



**Implementation and Evaluation of Home  
Health Simulation to Improve Pre-licensure  
Bachelor of Science Nursing Students'  
Learning:  
An Action Research Study**

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July 2015

# Disclaimer: Faculty Disclosure

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Conflict of Interest Statement: None

Employer: Platt College Aurora, CO. USA

Sponsorship or commercial support given-None

# Goals and Objectives

- Session Goal:

The learner will know the value of home health simulation in pre-licensure nursing programs.

- Session Objectives:

1. The learner will be able to understand the impact of student attitudes with alternative learning methods.
2. The learner will understand the impact of an action based study for making a system change using a triangulation process.

# Context, Target Population, Recruitment, & Sample

- BSN students in private, proprietary nursing program in a Midwestern metropolitan area enrolled in 300 level community health course
- Accredited by the ACEN
- Simulated home health environment
- Consented student volunteers
- Sample: 27 participants
  - June ( $n=14$ ) 5 groups of students
  - August ( $n=13$ ) 4 groups of students

# Research Questions

1. **What is the impact of the BSN student perceptions of learning with the use of home health simulation?**
  - a) Is there a statistically significant differences in nursing students' perceptions of learning after completing a home health care simulation?
  - b) What patterns of responses will be identified with the focus groups related to their perceptions of the home health learning experience?
  - c) What are the results with comparing two cohorts of students who are participating in the home health simulation that show improved student perceptions of learning as a whole?

# Literature Review

- History of High Fidelity Nursing Simulation
- Safety & Patient Care
- Home Health Simulation
- Gap:
  - Lack of evidence regarding value of home health simulation for clinical learning
  - Lack of standardizations of the process

# Theoretical Framework

## Bloom's Taxonomy

- Adult Learning Theory
- Higher levels of learning

## Kirkpatrick's Evaluation model

1. Reaction of the learning process
2. Learning that took place
3. Behavior changes\*
4. Results of the learning process

# Methodology

- Action-based research study
- Descriptive triangulation process
- Quantitative methods
  - Pre & post survey
  - Observation
    - field notes on group simulations
- Qualitative method
  - Focus group interviews
    - Grounded Theory approach

# Instrumentation Background

- Adapted/modified with permission from Colorado Center of Nursing Excellence training
- QSEN
  - Based on 5 out of 6 competencies
    - Patient-centered care
    - Teamwork & collaboration
    - Evidence-based practice (EBP)
    - Quality improvement
    - Safety
- Simulation day:
  - High fidelity mannequin used to simulate an Elderly woman in home setting

# Data Collection and Analysis

## Quantitative

- Pre and post surveys
  - 11 questions/Likert scale 1-5
- Analysis
  - Measures of central tendency
    - Nonparametric
    - Mann-Whitney U test due to small sample size
    - Software used (SPSS 22)
    - $p < 0.05/95\%$  CI

# Data Collection and Analysis

## Quantitative

- Observation tool
  - 11 questions/Likert scale 1-5
- Observation Questionnaire
  - Frequency (%) of ratings for each simulation group within each cohort

# Data Collection and Analysis

## Qualitative

- Focused group interviews
  - Focus group interviews
  - 12 open-ended guided reflection questions facilitated by researcher
  - digitally recorded & transcribed verbatim
- Analysis
  - Dedoose software
  - Axial thematic coding analyzed until saturation

# Results and Discussion

**1 a. What statistically significant differences are there with nursing students' perceptions of learning after completing a home health care simulation?**

- Pre & post survey results:
  - June Cohort:
    - Competency ( $p=0.008$ )
    - Teamwork ( $p=0.04$ )
    - Education ( $p=0.009$ )
    - Value of Home Health Simulation ( $p=0.005$ )
  - August Cohort:
    - No statistical significance noted

# Result and Discussion

**1 b. What patterns of responses will be identified with the focus groups related to their perceptions of the home health learning experience?**

- 3 themes
  1. Awareness of the value of learning through the home health simulation experience
  2. Knowledge deficit of the home health nursing role
  3. Home health care is in an unfamiliar setting

# Result and Discussion

- 1 c. What are the results with comparing two cohort of students who are participating in the home health simulation that show improved student perceptions of learning as a whole?**
- Comparing June and August cohorts with:
    - Pre/Post online survey results
    - Observation tool results

# Research Question 1c (continued)

## STRENGTHS

(Likert scale 2 or above)

- **June & Aug Cohorts**
  - Patient care\*100%
  - Communication
  - Education
  - Patient centered care Teamwork: 100%
  - Professionalism

## WEAKNESSES

(Likert scale 3 or below)

- **June & Aug Cohorts**
  - Organizational skills: June 80% & August 50%

# Final Result and Recommendations

1. What is the impact of the BSN student perceptions of learning with the use of home health simulation?
  - Enhanced learning
  - Recognized value
  - Recognized lack of knowledge
  - Identified challenges unique to care in home health setting.
  - Recognized their own limited critical thinking & decision-making skills in this unfamiliar home health nursing role
  - **Recommendations:** System change
    - Add home health simulation in course.

# Conclusion

- Simulation provides valuable clinical delivery method for pre-licensure BSN students to learn about the home health nursing role.
- Student perceptions of learning:
  - Valued high fidelity home health simulation experience
  - “Prepares you”



Questions?

# References

- AACN and CDC Partner to Advance the Public Health Nursing Workforce. (Sept 11, 2012). Press Release. Retrieved from <http://www.aacn.nche.edu/news/articles/2012/cdc-publichealth>
- Affordable Care Act of 2013. Retrieved from: <http://www.healthcare.gov/law/full/index.html>
- Attitudes. (n.d.). In Eric Thesaurus. Retrieved from <http://eric.ed.gov/?ti=Attitudes>
- Alfes, C. (2011). Evaluating the use of simulation with beginning nursing students. *Nursing Education*, 50 (2), 89-93. Retrieved from <http://www.search.proquest.com>
- American Nurses Association. (2010). *Scope and Standards of Practice Nursing*. 2<sup>nd</sup> ed. Silver Spring, MD: Nursebooks.org
- Argyris, C., & Schon, D. (1996). *Organizational Learning II Theory, Method, and Practice*. Reading, MA: Addison-Wesley Publishing Company.
- Bambini, D., Washburn, J., & Perkins, R. (2009). Outcomes of clinical simulation for *Education Perspectives*, 30(2), 79-82. Retrieved from [www.ncbi.nlm.nih.gov/pubmed/19476069](http://www.ncbi.nlm.nih.gov/pubmed/19476069)
- Bates, R. (2004). A critical analysis of evaluation practice: the Kirkpatrick model and the principle of beneficence. *Elsevier*. doi: 10.1016/j.evalprogplan.2004.04.011
- Begley, C.M. (1996). Using triangulation in nursing research. *Journal in Advanced Nursing*. 24(1), 122-128. Blackwell Science Ltd.
- Biteman, P. (2011). Use of patient simulation to improve home health nurses' skills, clinical judgment, and competency. *Home Health Care Management Practice*, 23(65), 65-66. Retrieved from <http://dx.doi.org/10.1177/1084822310382018>
- Broussard, L. (2008). Priority #1 safety; Simulation-based learning: How simulators help nurses improve clinical skills and preserve patient safety. *Nursing for Women's Health*, 12(6).doi:10.1111?j/151-486x.2008.000386.x
- Campbell, S. (2011). *Encyclopedia of Nursing Research*. Retrieved from <http://www.credoreference.com/entry/spennnurses/simulation>

# References

Center for Disease Control (2003). Morbidity and Mortality Weekly Report. 52 (6). Retrieved from <http://www.cdc.gov/mmwr>.

Clark, D.R. (2012). Design Methodologies: instructional, thinking, agile, system, or problem? Retrieved from [http://nwlink.com/~donclark/design/design\\_models.html](http://nwlink.com/~donclark/design/design_models.html)

Commission on Collegiate Nursing Education (2013). Standards and professional nursing guidelines. Retrieved from <http://www.aacn.nche.edu>

Cooper, S., Kinsman, L., Buykx, P., McConnell-Henry, T., Endacot, R., & Scholes, J. (2010). Managing the deterioration patient in a simulated environment: Nursing students knowledge, skill, and situation awareness. *Journal of Clinical Nursing*, 19 (15-16), 2309-2318. doi 10.1111/j.1365-2702.2009.03164.x.

Crytzer, M. (2011). *The effect of a high fidelity home health simulations nursing students' clinical performance*. Dissertation. ProQuest Dissertations.

Dadgaran, S. A., Parvizy, S., & Peyrovi, H. (2012). Passing through a rocky way to reach the pick of clinical competency: A grounded theory study on nursing students' clinical learning. *Iranian Journal of Nursing and Midwifery Research*, 17(5), 330-337. Retrieved from <http://www.ncbi.nih.gov.library.capella.edu>

Del Bueno, D. (2005). A crisis in critical thinking, *Nursing Education Perspective*, 26(5). Retrieved from [http://dx.doi.org/10.1043/1536-026\(2005\)026\[0278:ACICT\]2.0.CO;2](http://dx.doi.org/10.1043/1536-026(2005)026[0278:ACICT]2.0.CO;2)

Dearmon, V., Hayden R., & Lawrence, S. (2013). Effectiveness of simulation-based orientation of bacc. nursing students preparing for their first clinical experience. *Journal of Nursing Education*, 52(1), 29-38. SLACK Inc. doi: 10.3928/01484834-20121212-02.

Distelhorst, K. S. & Wyss, L. L. (2012). Simulation in community health nursing. *Clinical Simulation in Nursing*, 10(1-7). Retrieved from <http://dx.doi.org/>

Eaton, M. K., Floyd, K., & Brooks, S. (2012). Student's perceptions of simulation's influence on home health and Hospice practicum learning. *Clinical Simulation in Nursing*, 8(6), 239-247. Retrieved from <http://dx.doi.org/10.1016/j.ecns.2010.11.003>

Ellenbecker, C., Samia, L., Cushman, M., & Alster, C. (2008). Patient safety and quality in home health care. *Patient Safety and Quality: An Evidenced-based Handbook for Nurses*. Rockville, MD: Agency for Healthcare Research and Quality.

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# References

- Fanning, R. & Gaba, D. (2007). The role of debriefing in simulation-based learning. *Simulation Healthcare*, 2(2), 115-25. doi:0.1097/SIH.0b013e3180315539.
- Fero, L.J., Witsberger, C., Wesmiller, S., Zullo, T., & Hoffman, L. (2009). Critical thinking ability of new graduates and experienced nurses. *Journal of Advanced Nursing*, 65(1), 139-148. doi:10.1111/j.1365-2648.2008.04834.x.
- Finkelman, A. & Kenner, C. (2012). *Teaching IOM*. 3<sup>rd</sup> ed. Silver Spring, MD: ANA.
- Gall M., Gall, J. & Borg, G. (2007) *Educational search: An Introduction*. 7<sup>th</sup> ed. Boston, MA: Allynand Bacon Nursesbooks.org
- Gilliam, P., Pabst, P., & Spencer, S. (2013). Making high fidelity simulation relevant to the home setting. *Nurse Educator*, 38 (5), 214-217. Retrieved from <http://dx.doi.org/10.1097/NNE.0b013e3180315539>.
- Grounded Theory Institute (2008). Retrieved from <http://www.groundedtheory.com/what-is-gt.aspx>
- Guhde, J. (2011). Nursing students' perceptions of the effect on critical thinking and learner satisfaction in simple versus complex high-fidelity simulation scenarios. *Journal of Nursing Education*, 50(2), 73-78. Retrieved from <http://dx.doi.org/10.3928/01484834-2010130-03>
- Gershon, R., Pogorzelska, M., Qureshi, K, Stone, P., Canton, A., Samar, S., Westra, L, Damsky M., & Sherman, M. (2008). Home health care patients and safety hazards in the home. *Agency for Healthcare Research and Quality*. Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK43619/>
- Harper, M. (2012). Member checking: Can benefits be gained similar to group therapy? *The Qualitative Report*. 17(2), 510-517. Harper. Retrieved from <http://www.nova.edu/ssss/QR/QR17>
- Harris, K., Eccles, D.W., Ward, P., & Whyte, J. (2013). A theoretic framework for simulation in nursing: Answering Schiavenato's call. *Journal of Nursing Education*, 52(1). SLACK Inc. doi:10.3928/01484834-20121107-02
- Herr, K. & Anderson, G. (2005). *The Action Research Dissertation*. Thousand Oaks, London. SAGE Production.
- Hunter, C. & Ravert P.(n.d.). Nursing student's perceptions of learning outcomes throughout simulation experiences. *Undergraduate Research Journal for the Human Sciences* (9).Retrieved from <http://www.kon.org/urc/v9/hunter.html>

# References

Hyland, J. R., & Hawkins, M. C. (2009). High-fidelity human simulation in nursing education: A review of literature and guide for implementation. *Teaching and Learning in Nursing*, 4, 14-21. doi: 10.1016/j.tln.

Improving Patient Safety Through Simulation Research (n.d.). AHRQ. Retrieved from <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety/resources/resources/simulproj.html>

*Interpreting Results: Mann-Whitney Test* (n.d.). GraphPad Statistics Guide. Retrieved from [http://graphpad.com/guides/prism/6/statistics/index.htm?how\\_the\\_mann-whitney\\_test\\_works.htm](http://graphpad.com/guides/prism/6/statistics/index.htm?how_the_mann-whitney_test_works.htm)

IOM Report (2010). The future of nursing: Leading change, advancing health. Retrieved from <http://www.nap.edu/catalog/12956.html>

Kaddoura, M. A. (2010). New graduate nurses' perceptions of the effects of clinical simulation their critical thinking, learning, and confidence. *The Journal of Continuing Education in Nursing*, 41 (11), 505-516. Retrieved from <http://dx.doi.org/10.3928/00220124-20100701-02>

Kennedy, P. (2009). How to combine multiple research methods: Practical triangulation. Johnny Holland website. Retrieved from <http://johnnyholland.org/2009/08/practical-triangulation/>

Kim-Goodwin, Y. S., Livsey, K. R., Ezzell, D., & Highsmith, C. (2013). Home visit simulation using a standardized patient. *Clinical Simulation in Nursing*, 9 (2), 55-61. Retrieved from <http://dx.doi.org/10.1016/j.ecns.2011.09.003>

Kirkpatrick, D. & Kirkpatrick, J. (2007). *Implementing the Four Levels*. San Francisco: CA. Berrett-Koehler Publishers.

Kurt, L. (2013). Change Management Learning Center. PROSCI. Retrieved from <http://www.change-management>

LaFond, C.M. & Vincent, C.V.H. (2012). Discussion paper: A critique of the National League of Nursing/ Jeffries simulation framework. *Journal of Advanced Nursing*. 69(2). Blackwell. doi: 10.1111/j.1365-648.2012.06048.x

Mann-Whitney U test. (2014). Graphpad Software. Retrieved from [http://graphpad.com/guides/prism/6/statistics/how\\_theMann-whitney](http://graphpad.com/guides/prism/6/statistics/how_theMann-whitney)

Merry, A. & Wheeler, D. (2011). Safety in medical simulation: Overlooked or underappreciated? *Canadian Journal of Anesthesia*, 58, 789-795. Springer. doi: 10.1007/s12630-011-9544-0

# References

National Aeronautics and Space Administration, Aviation Systems Division (2014). Retrieved from <http://www.aviationsystemsdivision.arc.nasa.gov/facilities.index.shtml>

National League for Nursing (2006). NLN Laerdal Medical Summary Report. Project: Designing and implementing models for the innovative use of simulation to teach nursing care of ill adults and children: A national, multi-site, multi-method study Retrieved from: <http://www.nln.org/researchgrants/LaerdalReport.pdf>

Nehring, W. & Lashley, F. (2009) Nursing simulation: A review of the past 40 years. *Simulation Gaming*. 4, 528-55: SAGE. doi: 10.1177/1046878109332282

Nehring, W., Ellis, W., & Lashley, F. (2001). Human patient simulators in nursing education: An overview. *Simulation and Gaming*, 32(2), 194-204.

Nonparametric Statistics. (2014). What-when-how in-depth tutorials. Retrieved from <http://what-when-how.com/sociology/nonparametric-statistics/>

Norman, J. (2012). Systematic review of the literature on simulation in nursing education. *ABNF Journal*, 23, 2.23-28. Retrieved from <http://search.proquest.com.library.capella.edu/docview/1017544959?accountid=27965>

Onella, R. & Regan, M. (2013). Challenges in high fidelity simulation: Risk sensitization and outcome measurement. *OJIN: The Online Journal of Issues in Nursing*, 18 (3). doi:10.3912/OJIN.Vol18No03PPT01

Panunto, K. (2009) Simulation Technology in Nursing Education: Student Perceptions (Unpublished doctoral dissertation). Wilmington University.

Parker, B. C., & Myrick, F. (2009). A critical examination of high-fidelity human patient simulation within the context of nursing pedagogy. *Nurse Education Today*, 29(3), 322-329. doi:10.1016/j.nedt.2008.10.012; 10.1016/j.nedt.2008.10.012

Piscotty, R., Grobbel, C., & Huey-Ming, T. (2011). Integrating quality and safety competencies into undergraduate nursing, using student-designed simulation. *Journal of Nursing Education*. 50(8), 429-436. SLACK Inc. doi: 10.3928/013928/01484834-20110429-04

Preventable medical errors—the sixth biggest killer in America (2013). Newsroom. American Association on Justice. Retrieved from <http://justice.org/cps/rde/xchg/justice/hs.xsl/8677.htm>

Quality and Safety Education for Nurses (QSEN). Retrieved from [www.qsen.org](http://www.qsen.org)

# References

- Richards, E., Simpson, V., Aaltonen, P., Krebs, L., & Davis, L. (2010). Public health nursing student home visit preparation: The role of simulation in building self-confidence. *Home Healthcare Nurse*, 28 (10), 631-638. Retrieved from [www.homehealthcarenurseonline.com](http://www.homehealthcarenurseonline.com)
- Sanford, P. (2010). Simulation in nursing education. *The Qualitative Report*, 15(4), 1006-1011. Retrieved from <http://www.nova.edu/ssss/QR?QR15-4/Sanford.pdf>
- Sears, K., Goldsworth, S., & Goodman, W. (2010). The relationship between simulation in nursing education and medication safety. [Research Briefs]. *Journal of Nursing Education*, 52-54. doi:10.3928/01484834-20090918-12
- Smidt, A., Balandin, S., Sigafoos, J., & Reed, V. (2009). The Kirkpatrick model: A useful tool for evaluating training outcomes. *Journal of Intellectual & Developmental Disability*, 34(3):266-274.
- Smith, S. & Barry, D. (2013). The use of high-fidelity simulation to teach home care nursing. *Western Journal of Nursing Research*, 35, 297. doi:10.1177/019394593945911417635
- Stringer, E. (2007) Action Research. (3<sup>rd</sup>ed) Los Angeles, CA: SAGE Publications.
- Suling, L. (2007). The role of simulation in nursing education: A regulatory perspective. AACN Hot Issues Conference. Denver, CO: NCSBN Leading in Nursing Regulation. Retrieved from <https://www.ncsbn.org/Suling2.pp>
- The Kirkpatrick model of training evaluation. (2014). University of South Alabama Report. Retrieved from [www.southalabama.edu/coe/bset/johnson/660lectures/Kirkk.doc](http://www.southalabama.edu/coe/bset/johnson/660lectures/Kirkk.doc)
- Unsworth, J., Tuffnell, C., & Platt, A. (2011). Safer care at home: use of simulation training to improve standards. *British Journal of Community Nursing*, 16 (7), 334-339. Retrieved from ISSN 1462-4753. <http://nrl.northumbria.ac.uk/5265/>
- Vyas, D., McCullough, R., Dyer, C., Gregory, G., & Higby, D. (2012). Instructional design and assessment: An interprofessional course using human patient simulation to teach patient safety and teamwork skills. *American Journal of Pharmaceutical Education*, 76(4). NCBI. doi:10.5688/ajpe76471
- Wagner, D., Bear, M., & Sander, J. (2009). Turning simulation into reality: Increasing student competence and confidence. *Education Innovations*, 48(8), 465-467. Retrieved from <http://dx.doi.org/10.3928/01484834-20090518-07>
- Warland, J. (2010). Using simulation to promote nursing students' learning of work organization and people management skills: A case-study. *Nurse Education in Practice*, 11, 186-191. Retrieved from <http://dx.doi.org/10.1016/j.nepr.2010.08.007>
-

# References

Wotton, D., Davis, J., Button, D., & Kelton, M. (2010). Third year undergraduate nursing students' perceptions of high-fidelity simulation. *Journal of Nursing Education*. 49(11), SLACK Inc. doi: 10.39228/01484834-20100831-01

Yeager, S. & Gotwals, B. (2010). Incorporating high-fidelity simulation technology into community health nursing education. *Journal of Nursing Education*. 53-59. Elsevier Inc. doi: 10.10106/j.ccns.2009.07.004

Seiler, J. & Kowalsky (2012). Systems thinking evidence from colleges of business and their universities. *American and Journal of Business Education* 4(3). ProQuest Education Journals.

Stanhope, M. & Lancaster, J. (2010). *Foundations of Nursing in the Community*. 3<sup>rd</sup> ed., St. Louis, MO: Mosby Elsevier Inc.

Stringer, E. (2007) *Action Research*. 3<sup>rd</sup> ed. Los Angeles, CA. SAGE Publications.

The Essentials of Baccalaureate Education for Professional Nursing Practice (2008). American Association of Colleges of Nursing.

The Maturing of America. (2013). Retrieved from <http://www.n4a.org/pdf/MOAFinalReport.pdf>

What is Simulation? (2003). Society for Simulation in Healthcare. Retrieved from <http://ssih.org/about-simulation>