect technology in medical facilities, and its proper usage depends on the competency of nurses and other care team members. Readiness for technology is met with resistance in developing countries where education is inadequate. Improving the scope of education and developing technology to

accommodate the level of care required would be an essential step in improving how technology is introduced to healthcare providers and ultimately facilitates patients. Digitalization, automation, and globalization are three components: learning, transference, and automatic updates to legalities and systems. Empowering nurses' while providing care to become masters of their work and technology creates a sense of respect and a positive work environment. According to Garcia-Dia, 2020, "amidst these technologies, nurses can use the "head, hand, and heart" approach, which incorporates practical know-how with empathic understanding and technical knowledge to provide humane and sensitive care. Practicing respect, actively listening, committing to taking the time to sit with patients, and establishing trust and transparency will balance the ubiquitous presence of technology while promoting safe, quality care."

      The information this nursing student gathered from all three research articles can improve patient outcomes in nursing practice, evidence-based practice/Quality Improvement efforts, and healthcare as a whole in many ways. Technology can enhance patient outcomes by increasing access to information, i.e., medical records, lab results and follow-up appointments, communication, and medication errors. Technology can improve the nursing practice by improving efficiency, allowing more time with patients, and improving safety. Evidence-based practice and Quality improvement efforts are affected by technology as it provides clinical decision support, up-to-date quality measures, and support are provided by technology as well quality measures. Healthcare as a whole is affected by technology as it allows care coordination between facilities, data tracking, robotics, 3D printing, and much more.

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