Using Simulation to Teach Change Management Principles

Dr. Jenny Skelton, Dr. Jack Smothers
University of Southern Indiana

ABSTRACT

Background: For many U.S. healthcare management positions, a master's prepared individual is customary, but the opportunity to minimize diversity in graduate preparation on critical Quality Improvement (QI) skill sets remains. ***Objective:*** This study aimed to determine if there was a significant difference in the Self-Perception of Change Management Competency (SPCMC) after administering the Change Management Simulation Power and Influence V3 (Judge & Hill, 2020). This study also aimed to compare the competency scores of healthcare industry students and non-healthcare industry students after the simulation. ***Method:*** Study participants included a convenience sample of graduate business administration students from a mid-sized midwestern university enrolled in the program's required management course. Pretest and posttest data analysis included paired *t*-tests. Two-group comparison data analysis included the independent *t*-test. Additional competency statement analysis was performed, and trends were identified. ***Results:*** This study found a statistical difference between mean pretest and posttest sum scores on the SPCMC instrument. There was no difference in mean SPCMC posttest scores between non-healthcare industry and healthcare industry students. ***Discussion:*** The simulation intervention increased the self-perception of competency, demonstrating that the simulation was an effective teaching method. Additional exploratory analysis of the change management competency statements revealed that the subgroup of healthcare industry students brought to class a lower perception of change management competency. Posttest scores showed no significant difference between groups, indicating alignment of competency levels after the simulation.

INTRODUCTION/GROUNDING

Healthcare's complexity highlights the need for robust change management skills among leaders. While master's degrees are standard for many healthcare management roles, educational diversity results in varying skill levels. Students may learn many change management theories, and various methods have been used to deliver such quality improvement education. Simulation, an educational approach that garnered considerable attention in healthcare over the past two decades, provides systematic training and assessment tools tailored for clinical and non-clinical healthcare personnel (Gaba, 2007). Pringle et al. (2010) studied using a simulation tool to teach healthcare change management. However, while research in healthcare simulations has expanded, studies outside business education remain limited (Hallinger & Wang, 2020).

METHODS

In this pretest-posttest study, conducted in May–September 2023, ninety-six participants completed an IRB-approved Qualtrics survey, which obtained informed consent. The SPCMC assessment instrument, based on the National Association for Healthcare Quality (NAHQ) Competency Framework, used a 1-4 scale: novice to mastery (NAHQ, 2017). Students ranked their perceived level of competency on 12 change management ability statements, such as describing the value of a needed change to coworkers and explaining the stages of behavior that may occur when experiencing a workplace change. Participants had a mean age of 34.8 years and 9.4 years of professional experience.

Students engaged with the Change Management Simulation: Power and Influence V3®, role-playing as change agents in four manufacturing scenarios (Judge & Hill, 2020). In this online simulation, published by Harvard Business Publishing Education, students role-play as a change agent to gain insight into why individuals might resist change, better appreciate the change agent's power, and how to avoid common missteps (Judge & Hill, 2020).

Self-Perception of Change Management Competency (SPCMC) Instrument	
1 = Novice – a person new to or inexperienced in a field 2 = Emerging proficiency – gaining knowledge or becoming skillful in a field 3 = Competent – have the necessary ability, knowledge or skill to be successful in a field 4 = Master – have the comprehensive knowledge or skill to command a field	
SPCMC 1	I can compare and contrast different change models
SPCMC 2	I can apply a standard change management model or framework (e.g., Lewin, Kotter, Rogers, Kubler-Ross) to support workplace improvements
SPCMC 3	I can describe the value of a needed change and how it applies to my coworkers
SPCMC 4	I know how to encourage a change management strategy through the workplace
SPCMC 5	I can explain the stages of behavior that may occur when experiencing a workplace change and what to expect at each stage
SPCMC 6	I can discuss how the use of change management principles and tools impacts peoples' responses to workplace changes
SPCMC 7	I can collaborate with participants in my workplace to plan and carry out change and create buy-in
SPCMC 8	I know how to apply change management tools relevant to the separate phases when making a workplace change
SPCMC 9	I know how to use change management tools (e.g., Stakeholder Analysis, Elevator Speech) to analyze employee acceptance, influence, or resistance to change
SPCMC 10	I can evaluate the impact of change efforts (e.g. impact analysis and assess change readiness)
SPCMC 11	I can coach leaders on change management processes and tools
SPCMC 12	I know how to implement a variety of strategies to reduce the barriers that can block lasting change

Category	Subcategory	Number (%) of Participants
Gender	Male Female Prefer not to say	41 (42.7%) 54 (56.3%) 1 (1.0%)
Age (years)	20-29 30-39 40-49 50-59	34 (35.4%) 34 (35.4%) 18 (18.8%) 10 (10.4%)
Work primarily in what industry	Construction Healthcare Manufacturing Other Retail Technology	2 (2.1%) 20 (20.8%) 22 (22.9%) 36 (37.5%) 11 (11.5%) 5 (5.2%)
Years of experience in primary industry	1-5 6-10 11-15 16-20 21-25 26-30 30+	40 (41.7%) 24 (25.0%) 15 (15.6%) 7 (7.3%) 5 (5.2%) 4 (4.2%) 1 (1.0%)
Where most of work experience has taken place	Outside of the U.S. U.S. Midwest U.S. Northeast U.S. Northwest U.S. Southeast U.S. Southwest	1 (1.0%) 71 (74.0%) 9 (9.4%) 2 (2.1%) 10 (10.4%) 3 (3.1%)

RESULTS

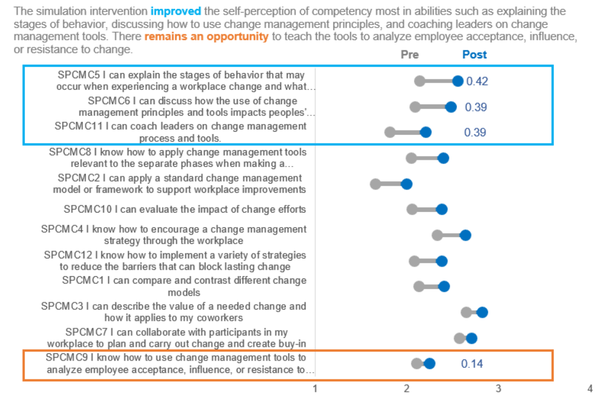
The simulation was an effective intervention for raising the self-perception of change management competency. Additional exploratory analysis of the change management competency statements revealed that the subgroup of healthcare industry students brought to class a lower perception of change management competency than the subgroup of non-healthcare industry students, as they had a lower mean pretest sum score on every competency statement except one. However, posttest scores showed no significant differences between groups, indicating alignment of competency levels after simulation. The simulation intervention improved the self-perception of competency most in three key dimensions of change management: explaining the stages of behavior, discussing how the use of change management principles and tools impact people, and how to coach leaders on change management processes and tools. Also, the simulation was least impactful in educating students on using change management tools to analyze employee acceptance, influence, or resistance and collaborating with coworkers to plan, carry out change, and create buy-in.

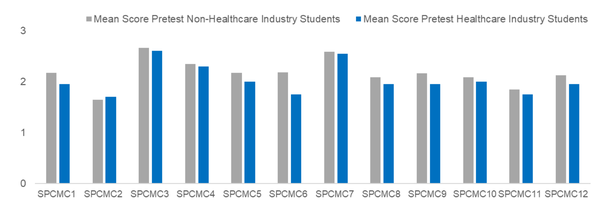
Comparing the Means of Two Related Groups (Paired-samples *t*-test)							
Study Objectives 1 & 2	Pretest Mean	Pretest Standard Deviation	Posttest Mean	Posttest Standard Deviation	Paired Differences Mean	Two-Sided *p* Value	Effect Size
SPCMC Sum Score (All Students N=96)	25.70	7.83	29.24	7.16	3.54	<.001	0.62
SPCMC Sum Score (Sub-group of Health-care Industry Students N=20)	24.45	7.90	30.20	8.43	5.75	.003	0.77

Differences Between Groups (Independent *t*-test) Non-Healthcare Industry Students and Health Industry Students							
Study Objective 3	Non-Healthcare (N=76)		Healthcare (N=20)				
	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	*p*	Effect Size
SPCMC Posttest Sum Score	28.99	6.82	30.20	8.43	1.21	.503	.17

DISCUSSION

The study effectively addressed all objectives. This study demonstrated simulation as a valuable teaching tool, with future opportunities to include training on using change management tools (e.g., Stakeholder Analysis, Elevator Speech) to analyze employee acceptance, influence, or resistance to change.





LESSONS LEARNED

Further investigation is needed regarding the interesting finding that healthcare professionals started with a lower self-perception of competency in every ability statement except one. Also, future research could involve repeating this study in graduate healthcare programs to conduct a more comprehensive analysis of the results among healthcare professionals. Additionally, it is recommended to explore simulation for teaching change management skills to emerging healthcare leaders across various disciplines, using healthcare-based simulation scenarios. This educational approach could also be applied in other graduate health programs that focus on developing leaders in health administration, nursing, occupational therapy, and similar fields.

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REFERENCES

Gaba, D. M. (2007). The future vision of simulation in healthcare. Simulation in Healthcare, 2(2), 126-135. https://doi.org/10.1097/01.SIH.0000258411.38212.32
Hallinger, P., & Wang, R. (2020). Analyzing the intellectual structure of research on simulation-based learning in management education, 1960-2019: A bibliometric review. *The International Journal of Management Education, 18*(3), Article e100418. https://doi.org.10.1016/j.ijme.2020.100418
Judge, W. Q., & Hill, L. A. (2020). Change management simulation: Power and influence V3. Harvard Business Publishing. https://hbsp.harvard.edu/product/7611-HTM-ENG
National Association for Healthcare Quality. (2017). HQ essentials: Competencies for the healthcare quality professional. NAHQ.
Pringle, J. D., Nippak, P., & Isaac, W. (2010). Simulations as an instruction tool to teach healthcare change management: The influence of repeat simulation testing, gender, and additional instructions on performance scores? *The Journal of Health Administration Education, 27*(1), 27-43.