VANDERBILT
School *of* Nursing

Evaluating Collective Competence to Promote Safe, Effective Care

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Conflicts of Interest and Disclosures

- Neither the planner(s) or presenter(s) indicated that they have any real or perceived vested interest that relate to this presentation.

Learning Objectives

Develop an understanding of collective competence and its significance in nursing education

Describe a strategy for evaluating collective competence, specifically clinical judgment competence

Recognize implications for nursing education

Introduction

- Individual foundational competence is a state, not a trait (McDermott & Dreifurst, 2022).
- Similarly, collective competence, defined as "a distributed capacity of a system, not easily reducible to an individual" is dynamic and context dependent (Lingard, 2016).
- Both kinds of competence are essential for safe nursing practice.

Background

- Nurses in practice use clinical reasoning & judgment collaboratively to make decisions (Shinners & Franqueiro, 2017).
- Collective competence is influenced by individual nurse confidence and competence (Shinners & Franqueiro, 2017).
- Individual competence is necessary but not sufficient for quality healthcare (Lingard, 2016).
- Educational curricula should be purposefully designed to teach and assess clinical reasoning and judgment as it will be used in practice (Delle et al., 2023).

Study Purpose

Develop a strategy for meaningful evaluation of collective clinical judgment competence among prelicensure nursing students.

Explore the relationships among individual student confidence, perceptions of individual competence, and collective competence.

Study Design

- Formative simulation designed as an escape room
- Mixed-methods pre- and post-test design
- Simulation and surveys developed using NCSBN-CJMM as a framework
- Survey instruments contained Likert-scale items assessing student's self-confidence and perceptions of competence in both Layer 3 and Layer 4 elements of NCSBN-CJMM
- Actual competence defined as successful "escape" within one hour

Survey Instruments

- Pre-simulation survey (α =0.85)
  - 15 items
  - 5-point Likert scale (1 = strongly disagree to 5 = strongly agree)
  - Aimed at assessing individual students' confidence specific to NCSBN Layer 3 & 4 operations
- Sample item assessing confidence recognizing cues:
  - I am confident in my ability to recognize abnormal findings in patient situations.

Survey Instruments

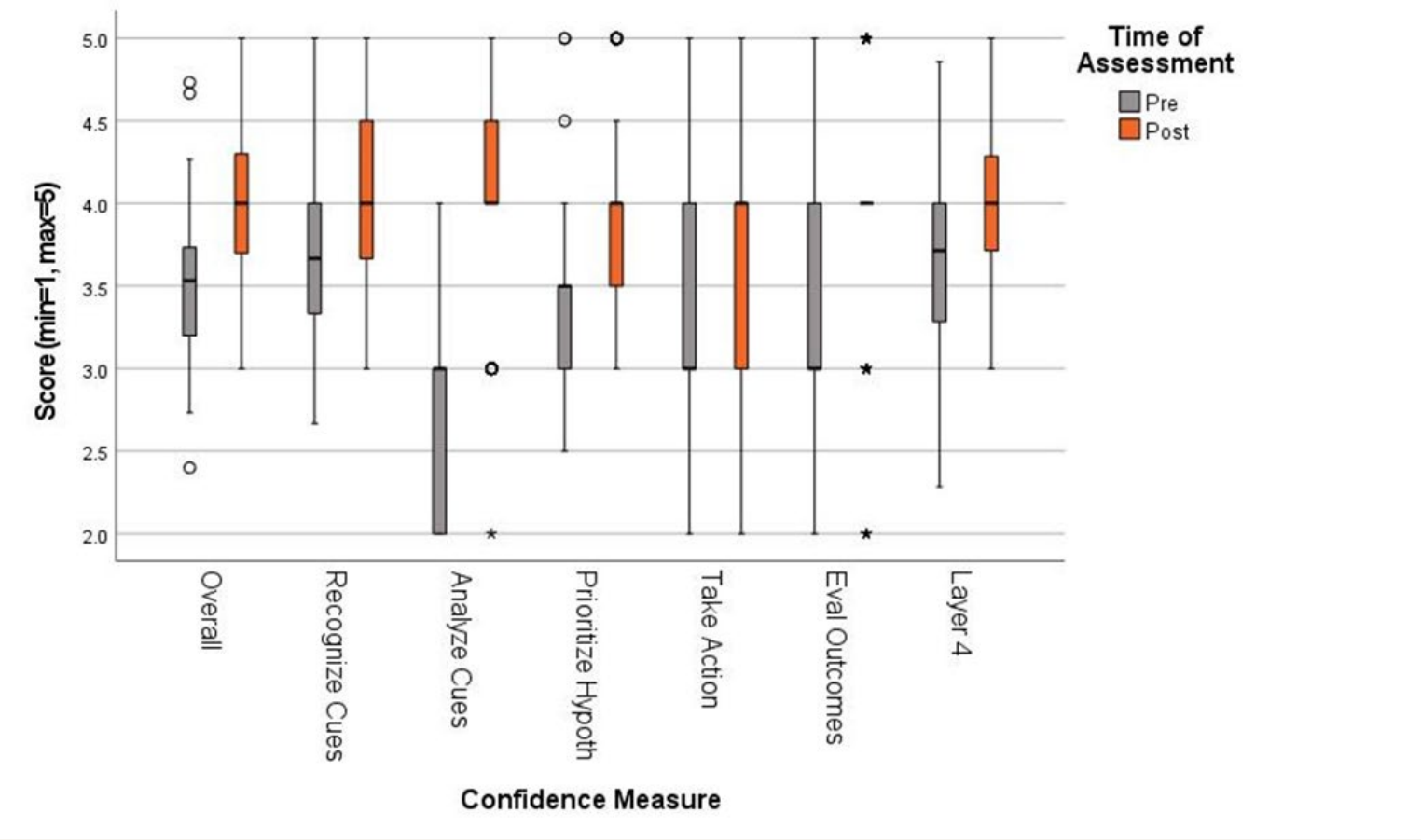
- Post-simulation survey (α =0.93)
  - 40 items
    - 15 items identical to pre-survey assessing students' confidence
    - 20 additional 5-point Likert items assessing perceived competence specific to Layer 3 & 4 elements (1 = strongly disagree to 5 = strongly agree)
    - 5 open-ended response items elicited student perceptions of learning
- Sample Likert item assessing perceived competence in recognizing cues:
  - I recognized the signs and symptoms of respiratory distress in my patient (hypoxia, tachypnea, tachycardia, etc.)

Study Results

- 17 out of 24 groups successfully "escaped"
- 137 students participated in simulation
- 79 students completed both pre-simulation and post-simulation assessments
- Response rate ≈ 57.7%

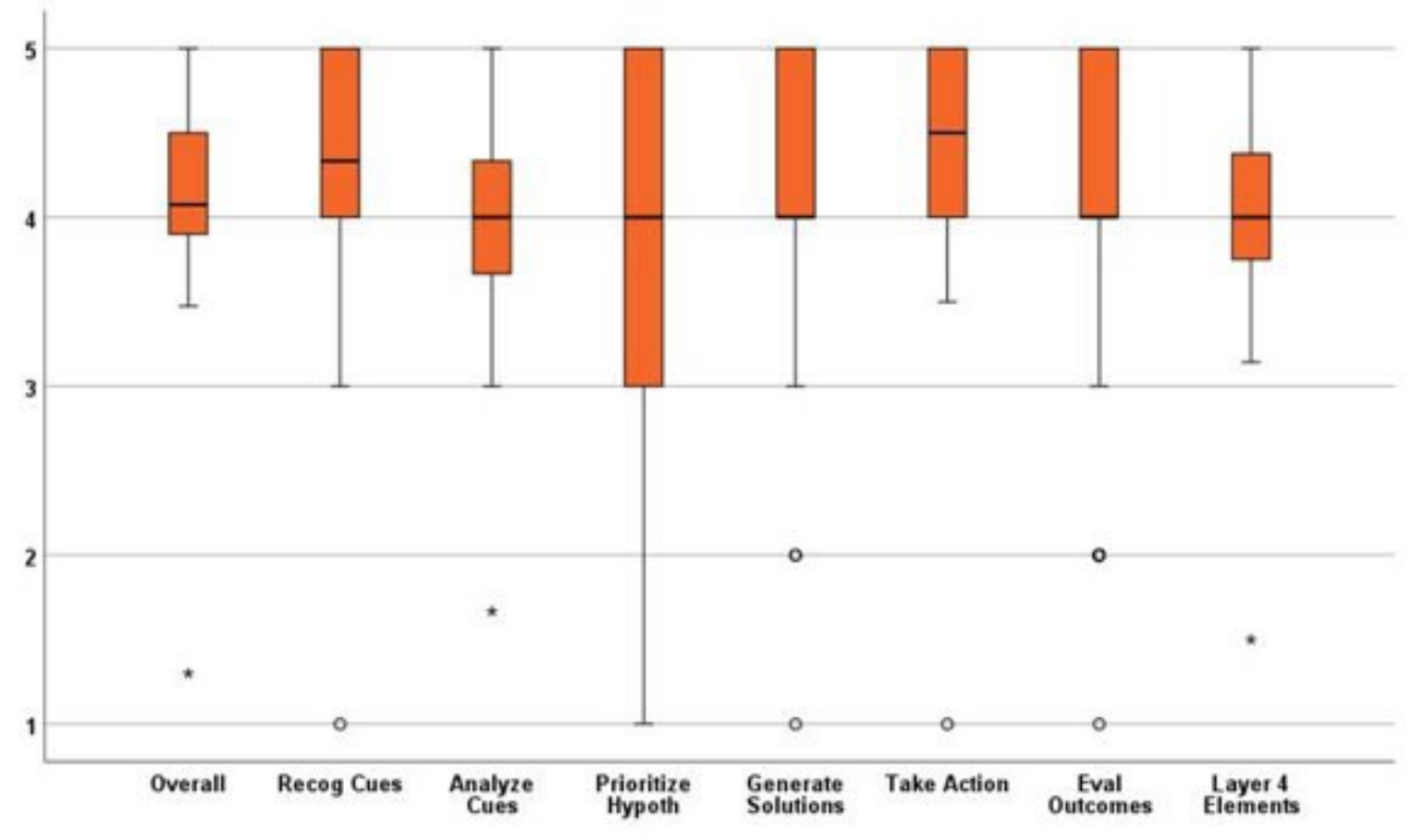
Changes in Confidence

- Change in confidence pre-simulation to post-simulation (n = 79)



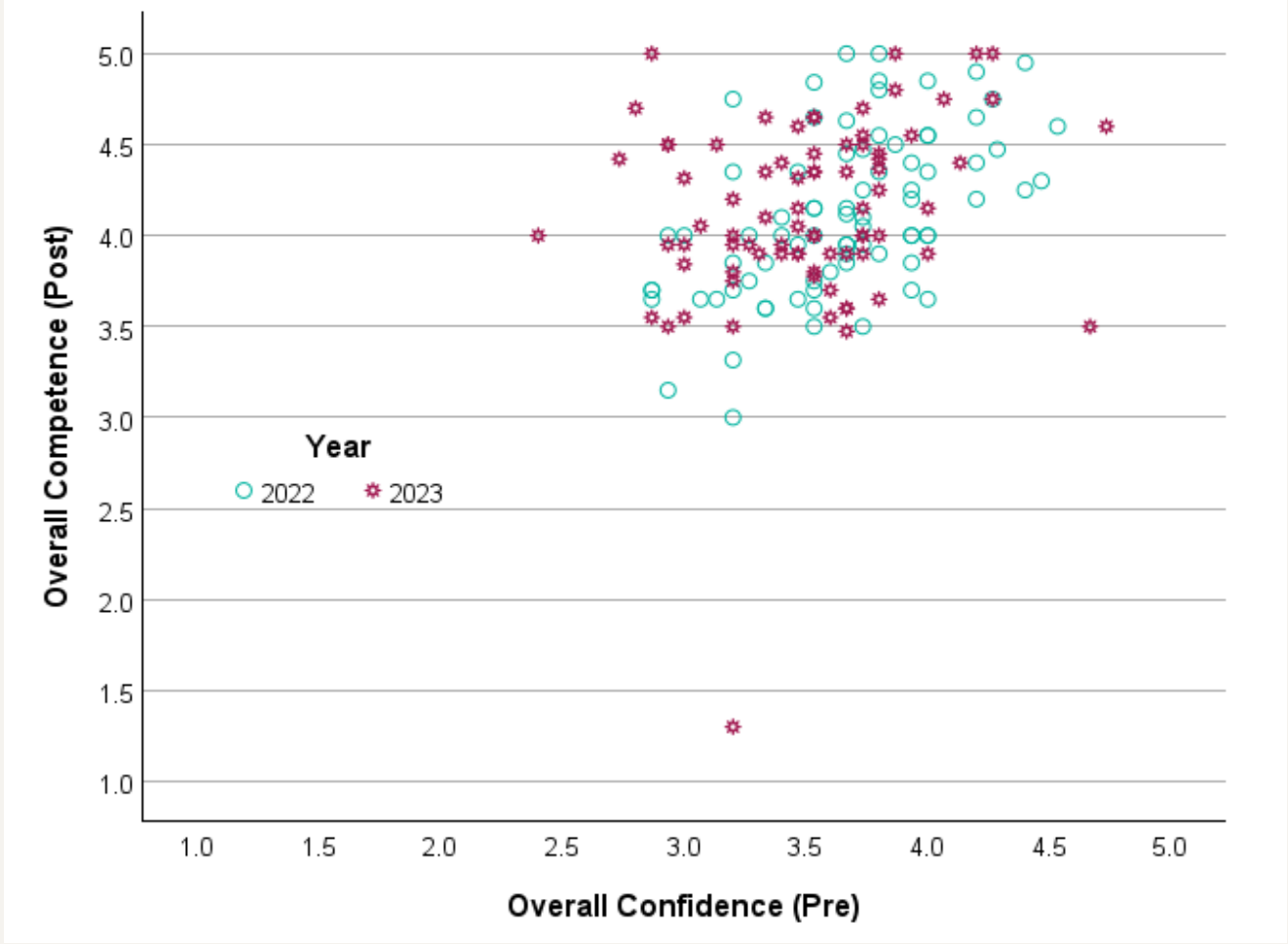
Perceptions of Competence

- Self-reported post-simulation competence (n = 79)



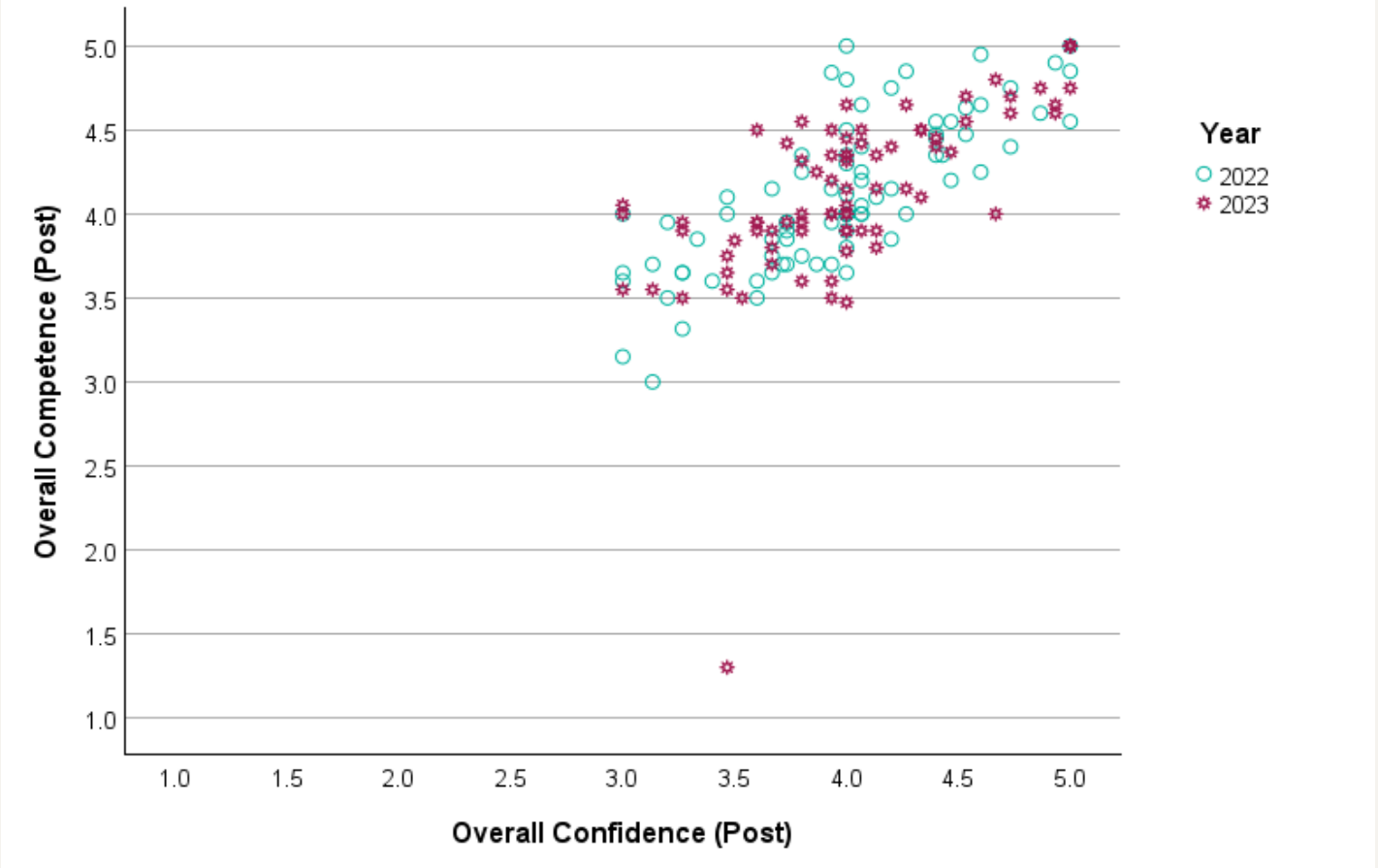
Correlating Pre-Simulation Confidence with Perceived Competence

- 2022: $r = .55$, $p < .001$
- 2023: $r_s = .23$, $p < .001$



Correlating Post-Simulation Confidence with Perceived Competence

- 2022: $r = .77$, $p < .001$
- 2023: $r_s = .72$, $p < .001$



Correlating Pre-simulation Confidence and Actual Competence (n = 18 groups)

NCSBN Category	Correlation (r_s)
Overall	.31
Recognize cues	.44
Analyze cues	.20
Prioritize hypotheses	.40
Take action	.34
Evaluate outcomes	.09
Layer 4 elements	.26

$p > .05$
$p < .05$
$p < .01$

*Group mean values for self-reported confidence were correlated with group actual performance

*No survey items evaluated confidence with NCSBN "generate solutions" operation

Correlating Post-simulation Confidence and Actual Competence (n = 18 groups)

NCSBN Category	Correlation (r_s)
Overall	.56
Recognize cues	.47
Analyze cues	.35
Prioritize hypotheses	.59
Take action	.51
Evaluate outcomes	.31
Layer 4 elements	.60

$p > .05$
$p < .05$
$p < .01$

*Group mean values for self-reported confidence were correlated with group actual performance

*No survey items evaluated confidence with NCSBN "generate solutions" operation

Correlating Perceptions of Competence and Actual Competence (n = 18 groups)

NCSBN Category	Correlation (r_s)
Overall	.66
Recognize cues	.47
Analyze cues	.66
Prioritize hypotheses	.31
Generate solutions	.63
Take action	.41
Evaluate outcomes	.49
Layer 4 elements	.63

$p > .05$
$p < .05$
$p < .01$

*Group mean values for self-reported competence were correlated with group actual performance

Discussion

- Self-confidence increased from pre- to post-simulation.
- Notable differences in correlations to actual competence exist within specific NCSBN operations (analyze cues and prioritize cues).
- Operations with highest perceptions of individual competence (take action and recognize cues) had no significant correlations to actual group competence.
- Correlations to actual competence within Layer 4 elements were some of the strongest and most statistically significant.

Implications for Nursing Education

Developing and refining instruments for assessing collective clinical judgment competence is meaningful and worthwhile.

Simulation provides the safe environment & contextual reality needed for development of individual and collective clinical judgment competence.

Curriculum should be intentionally designed to incorporate opportunities for students to engage in activities that promote progress toward collective competence (Delle et al., 2023)

References

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Question/Comments

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