QUALITY IMPROVEMENT

NURSING FORUM AN INDEPENDENT VOICE FOR NURSING WILEY

Exploring telehealth in the graduate curriculum

Olivia A. Cassiday BSN, RN | **Bonnie L. Nickasch DNP, APRN, FNP-BC** 🆔 |
Jason D. Mott PhD, RN 🆔

Post Licensure Program, University of Wisconsin Oshkosh College of Nursing, Oshkosh, Wisconsin, USA

Correspondence
Bonnie L. Nickasch, DNP, APRN, FNP-BC, Post Licensure Program, University of Wisconsin Oshkosh College of Nursing, 800 Algoma Blvd, Oshkosh, WI 54901.
Email: nickascb@uwosh.edu

Abstract

Background: With an increase in patient demand and a decrease in healthcare professionals, telehealth is able to provide needed services to patients, but appropriate training in telehealth is crucial for providers to deliver excellent patient care.

Method: Nurse researchers developed a quality improvement project targeting telehealth in the graduate nursing curriculum. A two-part evidence-based curriculum was developed for graduate family nurse practitioner (FNP) students. Part one consisted of a lecture that focused on increasing students' knowledge, and part two enhanced skills through simulation.

Results: Data were collected through qualitative and quantitative surveys. The qualitative data were analyzed for themes and statistical analysis of the quantitative data was completed (*t*-scores and descriptive statistics). Results showed that FNP students perceived the telehealth curriculum as educational and recommend it be continued for future FNP cohorts.

Conclusion: Using evidence-based practice and telehealth experts graduate nursing programs should introduce the telehealth curriculum for FNP students through in class lecture and simulation.

KEYWORDS

advanced practice registered nurse (APRN), curriculum, doctor of nursing practice (DNP), graduate, telehealth

1 | TELEHEALTH INTEGRATION IN THE GRADUATE CURRICULUM

Telehealth is a rapidly growing field, over 70% of healthcare providers use telehealth tools to deliver patient care,[1] advanced practice registered nurses (APRNs) are essential in the success of telehealth. APRNs include clinical nurse specialists (CNS), nurse anesthetists (NA), midwives, and nurse practitioners (NP). NPs have taken the lead in telehealth, especially in rural areas.[2] Implementing technology into healthcare delivery is both a need and want of APRNs and patients.

Since the passage of the Affordable Care Act, there has been a growing number of providers entering the healthcare field.[3] With this increase in demand/need for patient care and the shortage of healthcare professionals, telehealth services have increased and are

needed amongst patients; therefore, the need for telehealth education and training is crucial for future providers success in providing this service to patients. The Telehealth Nursing Special Interest Group suggests that prelicensure and graduate nursing programs teach principles of telehealth.[3] Recent curriculum mapping in the FNP program at a comprehensive, research enhanced university in northeast Wisconsin has identified telehealth as an area in need of enhanced curriculum (B. Nickasch, personal communication, April 16, 2019). A telehealth curriculum is needed so future family nurse practitioners are prepared to provide effective patient care through telehealth services. This will be particularly helpful in this location as 25.8% of Wisconsin residents live in rural communities.[4] To be knowledgeable in the role of telehealth, NP students have to be prepared to incorporate telehealth care with their patients upon graduation. A study of 266 schools with higher education in nursing

in the United States revealed that less than one-third of programs educated students in telehealth.[3] Graduate programs need to start implementing telehealth into their curriculum in order for APRNs to become sound health professionals in this field.

2 | BACKGROUND

Telehealth is becoming more prevalent in the healthcare system in the United States. With the concern in recent years over diseases such as the novel coronavirus in 2020, telehealth practices have taken a front seat in the way that healthcare can be delivered to people throughout the country. Telehealth has been shown to be safe and effective during this recent pandemic. When reviewing current literature related to telehealth several themes emerged that can help guide the development of an effective telehealth curriculum. These themes incorporate the answers to the following questions: what is telehealth, why does telehealth need to be taught in APRN curriculum, how is telehealth currently being taught, and how are other universities using simulation to teach telehealth? Each of these questions will be further explored.

2.1 | What is telehealth?

The Health Resources and Services Administration defines telehealth as, "the use of technology in care delivery, health information, and remote health education. Telehealth is therefore the use of electronic information, devices, and telecommunication technology to provide direct patient care, remote patient monitoring, and education at a distance."[2] As healthcare leaders, APRNs should possess the knowledge and skills required to use such technologies in practice. Current organizations such as The National Organization of Nurse Practitioner Faculties (NONPF) and the American Association of Colleges of Nursing are requiring telehealth to be an essential competency for masters and doctoral APRN programs.[5] NONPF believes that telehealth is a consistent form of healthcare and has moved into the mainstream delivery of healthcare.[2]

2.2 | Why does telehealth need to be taught in the APRN curriculum?

Over the beginning of the 21st century, the use of information technology has exploded, and the ability to communicate with patients via telehealth applications has rapidly increased throughout the United States.[6] Telehealth is one component of information technology, and APRNs are in a great position to be the leaders in telehealth.[1] To meet these demands of a rapidly changing healthcare system, it is essential to implement a telehealth curriculum for the APRN student.[7] Ninety percent of healthcare organizations have implemented telemedicine programs into their practice;[8] even though, few United States schools have incorporated telemedicine

education into the curriculum. Developing a comprehensive telehealth curriculum is necessary to ensure student success as they transition to practice and begin providing care via health visits, but this is not only to ensure the patient receives the best possible care, but so that the student obtains the education necessary to understand the legal and ethical implications that go along with caring for a patient through telehealth.[9] With an appropriate application of a telehealth curriculum, medical care can be enhanced through patient and provider communication which include prescribing medication, communicating patient results, scheduling appointments, managing chronic disease, and delivering healthcare education.[10]

2.3 | How is telehealth currently being taught?

Telehealth curricula can be developed using many different competencies such as didactic programs, simulations, and clinical encounters/hands-on experiences.[2] Online learning modules seemed to be most popular; one study indicated that "self-directed learning has been suggested as the methodology of choice to prevent curriculum hypertrophy."[9] Online telehealth modules included: improving patient healthcare access, outcomes, safety, and efficiency.[9] Additionally, a telehealth curriculum should have required competencies for the APRN student. A Delphi-study looked at the most importance competency to be included in a telehealth curriculum and found that, "communication skills, coaching skills, the ability to combine clinical experience with telehealth, clinical knowledge, ethical awareness, and a supportive attitude were important."[11] Lastly interprofessional communication was found to be vital when providers are using telehealth and should be included in a telehealth curriculum. One study collaborated with APRN students' and the school of pharmacy to introduce telehealth technology to their students. This study paired APRN students up with pharmacy students during the initial telehealth lecture. After learning as a team one student stated, "I think telehealth can improve the gap within interprofessional communication. Each professional has their own set of knowledge and experience and bringing those together makes for optimal plan of care and treatment."[12]

2.4 | Simulation to teach telehealth

Simulations are needed for the safety and quality of telehealth integration.[3] In addition, clinical placement is limited, and simulations allow students to gain telehealth experience outside the clinical setting. Students who participate in telehealth simulations are able to practice skills in a low risk, highly educational setting; which is optimal as the student may not otherwise be exposed to telehealth during their clinical rotations.[13] A recent meta-analysis identified that simulations are an effective method of teaching as simulating a clinic visit improves student performance compared to live clinic sessions.[8] Telehealth simulations have been shown to be useful for clinical reasoning.[14] A common simulation strategy is to use a

standardized patient (SP) to simulate common telehealth scenarios. This allows for students to work on important skills such as eye contact and empathy in a less stressful environment.[14] Many examples of telehealth simulations can be found in the literature. One study split the simulation experiences up into 3 weeks. The 1st week, the student watched a provider communicate with a patient via telemedicine. Weeks 2 and 3 consisted of the students gaining a patient perspective. This method of simulation allowed the student to be in the shoes of the provider and the patient.[5] A second study developed a simulation workshop.[2] Sixty APRN students were broken into groups of five to six students. Each student conducted an interview with a patient using videoconferencing technology. The patient was in one room while the other students were in another room communicating over a computer. An interview was conducted, and the student was able to develop a comfort with telehealth technology, address etiquette, and discovered that it was possible to develop a relationship with the patient through a computer.[2]

3 | METHOD

After gaining institutional review board approval, doctor of nursing practice (DNP) students in two different courses were recruited to participate in a telehealth simulation (n = 57). These students were 2nd- and 3rd-year family nurse practitioner students. This was done intentionally to ensure that the participants had previous clinical experiences before going through the telehealth simulation.

The authors created an online curriculum as well as a telehealth simulation. This education was delivered in two parts (part one—online lecture and part two—telehealth simulation). The telehealth curriculum focused on important competencies based on the literature review (i.e., demonstrating clinical skills of history collecting and assessment, identifying the diagnosis and potential differential diagnoses, and correctly documenting the telehealth visit). Due to the recent COVID-19 restrictions, university campuses were required to stop all face-to-face interactions and all learning was to be conducted via online learning. Part one was originally supposed to be conducted through an in-class lecture. Instead a video lecture was recorded by the author with the help of faculty members. Information on what telehealth is and how it can be delivered to the patient was taught using PowerPoint©. All students were required to watch the educational video before signing up for the simulation. Part two of the curriculum consisted of participating in multiple small group (n = 6) interactive telehealth simulations. The size of the groups were determined to be six based on numerous recommendations from simulation studies.[2] The curriculum included the collaboration of two cohorts at different learning levels to allow students to learn from one another as well as the instructor.

The simulations were conducted using an online meeting platform (Microsoft Teams©). It was important to select a platform that had video capability, a whiteboard to display patient snapshot, and a chat bar to allow students to collaborate and discuss case in real-time. This collaboration is essential to help increase critical thinking and reasoning skills in a safe environment. Each simulation group consisted of six students, one mediator (the researcher; played role of patient), and one instructor. A snapshot of the patient including the age, sex, medication history, chief complaint, past medical/surgical history, and allergies were provided. The simulation took place over 2 hours, allowing a total of six patient scenarios for the students to work through during each telehealth simulation session. After working through the simulation scenarios, the instructor and mediator led the students in a period of debriefing. Debriefing included topics such as: key health history details, visual exam, differential diagnosis, diagnostics, treatment options, red flags (do not miss diagnoses), and documentation. Documentation focused on legalities and how to document telehealth visits over the phone to decrease liability. First students were asked if this was an appropriate scenario to treat over the phone. Next, they were asked if audio and visual was necessary for the given scenario. Thirdly, they were asked if the clinical case was appropriate to treat over the phone or if bringing the patient into the office would have been better? Lastly billing and coding were discussed.

An anonymous evaluation survey addressing the simulation was administered electronically to participants after the telehealth simulation day. The six-item survey, based on a one to five Likert scale, generated quantitative data and there were also three open ended questions that allowed for qualitative feedback on skills that the participants gained, what did not work well, and additional learning needs that should be considered for future simulations.

4 | RESULTS

Fifty seven (n = 57) graduate family nurse practitioner students completed the anonymous survey after participating in the online lecture and virtual simulation. Dataset 1 had a mean of 4.9 and Dataset 2 had a mean of 4.8, which signifies the average number on a scale of one to five students rated the questions "please tell me how useful you found this simulation to be to your future practice as an FNP" and "please tell me in your opinion if we should continue this simulation for future cohorts." Following a qualitative analysis of the data, two major themes (engagement and realism) were identified on what worked well during the telehealth simulation.

4.1 | Engagement

After reviewing the qualitative survey data, it was clear the students found the telehealth simulation engaging. When asked what worked well many students did comment on the benefit of having two cohorts learn together. A student stated, "having two classes involved was a really neat aspect.… it was nice to work collaboratively and help bridge the gap" between 2nd- and 3rd-year DNP-FNP students' as they have varying amounts of clinical experience and knowledge at their perspective points in the curriculum. Involving two different cohorts allowed for a variety of ideas to be explored depending on

where each student was at in the curriculum. As students learn to collaborate with each other through a comprehensive telehealth curriculum, patients in turn can receive the best possible care.[9]

Students specifically found it helpful to collaborate via the Microsoft Teams© chat tool. Incorporating a chat bar during the simulation, allowed the students to be interactive and compare thoughts and plans of care. One student stated, "It felt safer to add thoughts in a chat compared to in the classroom environment." Another student noted, "I liked that we talked through the case studies using the chat as a group. It allowed me to look at things differently and gave me ideas for differentials and treatments that I hadn't thought about." The Delphi-study looked at important skills that should be included in the telehealth curriculum including communication and coaching skills.[11] The chat bar gave students an area to support each other. The instructors who were actively practicing FNPs with telehealth experience could engage with students through the chat and online platform from start to finish during the simulation.

4.2 | Realism

The telehealth simulation cases consisted of real-life patient scenarios following the recommendations from the literature using an SP who in this scenario was the mediator.[14] The survey indicated that students benefited from the preplanned patient cases because they offered a wide variety of cases which allowed the students to challenge themselves on how to appropriately treat a certain diagnosis over the phone. The cases were also taken from real-life scenarios seen in the clinic during the COVID-19 pandemic; all patient identifiers were removed and HIPPA guidelines followed. One student stated that, "it made me realize that I am intimidated to treat certain diagnosis." Telehealth simulations give students a safe environment to learn; simulations allow students to practice their skills in a low risk environment which they would not be exposed to in a clinical setting.[13]

All of the students who participated in the telehealth simulation indicated the importance of telehealth for the patient especially during a pandemic which is reflected in the survey data. Just like the pandemic, it was not planned to implement a telehealth curriculum in the graduate curriculum so quickly. The survey results reflected the importance of learning telehealth in the classroom environment so adequate care can be delivered in the real world. One student stated, "I liked having this experience. It is always better to experience a situation in a learning environment prior to seeing it in real life." These results identified a need for telehealth curriculum in the graduate nursing program and have led to the development of telehealth simulations that could be delivered in the curriculum at the 2nd- or 3rd-year level.

Telehealth uses technology to deliver patient care, and APRNs should be given the skills and knowledge to use this technology in practice.[5] The two-part curriculum that was developed reflected the current literature using didactic and simulation learning.[2]

The Federation of State Medical Boards[10] found that medical care can be enhanced through prescribing medications, communicating results, appointment scheduling, chronic disease management, and healthcare education. All five of these topics were addressed during the telehealth simulations. The simulation followed a workshop that focused on lecture, simulation, and debriefing; patient interviews were conducted in groups of six students through videoconferencing technology.[2] The success of the telehealth curriculum in the APRN curriculum can be seen in the data from the student survey.

5 | LIMITATIONS

Several limitations of the QI project were identified. The telehealth lecture could not be conducted in class and the simulation date had to be moved up to an earlier day due to the COVID-19 pandemic. The simulation had to be organized with less time and with minimal time for student instruction. Despite sending out multiple emails, the simulation could have run more smoothly with directions given in person. Students provided recommendations on what could have made the telehealth simulation run more smoothly. One area of improvement was the use of the technology. Students were not familiar with Microsoft Teams© and had some difficulties navigating the chat bar. An online module should be created that teaches students how to use the technology platform. This module should be accessible to students one week before the simulation. A second area of improvement would be to spread the simulation throughout three clinical rotations. Each simulation would be paired with the didactic topics that are being taught in class. One example is the care of the diabetic patient. Students could first learn in the classroom environment followed by an online telehealth simulation. This was a pilot program with FNP students so it cannot be generalized to NA, midwives, or CNS students. Outcome measures focused on curriculum evaluation. Additional research is needed to determine whether the curriculum increased students' knowledge on the delivery of telehealth.

6 | CONCLUSION

Given the need for telehealth to deliver patient care, most APRNs will use some form of telehealth throughout their career. The recent COVID-19 pandemic makes it imperative to integrate this topic into graduate APRN curriculum. With the goal of graduating APRN students to be familiar using telehealth applications in practice. The future plan is to require this course for second and third year APRN graduate students in the curriculum. The curriculum will be taken further by developing an interprofessional telehealth simulation with the Master of Athletic Training Students within the university starting Fall 2020. Numerous other interprofessional opportunities will also be explored. Evaluation results indicate that telehealth simulations allowed students to gain real life experience and additionally helped students transition back to clinical and to practice

for the students returning to clinical or graduating after the COVID-19 pandemic.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ORCID

Bonnie L. Nickasch https://orcid.org/0000-0002-5048-6227
Jason D. Mott https://orcid.org/0000-0002-9649-5081

REFERENCES

1. Fronczek AE, Cowen N. Leadership opportunities for nurses in tele-health: a kind perspective. *Nurs Sci Q.* 2019;32(4):327-330.
2. Rutledge CM, Haney T, Bordelon M, Renaud M, Fowler C. Telehealth: preparing advanced practice nurses to address healthcare needs in rural and underserved populations. *Int J Nurse Educ Scholarsh.* 2013;11(1):1-9.
3. Ali SN, Carlton HK, Ali SO. Telehealth education in nursing curricula. *Nurse Educ.* 2015;40(5):266-269.
4. *Rural Health Information Hub Wisconsin.* 2018. Retrieved from https://www.ruralhealthinfo.org/states/wisconsin. Accessed April 11, 2019.
5. Erickson C, Fauchald E, Ideker S, M. Integrating telehealth into the graduate nursing curriculum. *J Nurse Pract.* 2014;11(1):e1-e5.
6. Ducey A, Coovert M. Predicting tablet computer use: an extended technology acceptance model for physicians. *Health Policy Technol.* 2016;5(3):268-284.
7. Phillips T, Munn A, George T. Assessing the impact of telehealth ob-jective structured clinical examinations in graduate nursing education. *Nurse Educ.* 2020;45(3):169-172.
8. Palmer RT, Rdesinski RE, Galper A, Cantone RE, Shaver J. Assessing the impact of a telemedicine simulation on clinical learners. *J Family Med Commun Health.* 2017;4(5):1-6.
9. Papanagnou D, Sicks S, Hollander J. Training the next generation of care providers: Focus on telehealth. *Healthcare Transforma.* 2015;1(1): 52-63.
10. Federation of State Medical Boards. *Model Policy for the Appropriate Use of Telemedicine Technologies in the Practice of Medicine.* 2014. Retrieved from https://www.fsmb.org/siteassets/advocacy/policies/fsmb_telemedicine_policy.pdf. Accessed February 12, 2020.
11. Van Houwelingen C, Moerman A, Ettema R, Kort H, Ten Cate O. Competencies required for nursing telehealth activities: a Delphi-study. *Nurse Educ Today.* 2016;39:50-62.
12. Health Resources and Services Administration (HRSA). *What is Tele-health?* 2020. Retrieved from https://www.hrsa.gov/rural-health/telehealth. Accessed April 11, 2019.
13. Smith TS, Watts P, Moss JA. Using simulation to teach telehealth nursing competencies. *J Nurs Educ.* 2018;57(10): 624-627.
14. Knight E, Prettyman A. Rural telehealth team education for bacca-laureate and nurse practitioner students. *J Nurse Educ.* 2020;59(5): 274-277.