Bringing Clinical into the Classroom Using Screen-Based Simulation

Monday, April 1, 2019 10:15 AM – 11:15 AM
Tuesday, April 2, 2019 10:15 AM – 11:15 AM

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Session Objectives
Following this presentation, the learner will be able to...

- Define clinical competence and screen-based simulation
- Identify how screen-based simulation can facilitate development of clinical competence
- Discuss strategies for incorporating screen-based simulation into the nursing curriculum

Laying the Foundation for Clinical Competence
Confidence versus Competence

- **Confidence**
  - one’s own belief about one’s abilities

- **Competence**
  - one’s actual ability to successfully perform what is required to achieve a favorable outcome in a clinical context

(Andreata & Lori, 2014, p. 33)

Preparation of Graduates Survey

“Overall new graduate nurses are fully prepared to provide safe and effective care in a hospital setting.”

<table>
<thead>
<tr>
<th>Nursing School Leaders</th>
<th>Hospital Nurse Executives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>89.90%</td>
</tr>
<tr>
<td>Ambivalent</td>
<td>5.80%</td>
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<tr>
<td>Disagree</td>
<td>4.40%</td>
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<td></td>
<td>10.40%</td>
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<td></td>
<td>48.10%</td>
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</tbody>
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Source: The Advisory Board (2008)

Preparation for Practice

- **Educating Nurses**
  - Expertise develops as the learner transfers skills (clinical judgment, ethical comportment, and formation) to actual patient care situations (Benner et al., 2010)

- **To Err is Human (IOM)**
  - Move away from task-based proficiencies to higher-level competencies as foundational to knowledge and skills to formulate decisions and manage care across clinical situations and settings (IOM, 2009)
Developing Clinical Competence

- Developing clinical competence requires the assimilation of clinical skills and problem-solving combined with performance-based assessment in clinical contexts, which can be replicated for predictable outcomes mastered at the novice level through simulation.

  - (Passas, 2017; Andreataa & Lori, 2014)

Benner’s (1984) Clinical Competence Model

- **Novice**
  - Lack experience, depend on context-free rules to make decisions

- **Expert**
  - No longer relies on guidelines/assorted solutions; considers fewer options; focuses on task; 5+ years

- **Advanced**
  - Operates on general guidelines; needs assistance prioritizing what is most important

- **Competent**
  - Lacks speed/ flexibility, feels sense of mastery. Develops new guidelines with existing rules; 2-3 years

- **Proficient**
  - Looks at whole picture; considers less options; zooms in on the specific task; 3-5 years

Simulation and Clinical Competence

- Educators can bridge the gap with realistic, interactive, and meaningful learning experiences through clinical simulation.
  - (Decker, Caballero, & McClanahan, 2014)

- Simulation allows students to engage in critical thinking and decision-making in a safe learning environment that takes into account student experiences, interest, and learning styles.
  - (Jeffries, 2015)
Competence Assessment: Miller’s Pyramid (1990)

- Assess learning needs and environment
  - Who are the learners?
  - What do they need to know?
- Consider expected performance / competence
  - What will the learner need to apply or demonstrate?

Does

Shows How

Knows How

Knows

- Real world performance assessment
  - clinical assessment
- Applied clinical competence
  - simulation
- Content-based assignments
  - quizzes, essays, case studies
- Knowledge 
  - multiple choice, short answer

Screen-Based Simulation and Healthcare Education

What is Screen-Based Simulation?

- Screen-Based Simulations (SBSs)
  - Use of digital technology to represent patients, populations, or other healthcare encounters on a computer screen or a mobile tablet, smartphone, or other screen-based device to impart knowledge and achieve specific learning outcomes
  - (Chang, Gerard, & Pusic, 2016; Quail, et al., 2016)
Screen-Based Simulation in the Nursing Curriculum

Advantages
- Replicable
- Portable
- Asynchronous
- Individual Pace
- Shared Across Devices
- Trackable
- Cost Effective
- Standardization
- Experiential Learning

Disadvantages
- Functional Fidelity
- Programming
- Training
- Technical Problems

Quick Tip: Make sure to fit learning objectives/outcomes with the best simulation resource.

Review of the Literature: Screen-Based Simulation and Education

• Evaluate competency and development of situation cognition
• Support knowledge, clinical reasoning, and cognitive elements of patient care
• Provide feedback related to clinical knowledge and critical-thinking skills
• Facilitate iterative performance-feedback loop, mastery learning and retention
• Develop abilities to achieve proficiency through deliberate practice

(Andreatta & Lori, 2014; Butt, Kardong-Edgren, & Ellerton, 2018; Chang & Weiner, 2016)

Review of the Literature: Screen-Based Simulation Integration

• Early introduction of virtual patient-based assessment with self-evaluations led to student identification of clinical reasoning, clinical practice focus, and clinical competence expectations (Forsberg, Ziegert, Hull, & Fors, 2016)
• Engagement in authentic nursing activities web-based virtual simulation can enhance nurses’ competencies in acute care (Liaw, Wong, Chan, Ho, Mordiffi, Ang, ..., Ang, 2015)
• Nursing students’ use of virtual patients (VPs) provides learning activities to support development of nursing knowledge and theory-practice integration (Georg & Zary, 2014)
Using Best Practices in Simulation to Create Clinical Competence

**Phase I: Planning and Pre-Briefing**
- Criterion 1: Needs Assessment
- Criterion 2: Measurable Objectives
- Criterion 10: Participant Preparation
- Criterion 7: Prebriefing

**Phase II: Scenario Implementation**
- Criterion 3: Format of Simulation
- Criterion 4: Clinical Scenario or Case
- Criterion 5: Fidelity
- Criterion 6: Facilitative Approach

**Phase III: Debriefing and Evaluation**
- Criterion 8: Debriefing
- Criterion 9: Evaluation
- Criterion 11: Pilot

(NACSL Standards Committee, 2016; Özek & Alinier, 2018)

Group Activity: Clinical Competence and the Nursing Curriculum

**Think – Pair – Share – Square**

• What challenges do you face in helping students develop clinical competence?

"High quality clinical experiences are a challenge... short patient stays, high patient acuity, disparities in learning experiences, and amount of time instructors spend supervising skills." (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014, p. S3)

Screen-Based Simulation Strategies for Clinical Competence

• Unfolding Case Studies: Exploring Course Content
  • Using a variety of instructional activities, such as animated video, multimedia, virtual patient simulation and online quizzes, the student applies knowledge in context.
  • Designed to deliver intentional content focusing on analysis, strategy and evaluation.

(Liao, S. T., Wong, L. F., Chan, S. W.-C., Ho, J. T. Y., Mordiffi, S. Z., Ang, S. B. L., ... Ang, E. N. K., 2015)
Screen-Based Simulation Strategies for Clinical Competence

Virtual Patients / Virtual Environments: Building Clinical Competence

- Using game-based technology, students enter the patient-care environment, provide collaborative care, and engage in mental rehearsal for the real world.
- Participants reported improved confidence and ability to perform psychomotor tasks. ([Taekman, et al., 2017])

Practice & Coaching
Virtual Patient Care
Debriefing & Reflection
Evaluation & Remediation

Screen-Based Simulation Scenario

Before We Begin: Pre-Briefing

Objectives
1. Participate in a screen-based simulation scenario incorporating clinical concepts in a classroom environment
2. Reflect upon the screen-based simulation experience using a structured reflective debriefing framework

What to expect:
- Screen-based scenario using real actors followed by polling questions.
- A facilitated guided debriefing and reflection will follow the simulation case.
- Group discussion will be encouraged at specific points throughout the scenario and debriefing phases.
Scenario-Specific Objectives

Upon completion of this module, the student will:

1. Use clinical reasoning to promote a positive outcome for a client who has diabetes mellitus.
2. Determine the correct dosage for prescribed medication.
3. Prioritize client care based on concepts of evidence-based practice.
4. Identify appropriate nursing interventions in the delivery of client care.
5. Apply the knowledge, skills, and clinical reasoning required to positively affect outcomes for a client who has diabetes mellitus.

Simulation Briefing

Stimulating Motivation: Sharing the Patient’s Story

01:36:41
Stimulating Motivation: Meeting The Patient

Formative Assessment
Mr. Jones states that sometimes he gets high readings that do not make sense and asks the nurse why that would be. After acknowledging his concern, what is the appropriate response by Jenny?

- Option 1: Ask the client to remind her about his concern later when they have more time to talk.
- Option 2: Ask the client to bring in his glucometer and the hospital will check it out and return it if defective.
- Option 3: Have the client review the steps for self-monitoring blood glucose (SMBG).
- Option 4: Tell the client that someone else will answer his technical question.

Practice & Feedback: Interpreting Client Results

00:18:04
Formative Assessment

Jenny reviews Mr. Jones’ blood glucose result of 396. Which of the following is a correct understanding of this finding?

- **OPTION 1:** It is within the accepted reference range
- **OPTION 2:** It is below the accepted reference range
- **OPTION 3:** It is within the post-meal reference range
- **OPTION 4:** It is above the accepted reference range

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Practice & Feedback: Collaborating with Team Members

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Formative Assessment

Jenny is preparing the insulin dose for Mr. Jones. Which of the following actions should be taken?

- **OPTION 1:** Ask another nurse to verify the correct dosage of insulin for administration
- **OPTION 2:** Ask another nurse to prepare the insulin and check the label using the patient's information
- **OPTION 3:** Take the prepared insulin to the charge nurse and ask them to administer it
- **OPTION 4:** Prepare the insulin and verify the dosage to be administered
Formative Assessment

Jenny observes that Mr. Jones appears to be confused and diaphoretic. Based on these findings, she understands that this is likely an early indication of

**OPTION 1**: Hypoglycemia

**OPTION 2**: Hypoglycemic Reaction (Nursing)

**OPTION 3**: Hypoglycemia

**OPTION 4**: Diabetic Ketoacidosis (DKA)

Practice & Feedback: Collaborating with a Team Member

0:17:42

Formative Assessment

Jenny collects data indicating that Mr. Jones has early signs of hypoglycemia. Which of the following is the appropriate action by the nurse?

**OPTION 1**: Administer insulin

**OPTION 2**: Monitor vital signs

**OPTION 3**: Request a laboratory blood glucose test

**OPTION 4**: Provide a sugar candy bar
Guided Reflection and Debriefing Our Experience

- Debriefing techniques promote critical reflection and are essential to shape student thinking in classroom, clinical post-conference and patient care settings.
  
  - (INACSL, 2015; NLN, 2015)

Debriefing: Reactions (Emotions)

- How did this scenario go?
- How do you feel about this scenario?

  - (INACSL Standards Committee, 2016; Ornstein & Alinier, 2018)
Debriefing: Analysis

▪ What was this scenario about?
▪ What happened to this patient?
▪ Why did it happen this way?
▪ How could this have been prevented?

– (INACSL Standards Committee, 2016; Oriot & Alinier, 2018)

Debriefing: Summary

▪ What worked well in this scenario?
▪ What can we learn from this case?
▪ What could have been performed in a better way?
▪ If you happen to deal with the same case at the hospital tonight, what learning point will you particularly consider?

– (INACSL Standards Committee, 2016; Oriot & Alinier, 2018)

Bridging the Gap from Classroom to Clinical with Screen-Based Simulation

Employ learning tools as instructional strategies that engage students in a more realistic manner

Provide a safe environment for learning and foster mental preparation

Support educators in creating opportunities to apply clinical judgment to practice situations

Develop clinical competence to make clinical judgments, closing the gap between theory and practice

CLASS SIMULATION CLINICAL REAL WORLD
What is your PEARL (key takeaways) from this session?

How will you apply what you learned to your SBLEs?

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References


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