Washington State Department of HEALTH

INFORMING EVIDENCE-BASED REGULATION OF SIMULATION IN NURSING EDUCATION

INTRODUCTION and ACKNOWLEDGMENT

Katie Haerling, PhD, RN, CHSE

- Professor, University of Washington Tacoma School of Nursing and Healthcare Leadership
- Pro Tem Member, Washington State Board of Nursing
- Recipient, National Council of State Boards of Nursing Center for Regulatory Excellence Grant

PRESENTATION OUTLINE

- Definitions and History
- Research Aims and Methods
- Research Results
- Discussion and Regulatory Implications

DEFINITIONS AND HISTORY

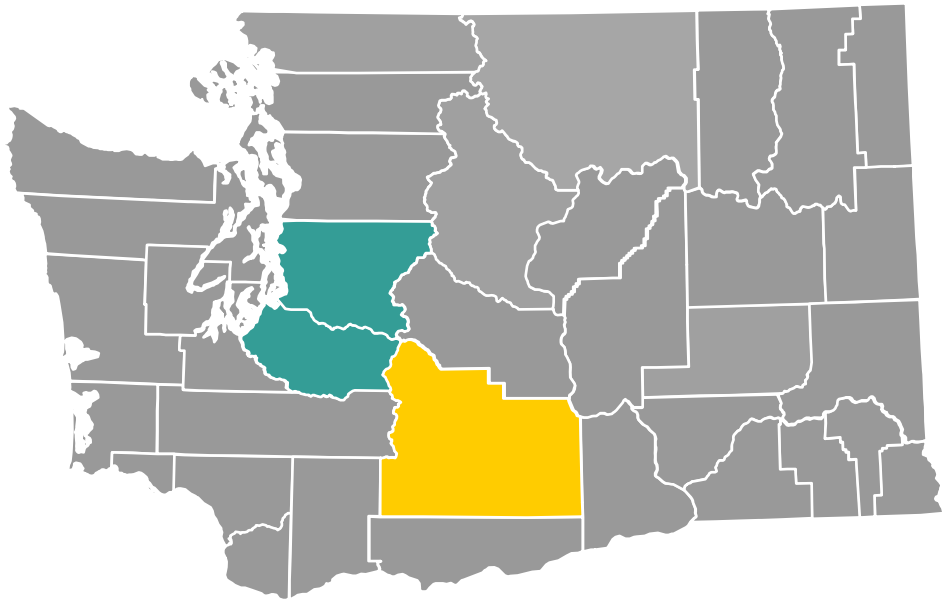
- Simulation: *A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions*. -Lioce et al. (2020)
- WAC 246-840-534 (2016): Use of simulation for clinical experiences in LPN, RN, or RN to BSN nursing education programs located in Washington state
- Increasing use of simulation in nursing education since early 2000's
- Explosion in use of screen-based simulation starting in 2020
- "Emerging evidence" to count hours spent in simulation using a 1:2 ratio (Sullivan et al., 2019)
- Legislation and rule making process in Washington State (2023-present)

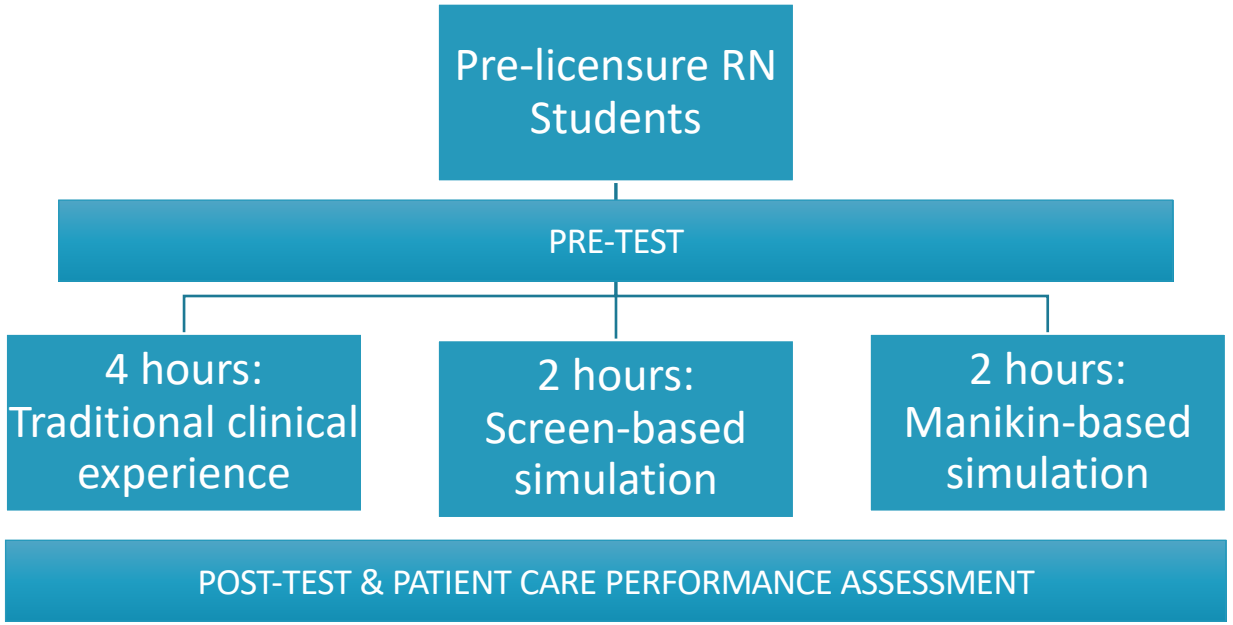
STUDY AIMS

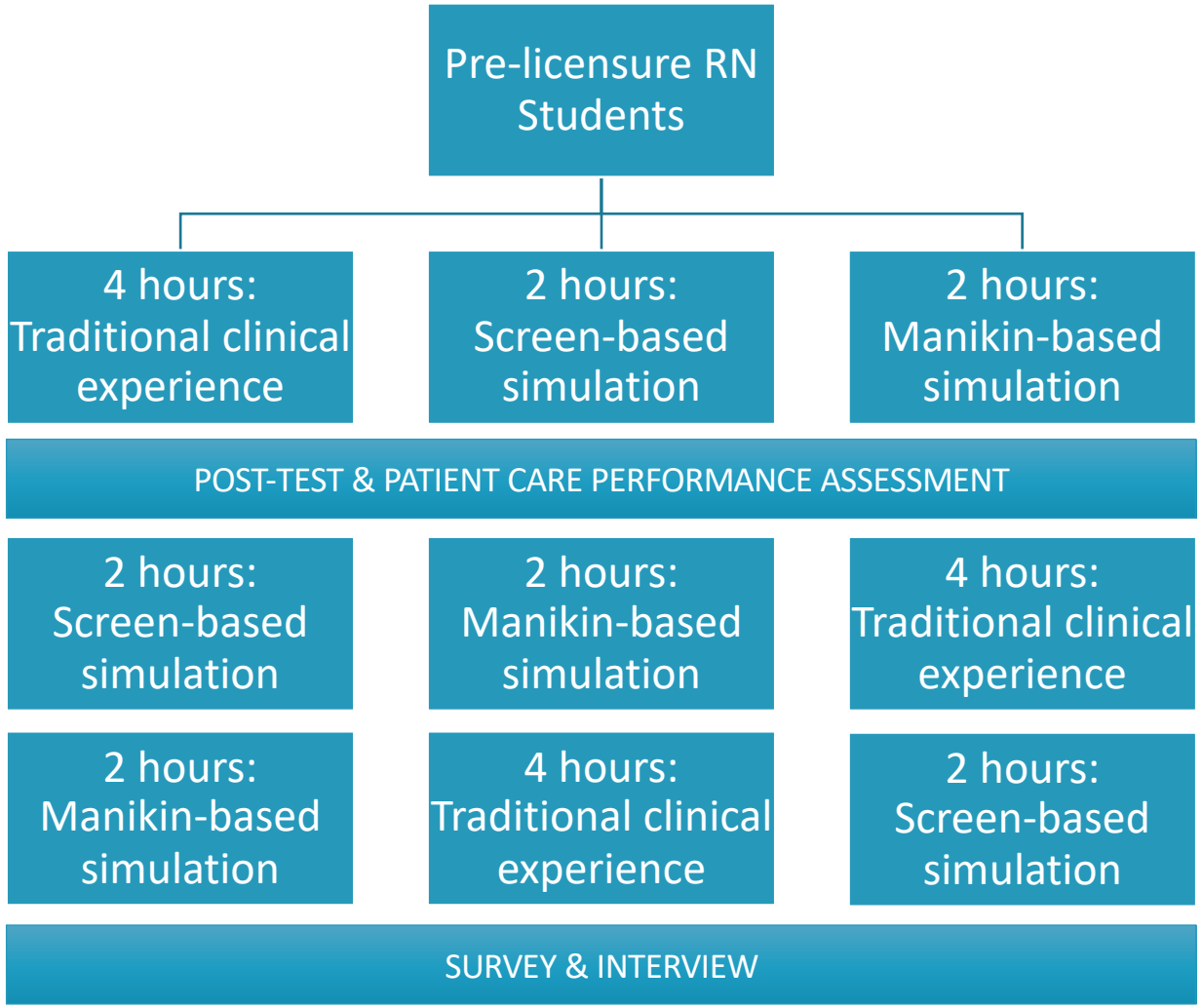
1. Assess the comparative effectiveness of the three types of experiential learning activities:
   - Traditional clinical experience
   - Manikin-based simulation
   - Screen-based simulation
2. Examine how each type of experiential learning activity informs pre-licensure registered nursing students' clinical judgements; and
3. Conduct a cost-utility analysis comparing the three types of experiential learning activities

METHODS

- Program selection
- Target demographic
- Learning activities and objectives




Pre-licensure RN Students
PRE-TEST
4 hours: Traditional clinical experience
2 hours: Screen-based simulation
2 hours: Manikin-based simulation
POST-TEST & PATIENT CARE PERFORMANCE ASSESSMENT


Pre-licensure RN Students
4 hours: Traditional clinical experience
2 hours: Screen-based simulation
2 hours: Manikin-based simulation
POST-TEST & PATIENT CARE PERFORMANCE ASSESSMENT
2 hours: Screen-based simulation
2 hours: Manikin-based simulation
4 hours: Traditional clinical experience
2 hours: Manikin-based simulation
4 hours: Traditional clinical experience
2 hours: Screen-based simulation
SURVEY & INTERVIEW

RESULTS: DEMOGRAPHICS

Total Sample Size: 152

Private institution: 59.21%

Urban location: 87.50%

BSN: 59.21%

Prior healthcare experience: 46.05%

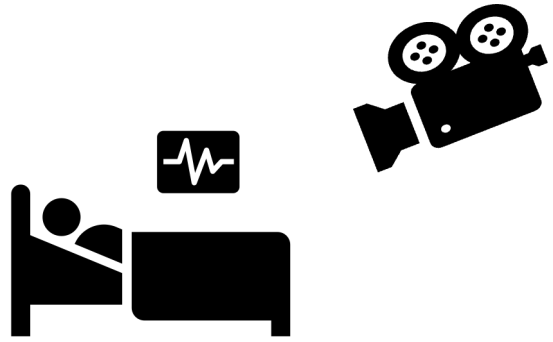
English as a first language: 87.50%

Female: 81.58%

Age range 19-53 years old (mean = 25.07 and median = 21).

AIM 1

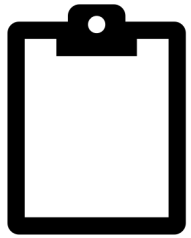
Assess the comparative effectiveness of the three types of experiential learning activities by measuring the **cognitive learning** and **patient care performance outcomes** of students who participated in 4 hours of traditional clinical activities, 2 hours of manikin-based simulation activities, or 2 hours of screen-based simulation activities



AIM 2

Examine how each type of experiential learning activity informs nursing students' clinical judgments:

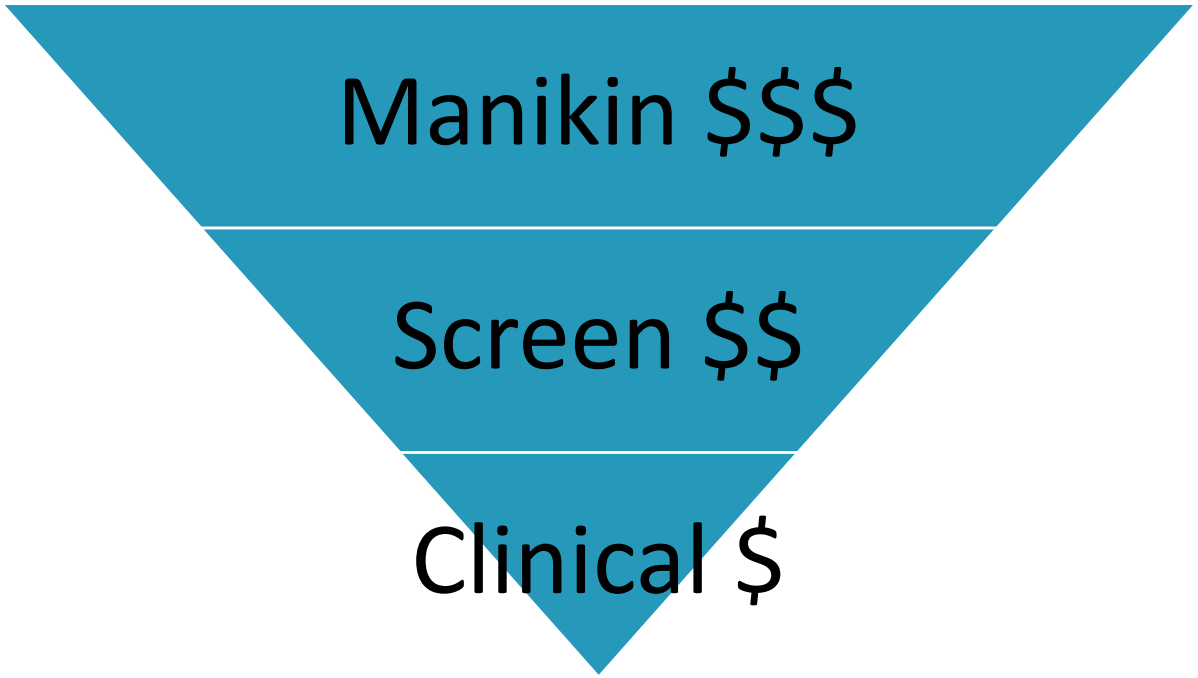
- Clinical Learning Environment Comparison Survey 2.0
- Cognitive Task Analysis Interview



AIM 3

Conduct a cost-utility analysis comparing the three types of experiential learning activities

Cost/ Utility per student

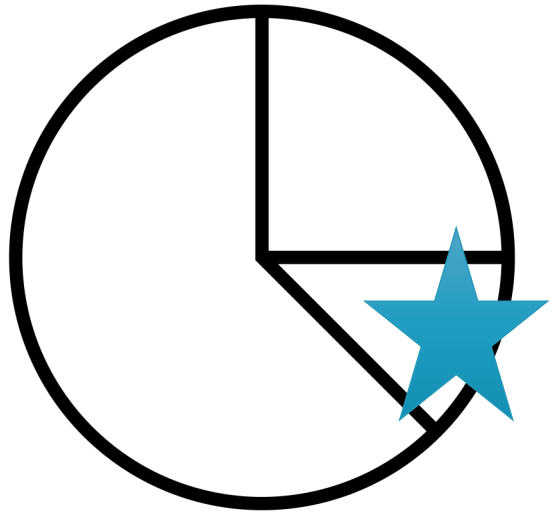


DISCUSSION

For students who were in their first clinical course, focusing on the four study-related objectives:

Those who participated in 2 hours of high-quality manikin-based simulation performed as well or significantly better on measures of cognitive learning and patient care performance than those who participated in 2 hours of high-quality screen-based simulation or 4 hours of high-quality traditional clinical activities.

POLICY IMPLICATIONS



NEXT STEPS

Haerling, K. Kmail, Z., Buckingham, A. (2023). Contributing to evidence-based regulatory decisions: A comparison of traditional clinical experience, mannequin-based simulation, and screen-based virtual simulation. *Journal of Nursing Regulation*, 13(4), 33-43.

Haerling, K. & Miller, C. (202X). A cost-utility analysis comparing traditional clinical, mannequin-based simulation, and virtual simulation activities. Accepted for publication in the *Journal of Nursing Education*.

Washington State SB 5582 Rule making process

kadamson@uw.edu

THANK YOU!

- NCSBN CRE Grant
- WABON
- Northwest University
- Seattle University
- Tacoma Community College
- Yakima Valley College

REFERENCES

Lioce L. (Ed.), Lopreiato J. (Founding Ed.), Downing D., Chang T.P., Robertson J.M., Anderson M., Diaz D.A., and Spain A.E. (Assoc. Eds.) and the Terminology and Concepts Working Group (2020), Healthcare Simulation Dictionary –2nd Ed. Rockville, MD: Agency for Healthcare Research and Quality; September 2020. AHRQ Publication No. 20-0019. DOI: https://doi.org/10.23970/simulationv2.

Sullivan, N., Swoboda, S. M., Breymier, T., Lucas, L., Sarasnick, J., Rutherford-Hemming, T., ... & Kardong-Edgren, S. S. (2019). Emerging evidence toward a 2: 1 clinical to simulation ratio: A study comparing the traditional clinical and simulation settings. *Clinical Simulation in Nursing*, 30, 34-41.