

Implementing and Evaluating Telehealth Competency Frameworks in NP Curriculum

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Disclosures

- The following presenters have no disclosures:
 - Dr. Keiffer
 - Dr. LaManna
 - Dr. Eckhoff
 - Dr. Blackwell
 - Dr. Guido-Sanz
- Dr. Anderson
 - Multiple grants from National Science Foundation, UCF, UCF LIFE, Patient Communication Simulators
 - Associate Editor – *Simulation and Gaming*
 - Editorial Board – *Simulation in Healthcare*
- Funding for the research described in this presentation was provided by a Learning Institute for Elders (LIFE) at UCF Richard Tucker Gerontological Research grant and the ANEW HRSA Grant #: T94HP33213 .

Objectives

- Evaluate activities which enhance faculty and student competency in telehealth.
- Recognize strategies to integrate telehealth content into hands-on simulated/standardized patient encounters.
- Appraise best practice standards in simulation curriculum planning.



Background

- Telehealth, “the use of medical information exchanged from one site to another via electronic communications to improve the patient’s health status” (American Telemedicine Association [ATA], 2014, p. 5).
- Over 10 million Americans annually benefit directly or indirectly from delivery of telehealth services.



Background

- The rapid diffusion of internet, cellular, and mobile telecommunication technologies into healthcare expanding novel applications of telehealth.



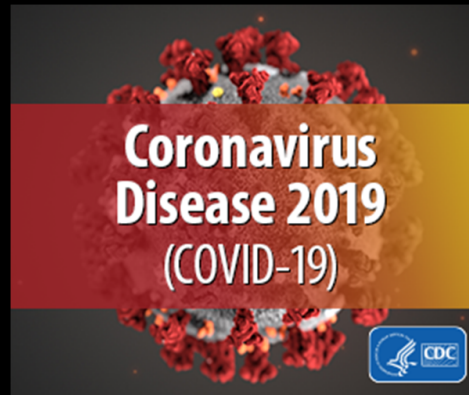
<https://blogthinkbig.com/wp-content/uploads/2017/08/tecnología-móvil.jpg>



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Background

- Strategy to address growing provider shortages in primary and specialty care, particularly in underserved and rural communities (IOM, 2012; TAC, 2017) and now in a pandemic.



<https://www.cdc.gov/coronavirus/2019-ncov/images/Coronavirus-badge-300.png>

- Improves patient safety and clinical outcomes, prevents unnecessary emergency department utilization, reduces hospitalization, and supports aging-in-place in geriatric populations (Bakas et al., 2018; Guo & Albright, 2018; McClean et al., 2013; Shah et al., 2013, 2015; Vermeersch, Sampsel, & Kleman, 2015).

Background

- Preparation of current and future healthcare workers in use of these complex technologies is lacking (Edirippulige & Armfield, 2016).
- Actual opportunity to gain real-world experiences with these technologies is limited for most nursing students.
- 77% of nursing faculty report no personal experience using a telehealth application (Ali et al., 2015)



Background



<https://www.pexels.com/collections/healthcare-3kvuhai/>

- National Organization of Nurse Practitioners Faculties (NONPF) 2018 white paper supporting the inclusion of telehealth as an essential clinical competence in NP role preparation.



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Background

- Telehealth etiquette and professionalism
- Skills in using peripherals
- Appropriate use of telehealth
- Privacy/Protected health information (PHI)
- Synchronous and asynchronous visits
- Documentation and billing
- History, physical assessment and generate differential diagnoses

(NONPF, 2018)



Setting

- College of Nursing
 - NP Program Tracks
 - Primary Care
 - Family Nurse Practitioner
 - Adult-gerontologic Nurse Practitioner
 - Adult-gerontologic Nurse Practitioner Acute Care
 - DNP degree program
 - Admits 40 to 50 students annually



Setting

- Established Simulation Program – Graduate activities
 - Standardized Patients/Physical Examination Teaching Associates/Other Human Role Players
 - OSCEs/Exams
 - Virtual simulation
 - Intraprofessional simulation activities (Guido-Sanz et al., 2019)
 - Recently-acquired telehealth equipment



Study Aims

1. Determine if students perceive the telehealth robot simulation experience as effective as measured by the Simulation Effectiveness Tool – Modified (SET-M) in a virtual geriatric primary care encounter (CAE, n.d; Leighton, Ravert, Mudra, & Macintosh, 2015).
2. Assess if students participating in a virtual geriatric primary care encounter perceive the telehealth robot technology as usable as assessed by the System Usability Scale (SUS) (Brooke, 1996).

Study Aims

3. Determine if students find the geriatric primary care telehealth robot simulation experience as realistic using an Evaluation of Simulation – Graduate Program tool adapted from UCF College of Medicine (COM).
4. Evaluate student perceptions of comfort and learning of telehealth content as well as patient/provider relationship building during a geriatric-focused telehealth robot simulation experience by analyzing themes from a Reflective Assignment.



Methods

- Mixed method feasibility study
- Pre-simulation preparation: Completion of telehealth module developed in consultation with national telehealth expert
 - Narrated PowerPoint
 - Supplemental readings
 - Quiz covering content from PowerPoint and assigned readings
 - Overview of telehealth delivery systems
 - Telehealth etiquette
 - Privacy
 - Best-practices

Methods

- Telehealth Visit Simulation (Formative)
 - Study frameworks
 - Primary -
 - National League for Nursing (NLN) Jeffries Simulation Theory (Jeffries, 2016)
 - Secondary –
 - Multimodal telehealth education model specifically for APRN (Rutledge et al., 2017)
 - Inclusion criteria
 - Primary care NP student
 - Enrolled in gerontologic advanced practice course
 - Provide consent
 - Study was approved by University IRB



Methods

- Telehealth Visit Simulation (Formative)
 - Pre-brief
 - Description of case
 - Practice using telehealth robot



Methods

- Telehealth Visit Simulation
 - Scenario
 - Students placed in pairs – switched off role of interviewer and robot control
 - Case
 - Acutely ill, healthy older adult male with 2 chronic conditions
 - Case requires referral for diagnostics or in-person visit
 - Standardized patient (SP)
 - Embedded participant (EP) family caregiver
 - Students collaborate on planning interview and treatment plan development



Methods (Evaluation of Activity)

- Telehealth Visit Simulation
 - Debrief
 - Co-led by simulation and gerontologic expert
 - Students completed 3 surveys upon completion
 - Post-activity reflection exercise
 - Completed at home
 - Graded course assignment
 - Used in qualitative data analysis

Instruments

- Demographic Form
- Simulation Effectiveness Tool - Modified (Set-M) (CAE, n.d.; Leighton et al., 2015)
 - Origin
 - Evaluates effectiveness of prebriefing, scenario and debriefing
 - 19 items
 - Likert scale: Anchors 1 = Do Not Agree to 3 = Strongly Agree
 - Reported Cronbach Alphas = .883-.908
 - No formalized scoring - focus on low scoring items (25% or more)
- Evaluation of Simulation – UCF College of Medicine
 - 17 items
 - Likert scale: Anchors 1 = Strongly Disagree to 5 = Strongly Agree

Instruments

- System Usability Scale (SUS)
 - Measures Usability and Learnability (Brooke, 1996; Sauro, 2011; “System Usability Scale,” n.d.).
 - 10 items
 - Likert scale: Anchors 1 = Strongly Disagree to 5 = Strongly Agree
 - Scores converted
 - Scores with mean average above 68 indicate an effective system
 - Available in public domain
- Reflection Questions
 1. Comfort level
 2. Learning
 3. Relationship Development

Preliminary Findings

- Demographics (n = 33)
 - 54.5% of students between the ages of 26 and 30 years.
 - 57.6% of students – Caucasian.
 - 72.7% of students had less than 2 years of experience in gerontologic nursing.
 - All students had participated in several SP experiences in the NP program and virtual simulation.
 - 84.8% of students had no telehealth experience in their undergraduate education.
 - 30.3% of students had work-related telehealth experience.

Preliminary Findings

- Simulation Effectiveness Tool-Modified (CAE, n.d.; Leighton et al., 2015)
- Scale; 1 = Strongly Disagree, 3 = Strongly Agree.
- All 2.37-3.00.
- Lowest scoring related to understanding medications and pathophysiology.

Preliminary Findings

- UCF College of Medicine Evaluation of Simulation

Item	Mean	SD	Median	Range
Simulation was realistic	4.79	0.74	5	1-5
Felt prepared for the simulation	4.30	0.85	4	1-5
Debriefing was helpful	4.58	1.00	5	1-5
Standardized patient presented a realistic case	4.48	1.28	5	1-5
Standardized patient portrayed realistic emotions	4.52	1.28	5	1-5
Experienced identified areas of comfort or where improvement is needed	4.58	1.12	5	1-5
Simulation was a meaningful experience	4.61	1.12	5	1-5
Simulation was informative to future practice	4.76	0.51	5	1-5
Would like to participate in more simulations	4.45	1.06	5	1-5

Scale:

1 = Strongly Disagree

5 = Strongly Agree

Interpretation: Students perceived simulation scenario and standardized patient portrayal as realistic and applicable to future practice.

Preliminary Findings

- System Usability Scale (Brooke, 1996)
- Mean converted score: 77.66 (SD 10.10)
- Interpretation: Telehealth simulation was evaluated as “Good” or effective by student participants

Preliminary Findings

- Reflective Data
 - Final qualitative analyses are ongoing
 - Findings look promising



Evaluation of Activities - Faculty

- Did not formally evaluate with this feasibility study.
- Faculty were overall pleased with activity and want to continue offering this simulation.
- Good future study - look at faculty.



Strategies to Integrate Telehealth

- SPs and/or EPs – use of robot (one example).
- Other means?
 - Phone
 - Facetime, Videoconferencing, etc.



Important – Best Practice Standards

- International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best PracticeSM (INACSL Standards Committee, 2016)
- Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP) (Lewis et al., 2017)
- Those related to telehealth



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