Examining the Effects of a Standardized Patient Simulation Experience on Decision Making, Self Efficacy and Critical Thinking

Linda Wilson RN, PhD, CPAN, CAPA, BC, CNE, CHSE, CHSE-A

July 26, 2014
Philadelphia, Pennsylvania, United States
Research

- Focus on patient safety
- The purpose of this study was to examine the effects of a standardized patient simulation experience on decision making, self efficacy and critical thinking
Location

- Drexel University, Philadelphia, PA, United States
- Study approved by Drexel University IRB
Subjects

● Students
  – Traditional undergraduate nursing students
  – Accelerated undergraduate nursing students
  – Associate degree nursing students
  – Practical nursing students
  – Medical Assistant students
Methods

● Quasi experimental design
● Pre test / Post test
● Standardized patient simulation experience as part of regularly scheduled experience
Simulation Experiences

- Medical Surgical Cases
- Ethical Dilemma Cases
- Communication Cases
- Patient Teaching Cases
Instruments

● Pre Standardized Patient Simulation Experience
  – Demographic sheet
  – Decision Making Quality Scale (DMQS) with 7 questions
  – General Self-Efficacy Scale (GSE) with 10 questions
  – Critical Thinking Disposition Scale (CTDS) with 75 questions
Instruments

- Post Standardized Patient Simulation Experience
  - Decision Making Quality Scale (DMQS) with 7 questions
  - General Self-Efficacy Scale (GSE) with 10 questions
  - Critical Thinking Disposition Scale (CTDS) with 75 questions
Decision Making Quality Scale (DMQS)

- Assesses the degree to which a person adheres to seven quality criteria of decision making
- 7 questions
- Likert scale
General Self-Efficacy Scale (GSE)

- General Self-Efficacy Scale is a 10-item psychometric scale that is designed to assess optimistic self-beliefs to cope with a variety of difficult demands in life.
- 10 items
- Likert scale
The CTDS measures the "willing" dimension in the expression "willing and able" to think critically.

- 75 questions
- Agree Strongly to Disagree Strongly
Critical Thinking Disposition Scale (CTDS)

- Subscales
  - Truthseeking
  - Open-mindedness
  - Analyticity
  - Systematicity
  - Confidence in Reasoning
  - Inquisitiveness
  - Maturity of Judgment
Data Analysis

- Data entered in SPSS version 20
- The pre-test post-test comparisons were analyzed using an analysis of covariance (ANCOVA)
- Separate ANCOVA was used for each of the dependent variables of decision making, self efficacy and critical thinking
Results

- 388 students participated in the study
  - 6 medical assistant students (1.5%)
  - 44 practical nurse students (11.3%)
  - 338 undergraduate nursing students (87%)
- Undergraduate nursing students from variety of programs
  - Associate degree nursing program (2 year program) 18%
  - Baccalaureate nursing traditional program (4 to 5 year program) 11.1%
  - Baccalaureate nursing accelerated program (11 month program) 58%
Results

● Aged 19 to 62 years with the majority between the ages of 20 to 33
● Marital status
  – 75.5% were single
  – 20.9% were married
  – 3% were widowed
  – 1.8% were divorced
● Gender
  – 16.7% were male
  – 83.3% were female
Results

- **Race**
  - 66.5% were White
  - .3% American Indian or Alaskan native
  - 7.7% were Asian
  - 21.1% were Black or African American
  - 4.4% identified as more than one race
Results

- Due to the small number of medical assistant student participants they were excluded from the pre-test post-test analysis which left a total of 382 participants
Results

- The analysis will identify the main effect (F-test) of the independent variable (the four groups [practical nurse students, associate degree nursing students, baccalaureate traditional program nursing students and baccalaureate accelerated program nursing students]) on the post-test scores of each of the dependent variables (decision making, self efficacy, and critical thinking).
- The pre-test post-test comparisons were analyzed using an analysis of covariance (ANCOVA).
- A separate ANCOVA was used for each of the dependent variables of decision making, self efficacy, and critical thinking.
Results

- The results for Decision Making were $F(2, 305) = 1.475, \ p = .230$ showing no statistically significant difference in post-test scores after initial differences were controlled through covariation.
- The results for Self Efficacy were $F(2, 304) = 1.021, \ p = .362$ showing no statistically significant difference in post-test scores after initial differences were controlled through covariation.
- The results for Critical Thinking were $F(2, 308) = .933, \ p = .395$ showing no statistically significant difference in post-test scores after initial differences were controlled through covariation.
Conclusions

The analysis showed that there was no significant difference in any of the 4 groups (practical nurse students, associate degree nursing students, baccalaureate traditional program nursing students and baccalaureate accelerated program nursing students) when examining the dependent variables of decision making, self efficacy and critical thinking following a standardized patient simulation experience.
Discussion

Possible reasons for these results include:

- Variation in the types of students
- Variation in the simulation cases
- Participant exhaustion due to the length of the pre-test and post-test
Challenges

- Length of data collection instrument
- Length of time to complete the data collection instrument
- Cost of CTDI
- CTDI data entry and analysis
Future Research

- Continued examination of the dependent variables of decision making, self efficacy and critical thinking along with other concepts important to healthcare education and patient safety
- Further examination of the subscales of decision making and critical thinking following a standardized patient simulation experience
- Examination of decision making, self efficacy and critical thinking following a human patient simulator simulation experience.
- Continued research is needed to find the simulation technique or technology with biggest impact student success and patient safety
Questions?
Thank you!

Lbw25@drexel.edu