**Virtual Care Nursing: A Literature Review on Impacts**

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The National Council of State Boards of Nursing defines telehealth nursing as, “The practice of nursing delivered through various telecommunications technologies, including high speed Internet, wireless, satellite and televideo communications.”[[1]](#endnote-1) Using this model, the virtual nurse can interact with the patient or staff directly through the following roles, “patient education, staff mentoring/education, real-time quality/patient safety surveillance, physician rounding, admission activities, and discharge activities”.[[2]](#endnote-2) The virtual nurse electronically receives information about the patient’s health status and can initiate and transmit therapeutic interventions and regimens as well as monitor and record the patient’s response and nursing care outcomes.[[3]](#endnote-3) This narrative literature review was conducted to synthesize the research on virtual nursing to provide insight into the structure and value of the model.

**Literature Review**

This literature review includes information gathered from journal articles, a national survey, and reliable websites. It includes information and research examples about satisfaction, patient outcomes, cost effectiveness, and the effects of virtual nursing on the workforce shortage.

*Satisfaction*

Virtual nursing has the potential to improve patient satisfaction and outcomes by enhancing communication, care coordination, and follow-up care.[[4]](#endnote-4), [[5]](#endnote-5) Patients have reported high satisfaction with virtual nursing services, citing factors such as confidence in being monitored virtually and easy-to-use technology.[[6]](#endnote-6)

The results of the Virtual Nursing Insight Survey Report (n=789) conducted in 2023 found the number one reason to implement virtual nursing was to improve nurse satisfaction and retention.[[7]](#endnote-7) In a pilot of a virtual nursing program in two sites staff satisfaction increased 5% in cultural assessment scores in one site with no improvement in the second site yet it improved in teamwork scores.[[8]](#endnote-8) In that same study, physicians shared positive feedback via emails, personal conversations, and interviews yet satisfaction scores did not statistically change.

*Patient Outcomes*

Studies have shown that the implementation of virtual nursing models can lead to positive outcomes, such as reduced patient falls, improved quality metrics, and increased patient safety through the identification of potential errors or "good catches."[[9]](#endnote-9), [[10]](#endnote-10) Virtual nurses can optimize resources and improve care. Bedside nurses often have competing priorities and interruptions that can result in reduced quality of care, medical errors, and patient adverse outcomes.[[11]](#endnote-11)

Fifty-nine percent of the 789 respondents to the Virtual Nursing Insight Survey Report cited patient discharge as a top use case for virtual nursing.[[12]](#endnote-12) Virtual nursing used to facilitate discharge planning and transitional care have been associated with improved patient outcomes, reduced readmissions, decreased healthcare resource utilization,[[13]](#endnote-13) lower direct medical costs, shorter lengths of stay (LOS), and higher survival rates when compared to traditional care models.[[14]](#endnote-14) The implementation of virtual nursing models can enhance care coordination and follow-up care during transitions between care settings.

Discharging patients using virtual nurses was piloted tested with the intent to optimize resources and improve care. Virtual nurses used technology to conduct the patient education at time of discharge to reduce the competing priorities for bedside nurses, which were contributing to medical errors and patient adverse outcomes.[[15]](#endnote-15) The pilot study conducted in a 30-bed orthopedic unit demonstrated positive results. A focus group with nurses was conducted prior to implementation. The focus group participants noted that the discharge process took about 45 minutes. The measures used to assess the pilot were the number of sessions conducted by remote nurses, time spent, training costs, readmission rates, and a patient and staff satisfaction survey. The results showed that the bedside nurses had a reduced workload, satisfaction was high for patients and staff, and when compared to the standard discharge process, quality of care was maintained. Virtual nurses noted that errors were avoided in patient instructions due to the virtual nurse’s clinical judgement e.g., missed medication, errors in discharge instructions. The researchers concluded that the program should be considered for implementation in other departments as the program was highly effective.[[16]](#endnote-16)

*Cost Effectiveness*

While the implementation of virtual nursing models requires initial investment in technology and training, studies have shown potential cost savings and improved financial metrics.[[17]](#endnote-17) For example, the Virtual Integrated Care model at CommonSpirit Health was associated with cost savings and improved financial performance.[[18]](#endnote-18)

Tele-ICUs have been shown to reduce costs and improve patient outcomes. Tele-ICUs, also known as e-ICU, use a hub and spoke model with the critical care physician specialist, usually an intensivist, and nurses at the hub site with the bedside team at the spoke site. The ICU is the most expensive unit in a hospital, there is a national shortage of intensivists, the aging population is creating an increased need for critical care, and the ICU is where most medical errors occur[[19]](#endnote-19), therefore assessing the cost effectiveness of this model has merit. The researchers conducted a literature review to test their hypothesis that Tele-ICUs provide cost effective care due to a lower LOS while reducing mortality. Using 42 sources from the literature, the researchers concluded that Tele-ICUs do reduce the LOS, mortality, and ventilator days. Care quality and patient safety increase with the use of Tele-ICU. These factors make Tele-ICU cost effective.[[20]](#endnote-20)

*Workforce Shortages*

Virtual nursing has been proposed as a strategy to address nursing workforce challenges, such as staffing shortages and burnout.[[21]](#endnote-21) By allowing nurses to work remotely and leveraging technology, virtual nursing can alleviate stress on the nursing workforce and improve work-life balance, contributing to recruitment and retention efforts.[[22]](#endnote-22)  The results of the Virtual Nursing Insight Survey Report (n=789) showed that in 2023 75% of survey respondents reported that virtual nursing is a recruitment opportunity to hire nurses who cannot or will not work at the bedside.[[23]](#endnote-23) Eighty-two percent reported that virtual nursing improves workplace place burden.[[24]](#endnote-24)

At WellSpan Health, virtual nursing began as a pilot at its specialty surgery and rehabilitation hospital. The virtual nurses were an extension of physically present bedside nurses, partnering with them on admissions, discharges, and patient education, and a virtual sitting program, wherein a virtual sitter monitors up to 16 patients at risk of falls or self-harm using the artificial intelligence.[[25]](#endnote-25) This allows the virtual nurses to monitor 16 patients freeing up bedside nursing staff.

**Conclusion**

Virtual nursing research shows that the model improves healthcare delivery through enhanced staff satisfaction, cost-effectiveness, and improved patient outcomes. It also helps alleviate the nursing workforce shortage through recruitment and retention as well have increasing the number of patients a nurse can care for simultaneously.

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