Title:
Who Decides?: Analysis of Decision-Makers in the Adoption of Virtual Patients for Nursing Education

A. J. Kleinheksel, PhD
Francisco Jimenez, PhD
Shadow Health, Inc, Gainesville, FL, USA

Session Title:
Research Poster Session 3
Slot (superslotted):
RSC PST 3: Sunday, 30 July 2017: 9:45 AM-10:15 AM
Slot (superslotted):
RSC PST 3: Sunday, 30 July 2017: 12:00 PM-1:15 PM
Slot (superslotted):
RSC PST 3: Sunday, 30 July 2017: 2:00 PM-2:30 PM

Keywords:
decision-making, technology adoption and virtual patients

References:
Agresti, A. (1996). *An introduction to categorical data analysis* (Vol. 135). New York: Wiley.

Kleinheksel, A. J. (2015) *Measuring the Adoption and Integration of Virtual Patient Simulations in Nursing Education: An Exploratory Factor Analysis* (Doctoral dissertation). University of Florida, Gainesville, Florida.

R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: https://www.R-project.org/.

Abstract Summary:
In 2015, nursing faculty responded to the Virtual Patient Adoption and Integration in Nursing (VPAIN) survey. Of the 398 participants, 194 reported being part of the decision-making process to adopt asynchronous virtual patient simulations. This presentation will describe the significant differences between the decision-makers and non-decision-makers using these innovations.
Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be able to identify which faculty are currently empowered to decide to adopt virtual patient simulations for their courses.	Analysis of the VPAIN survey results will be presented to identify significant differences between decision-makers and non-decision-makers in nursing education.
The learner will be able to describe the differences between faculty status, institution type, years of teaching experience, nursing program type, course delivery method, funding source, and amount of experience using virtual	Data will be presented to identify which faculty, types of institutions, course delivery methods, and funding sources are most likely to be empowered to make the decision to adopt virtual patient simulations.

simulations as they affect decision-making status.	

Abstract Text:

Purpose: As faculty implement more simulations into their nursing curricula, it is important to understand who is being empowered to make the decision to adopt these technologies. This study analyzed data collected as part of the Virtual Patient Adoption and Integration in Nursing (VPAIN) survey distributed in 2015, in order to identify the characteristics of those empowered in the decision-making process to adopt computer-based, interactive, and asynchronous virtual patient simulations for their courses (Kleinheksel, 2015).

Methods:

Participants: This study analyzed self-reported demographic data provided by nursing faculty who participated in the 2015 Virtual Patient Adoption and Integration in Nursing (VPAIN) survey, which was designed to identify and measure the factors related to technology adoption and integration by nursing faculty who use computer-based, interactive, asynchronous virtual patient simulations.

Instrument: The final version of the VPAIN survey instrument included four sample eligibility items, ten demographic items, seventy-one adoption items, and twenty-one integration items.

Procedure: The final version of the VPAIN survey instrument was open to participants February 23, 2015 through March 30, 2015. The population of nurse educators using virtual patient simulations was identified through convenience and snowball sampling.

Analysis: The researchers conducted a multiple logistic regression analysis to predict decision-makers in the adoption of virtual patient simulations ("Were you part of the decision-making process to adopt the virtual patient you use in your course? 1 = Yes, 0 = No) using the following predictors: institution type, teaching in a Licensed Practical/Vocational Nursing program (LPN/LVN), teaching in a Bachelor of Science in Nursing program (BSN), teaching in an RN-to-BSN program, teaching in a Master of Science in Nursing program (MSN), teaching in a Doctor of Nursing Program (DNP), current faculty status, years teaching in a nursing program, course delivered face-to-face, course delivered web-enhanced, course delivered fully online, course length being traditional semester, course length being accelerated semester, number of semesters faculty used a virtual patient program, and who currently pays for the virtual patient program. A full model was fit with all the previously detailed predictors, as existing literature identified them as being potentially relevant to best predict the likelihood of being empowered to make the decision to adopt a virtual patient simulation. The multiple logistic regression model was fit using maximum-likelihood estimation (Agresti, 1996). AIC and deviance D values were used as model comparison indices between a constant only (baseline) and full models. The models were fit using the glm function of the package stats in R (R Core Team, 2015).

Results: The baseline model had an AIC value of 372 and a deviance D value of 370.01. The full model including all predictors had an AIC value of 339.42 and a deviance D value of 259.42, which indicated better model fit in comparison to the baseline model. Table 1 shows that teaching in an RN-to-BSN program (log odds = 1.015), teaching in a Master of Science in Nursing program (MSN) (log odds = -1.250), and teaching in a Bachelor of Science in Nursing program (BSN) (log odds = -1.427) were significantly associated with being a decision-maker, controlling for all other variables in the model ($p < .05$). Regarding faculty status, holding a positions as a Clinical Assistant Professor (log odds = 2.004), Instructor (log odds = 1.893), Assistant Professor (log odds = 2.246), or Associate Professor (log odds = 1.277) were significantly associated with being a decision-maker, controlling for all other variables in the model ($p < .05$). Years of teaching experience also had a significant effect. Model results showed that the more experience the faculty had, the higher the odds of being a decision-maker (log odds ranging from

2.228 for 2 and 4 years to 4.376 for between 21 and 25 years). In addition, compared to having used the virtual patient program for one semester, faculty who had been using it for three semesters (log odds = 1.296), four semesters (log odds = 1.412) or more than four semesters (log odds = 1.391) were more likely to be a decision-maker in adopting. Institution type, course delivery method, course length, and who currently pays for the virtual patient program were not significantly associated to being involved in the decision-making process.

Conclusion: With the increased number of pedagogical innovations available to educators, it is important for faculty and administrators to understand who is being empowered to make the decision to implement a given technology. In the case of virtual patient simulations, the institution type at which a faculty taught, the delivery method of their course, and funding source do not affect a faculty's decision-making status. However, RN-BSN, MSN, and BSN faculty, faculty with more experience, and Clinical Assistant Professors, Instructors, Assistant Professors, and Associate Professors are more likely to have the authority to decide to adopt virtual patient simulations.