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Integrating Telehealth Into the Graduate Nursing Curriculum

Christie Ehle Erickson, MA, FNP-BC, Sally Fauchald, PhD, RN, and Maureen Ideker, MBA, RN

ABSTRACT

Telehealth can be effective for those who use it; however, very few educational programs prepare their students to use telehealth in clinical practice. The integration of telehealth into the graduate nursing curriculum was done by providing both classroom and clinical experiences. Seventy-two nurse practitioner students from a college in northern Minnesota participated. Results indicate that that the experience increases students' knowledge of telehealth as a means of providing care. Because telehealth is a means for providing services to underserved populations, it is important to incorporate education regarding this technology into the graduate nursing curriculum.

Keywords: curriculum, education, graduate nursing, nurse practitioner, satisfaction, telehealth, telemedicine

Telehealth is a rapidly expanding way technology is used to provide health care. In order to be prepared for a role in today's health care systems, nurse practitioner (NP) students need to be prepared to use this technology in providing patient care.[1] There are few examples of graduate nursing programs that teach students how to use telehealth in delivering advanced nursing practice.[2] An opportunity exists to develop a curriculum that provides a significant chance for nurses to shape education to prepare the profession for leadership in the strategic development of technology-enhanced practice.[2] This article describes how the attainment of telehealth technology skills for NPs can be included in a graduate nursing curriculum.

BACKGROUND AND REVIEW OF LITERATURE

Telehealth has been defined as the utilization of information and telecommunications technologies to extend the time and space of health care organizations in order to facilitate health and wellness and provide health services to persons at some distance from the provider.[3] The American Association of Colleges of Nursing includes informatics as an essential of graduate nursing for both master's and doctoral education.[4,5] Telehealth is often included as a topic of discussion in graduate programs; however, the literature shows no programs that actively include education regarding the skills and practice of delivering patient care via telehealth. In order to meet the constantly changing demands of the health care system, NP programs need to prepare graduates who deliver quality patient care, which includes information technology (IT) knowledge as well as formal clinical experiences in telehealth.[6]

Literature regarding graduate health curriculum integration of the skills and practice of telehealth to deliver patient care is rare. The University of Texas Physician Assistant program reports the utilization of telehealth in clinical education.[7] The program involves faculty observing student examinations of geriatric patients in a nursing home using telehealth equipment. Of the students surveyed after the experience, 82% indicated that they were comfortable with this method of care, and 62% of the students indicated that it was equal to face-to-face interactions.

Strehle et al[8] looked at using telehealth to teach medical students pediatric cardiovascular examinations. The goal was to test whether medical students could be taught a pediatric cardiovascular examination with teleconferencing technology and digital stethoscopes as well as to assess the student's attitudes toward this technology. Technical difficulties were indicated as the primary disadvantage of these teaching sessions. The ability to have both student and faculty listen to heart sounds simultaneously via the electronic

stethoscope was indicated as a significant advantage over traditional stethoscopes.

The University of Texas Medical School developed a telehealth elective for 4th-year medical students to learn about the delivery of primary care telehealth.[9] The goals were to expose medical students to telehealth as a method for the delivery of primary care and to reinforce the importance of health care provider communication during the encounter. Evaluation was completed via reflection papers. The students indicated it was a valuable learning experience and suggested it be offered as an elective in all medical school curriculums.[9]

PROJECT OVERVIEW

The mission of this project was to integrate telehealth education and skills into the NP curriculum at a college in northeastern Minnesota. The aim of the graduate nursing department of this college is to prepare providers for rural health care. Telehealth services allow increased patient access to specialty care and provider access to specialty consultations at rural clinics. Student skill attainment regarding telehealth is essential because the overriding obstacle to the implementation of telehealth is reported to be a lack of knowledge.[10] For this reason, NP students at the identified college were provided an introductory classroom session in telehealth and a clinical education experience that used telehealth to provide direct patient care.

This project assessed the impact of integrating a 1-hour classroom orientation to telehealth technology and skills along with a 4-hour clinical rotation using telehealth with NP students. The project attempted to identify whether or not this content in the curriculum has a significant impact on students' overall knowledge, satisfaction, and interest in using telehealth as a means of providing patient care. It was anticipated that knowledge and experience with telehealth will lead to increased satisfaction and interest in using telehealth, thereby increasing the number of NPs prepared and skilled to provide care via telehealth.

PROJECT DESIGN

The NP program faculty collaborated with the telehealth department of the local health system and 2 rural clinics to design experiences for students. The experience included a classroom presentation to the NP students from the telehealth program director and a demonstration using videoconferencing equipment in the classroom with a live connection to the hospital information technology (IT) laboratory. The connection and equipment demonstration was conducted by the IT telehealth technician (off-site) and the IT director for the college (on-site, in the classroom). The college's nursing department skills laboratory houses the equipment for practice and a private space for 3-way connections for NP students to link up to observe and participate in live interactive telehealth patient visits. The IT director for the college demonstrated the process for connecting and using the videoconferencing cameras, whereas the telehealth IT technician off-site demonstrated the digital stethoscope, otoscope, and handheld examination camera.

Classroom discussion included barriers and challenges with providing care via telehealth. Issues such as licensure requirements for the NP not only at their physical location but also at the patient location were reviewed.[11] Information was also provided regarding which providers, services, and patient sites are currently eligible for reimbursement.[12] Security and privacy issues were discussed including the need to follow Health Insurance Portability and Accountability Act regulations regarding patient information.

Clinical experiences were scheduled at the completion of the classroom presentation. Students were offered a 4-hour block of clinical experience with a preceptor who used telehealth to provide direct patient care. Students had the option to participate in clinical experience in the ambulatory care setting or acute care setting (Figure 1). Students were present at either the patient, preceptor, or a 3rd location within either the health system or the college. Students were assisted with connectivity via IT staff at their chosen location. They then had the ability to participate in taking the patient's history and review of systems while the preceptor observed and clarified as needed. Students also participated in physical examinations using the examination camera, digital stethoscope, otoscope, and other peripheral equipment as needed. The electronic medical record was available for student viewing if the student was participating from