

The Impact of Cognitive Aids in Simulation Learning on Perception of Clinical Preparedness

Alyssa Cinquemani BSN, RN, SRNA & Emily Jones BSN, RN, SRNA

Project Chair: Steven Fowler DNAP, CRNA, Project Mentor: Susan Wright PhD, CRNA, Project Reviewer: Carolyn Ramsey PhD, ARNP, RN
AdventHealth Doctor of Nurse Anesthesia Program

Problem

How do Student Registered Nurse Anesthetists (P) using cognitive aids during clinical simulation learning scenarios (I) perceive their clinical preparedness (O) compared to Student Registered Nurse Anesthetists in clinical simulation learning scenarios without cognitive aids (C)?

In Student Registered Nurse Anesthetists at AdventHealth University in graduating cohort 2023 (P), does simulation learning scenarios with the use of the Stanford Emergency Manual as a cognitive aid (I) compared to simulation learning scenarios without a cognitive aid (C) affect the Student Registered Nurse Anesthetists' perception of clinical preparedness (O) within one academic trimester (T)?

Methods

Project Design
Quality Improvement studies (QI) and Quality Assessment (QA) studies
Quasi-experimental design that is both quantitative & prospective.

Inclusion Criteria
SRNAs admitted to the DNAP program and completed DNAP 725, DNAP 735, and DNAP 740 (prerequisites for DNAP 701)

Exclusion Criteria
SRNAs who exit the DNAP program prior to beginning the third trimester of learning.

Theoretical Framework

Bandura's Social Cognitive Theory of Self-efficacy

- Highlights the relationships between cognitive, behavioral, personal, and environmental factors in determining an individual's motivation and behaviors.
- Supports the notion that individuals perform superiorly in difficult situations if they have a high self-perception of efficacy.

When SRNAs participate in simulation learning there is potential for improvement of self-efficacy that could expand their perception of preparedness for clinical practice as students. Sending SRNAs into the clinical environment who feel prepared benefits nurse anesthesia education and practice.

Discussion & Implications

Education of SRNAs should rely on evidence-based practice to ensure they contribute to the growth of the anesthesia profession. These improved self-efficacy scores benefits nurse anesthesia education and practice by increasing perception of preparedness of SRNAs. AHU DNAP course 701 is in alignment with the evidence-based practice recommendations based on the findings of this scholarly project. It can be theorized that SRNAs who perceive themselves as clinically prepared will perform better in real world practice but further research to investigate this is warranted.

Literature Review

Use of cognitive aids

The body of evidence did not reveal what cognitive aid method was superior but rather urges the various disciplines to use the cognitive aid that best suits its user's needs. The implementation of cognitive aids were almost exclusively done in a simulated learning scenarios so that patient care was not affected. This limits the evidence that cognitive aids will change real-world practice (Clebene, 2020; Gangadharan, 2018).

Barriers to implementing cognitive aids into clinical practice

Cognitive aids have not been fully embraced during emergencies, but increasing their availability lead to more frequent use (Clebene, 2020; Gleich, 2019, Gangadharan, 2018; Mazer et al., 2017; Storm, 2016)

Users' perceptions of cognitive aids

When cognitive aids were used in simulation learning, user's reported improved perceptions of preparedness and self-efficacy as compared with simulation experiences without cognitive aids (Gangadharan, 2018; Gardner, 2018; Martin, 2017; Tujague, 2019).

Results

- Pre-intervention General Self-efficacy Scale Results:
 - Mean: 29.4
- Post-intervention General Self-efficacy Scale Results:
 - Mean: 32.07
- Pretest mean values increased from 29.4 to posttest mean values of 32.07
- The obtained p value ($p = .016$) signifies that the use of cognitive aids in simulation learning has a statistically significant impact on SRNA's perception of clinical preparedness as measured by the GSE.
- This provides strong evidence for the continued use of cognitive aids in simulation learning at AHU.

More Results

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	29.4000	15	3.92428	1.01325
	PostTest	32.0667	15	4.93481	1.27416

Illustration



Conclusions

This scholarly project found that a positive statistically significant correlation exists between SRNAs perception of clinical preparedness and the use of cognitive aids in simulation learning.

These findings allow for evidence-based recommendations to be made to key stakeholders to include cognitive aid use in simulation learning in SRNA education.

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