A Telehealth and Substance Use Disorder Nursing Practice Simulation with Undergraduate Nursing Students

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Background

- Nursing Simulation-based education (SBE) provides low frequency high stakes simulations

- SBE increases nursing knowledge, skills, & attitudes (KSAs) needed for practice competencies

Problem

- Limited psychiatric and rural health specific clinical placements

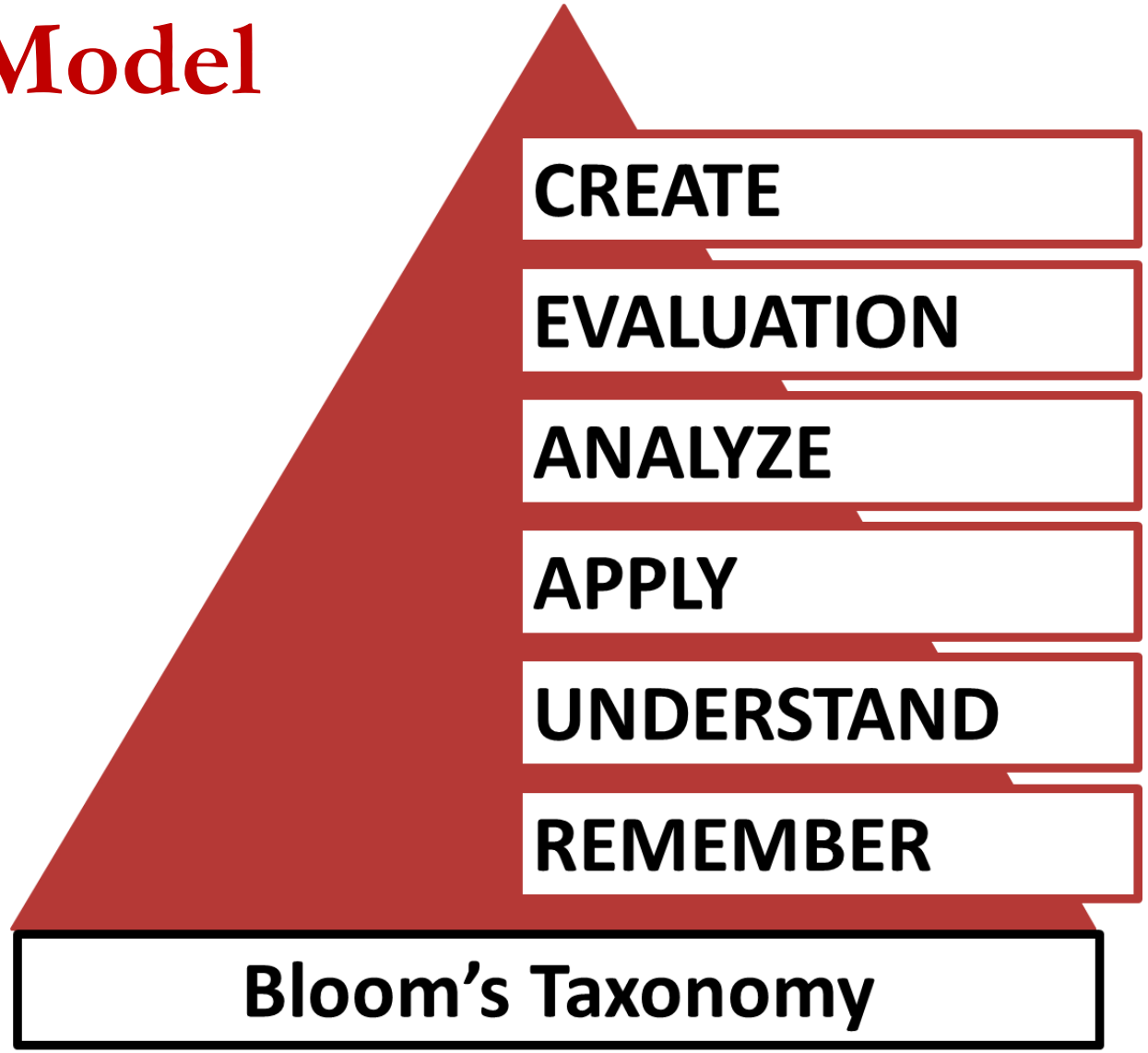
- Nursing students have limited consistent clinical involvement with:
  - Clients with Substance Use Disorders (SUD)
    - SUD: public health concern and should be incorporated into nursing curricula
  - Telehealth technology
    - Telehealth technology: rapidly advancing & needs incorporated in nursing curricula

- Lack of SUD and telehealth SBE designed to increase SUD care & telehealth KSAs in undergraduate nursing curricula

Purpose

- **Education Aims:**
  - To design & implement a SBE to allow students to experience & develop
    - Telehealth technology KSAs
    - SUD assessment and management KSAs
- **Research Aims:**
  - To compare differences before & after participation in a telehealth SUD SBE of learners':
    - 1) perceptions toward people who use drugs,
    - 2) self-efficacy KSAs of utilizing telehealth technology,
    - 3) self-efficacy KSAs of intranasal Narcan administration and client/family education

Theoretical Model



Methods

- **Study Design:** Quasi-experimental pre/post design
- **Sample:** Prelicensure Baccalaureate of Science in Nursing students (n=52)
- **Intervention:**
  - Pre-Learning Modules with Ticket-In
  - Telehealth SUD Rapid Cycle Deliberate Practice (RCDP) SBE
- **Data Collection:**
  - Person Centered-Drug and Drug Problems Perception Questionnaire (PC-DDPPQ)
  - Telehealth Learning-Self Efficacy Scale (L-SES)
  - Narcan Administration and Education L-SES
  - Simulation Effectiveness Tool –Modified (SET-M) Post-Simulation Evaluation
- **Data Analysis:**
  - Paired t-test

Intervention: Pre-Learning Education Modules

- Learning Objectives provided:
  1. Use two therapeutic communication techniques to create a safe environment
  2. Demonstrate three telehealth best practices
  3. Collect focused assessment data using telehealth equipment
  4. Identify signs and symptoms of opioid withdrawal
  5. Screen for substance use disorder with Tobacco, Alcohol, Prescription medication, other Substance use (TAPS) Tool
  6. Screen for opioid withdrawal using the Clinical Opiate Withdrawal Scale (COWS Scale)
  7. Communicate with a healthcare provider using Situation, Background, Assessment, Recommendation (SBAR) approach to formulate a plan of care with the health care team through communication and collaboration
  8. Assess patient's readiness to change
  9. Provide patient education on medications for opioid use disorder
  10. Verbalize signs and symptoms of an opioid overdose
  11. Demonstrate how to use intranasal Narcan to a patient and their family

Intervention: Pre-Learning Education Modules

- Pre-learning in Comevo
  - (Written slides with audio transcription and videos)
- Pre-learning Topics:
  - Telehealth Best Practices
  - Tyto Care Telehealth Equipment Overview
  - Substance Use Disorders
    - Person Centered Care & Preferred Language
    - Therapeutic Relationship
    - Overview of Opioid Use Disorder
    - Medication Assisted Treatment for SUD
    - Intranasal Narcan
- Ticket-In with questions to review the pre-learning materials required before participation in SBE

Telehealth Platform: Tyto Care

- Telehealth platform
- Used in healthcare settings or consumer facing and can be used from home

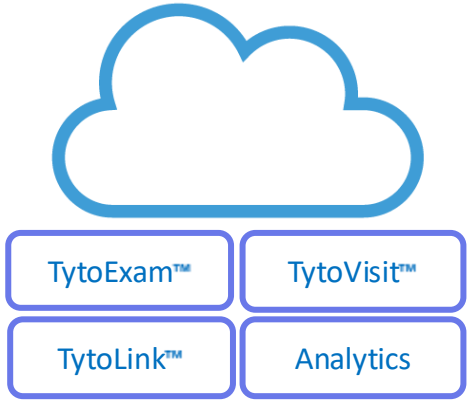
Telehealth Technology TytoCare Platform Overview

Remote Use

TytoClinic

Native TytoCare iOS App for mobile device ✚ TytoClinic

Full-Stack Platform

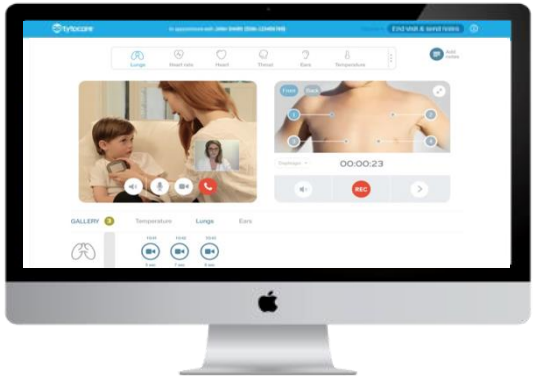


HL7 / API
VPN
Optional

Health System EHR or Telehealth Platform

Clinicians

Clinicians



Tyto Web App

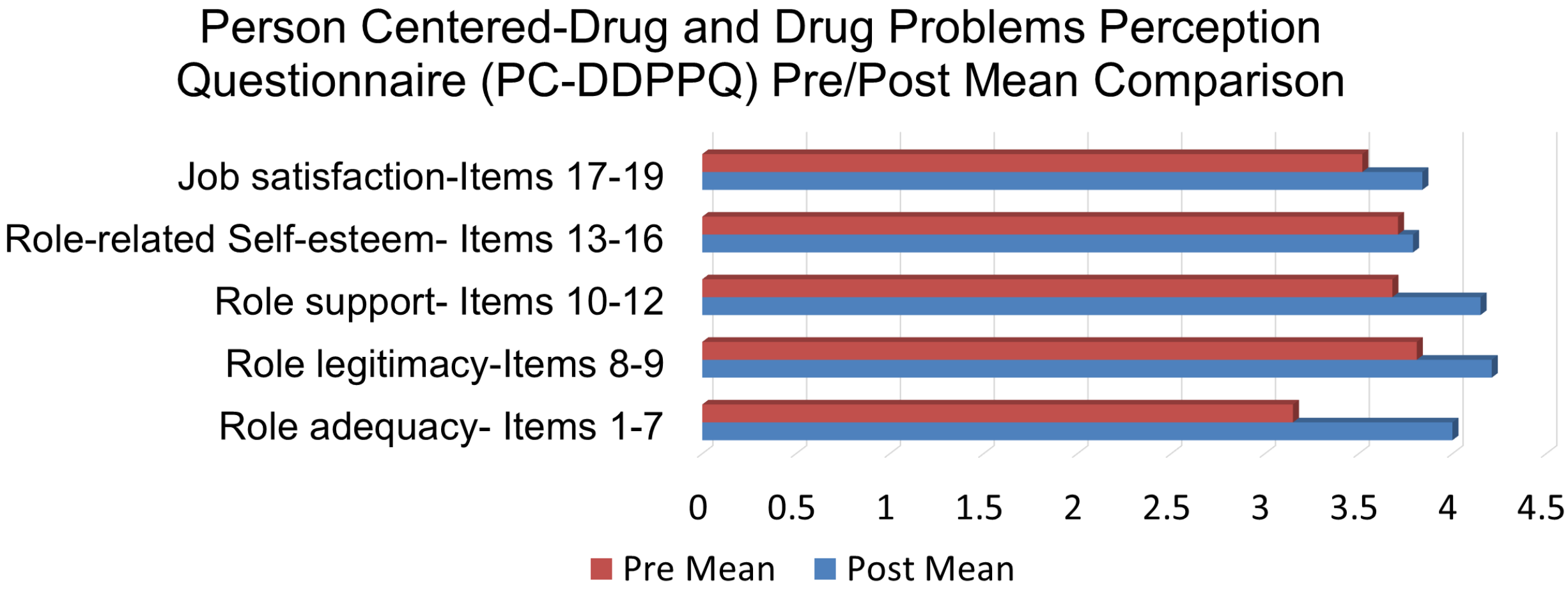
Intervention: Simulation Based Education

- 2 Hour Active Learning Activity in the Simulation Lab
- Groups of 8 learners with 1 facilitator
- Pre-briefing:
  - Introduction Tyto Care with active hands-on practice
  - Introduction to scenario client information
- Rapid Cycle Deliberate Practice: Unfolding case scenario with freeze frames
  - Learners use team approach to all care for the same patient
    - Active learners in pairs directly caring for client while other team members are observing & ready to pick-up care at anytime
    - Learners working as RNs in rural health clinic when a patient walks into clinic to establish care following a recent ER visits for an overdose
  - Standardzied patient (SP), standardized off-site nurse practitioner & low-fidelity mannequin for Narcan administration
- Debriefing during RCDP and following simulation

Results

- T-tests to identify significant differences between the pre/post survey responses
- Pre/Post Comparison resulted in significant pre/post differences between:
  - Perceptions of health care professionals' attitudes to working with drug users (19 item PC-DDPPQ)
    - 16 of the 19 (84%) PC-DDPPQ ($p<0.007$)
  - Learner self-efficacy of telehealth KSAs
    - 12 of 12 (100%) telehealth L-SES ($p<0.05$)
  - Learner self-efficacy of Narcan administration KSAs
    - 12 of 12 (100%) Narcan L-SES item scores ($p<0.05$)
- Post evaluation of learner's perceptions of how well their learning needs in the simulation environment were being met
  - SET-M Post-Evaluation scores were high ranging between 2.59-2.85 on a 1 to 3 Likert scale

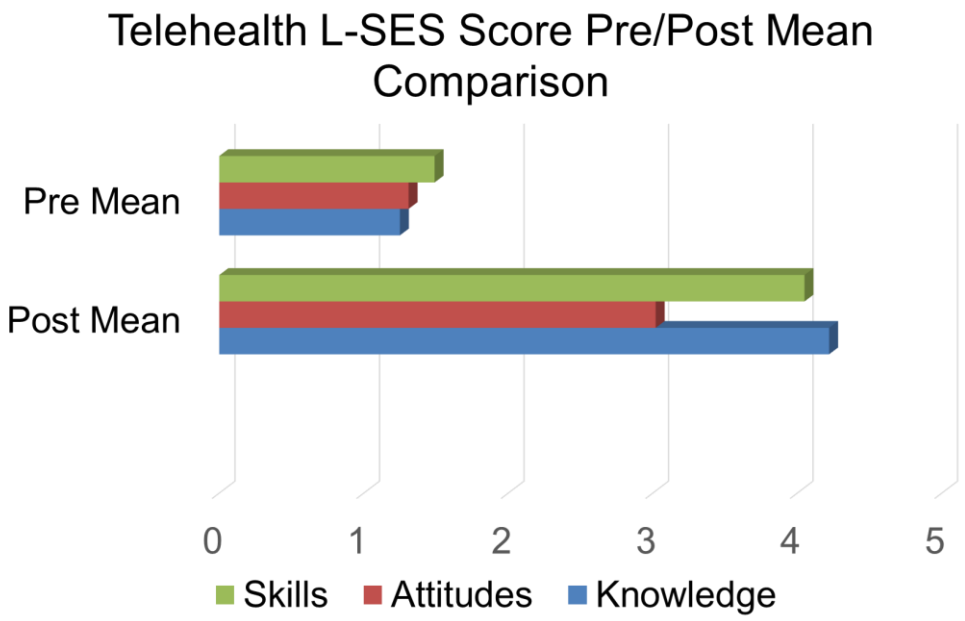
Survey Response Data



Pre/Post PC-DDPPQ Response Data

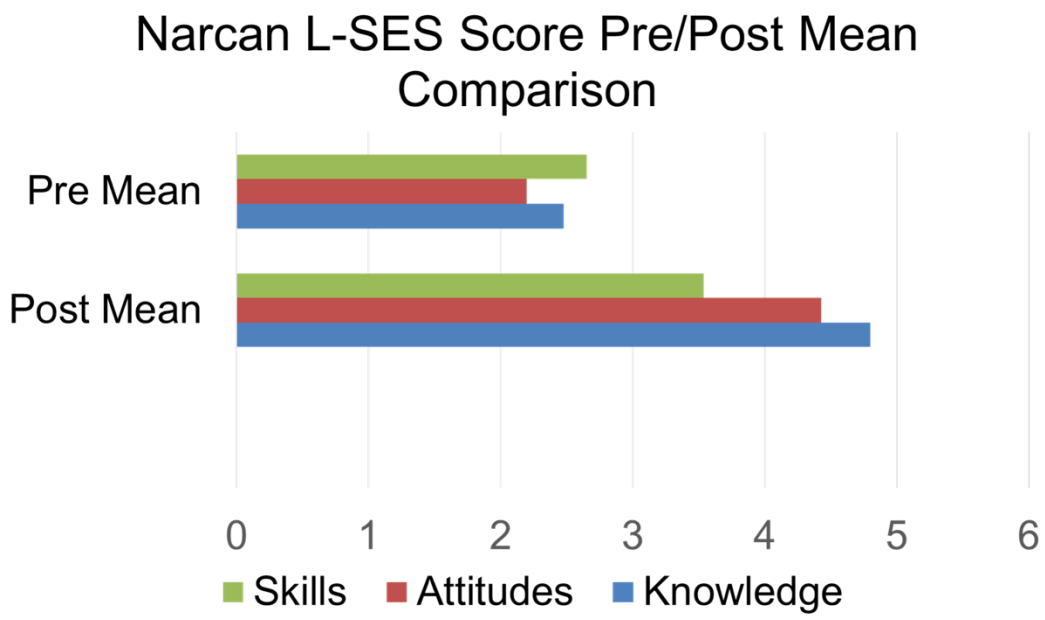
PC-DDPPQ (N=52)	Items	Pre M	Pre SD	Post M	Post SD	P-value	Cohen's D
Role adequacy	1-7	3.15	0.59	4.00	0.58	<.000	1.22
Role legitimacy	8-9	3.81	0.46	4.21	0.62	<.000	0.54
Role support	10-12	3.68	0.60	4.15	0.59	<.000	0.66
Role-related Self-esteem	13-16	3.71	0.68	3.79	1.01	0.28	0.08
Job satisfaction	17-19	3.52	0.56	3.84	0.71	<.000	0.56

Telehealth L-SES (N=52)	Item	Pre M	Pre SD	Post M	Post SD	P-Value	Cohen's D
Knowledge	1-4	1.25	0.51	4.22	0.77	<.000	3.09
Attitudes	5-8	1.38	0.62	3.01	1.10	<.000	1.48
Skills	9-12	2.48	1.16	4.05	0.90	<.000	1.09



Pre/Post Telehealth L-SES Measuring KSAs Levels

Narcan L-SES (N=52)	Item	Pre M	Pre SD	Post M	Post SD	P-Value	Cohen's D
Knowledge	1-4	2.48	1.16	4.78	0.43	<.000	1.94
Attitudes	5-8	2.20	0.89	3.55	0.94	<.000	1.12
Skills	9-12	2.58	1.08	4.43	0.66	<.000	1.75



Pre/Post Narcan Administration L-SES Measuring KSAs Levels

Discussion

- Initial data is encouraging for improved learner perceptions of:
  - Working with clients with SUD for the majority of PC-DDPPQ subscales
  - Improved self-efficacy of KSAs for telehealth and intranasal Narcan administration
  - Learner's had positive perceptions of how well their learning needs were met in the simulation environment
- This SBE provided a high-quality learning experience that allowed students to apply knowledge learned in pre-learning modules to a real-life scenario
- Similar simulations could be useful to address learning needs in healthcare and other disciplines
- Limitations:
  - Inability to assess long-term effects
  - Simulations are resource intensive

Conclusion

- Results of the evaluation determine this was an effective learning strategy
  - Positive learner feedback and assessment loop
  - Pre and post data comparison revealed improved KSA and self-efficacy levels following SBE evidenced based pedagogy

- Informs nursing faculty that utilizing innovative simulation-based education may increase student knowledge and self-efficacy in telehealth and SUD care delivery while improving perceptions related to the provision of person-centered care to clients with disorders using substances.

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Thank you

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