**Discussion2:**

**Evolving Technology and Evidence-Based Practice**

**Post** **a response explaining how the topic you selected informs evidence-based practice and improved outcomes in nursing. Be specific and provide examples.**

**Artificial intelligence**

According to Pattam, Artificial intelligence is the science of making machines that can think like humans and that can do things that are considered "smart." “Artificial intelligence (AI) is an umbrella term used to describe techniques developed to teach computers to mimic human-like cognitive functions like learning, reasoning, communicating, and decision-making “(Robert, 2019).

Evidence-based practice faces many challenges that can be solved by Artificial intelligence as it can detect research gaps and avoid funding redundant studies. AI can expedite the evidence synthesis process that is slow and costly currently. This slow and costly process has led to the use of outdated and incomplete evidence in the evidence-making process. AI can assist clinicians, patients, and their families to efficiently process all available data to generate informed, evidence-based recommendations and participate in shared decision-making to identify the best course of action.

In health care AI-based technologies have increased within the last decade, showing great potential in nursing, but the evidence of the influence of applications of these technologies in nursing has yet not been reviewed, therefore education on nurse informatics for all nursing professionals and students is imperative, and basic knowledge of AI-based technologies in nursing should be incorporated on all professional levels. This scoping review lays preparation for the future education, research, and clinical application of AI-based technologies in nursing (Gerich et al., 2021)

AI has revolutionized the nursing profession, allowing nurses access to quicker, more accurate data sets that can help predict patient outcomes, provide a deeper understanding of illnesses, and better-informed diagnoses of diseases.

AI provides an opportunity to identify the health risks of patients influencing patient safety outcomes. When used correctly AI can improve error detection, patient stratification, and drug management that will enhance patient safety. To identify, assess, and mitigate threats to patient safety AI has been embedded in electronic health records (EHR). ( Choudhury & Asan, 2020) Previously lab values and vital signs that are used to alarm an acutely decompensating patient have been replaced by continuously monitoring and updating AI tools that can pick up early imperceptible patterns predicting subtle health deterioration. For instance, we have a Sepsis alert embedded in EHR that triggers a sepsis alert if EHR detects SIRS criteria so that timely interventions can be done that can prevent mortality in our patients. AI-based monitoring incorporated into the EHR can facilitate the use of large volumes of data for all patients more efficiently and precisely than a physician could, enabling AI to identify patients who are most at risk. (Giordano et al., 2021) AI is believed to be able to help organizational employees reach better decisions, boost our analytic and decision-making abilities, and heighten creativity (Duan et al., 2019)

 One of the applications of AI is in the form of voice applications. These applications are computer programs that use AI to understand and respond to voice commands, we have Tele sitters in our organization for confused and high-risk fall patients. When the patient tries to get up or do any kind of activity that could place him/her at fall risk then there is this voice command that says not to get up or do any activity and will remind them that help is on the way in a more natural and intuitive way. AI can engage patients and provide coordinated care to patients with multimorbidity. This has helped Nurses mainly when we are short-staffed as we don’t have time to engage and listen to the patient all the time.

**References:**

Choudhury, A., & Asan, O. (2020, July 24). Role of artificial intelligence in Patient Safety Outcomes: Systematic Literature Review. JMIR medical informatics.

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7414411/Links to an external site.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7414411/)

Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). [Artificial intelligence for decision making in the era of Big Data—evolution, challenges and research agendaLinks to an external site.Links to an external site.](https://go.openathens.net/redirector/waldenu.edu?url=https://www.sciencedirect.com/science/article/pii/S0268401219300581?via%3Dihub). International Journal of Information Management, 48, 63–71.

Gerich , H. von, Moen, H., Block, L. J., Chu, C. H., Hobensack, H., Michalowski, M., Mitchell, J., Nibber, R., Olalia, M. A., Pruinelli, L., Ronquillo, C. E., Topaz, M., & Peltonen, L. M. (2021, December 7). Artificial Intelligence -based technologies in nursing: A scoping literature review of the evidence. International Journal of Nursing Studies.

[https://www.sciencedirect.com/science/article/pii/S0020748921002984Links to an external site.](https://www.sciencedirect.com/science/article/pii/S0020748921002984)

Giordano, C., Brennan, M., Mohamed, B., Rashidi, P., Modave, F., & Tighe, P. (2021a, June 25). Accessing artificial intelligence for clinical decision-making. Frontiers in digital health.

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8521931/Links to an external site.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8521931/)

Pattam, A. (2021, September 16). Artificial intelligence, defined in simple terms. HCLTech.

[https://www.hcltech.com/blogs/artificial-intelligence-defined-simple-termsLinks to an external site.](https://www.hcltech.com/blogs/artificial-intelligence-defined-simple-terms)

**Response 1**

Hello Thomas

Thank you for the informative post. I completely agree with you that Artificial intelligence can help nurses better manage signs/symptoms as we get alert in our EHR before patient symptoms start getting worse. On top of this, the new wave of AI systems has improved an organization’s ability to use data to make predictions and has substantially reduced the cost of making predictions. AI has become one of the most important applications in the history of decision-making as it supports and assists human decision-makers. (Duan et al., 2019)

Clinical decision support tools that include alerts in the electronic health record, clinical practice guidelines, order sets, reports, and dashboards enhance nurses’ ability to make clinical decisions. Stimulating human conversations and providing companionship to elderly disabled patients can increase patient outcomes in long-term care facilities.

During the COVID-19 pandemic, nurses have frequently interacted remotely with patients via voice assistants and robots to reduce personal protective equipment use and repeated exposure to the virus. These technologies also may reduce the time nurses spend per visit on data collection and documentation.

Understanding how AI functions compared to traditional tools can help nurses choose the best option based on the specific care situation. Artificial intelligence can be the next technological revolution for nursing because nurses spend time doing things that should be performed by someone else with different skills. In the future, AI tools will relieve nurses of these activities, enabling them to focus their efforts on professional activities that utilize the full extent of their education, training, and experience. (Robert, 2019)

**References:**

Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). [Artificial intelligence for decision making in the era of Big Data—evolution, challenges and research agendaLinks to an external site.Links to an external site.](https://go.openathens.net/redirector/waldenu.edu?url=https://www.sciencedirect.com/science/article/pii/S0268401219300581?via%3Dihub). International Journal of Information Management, 48, 63–71.

Robert, N. (2019, September). How artificial intelligence is changing nursing. Nursing management.

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7597764/Links to an external site.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7597764/)

**Response 2**

Hello Bernice

Thank you for sharing information on Bigdata that has contributed to the improvement of EBP leading to better patient outcomes. Along with empowering nurses to make clinical decisions it has predicted and prevented health issues leading to evidence-based care.  Big data initiatives in health care will benefit from greater integration with nursing science and nursing practice and in turn, nursing science and nursing practice has much to gain from the data science initiatives. I totally agree with Duquesne University that Big data can provide Nurses with an optimized snapshot of patients health history and potential concerns that will help nurses build a care strategy for a patient with greater effectiveness.

EHR one of the largest applications of Bigdata in health care can store more information. All the EHR-derived data being generated, stored, cross-referenced, and analyzed has yielded insightful results. These results can make it possible for a patient to receive consistent care at multiple facilities and can lead to more reliable care, regardless of the health situation in question.

Analysis of Bigdata by clinicians can be extremely time-consuming and therefore Utilization of AI techniques can help to make sense of Big Data., therefore AI has become more popular today due to Big Data. (Duan et al., 2019) AI has been revitalized with Big Data and is becoming ever more powerful than before helping Nurses and other clinicians provide evidence-based quality care to their patients.

**Reference:**

Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). [Artificial intelligence for decision making in the era of Big Data—evolution, challenges and research agendaLinks to an external site.Links to an external site.](https://go.openathens.net/redirector/waldenu.edu?url=https://www.sciencedirect.com/science/article/pii/S0268401219300581?via%3Dihub). International Journal of Information Management, 48, 63–71.

Duquesne University School of Nursing. (2022, June 2). Nursing needs big data and Big Data Needs Nursing - Wiley Online Library.

<https://sigmapubs.onlinelibrary.wiley.com/doi/abs/10.1111/jnu.12159>