

## Significance Statement

The implementation of additional educational strategies to undergraduate nursing curriculum may contribute to more knowledgeable and safe graduating nurses, leading to less medication error.

**P-** Undergraduate Student Nurses

**I-** Educational Strategies

**C-** No Additional Strategies

**O-** Enhanced Medication Knowledge & Competency

## Key Methodology

A two-part study that assessed the traditional educational strategy of lecture and textbook. The first half was descriptive cross-sectional that examined characteristics of pharmacological education via a questionnaire. The second half was a cross-sectional correlation survey that received medication knowledge and calculation skill data from testing. <sup>1</sup>

A cluster randomized control trial assessed the technology educational strategy. The control group in the study received a traditional handout for learning, while the experimental group received an educational e-package that focused on medication calculation. <sup>3</sup>

A quasi-experimental longitudinal design study that consisted of two groups of students in a college's pharmacology program. One group was the control group and received normal teaching strategies. The second group was the experimental group which received simulation experience based on medication administration skills. <sup>4</sup>

A descriptive study design that used an electronic survey to learn more from the leaders of a college about their curriculum regarding medication reconciliation process. <sup>2</sup>

## Key Findings

### • Traditional Educational Strategy (Lecture)

- The basic pharmacological knowledge test resulted in a mean score of 57% for diploma students and 61% for bachelor's degree students. <sup>1</sup>
- The calculation test resulted in a mean score of 53% for diploma students and 66% for bachelor's degree students. <sup>1</sup>
- Students rated their own level of readiness for medication care on a scale of 1-10. <sup>1</sup>
  - 27% rated themselves a 5 or lower. <sup>1</sup>
  - Only 15% rated themselves an 8 or more. <sup>1</sup>

### • Technology Educational Strategy

- Students involved in both cohorts were better able to perform drug calculations using the randomized e-learning package compared to receiving handouts ( $p = .027$ ). <sup>3</sup>
- Students using e-learning packages also reported greater confidence in their performance of drug calculations ( $p = .024$ ). <sup>3</sup>

### • Pharmacology-Enhanced Simulation Educational Strategy

- 94% of students strongly agreed that simulation benefited their learning of pharmacology concepts, skills, and knowledge. <sup>4</sup>
- 95% agreed that simulation improved their medication administration safety. <sup>4</sup>
- Simulation positively affects medication administration safety practices. <sup>4</sup>

### • Medication Reconciliation Educational Strategy

- 75% of education programs reported teaching medication reconciliation in the classroom. <sup>2</sup>
- Only 52.8% of leaders identified they actually provide formal training on their hospital's medication reconciliation policy. <sup>2</sup>
- Students did not consistently receive education on medication reconciliation in the classroom or clinical settings. <sup>2</sup>

## Key Practices Recommended

- Assess newly graduated nurses and undergraduate nursing students competence, confidence, and overall preparedness in regards to medication administration. <sup>1</sup>
- Assess current pharmacology curriculum to determine effectiveness of educational strategies in regards to medication competence. <sup>2</sup>
- Establish and define pharmacology curriculum expectations and mandatory inclusions. <sup>1</sup>
- Promote inclusion of various educational strategies during undergraduate nursing programs and post-graduation for newly graduated nurses. <sup>3</sup>
- Implementation of various education styles <sup>1-4</sup>:
  - Simulation.
  - Interactive e-learning programs.
  - Clinical experiences.
  - Serial testing.
- Incorporate simulation-enhanced pharmacology education to promote patient centered care and safety. <sup>4</sup>
- Implement interactive e-learning programs to improve student drug calculation as well as increase student satisfaction. <sup>3</sup>
- Promotion of different opportunities within the clinical setting increase readiness for practice. <sup>2</sup>
- Continuation of lecture with addition of serial testing supports increased competence and confidence in regards to medication administration. <sup>1</sup>

## References

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3. McMullan, M., Jones, R., & Lea, S., (2011). The effect of an interactive e-drug calculations package on nursing students' drug calculation ability and self-efficacy. *International Journal of Medical Informatics*. 80(6), 421-430. doi: 10.1016/j.ijmedinf.2010.10.021
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### Figure List

Figure 1. Nursing and Midwifery Board of Australia. (2018). Code of conduct for nurses. Retrieved from: <https://www.nursingmidwiferyboard.gov.au/codes-guidelines-statements/professional-standards.aspx>

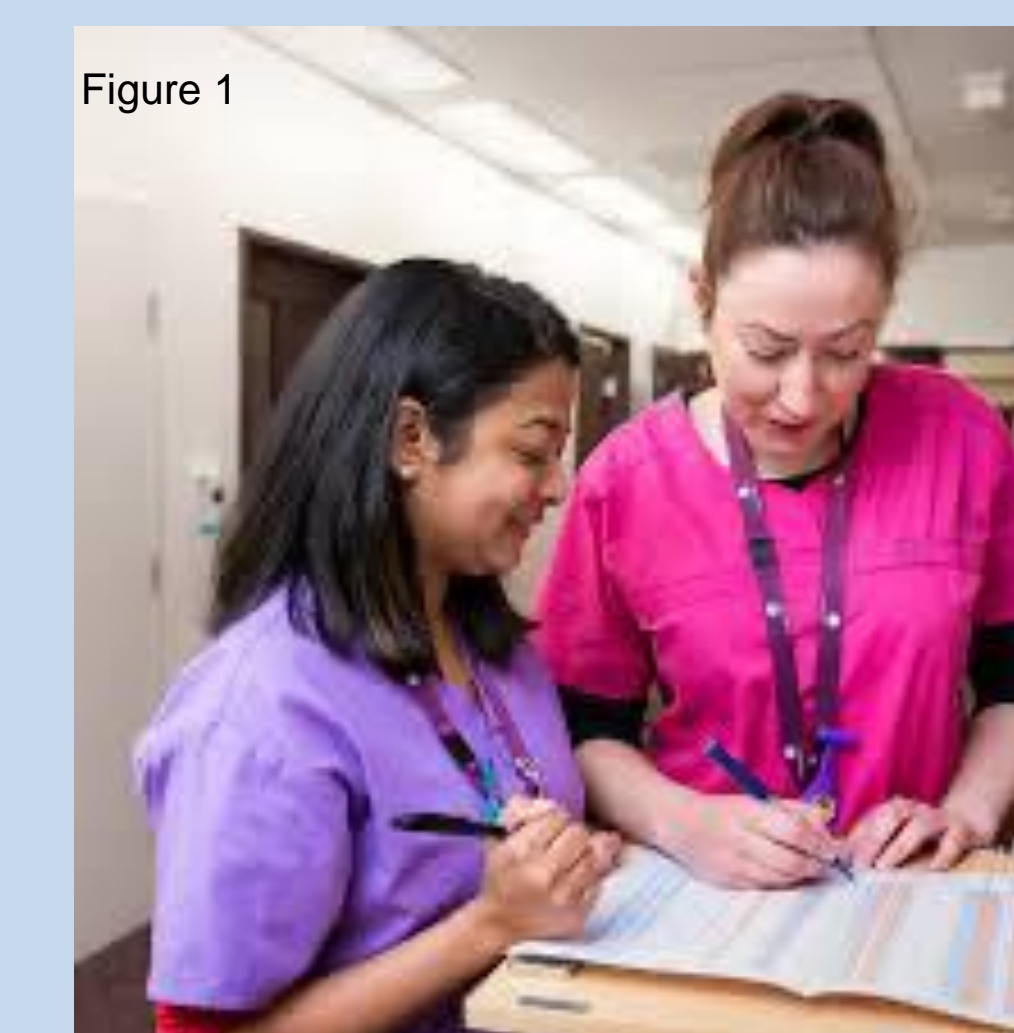


Figure 1