Empowering Novice Nurses to Recognize and Respond to Clinical Deterioration

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• Problem
  • Novice Nurses will encounter high acuity patients who have complex medical needs early in their career
  • Likely to be first responders in critical situations and must be prepared to manage these patients
  • Strong, reliable evidence that reveals classic warning signs of deterioration and impending arrest 1-6 hours prior to the actual event

• Compelling Evidence
  • “A healthcare provider’s ability to react prudently in an unexpected situation is one of the most critical factors in creating a positive outcome in a medical emergency. Deaths due to preventable adverse events exceed deaths attributable to motor vehicle accidents, breast cancer or AIDS.” (Eder-Van Hook, 2004).
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- Evidence Supporting the Intervention
  - Classic studies
  - High fidelity simulation provides a pedagogical link between science and education (Jeffries, 2006)
  - HFS has the ability to provide nursing students with immersive, reality-based learning experiences (Parker & Myrick, 2009)
  - Simulation assists with bridging theory to practice focuses on needs of learner, and allows mastery of skills without placing patients in danger (Burdi, Wierman & Zamis, 2010)
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• Study Purpose
  • To design and test an educational strategy that prepares the novice nurse to six predictors of clinical deterioration and impending cardiac arrest in hospital patients.
    • Decrease in Glasgow coma scale scores
    • Onset of coma
    • Hypotension or SBP < 90mm Hg
    • Respirations < 6/min
    • Oxygen saturation of < 90%
    • Bradycardia lasting more than 30 mins
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- **Study Aims**
  - Novice nurses would be able to:
    - Recognize classic signs of deterioration
    - Apply theory and identify clinical signs of deterioration in the patient during high fidelity simulation
    - Feel confident that the learning objectives and needs were met during the simulation
    - Evaluate interventions and follow up appropriately
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- **Methods**
  - Convenience sampling with groups of nursing students in two different nursing programs
  - Learning module embedded in two senior nursing courses
  - Pre- and post-test delivered via LMS
  - Evaluation of clinical deterioration during simulation rubric
  - Standardized patient, scenario and case study
  - Clinical Environment Learning Survey
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- **Summary of Findings**
  - Significant improvement in written post test scores after intervention
  - Successful demonstration of applied learning and clinical reasoning in response to clinical deterioration in the high fidelity simulation scenario
  - Students response to self-survey indicated that they felt their learning needs were met
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- Implications
  - Project was successful in achieving the primary aim of educating novice nurses to recognize and respond to clinical deterioration
  - Innovation reflects a shift in focus from rescue to early recognition and intervention as the educational outcome
  - Project was implemented at two separate sites with similar results
  - Interdisciplinary education, repeated implementation and further assessment of the tool is necessary
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• Next Steps
  • Replicating the study utilizing virtual reality and incorporating haptics
  • Making skills training and simulations more realistic
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