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**Assessing Knowledge, Confidence, and Attitude Toward Virtual Care
and Telehealth Among Graduate Nursing Students**

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In Partial Fulfillment of the Requirements for the

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Abstract

In response to the COVID-19 pandemic, telehealth and virtual healthcare modalities have become primary care delivery methods. The American Academy of Ambulatory Care Nursing (AACN) and the American Association of Nurse Practitioners (AANP) support using virtual care and telehealth technology in health care services. Although most healthcare institutions utilize telehealth to provide care, emerging research highlights the lack of telehealth training in Advanced Practice Nurse (APRN) education. However, no standard curriculum requirements mandate graduate nursing programs to train APRN students in telehealth or virtual health modalities. Due to the lack of training for APRNs, it can be very challenging for new APRNs entering clinical settings that rely heavily on virtual care and telehealth services. Therefore, the purpose of this quality improvement project was to assess the current state of APRN students' perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits using a standardized patient simulation activity as an adjunct training opportunity for students enrolled in their program's Advanced Health Assessment Course. The project findings will help the graduate nursing program comply with the guidelines of the AANP and AACN recommendations for APRN education programs, which strongly promote the incorporation of virtual care and telehealth technology into nursing program curricula.

Keywords: Advance Practice Registered Nurse (APRN), Virtual Care, Telehealth, Telemedicine, Training/Education, Standardized Patients, Simulation-based Scenarios, Knowledge, Skills, Attitudes, Nursing Education

Introduction

Telehealth is a progressively growing field in health care. Over 70% of healthcare providers use telehealth tools to deliver patient care, and APRNs are significant in the success of telehealth (Cassiday et al., 2020). There is an increase in demand for patient care, and there is a shortage of healthcare professionals (Cassiday et al., 2020). Telehealth services may be needed to help meet the demand for healthcare providers. Therefore, training current and future providers is essential to enable these providers to meet these demands and practice safely and diligently. Recent guidelines and recommendations state that APRNs should be trained in virtual healthcare and telehealth. Overall, the research highlights the various policies and regulations regarding APRN students' training in virtual care and telehealth modalities.

Background

Virtual care broadly encompasses various healthcare services provided remotely through digital communication tools. Virtual care refers to delivering healthcare services, including consultations, assessments, monitoring, and even treatments, using video calls, messaging platforms, and mobile applications. Virtual care aims to bridge the gap between patients and healthcare professionals, enabling access to quality care from the comfort of one's home or any location with an internet connection. Cassiday et al. (2020) define telehealth as the use of electronic information, devices, and telecommunication technology to provide direct patient care, remote patient monitoring, and education at a distance. As the aging population increases, the need for accessible health care has increased significantly. Most healthcare organizations implemented telemedicine programs into their practice, but the incorporation of telehealth training into clinical education is lacking.

Problem Statement and Significance

Despite the AACN and AANP recommendation and evidence from the literature supporting the use of simulation-based education in improving virtual care and telehealth knowledge and skill, fragmentation still exists between the level of education given to APRNs and the requirements needed to serve clients efficiently with telehealth and virtual care technologies. Most new graduate APRNs do not demonstrate competency in telehealth due to a lack of telehealth training during their academic years. The adoption in clinical practice is hindered by the lack of virtual care/ telehealth training (Garber & Gustin, 2021). Due to the minimal or no training of APRNs, utilizing virtual health/telehealth care can be significantly challenging for new APRNs entering clinical settings that highly rely on these modalities.

Therefore, graduate nursing programs must incorporate virtual care and telehealth technologies and scenarios into their curricula. Some programs already took the lead in integrating such training into their advanced practice nursing course. Therefore, for those academic institutions of higher learning that have not yet started, it may be of great benefit for them to assess the status of their APRN students' perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits before incorporating small or significant changes to their graduate nursing curricula.

The evidence in the literature suggests a desperate need for trained providers who deliver care using virtual care and telehealth technology. However, few providers possess these skills entering clinical practice following their graduate education. The data is limited on the evaluation of the education of providers utilizing virtual health/ telehealth modalities, but most providers currently practicing via virtual/ telehealth did not receive training during their academic years (Garber & Gustin, 2021). An additional implication to this identified problem

exists whereby many newly graduated APRNs may be deterred from applying for jobs that rely on these modalities due to feeling unprepared and lacking knowledge or confidence in these types of skills.

Three significant barriers to providing care via telehealth/ virtual health are the lack of developed standardized telehealth/ virtual healthcare training in many healthcare institutions, minimal or no training in virtual health/ telehealth training for healthcare providers in their academic preparation, and standardized telehealth competencies are not well developed yet (Arends et al., 2021). The alarming problem is the ability of providers to provide safe and quality patient care through these modalities. To further examine the evidence about the problem and possible evidence-based practice solutions, relevant outcomes, and reliable outcome measure tools, a thorough search and review of the literature was conducted as part of the project.

Literature Review and Summary of Evidence

The first objective of this project was to conduct a literature review of the best available evidence. The following Otterbein University Courtright Memorial Library databases (e.g., PubMed, CINHALL, EBSCO, and OVID) were utilized to search for research and evidence-based practice articles for the project. The initial search utilized the keywords that were derived from the following PICOT question: In (P) graduate Advanced Practice Registered Nursing Students (APRNs), how does the incorporation of (I) a standardized virtual care/telehealth patient learning activity using simulation-based scenarios, compared (C) to the current advanced health assessment course format (which does use virtual care/telehealth training activities), affect student nursing (O) knowledge, confidence, and attitudes using virtual care and telehealth for advanced health assessment? Keywords used in the literature search included the following terms—*Advanced Practice Registered Nurse (APRN), Virtual Care, Telehealth, Telemedicine,*

Training/Education, Standardized Patients, and Simulation-based Scenarios—all of which yielded 794 articles. Eleven articles were selected after the search was narrowed down to articles published in the last five years, academic journals, and articles published in English.

The literature review's evidence suggests increasing telehealth training for APRN students. Some concerns arise about the use of telehealth and virtual health. The evidence also highlights increased clinical training through telehealth precepting and the safe use of simulations to teach telehealth.

Increasing Access to Clinical Training Through Telehealth Precepting

Telehealth precepting increases access to clinical education and will serve as a technological resource to the health care system. As reported by Garber and Gustin (2021), the lack of telehealth training has been shown to be a barrier to telehealth adoption. Johnson et al. (2020) suggests that implementing telehealth-precepting would provide training opportunities, create a training pipeline to address providers' inability to deliver care via telehealth, and build future training sites. Johnson et al. (2020) reported that tele-precepting enhances students' access to necessary clinical education. Creating a training pipeline may address provider shortages and build training sites for upcoming students.

Concerns In Telehealth

There are a few rising concerns associated with virtual care/telehealth. Garber and Gustin (2021) reported concerns such as reduced quality of care, reduced security and privacy, and the risk of losing interpersonal connection with patients. Garber and Gustin (2021) also report that these concerns about telehealth may be overcome through education. Posey et al., 2020 stated that students who participated in interprofessional standardized patient (SP) simulations recognized the value of telehealth in enabling connections to patients and students from other

disciplines. Most interventions practiced in face-to-face clinical can be practiced in the virtual world.

Teaching Telehealth Through Simulation

Research suggests that simulations are safe and create a highly educational environment to enhance students' skills and knowledge. Posey et al. (2020) suggest simulation as a means of training graduate students on telehealth. Cassiday et al. (2020) also concur and suggest using simulation to train students. Although Cassiday et al. (2020) used a larger sample than Posey et al. (2020), both articles concluded that using simulations allows students to gain the necessary skills and knowledge needed to transition into practice. Posey et al. (2020) reported that students participating in telehealth SP simulation and face-to-face SP encounters demonstrate equivalent diagnostic reasoning performance. In addition to supporting the use of simulation as a training tool, Gartz and O'Rourke (2020) also concur with the conclusions drawn from the articles by the authors stated above. However, they go on to report that when telehealth didactic education is combined with experiential learning, such as simulation and clinical experience, the benefit is more significant. Students receiving different forms of education and practice create well-informed students and allow them to be comfortable participating in simulations, which aids in their transition to practice.

Another study addressed telehealth education in Family Nurse Practitioners through simulation-based training. Berrier and Hellier (2022) conducted the study using a learning module and a summative standardized patient simulation to address telehealth education in nurse practitioners. The authors found that the students perceived simulation experiences to be stressful. Students experience higher stress during the simulations than in a face-to-face clinical experience. The level of stress experienced by students could be due to the summative nature of

the simulation experience. Descriptive statistics from this study showed that students were self-confident and satisfied with the education module and simulation experience Berrier and Hellier (2022). The students were satisfied with the simulation and had developed an increased self-confidence to utilize the knowledge and skills they acquired in their practice.

A single-group comparison was conducted to evaluate the intervention of telehealth education simulation for APRNs. The study was conducted by Jones et al. (2023) with APRN students enrolled in an Advanced Health Assessment course to describe the students' beliefs and confidence regarding the delivery of care via telehealth in their future practice. This study combined didactic and telehealth SP simulation. After the implementation of the intervention, there was a significant improvement in the student's confidence in providing care via telehealth. Jones et al. (2023) highlight the need for didactic and SP simulations by stating the need to use this learning tool in upcoming Advanced Health assessment Courses to instill confidence in performing in telehealth. Overall, the students were reported as having felt very comfortable with telehealth after participating in the simulation.

Summary of Evidence

In summary, substantial, high-quality level evidence suggests that the lack of telehealth training affects the ability of APRNs to provide safe and quality care for patients. The evidence from the literature also highlights that the lack of telehealth and virtual care training serves as a barrier to providing care via telehealth. Simulations are a safe way to train APRNs on telehealth to improve their knowledge and skills in the utilization of telehealth. Lastly, simulation-based education and training have been shown in the literature to effectively train healthcare professionals, improving their clinical knowledge, decision-making, response times, and clinical performance of care-related tasks while utilizing telehealth/virtual care modalities.

Project Purpose and Objectives

Although most healthcare institutions utilize telehealth to provide care, emerging research highlights the lack of telehealth training in Advanced Practice Nurse (APRN) education. However, no standard curriculum requirements mandate graduate nursing programs to train APRN students in telehealth or virtual health modalities. Due to the lack of training for APRNs, it can be incredibly challenging for new APRNs entering clinical settings that rely heavily on virtual care and telehealth services. Therefore, the purpose of this quality improvement project was to assess the current state of APRN students' perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits using a standardized patient simulation activity as an adjunct training opportunity for students enrolled in their program's Advanced Health Assessment Course. The project findings will help the graduate nursing program comply with the guidelines of the AANP and AACN recommendations for APRN education programs, which strongly promote the incorporation of virtual care and telehealth technology into nursing program curricula.

Objectives

The expectation of practicing APRNs is that they are competent in all areas of healthcare once they are certified. One of the areas in which APRNs are expected to be competent is telehealth, but most APRNs may not be competent in this area. The National Organization of Nurse Practitioner Faculties (NONPF) suggests APRNs meet competencies such as telehealth etiquette and professionalism, understanding of when telehealth should be used and should not be used, the understanding of privacy/ protected health information regulations, knowledge of appropriate documentation and billing of telehealth technology, the ability to collaborate inter professionally using telehealth technologies, proficiency in taking a history and performing an

appropriate exam and generate differential diagnoses using telehealth. Therefore, the objectives of the project were to:

1. Review and synthesize the evidence from the literature, AANP, and AACN guidelines/ recommendations towards the development of a standardized patient training activity using simulation-based virtual care and telehealth techniques,
2. Incorporate the standardized virtual care/telehealth patient activity as an adjunct training opportunity for APRN students participating in their program's Advanced Health Assessment Course (e.g., NURS 6830),
3. Assess and describe the effects of the simulated immersion activity on the APRN student's knowledge, confidence, and attitudes using the technology, and
4. Present project findings and recommendations to the Nursing faculty and students regarding the possible incorporation of virtual care and telehealth training into future graduate nursing program curricula.

Project Design and Method

Quality Improvement Framework

The objectives above and the methods for the DNP project were aligned with the Plan-Do-Study-Act (PDSA) framework for quality improvement, which was used to guide this project through completion. The Deming cycle model is the most widely used and accepted quality improvement model in healthcare, which utilizes PDSA cycles to provide a structure for iterative testing of local changes toward the improvement of the quality of systems (Polit & Beck, 2021). The PDSA model provides a structure for iterative testing of changes to improve the quality of systems (Katowa-Mukwato et al., 2021). The PDSA quality improvement framework comprises

a four-step cycle beginning with the ‘Plan’ phase, followed by the “Do,” “Study,” and “Act” phases.

Plan. During this initial phase, key components include identifying the problem and deriving potential solutions (Connelly, 2021; Polit & Beck, 2021; Moen & Norman, 2010). The “Plan” phase follows a cycle of planning goals and success measures. During the “Plan” phase, the project team identified the initial indication of a problem during the completion of a needs assessment of the graduate APRN students at a private university in the Midwest. The identified primary problem that the project sought to address/resolve was a generalized lack of virtual health/telehealth care skills training in the current graduate APRN curriculum. A potential solution to this issue through utilizing a simulated standardized patient encounter using virtual care/telehealth care technologies and methods was developed during this PDSA phase. The simulation was intended to provide a thorough and immersive experience for APRN students participating in their Advanced Health Assessment course. Also, during this phase, a highly reliable *TeleOSCE Questionnaire* was identified to assess APRN student knowledge, confidence, and attitudes using virtual care/telehealth technologies in providing nursing care.

Do. The second portion of this cycle requires implementing the proposed plan, or the ‘Do’ phase (Moen & Norman, 2010). This stage is best implemented on a small scale to implement small local change, providing the project investigators with the freedom to learn and adapt while minimizing the use of organizational resources (Connelly, 2021; Taylor et al., 2014). For this project’s plan, the use of a simulated standardized patient experience with virtual care/telehealth was implemented on a small scale among APRN students within an Advanced Health Assessment course at an accredited, private university graduate nursing program, which is described in more detail in the Procedures and Methods section of this project.

Study. The third phase of the PDSA cycle is the ‘Study’ portion, which emphasizes the evaluation of results (Moen & Norman, 2010) and serves as the basis of this scholarly project team’s involvement. Results were collected and analyzed during the ‘Study’ phase, as described within the methodology section.

Act. After evaluating the results, the final ‘Act’ phase of this quality improvement project cycle focused on lessons learned, identifying adjustments as necessary to optimize a new cycle if needed or sustain effective cycles already in place (Connelly, 2021; Taylor et al., 2014). After the ‘Study’ phase, after data collection and analysis, the project team ‘Acted’ by presenting project findings, barriers, and recommendations to the Nursing faculty and students regarding the possible incorporation of virtual care and telehealth training into future graduate nursing program curricula.

Target Sample and Setting

The population for the project comprised APRN students enrolled in a graduate nursing Advanced Health Assessment Course at an accredited private university in the Midwest. A convenient sample of up to 21 Family Nurse Practitioners, Psychiatric Mental Health Nurse Practitioners, and Nurse Anesthesia students was invited to participate in this project. The inclusion criteria included the following: being able to read, write, and speak English; enrolled in a graduate-level Advanced Health Assessment Course; age equal to or greater than 18-39 years old; and possessing an active Registered Nursing (RN) license. Participants were recruited via face-to-face contact with graduate nursing students in the graduate nursing program’s Advanced Health Assessment course at a large Midwest private university.

Project Measures and Instruments

The variables of interest for this project included: 1) demographic information, as well as perceived 2) knowledge, 3) self-confidence, and 4) attitudes concerning the utilization of telehealth/virtual care modalities. These variables are significant to the final scholarly project as they are known in the literature to impact and influence the performance of the project participants directly. The information was collected on the simulation day (Appendix A) and analyzed afterward.

Demographic Data

The demographic survey information included pertinent demographic data, including the years of nursing experience a participant had, the participant's level of education, the participant's current area of expertise, and the participant's current or history of using telehealth. The information mentioned above was collected due to its potential influence on the participants' responses and the overall outcome of the project.

Perceived Knowledge

Knowledge is defined as a skill or information obtained by an individual from experience or education. Fouad et al., 2023 define knowledge as a collection of experience, appropriate information, and skilled insight that offers a structure for estimating and integrating new experiences and information. Clinicians develop their general and specialty practice expertise through education, training, and patient encounters. Through experience and numerous patient encounters, a clinician's knowledge continues to extend, resulting in efficient and adequate clinical reasoning and safe and effective practices.

Perceived Confidence

Confidence can be defined as the assurance or trust an individual has in their abilities. The level of confidence an individual has directly impacts their performance and skill. Achieving self-perceived professional confidence is an endless journey with no starting and ending point, but it is a dynamic process that depends on circumstances. Therefore, an APRN may achieve confidence in their academic setting, which can then be further developed through working in clinical practices.

Attitude

An individual's attitude can impact how an individual views or approaches a situation. Fouad et al., (2023) defines the term, attitude, as how a person views and evaluates something or someone, a predisposition, or a tendency to respond positively or negatively toward a particular idea, object, person, or situation. A combination of knowledge and self-confidence can help develop a positive attitude.

TeleOSCE Questionnaire

As described above, all project demographic and outcome variables were measured using the TeleOSCE questionnaire (Appendix A). The TeleOSCE questionnaire consists of 22 questions to measure nurses' perceived knowledge, self-confidence, and attitudes. This instrument was developed by Van Houwelingen and colleagues in 2019 and then modified by Downing in 2021. The responses obtained from the TeleOSCE survey questionnaire were measured using a Likert scale, with five for strongly agree, four for agree, three for neutral, two for disagree, and one for strongly disagree. The measurement result is the classification based on the mean or median, depending on the data distribution results. TeleOSCE survey questionnaire is a highly reliable and valid tool used across numerous disciplines, including Nursing, Physician

Assistants, and Medical Doctors, with previous research reporting p-values of 0.841 for knowledge, 0.899 for self-confidence, and 0.774 for attitude (Purba et al., 2023). The questionnaire was distributed to APRN students as described in the project's implementation plan.

Implementation Plan

APRN students were approached face-to-face, and project information was presented via an IRB-approved oral script by one of the project team investigators (Appendix B). Only the student associate investigator (AI) conducted all recruiting and face-to-face contact with potential APRN participants to prevent undue influence or potential coercion of the faculty Principal Investigator, who was also the course instructor at the time during the consent process. Prospective APRN participants were informed that all data collected would be de-identified, confidential, and only disseminated in aggregate form. Subjects will be made aware that participation is voluntary and that they can withdraw from the project activities at any time without consequence. All potential subjects were encouraged to ask questions and voice concerns regarding participation in the project. If the potential APRN student agreed to participate after the project was explained and time for questions had been provided, then informed consent forms were provided to each prospective participant to complete (Appendix C). After enrollment, participants were seated in a private nursing classroom in the science building and scheduled for their one-on-one standardized simulated patient scenario with the AI using virtual health/telehealth methods. They completed the post-TeleOSCE Questionnaire (Appendix A) following their scheduled standardized patient training immersion experience.

The standard patient activity using simulation-based scenarios involved virtual care/telehealth, which was introduced to APRN students taking the Advance Health Assessment

Course in the spring 2024 semester. The standardized patient simulation using virtual care/telehealth was conducted outside of the participants' scheduled class time using Microsoft Office TEAMS to maximize participation and limit the effects on the student participant learning in their health assessment course. TeleOSCE Questionnaire responses (Appendix A) were collected following the completion of each virtual simulation scenario session. Students were run through various standardized patient scenarios using telehealth/virtual care technology while conducting aspects of advanced health assessment. Students were emailed information cards with described patient scenarios. They were then asked to either gather data on the patient's health history and the history of presenting symptoms or manage a patient's prescription. Students had 15 to 20 minutes to conduct each assessment, including documentation of findings. Once the required assessment time limit expired, the AI read each of the questions from the TeleOSCE Questionnaire (Appendix A), allowing adequate time for participants to provide verbal responses to all Demographic, Likert-scaled, and open-ended questions.

Ethical Considerations / Protection of Human Subjects

Before initiating the DNP Final Scholarly Project, a scholarly written project proposal was submitted in January 2024 as part of an application to the Otterbein University Institutional Review Board (IRB). Following the review and determination by the Otterbein University IRB, an approval determination letter was issued to the project team and is attached to this project's final report for record-keeping by the project team's Principal and Associate Investigators and shown in Appendix D. No names or unique student participant identifiers were requested, collected, or stored. No personal health information (PHI) or academic/FERPA-related information was collected. All collected information was fully de-identified before being stored in a password-protected, secure spreadsheet. Only de-identified aggregate data was shared within

and outside of the project site with Otterbein University, Department of Nursing Faculty, and Students as part of the dissemination of the DNP Final Scholarly Project Report Presentation (in partial fulfillment of the requirements of the degree: Doctor of Nursing Practice at Otterbein University).

Project Timeline and Budget

Timeline

The Otterbein University's Institutional Review Board's process (IRB) was completed between January 2024 and February 2024. After IRB's approval, the project's Principal and Associate Investigators (PI/AIs) began incorporating a Standardized Patient (SP) activity using virtual care and telehealth simulation-based scenarios in the graduate nursing Advance Health Assessment Course between January 2024 and March 2024. The collection of the project's post-activity questionnaire responses began in February 2024 and continued through March 2024. The post-questionnaire data collection and analysis was completed by March 2024. From March 2024 to April 2024, a final scholarly written report was developed along with a poster for presentation in partial fulfillment of the requirements for the Doctor of Nursing Practice degree for the student AIs of the Project Team. Lastly, in April 2024, the project was defended and presented to the Nursing Department faculty and students at Otterbein University in an open forum. Once the final written report was approved by the Project Team Leader and Reviewing Committee, the final report and poster were submitted to the university for publishing by the end of April 2024.

Budget

The project team funded the operational budget (Appendix E), which did not exceed \$500. These funds were used towards paper, printing fees (TeleOSCE questionnaire forms), and

transportation. The budget also accounted for the personal time of the principal and project team investigators. The time spent by the project's key investigators consisted of collecting and reviewing response data from the post-activity participant questionnaires (e.g., two to four hours per week), updating Project Team Leader (PTL) with information about progress of project (one to two hours per week), reaching out to key stakeholders (PTL, second and third readers) for new viewpoints and project support, outcome management and data analysis, and writing final scholarly report document (average of two hours per day). Time was budgeted between the team leaders to ensure all duties were completed by specified deadlines.

Data Analysis Plan

Data Collection

The data for the project was collected on the scheduled day of each simulation. Post-Standardized Patient Virtual Care/Telehealth Learning Activity Questionnaire, which consisted of basic nursing demographic information questions, 22 (5-point Likert Scaled) Questions, and one open-ended question (See Appendix A), were collected and assessed. The TeleOSCE Questionnaire provided an opportunity to assess a learner's outcomes in a rigorous and standardized manner (Bajra et al., 2023). The data was collected by the project team investigator and placed into a secure, password-protected Excel spreadsheet for analysis. All collected data was fully de-identified before storage into a password-protected, secure spreadsheet as previously described and only accessible to the Project Team PI and AI's reviewing and conducting data analysis. All physical data was locked in a secure room in file drawers. The data was reviewed and analyzed using descriptive and inferential statistical tests for variance. Only de-identified aggregate data was shared within and outside the university's Nursing Department faculty.

Data Analysis

Descriptive statistics were used to analyze and summarize quantitative data. The use of descriptive statistics allowed the project team to examine and provide a basic summary of sample demographics and information about students' perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits using a standardized patient simulation activity as an adjunct training opportunity for students enrolled in their program's Advanced Health Assessment Course. Questionnaire response findings were analyzed and presented during a Final Scholarly Report poster presentation to key nursing program students and faculty stakeholders, which will help inform and guide the graduate program director and nursing faculty on whether or not to incorporate the use of telehealth/virtual care training using simulation-based methods into future educational offerings to meet the needs of future advanced practice nurses providing care to their patients using these technologies. The project findings are anticipated to help the graduate nursing program comply with the guidelines of the AANP and AACN recommendations for APRN education programs, which strongly promote the incorporation of virtual care and telehealth technology into nursing program curricula. All project findings identified barriers, and recommendations were presented to all key stakeholders and leaders.

Results

Participant Responses to TeleOSCE Questionnaire

Demographic Characteristics

A convenience sample of 6 full-time graduate nursing students with an average age of 9.17 years (SD = 5.3, ranging from 4 to 20 years) who met the inclusion criteria were enrolled over one month from February through March 2024. The demographic data for the sample were obtained via self-reported responses from the TeleOSCE Questionnaire form (Appendix A). The

information included the participant's years of nursing experience, level of education, current or anticipated APRN Role, and current or history of using virtual care/telehealth. The demographic characteristics of the sample are displayed in Appendix F, Table 1.

Likert-Scaled TeleOSCE Questionnaire Response Data

Overall, the participants either agreed or strongly agreed with understanding the benefits of telehealth to patients and the health care system. 50% of the participants felt comfortable with utilizing telehealth, and 83.33% strongly disagreed/disagreed with understanding how to bill for telemedicine visits. There were 66.67% of participants who were neutral about their level of comfort with partnering with patients to perform a physical assessment. All the participants strongly agreed/agreed to integrate telehealth/virtual care training into the APRN curriculum. Although 50% of the participants agreed to the likelihood of utilizing telehealth in their future practice, the participants expressed the need for training on how to bill for telehealth visits, how to partner/communicate with patients to perform physical assessments, and how to perform physical assessments via telehealth. The participants also mentioned the need for education on connecting with other resources to provide care for patients and navigating technical and physical difficulties (Appendix F, Figure 1).

Discussion

All the participants strongly agreed/agreed to how beneficial the integration of virtual care/telehealth training into the APRN program would be helpful to future students. One collective concern the participants had was billing for telemedicine visits. Most participants also had concerns with performing physical assessments/partnering with patients to perform physical assessments via virtual care/telehealth. Learning how to bill for telemedicine visits is essential because it helps APRNs provide care via virtual care/telehealth and get reimbursed for their

work. Also, learning how to perform assessments remotely plays a significant role in the APRN's duties. Performing accurate virtual assessments enables the APRN to make informed decisions about diagnoses and treatment plans, which is crucial to a patient's well-being. None of the participants verified the identity of the patients while participating in the simulation. APRN students need to be educated on the significance of verifying the identity of patients virtually as they would do in person. Verifying the identity of patients helps the APRN ensure that the patient receiving care is the intended patient, which is also crucial for maintaining privacy and security.

Limitations

The implementation of the project had some limitations. The project involved a small convenience sample size. There were only 6 participants in the project, which limits the generalization of the project's results on a larger scale. Some participants had technical/internet difficulties accessing teams and had to call in via phone to participate in the project. The principal investigator had a difficult time with the participants responding to the availability email sent to them. Text messages were also sent in addition to the email, and 6 out of the 9 participants responded via text and participated in the simulation.

Recommendations

For future recommendations, investigators should include all APRN students in different courses to increase their chances of getting a larger sample size. Also, investigators should consent to students and perform simulations when students do not have midterms or breaks coming up. The project participants had midterm examinations during the week, so asking for their availability could have deterred them from participating due to their upcoming studies and examinations.

Conclusion

Although the sample size of the project was small, all the participants agreed that incorporating telehealth/virtual care training into APRN education would be beneficial. There are other areas, such as verifying the identity of patients, wherein students still need education. The participants also mentioned the need for education in areas such as billing and performing physical assessments via telehealth, which is a vital part of the APRN role. Based on the project results, incorporating telehealth/virtual care training in APRN education at the University will benefit APRN students. It will also aid the university in complying with the recommendations of the AANP and ACCN, which encourages the incorporation of telehealth/virtual care training in APRN education.

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Appendix A

Standardized Patient Virtual Care/Telehealth Learning Activity Questionnaire

Demographic Information: Answer the questions below.

How many years have you been a nurse? _____

What is your highest level of Education achieved so far?

___ Associate degree ___ Bachelor's Degree ___ Master's Degree ___ Doctorate Degree

What is your current nursing practice setting? ___ Outpatient Clinic ___ Inpatient Unit

What is the main patient population you care for in your current clinical practice setting?

What is your current or anticipated APRN Role?

___ Nurse Anesthetist (CRNA)

___ Family Nurse Practitioner (FNP)

___ Psychiatric Mental Health Nurse Practitioner (PMHNP)

___ Pediatric Nurse Practitioner (PNP)

___ Clinical Nurse Specialist (CNS)

___ Women's Health Nurse Practitioner (WHNP)

___ Nurse Midwife (CNM)

___ Acute Care Nurse Practitioner (ACNP)

___ Nurse Executive Leader (NEL)

___ Adult-Gerontology Nurse Practitioner (AGNP)

___ Neonatal Nurse Practitioner (NNP)

Do APRNs use virtual care/telehealth in your current clinical practice setting?

____ Yes

____ No

How much virtual care/telehealth experience with patients have you had in the past?

Enter number of years: _____ months: _____ weeks: _____

Have you received any formal training in virtual care/telehealth?

____ Yes (If so, please describe: _____)

____ No

Questions: Answer the questions below based on a five-point Likert scale. Select the answer that best represents your thoughts.

1. I can define virtual care/telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

2. I understand how virtual care/telehealth is utilized in the healthcare industry.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

3. I can identify how virtual care/telehealth may improve patient outcomes.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

4. I feel comfortable with confirming patient identifiers.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

5. I feel comfortable with identifying nonverbal communication to enrich communication via camera.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

6. I feel comfortable with optimizing the technical aspects of the virtual/telehealth encounter.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

7. I feel confident with utilizing video/phone interfaces for virtual care/telehealth patient encounters.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

8. I feel comfortable utilizing live video/phone to augment information gathering.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

9. I am comfortable reviewing consent forms with a patient via virtual care/telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

10. I feel comfortable with developing a partnership with the patient to perform a physical examination.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

11. I feel comfortable with appropriate computer/phone etiquette during the video/phone encounter.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

12. I am comfortable gathering data on the history of presenting symptoms via virtual care/telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

13. I am comfortable gathering data to manage patients' medication prescriptions via virtual care/telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

14. I am comfortable gathering the patient's health history via virtual care/ telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

15. I can utilize virtual care/telehealth in future practice.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

16. I can explain how virtual care/telehealth applications have contributed to healthcare.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

17. I understand how virtual care/telehealth is essential to future practice.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

18. I am comfortable performing virtual care/telehealth visits as a future clinician.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree or Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

19. I understand how to bill for telemedicine visits.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

20. I am comfortable performing a physical exam using virtual care/telehealth.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

21. I will likely use virtual care/telehealth in my future clinical practice.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

22. Overall, I think having virtual care/telehealth integrated into the APRN curriculum is beneficial.

_____ 5: Strongly Agree

_____ 4: Agree

_____ 3: Neither Agree nor Disagree

_____ 2: Disagree

_____ 1: Strongly Disagree

Open-ended Question: Please type your answer below.

What topics would you like to see covered in future virtual care/telehealth training courses?

Appendix B

Script for Project Solicitation

***Assessing knowledge, confidence, and attitudes toward virtual care and telehealth among graduate nursing students:
Project Investigator Solicitation Verbal Script***

Principal Investigator: **Chai Sribanditmongkol, Ph.D., RN, IBCLC, CNS**

Associate Investigator: **Natasha Asante, MSN, PMHNP-BC**

Solicitation Script: Face-to-Face:

Hello. My name is Natasha Asante, and I am a student investigator in the Graduate Nursing Program at Otterbein University. Our project team is conducting an evidence-based, quality improvement project that will assess the current state of Advanced Practice Nursing Students' (APRNs) perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits using a standardized patient simulation activity as an adjunct training opportunity for students enrolled in their program's Advanced Health Assessment Course.

This interest in this project stems from the following: In response to the COVID-19 pandemic, telehealth and virtual healthcare modalities have become primary care delivery methods. The American Academy of Ambulatory Care Nursing (AACN) and American Association of Nurse Practitioners (AANP) support using virtual care and telehealth technology for health care services. Although most healthcare institutions utilize telehealth to provide care, emerging research highlights the lack of telehealth training in Advanced Practice Nurse (APRN) education. However, no standard curriculum requirements mandate graduate nursing programs to train APRN students in telehealth or virtual health modalities. Due to the lack of training for APRNs, it can be incredibly challenging for new APRNs entering clinical settings that rely heavily on virtual care and telehealth services. Therefore, the purpose of this quality improvement project is to assess the current state of APRN students' perceived knowledge, confidence, and attitudes in conducting virtual care/telehealth visits using a standardized patient simulation activity as an adjunct training opportunity for students enrolled in their program's Advanced Health Assessment Course. The anticipated project findings will help the graduate nursing program comply with the guideline recommendation of the AANP and AACN recommendations for APRN education programs, which strongly promotes the incorporation of virtual care and telehealth technology into nursing program curricula. We invite you to participate in this project if you have an interest in helping to improve graduate nursing education curricula and if you meet the qualifying criteria, as will be described shortly.

Do you have any questions before I continue?

[Answer questions as appropriate.]

If you decide to participate in this project, your total time commitment will be approximately 20-45 minutes, as follows:

Participation is voluntary and based on your availability to attend a brief, one-time 20–30-minute virtual care/telehealth presentation and complete a Post-Standardized Patient Virtual Care/Telehealth Learning Activity Questionnaire, which consists of basic participant demographic information questions, 22 (5-point Likert Scaled) Questions, and one open-ended question. The questionnaire should be no longer than 10-15 minutes for you to complete.

Do you have any questions before I continue?

[Answer questions as appropriate.]

To be able to participate in the project, you must meet the following criteria:

- 1) Equal to or greater than 18 years of age;***
- 2) Active Registered Nurse (RN) License;***
- 3) Part-time or full-time graduate nursing student currently enrolled in advanced health assessment course; and***
- 4) Able to read and speak English.***

There are no risks or direct benefits to you, as a student participant, or to the nursing program faculty stakeholders. However, the findings of this scholarly project are anticipated to help inform the graduate nursing program at Otterbein University in its efforts to comply with the AANP and AACN guideline recommendations for ARPN education programs, which incorporate virtual care and telehealth technology into their curricula.

Individuals participating in this project will not receive any inducements or monetary gift incentives.

Information collected for this project's purposes will be de-identified and kept confidential. Your name will not be on the collected materials; only a study number will be.

Please note that your participation in the study is entirely voluntary. Also, if you decide to participate, you can withdraw from the project without penalty at any time.

Do you have any questions at this time?

[Answer questions as appropriate.]

[If the Respondent is eligible and wants to participate, consent will be completed.]

[If Respondent is eligible but does not want to participate, state the following]:

Thank you for your time.

[If Respondent wants to participate but is not eligible, state the following].

I am sorry, but the protocol does not allow us to include you in the project. Thank you very much for your time. If you have any questions, please phone Natasha Asante at (614) 226-1428 (asante1@otterbein.edu) and/or Dr. Chai Sribanditmongkol at (614) 823-1678 (sribanditmongkol1@otterbein.edu).

Appendix C

Project Consent Form

CONSENT
Otterbein University

IRB Protocol Number: **HS # 23/24-31**
IRB Approval date: **01/30/2024**
Version: **1**

1
2
3
4

Otterbein University Consent to Participate in Projects/Research

Project/Study Title: Assessing knowledge, confidence, and attitudes toward virtual care and telehealth among graduate nursing students

Principal Investigator (Faculty/Advisor): Chai Sribanditmongkol, Ph.D., RN, IBCLC, CNS

Associate Investigator (Student): Natasha Asante, MSN, PMHNP-BC

5

- 6 • **This is a consent form for research participation.** It contains important information
7 about this project and what to expect if you decide to participate. Please consider the
8 information carefully. Feel free to discuss the study with your friends and family and to
9 ask questions before making your decision whether or not to participate.
- 10 • **Your participation is voluntary.** You may refuse to participate in this study. If you
11 decide to take part in the study, you may leave the study at any time. No matter what
12 decision you make, there will be no penalty to you, and your academic standing within the
13 Graduate Nursing Program at Otterbein University. Your decision will not affect your
14 future relationship with Otterbein University. If you are a student or employee at
15 Otterbein University, your decision will not affect your grades or employment status.
- 16 • **You may or may not benefit as a result of participating in this project.** There are no
17 risks or direct benefits to you as a participant.
- 18 • **You will be provided with any new information that develops during the project that**
19 **may affect your decision whether to continue participating.** If you decide to
20 participate, you will be asked to sign this form and will receive a copy of the form. You
21 are being asked to consider participating in this project for the reasons explained below.

22

1. Why is this project being done?

23

24
25 The focus of this evidence-based, quality improvement project is to assess the current
26 state of Advanced Practice Nursing Students' (APRNs) perceived knowledge, confidence,
27 and attitudes in conducting virtual care/telehealth visits using a standardized patient
28 simulation activity as an adjunct training opportunity for students enrolled in their
29 program's Advanced Health Assessment Course.

30

2. How many people will take part in this study?

31

32
33 21 men and/or women will participate.

34

CONSENT
Otterbein University

IRB Protocol Number: HS # 23/24-31
IRB Approval date: 01/30/2024
Version: 1

35 **3. What will happen if I take part in this project?**

36

37 If you take part in this project, following a one-time 20–30-minute virtual care/telehealth
38 presentation and simulated standardized patient training exercise, you will be asked to
39 allow the project team to review your written and Likert-rated responses on the Post-
40 Standardized Patient Virtual Care/Telehealth Learning Activity Questionnaire, consisting
41 of basic participant demographic information questions, 22 (5-point Likert Scaled)
42 Questions, and one open-ended question. The questionnaire should be no longer than 10-
43 15 minutes for you to complete.

44

45 **4. How long will I be in the project?**

46

47 Total participant time commitment for this project will be approximately 20-45 minutes: a
48 one-time 20–30-minute virtual care/telehealth presentation followed by a 10-15 minute
49 completion of the Post-Standardized Patient Virtual Care/Telehealth Learning Activity
50 Questionnaire.

51

52 **5. Can I stop being in the project?**

53

54 You may leave the project at any time. If you decide to stop participating in the project,
55 there will be no penalty to you, and you will not lose any benefits to which you are
56 otherwise entitled. Your decision will not affect your future relationship with Otterbein
57 University.

58

59 **6. What risks, side effects, or discomforts can I expect from being in the project?**

60

61 There are no physical or psychological risks to you as a student participant. The only
62 identified minimal risk of this project could be the loss/breach of your responses obtained
63 via the questionnaire. Information collected for this project's purposes will be de-
64 identified and kept confidential. Your name will not be on the collected materials, only a
65 project number, so there is no more risk to you than there is for any student participating
66 in the graduate nursing courses at Otterbein University. Therefore, there is minimal to no
67 risk to you as a participant in this project.

68

69 **7. What benefits can I expect from being in the project?**

70

71 You will not benefit directly from participating in the project. However, the findings of
72 this scholarly project are anticipated to help inform the graduate nursing program at
73 Otterbein University in its efforts to comply with the AANP and AACN guideline
74 recommendations for ARPN education programs, which incorporate the use of virtual care
75 and telehealth technology into their curricula.

76

77

78

CONSENT
Otterbein University

IRB Protocol Number: HS # 23/24-31
IRB Approval date: 01/30/2024
Version: 1

79 **8. What other choices do I have if I do not take part in the project?**
80

81 You may choose not to participate without penalty or loss of benefits to which you are
82 otherwise entitled.
83

84 **9. Will my project-related information be kept confidential?**
85

86 Efforts will be made to keep your study-related information confidential as previously
87 described. However, there may be circumstances where this information must be released.
88 For example, personal information (demographic and questionnaire responses) regarding
89 your participation in this project may be disclosed if required by state and federal laws.
90

91 Also, your records may be reviewed by the following groups (as applicable to the
92 research):

- 93 • Office for Human Research Protections or other federal, state, or international
94 regulatory agencies;
- 95 • Otterbein University Institutional Review Board or Office of Responsible Research
96 Practices; and
- 97 • The faculty PI/ Advisor supporting the project, their agents, or project/study monitors.
98

99 You may also be asked to sign a separate Family Educational Rights and Privacy Act
100 (FERPA) release authorization form if the project involves the use of your protected
101 academic student information.
102

103 **10. What are the costs of taking part in this study?**
104

105 There is no cost to participate in this study.
106

107 **11. Will I be paid for taking part in this study?**
108

109 By law, payments to subjects are considered taxable income. Individuals participating in
110 this project will not receive any inducements or any monetary gift incentives.
111

112 **12. What happens if I am injured because I took part in this study?**
113

114 If you suffer an injury from participating in this project, you should notify and seek
115 medical care from your healthcare provider or the university Health Center
116 (614.823.1345). The University Health Center provides health care for full-time Otterbein
117 students who pay full-time fees to the University and is open, 8:00 a.m. to 4:00 p.m.,
118 Monday through Friday. A doctor is available four hours a week. In case of emergency,
119 the project team will call 911.
120

121 According to the Academic Policies and Procedures of Otterbein University, if a student is
122 injured during a course or athletic-related activity, they should immediately inform their

CONSENT
Otterbein University

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123 instructor and seek medical attention if necessary. The instructor (and, in this case, the
124 Faculty PI) will then report the incident to the Nursing Department, Academic Affairs,
125 Office of Student Affairs, the Office of Risk Management, and, if applicable, the
126 University IRB. The student should also fill out an incident report form within 24 hours of
127 the incident occurrence. The university will then investigate the incident and take
128 appropriate action.

129

130 Should you obtain medical treatment with your healthcare provider or medical
131 facility/university health center, the cost for this treatment will be billed to you or your
132 medical plan or hospital insurance. Otterbein University has no funds set aside for the
133 payment of health care expenses for participating in this project.

134

135 **13. What are my rights if I take part in this study?**

136

137 If you choose to participate in the project, you may discontinue participation at any time
138 without penalty or loss of benefits. By signing this form, you do not give up any personal
139 legal rights you may have as a participant in this project.

140

141 You will be provided with any new information that develops during the project that may
142 affect your decision whether or not to continue participating in the study.

143

144 You may refuse to participate in this project without penalty or loss of benefits to which
145 you are otherwise entitled.

146

147 An Institutional Review Board responsible for human subjects research at Otterbein
148 University reviewed this research project and found it to be acceptable, according to
149 applicable state and federal regulations and University policies designed to protect the
150 rights and welfare of participants in scholarly projects/research.

151

152 **14. Who can answer my questions about the study?**

153

154 For questions, concerns, or complaints about the project, you may contact Natasha Asante
155 at (614) 226-1428 (asante1@otterbein.edu) and/or Dr. Chai Sribanditmongkol at (614)
156 823-1678 (sribanditmongkol1@otterbein.edu).

157

158 For questions about your rights as a participant in this project or to discuss other
159 project/study-related concerns or complaints with someone who is not part of the project
160 team, you may contact Dr. Noam Shpancer, IRB Chair, at IRB@otterbein.edu.

161

162 If you are injured as a result of participating in this study or for questions about a project-
163 related injury, you may contact Natasha Asante at (614) 226-1428 and/or Dr. Chai
164 Sribanditmongkol at (614) 823-1678.

165

166

CONSENT
Otterbein University

IRB Protocol Number: **HS # 23/24-31**
IRB Approval date: **01/30/2024**
Version: **1**

167 **Signing the consent form**

168
169 I have read (or someone has read to me) this form, and I am aware that I am being asked to
170 participate in an evidence-based practice quality improvement project. I have had the
171 opportunity to ask questions and have had them answered to my satisfaction. I voluntarily
172 agree to participate in this project.

173
174 I am not giving up any legal rights by signing this form. I will be given a copy of this form.
175

Printed name of the participant/ subject	Signature of participant/ subject
	AM/PM
	Date and time
Printed name of the person authorized to consent for the participant/ subject (when applicable)	Signature of the person authorized to consent for the participant/ subject (when applicable)
	AM/PM
Relationship to the participant/ subject	Date and time

176
177
178 **Investigator/Research Staff**

179
180 I have explained the research to the participant or his/her representative before requesting the
181 signature(s) above. There are no blanks in this document. A copy of this form has been given
182 to the participant or his/her representative.
183

Natasha Asante, MSN, PMHNP-BC Printed name of person obtaining consent	Signature of the person obtaining consent
	AM/PM
	Date and time

184
185 **Witness(es)** - *May be left blank if not required by the IRB*

Dr. Chai Sribanditmongkol, Ph.D., RN, IBCLC, CNS Printed name of the witness	Signature of witness
	AM/PM
	Date and time
Printed name of the witness	Signature of witness
	AM/PM
	Date and time

Appendix D

Otterbein University IRB Determination Letter



INSTITUTIONAL REVIEW BOARD

- Original Review
 Continuing Review
 Amendment

Dear Dr. Sribanditmongkol,

With regard to the employment of human subjects in the proposed research:

HS # 23/24-31

Sribanditmongkol & Asante: Assessing knowledge, confidence, and attitudes toward ...

THE INSTITUTIONAL REVIEW BOARD HAS TAKEN THE FOLLOWING ACTION:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Disapproved |
| <input type="checkbox"/> Approved with Stipulations* | <input type="checkbox"/> Waiver of Written Consent Granted |
| <input checked="" type="checkbox"/> Limited/Exempt/Expedited Review | <input type="checkbox"/> Deferred |

*Once stipulations stated by the IRB have been met by the investigator, then the protocol is APPROVED.

1. As Principal Investigator, you are responsible for ensuring all individuals assisting in the conduct of the study are informed of their obligations for following the IRB-approved protocol.
2. It is the responsibility of the Principal Investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the Principal Investigator leave the university, signed consent forms are to be transferred to the IRB for the required retention period.
3. If this was a limited, exempt, or expedited review, there is no need for continuing review unless the investigator makes changes to the proposed research.
4. If this application was approved via full IRB committee review, the approval period is one (1) year, after which time continuing review will be required.
5. You are reminded you must promptly report any problems to the IRB and no procedural changes may be made without prior review and approval. You are also reminded the identity of the research participants must be kept confidential.

Signed: Meredith Meyer
IRB Chairperson

Date: 1/30/24

Appendix E

Project Budget

Expense	Cost
Principal investigation time for introduction	10 minutes = \$10
Transportation	20 miles per drive to Otterbein University. 2 round trips = 80 miles Gas price per gallon \$3.55 80 miles = \$9.47
Principal investigator's time for simulation exercise	Simulation 1 30 minutes = \$45 Simulation 2 30 minutes = \$45 \$45 + \$45 = \$90
Paper cost	15 * 2 = 30 30 * \$0.10 = \$3
Ink cost	\$0.68 for each paper \$0.68*30 papers= \$20.4
Total Cost	\$132.87

Appendix F

Results

Table 1.*Demographic Characteristics of the Sample (n = 6)*

	n	(%)
Years of Nursing Experience		
Male	46	(75)
Female	15	(25)
Level of Education		
BSN	5	(83)
MSN	1	(17)
Current or Anticipated APRN Role		
Nurse Anesthetist (CRNA)	3	(50)
Family Nurse Practitioner (FNP)	2	(33)
Psychiatric Mental Health Nurse Practitioner (PMHNP)	1	(17)
Area of Clinical Expertise		
Adults	4	(10)
Pediatrics	1	(17)
Patients Across the Lifespan	1	(17)
Prior Experience with Using Virtual Care/Telehealth		
Yes	0	(0)
No	6	(100)
Received Any Formal Training in Virtual Care/Telehealth		
Yes	0	(0)
No	6	(100)

**Note:* Only one nurse reported working in a facility where Advanced Practice Nurses utilize Telemedicine for follow-up assessment with surgery patients.

Appendix F

Results

Figure 1.

Participant Responses to TeleOSCE Questionnaire

