ASSESSING THE IMPACT OF TELEHEALTH OBJECTIVE STRUCTURED CLINICAL EXAMINATIONS (OSCES) IN GRADUATE NURSING EDUCATION

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Disclosure Statement

- We have no conflicts of interest to disclose.

Objectives

- Discuss the importance of incorporating telehealth into nurse practitioner education.
- Evaluate the impact of telehealth simulation on students in a nurse practitioner program.

Background

- Telehealth is increasingly being used to provide care in the United States.
- Patients report high satisfaction with telehealth visits due to:
  - Convenience
  - Perceived quality of care
  - Decreased cost (Polinski et al., 2016; Powell, Henstengurg, Cooper, Hollander, 2017).

Background

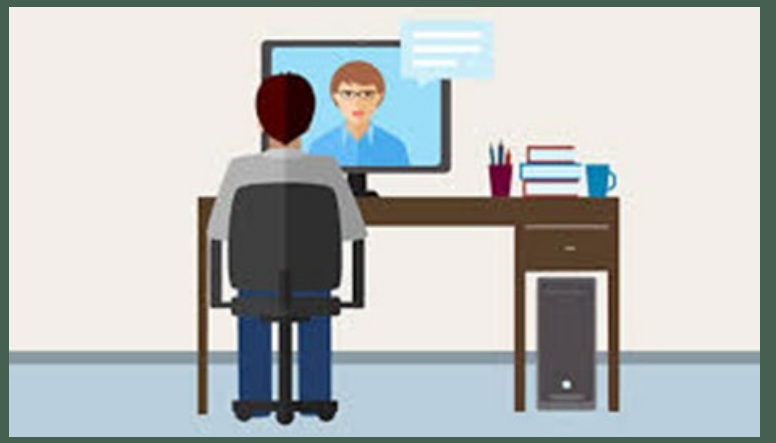
To meet the demands of a rapidly changing health care system, it is important to include telehealth in nurse practitioner education (Hawkins, 2012).

Telehealth should be integrated into multiple nurse practitioner (NP) courses (Swenty & Titzer, 2014).

Simulation experiences with telehealth may promote acceptance and skill with telehealth delivery (Rutledge et al., 2017).

Background

- The National Organization of Nurse Practitioner Faculties (NONPF) supports the incorporation of telehealth into NP education in the didactic or practicum settings and/or simulation experiences (Rutledge, Pitts, Poston, & Schweickert, 2018).
- There is a need to deliver telehealth content through telehealth simulation experiences, clinical telehealth rotations, and by involvement in telehealth projects (Rutledge et al., 2017).



Background

Telehealth simulation can be an effective teaching strategy:

- Statistically significant improvements in NP students' knowledge and confidence about telehealth (Palmer et al., 2017)
- Increased student knowledge of telehealth when didactic and clinical experiences were included in a NP program (Erickson, Fauchald, & Ideker, 2015).
- A multi-modal approach, including a simulation workshop, telehealth simulation immersions, and written projects, was well-accepted by students (Rutledge et al., 2014).

Purpose

- Evaluate the impact of telehealth simulation on students in their first NP clinical course.

Methods

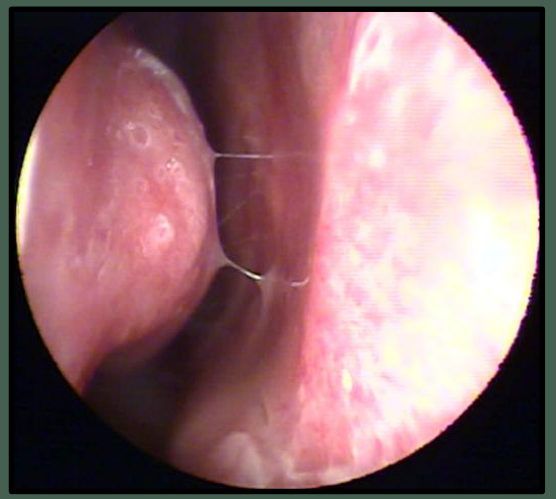
- Study site: Rural, public university with a hybrid FNP program.
- Participants: 28 first-year NP students in their first clinical course.
  - Didactic telehealth content taught in the advanced health assessment course - one semester before clinical course containing the telehealth OSCE.
- Institutional Review Board (IRB) approval was granted at this facility.

Methods

- Students were introduced to the telehealth OSCE during a live course orientation at the beginning of the semester.
- Telehealth OSCEs took place during weeks 5 and 6 of a 15-week semester.
- The telehealth OSCEs included only head-ear-eyes-nose-throat (HEENT) conditions which were taught during week one of the course and tested during week five of the course.

Methods

- Telehealth OSCEs were conducted using a free video conferencing system.
- Representative images and assessment sounds were utilized from internet sources.



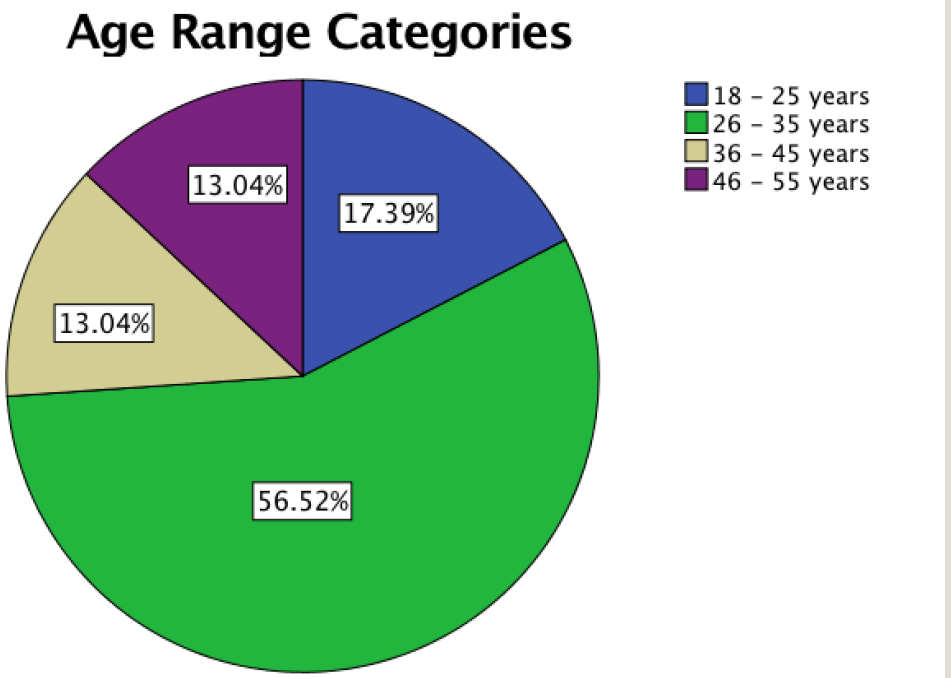
Methods

- Telehealth simulation roles:
  - Two faculty members
    - One faculty member acting as the scripted patient
    - One faculty member acting as the nurse and telepresenter.
  - NP student maintained his/her role as the telehealth provider.

- Telehealth visit (maximum time: 30 minutes):
  - Scripted patient was introduced to the student by the telepresenter/nurse
  - Focused history collected by student
  - Patient examined by the telepresenter/nurse (with guidance of the student)
  - Images/audio files shared with student by telepresenter/nurse via screen-sharing
  - Student able to consult resources to aid development of the assessment and plan
  - Student presented his or her diagnosis and plan to the scripted patient
  - Student debriefed by both faculty

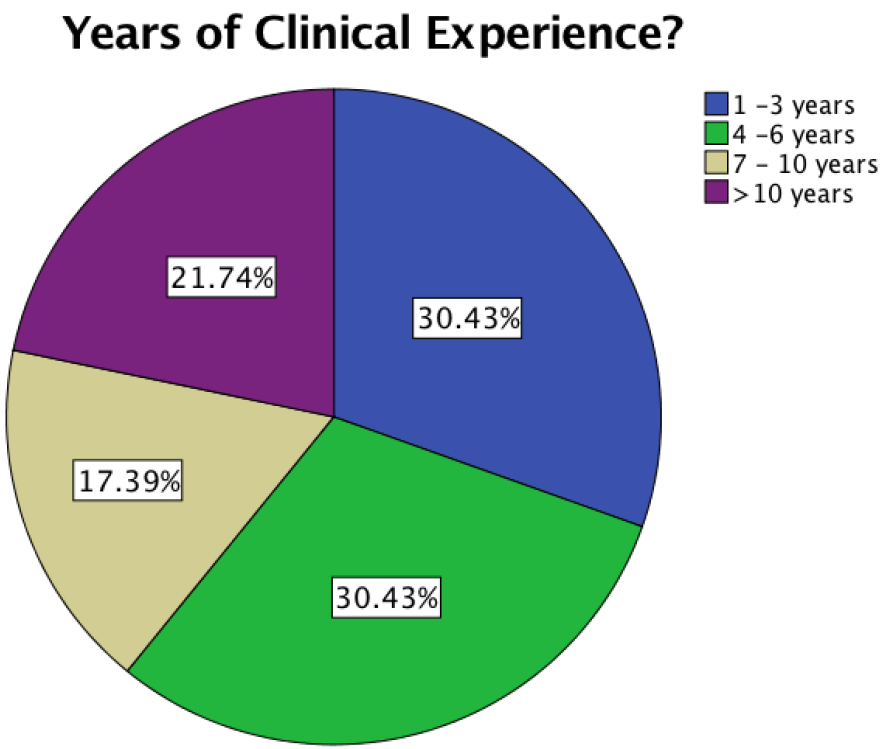
Methods

- Students completed an online survey about the impact of telehealth OSCE simulation both prior to and after completion of the OSCE simulation.
- The survey was adapted from the instrument utilized in a prior study and used with permission from the authors (Palmer et al., 2017).
- Survey items were scored using a 5-point Likert scale:
  - 1= strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree
- Wilcoxon signed-rank tests were used to determine if there were statistically significant differences in pre- and post- survey responses.
- Mann-Whitney U analyses were performed to determine differences in pre- and post experience scores in terms of age or years of clinical experience.



Results Demographics

- 23 out of 28 students completed the pre-survey, and 22 students completed the post-survey.
- Pre-survey:
  - 1 male (4.3%) and 22 females (95.7%)
  - 17 Caucasian (73.9%)
  - 5 African American (21.7%)
  - 1 Asian (4.3%)



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Results

- All 15 post-survey median response scores were higher than the pre-survey scores
- 13 of the 15 telehealth perception items yielded statistically significant differences in pre- and post-survey median response scores.
- The students' general understanding of the field of telehealth was significantly greater after the telehealth OSCE experience (*Mdn* = 4.00) than before the OSCE experience (*Mdn* = 3.00), $z = -3.11$, $p = 0.002$, $r = -0.66$.

Item	Pre-median	Post-Median	*Z* - score	*p*-value	Effect Size
I have a good general understanding of the field of TeleHealth	3.00	4.00	-3.11	0.002	-0.66
I have a good general understanding of appropriate uses of TeleHealth	3.00	4.00	-3.23	0.001	-0.69
I have a good general understanding of how TeleHealth is practiced	3.00	4.00	-3.29	0.001	-0.70
I am familiar with the types of examination tools used in TeleHealth	2.00	4.00	-3.70	<0.001	-0.79
I feel comfortable speaking in front of a camera	3.00	4.00	-2.22	0.026	-0.47
I feel that I would be able to communicate effectively with a patient via TeleHealth	3.00	4.00	-2.59	0.01	-0.55
I feel equally prepared to present a patient to another provider via TeleHealth	3.00	4.00	-2.65	0.008	-0.56
I would be able to establish rapport with a patient via TeleHealth	4.00	5.00	-2.42	0.016	-0.52

PRE- AND POST-SURVEY RESULTS

Item	Pre-median	Post-Median	*Z* - score	*p*-value	Effect Size
I think TeleHealth is a good alternative to face-to-face health care	4.00	4.50	-1.54	0.123	-0.33
I think TeleHealth will help decrease health care disparities for underserved patients in rural areas	4.00	5.00	-1.87	0.062	-0.40
I think TeleHealth will help decrease health care disparities for underserved patients in rural areas	4.00	5.00	-3.45	0.001	-0.74
How likely are you to use TeleHealth in your future practice?	3.00	4.00	-1.48	0.139	-0.32
How confident are you to, at the start of a TeleHealth visit, explain to the patient what the visit will entail and what to expect?	3.00	4.00	-2.77	0.006	-0.59
How confident are you to take a patient history via TeleHealth	4.00	5.00	-3.37	0.001	-0.72
How confident are you to provide counseling to the patient for treatment and follow up with TeleHealth	4.00	5.00	-3.40	0.001	-0.72

PRE- AND POST-SURVEY RESULTS

Results

- Mann-Whitney U tests revealed no significant differences in pre- and post-survey scores in terms of years of experience or age.
- The Telehealth OSCE was beneficial for students of all ages and experience levels.

Qualitative Themes

- 4 Qualitative themes were identified using content analysis:
  - 1. **Usefulness of telehealth:**
    - "It's a way to provide care to an underserved population that currently is lacking in appropriate access to providers."
    - "Hopefully in the future (telehealth) will gain more and more recognition for the benefits it can bring to a large population of people"
  - 2. **Benefit in role preparation:**
    - "It was an experience that may prepare me in the future as an NP to participate in a telehealth job."
    - "I enjoyed the experience and appreciate the fact that we received immediate feedback."

Qualitative Themes

- **3. Incorporation of technology into experiential learning:**
  - "Wi Fi signal is important. High speed internet needs to be available."
  - "I think the technology is very beneficial in certain circumstances. However, depending on the complaint, an in person exam may be more beneficial."
- **4. Perceptions of the learning experience:**
  - "I gained more knowledge and confidence regarding the use of Telehealth."
  - "You can do a number of things remotely that I wasn't aware you could do."

Discussion

- NP programs must stay current in their preparation of graduates through didactic, clinical, and simulation experiences.
- Telehealth OSCEs are an effective way to incorporate telehealth into NP education as required by NONPF (Rutledge, Pitts, Poston, & Schweickert, 2018).
- Telehealth OSCEs were incorporated at no cost to the program, and no specialized equipment was required.
- <u>Limitations:</u>
  - Small number of students at one rural university over a single semester.
  - Internet connection was an issue with one student due to her remote location.
- Future studies to include students in various clinical courses in the NP program

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