Leadership in Action: Innovative use of TeamSTEPPS and Intraprofessional & Interprofessional Simulation that Extends the Boundaries of the Classroom

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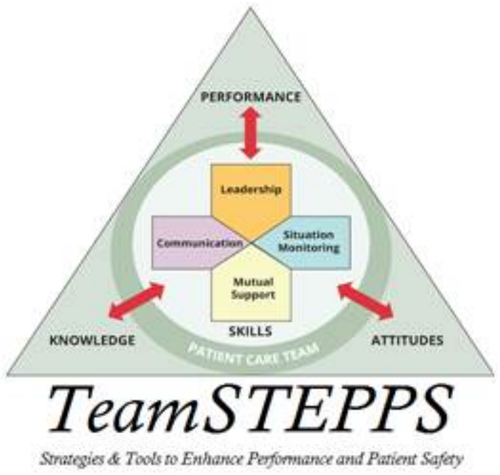
Background

Nurse practitioners (NP) must be prepared to lead teams to meet the needs of an evolving health care system. Transitioning from a bedside nurse to a provider role is a significant challenge for students. Nurse educators tasked with preparing NP students must identify new teaching modalities to prepare students to lead in complex care settings.

TeamSTEPPS, an evidence-based framework, focuses on developing high functioning interprofessional teams. Integrating TeamSTEPPS training and providing students opportunities to apply the framework with "real" patients and followers in simulation may strengthen teamwork and the ability to lead.



Purpose

The purpose of this poster is to demonstrate the benefits derived from using teamwork simulations in the undergraduate and graduate level nursing curriculum. The poster highlights outcomes from a simulation focused teaching strategy using intraprofessional, interprofessional education (IPE) to examine the impact of TeamSTEPPS training on nurse practitioner (NP) students' ability to lead in the provider role.

Methods

Faculty developed an intervention allowing AG-ACNP students to practice leadership with BSN students and respiratory therapists using simulation. Simulations occurred prior to and following training for AG-ACNP students (n=23). BSN students (n=83) delivered the interaction of "follower" participants. Research assistants rated NP students' performance using TeamSTEPPS® 2.0 Team Performance Observation Tool (TPOT).

NP students were randomly assigned for training. The Control group participated in "classroom" training, while the Intervention group participated in "classroom" training enhanced with simulation vignettes.

Table 1. Mean item scores at Baseline and Post-training for whole sample

	Baseline	Post-training	
	Mean (SD)	Mean (SD)	p†
TEAM STRUCTURE			
Assembles a team	3.78 (1.20)	4.35 (1.07)	.158
Assigns or identifies team members roles and responsibilities	3.17 (1.30)	4.04 (1.33)	.024*
Holds team members accountable	2.48 (1.31)	3.30 (1.18)	.017*
Includes patients and families as part of the team	2.91 (1.41)	3.74 (1.54)	.073
COMMUNICATION			
Provides brief, clear, specific, and timely information to team members	3.61 (1.20)	4.39 (0.78)	.014*
Seeks information from all available sources	3.13 (0.92)	4.17 (0.94)	.001**
Uses check-backs to verify information that is communicated	3.43 (1.08)	3.48 (1.41)	.913
Uses SBAR, call-outs, and handoff techniques to communicate effectively with team members	3.52 (1.24)	4.13 (0.87)	.045*
LEADERSHIP			
Identifies team goals and vision	3.09 (1.44)	3.74 (1.25)	.044*
Uses resources efficiently to maximize team performance	3.00 (1.24)	4.13 (1.10)	.003**
Balances workload within the team	3.35 (1.07)	4.26 (1.10)	.013*
Delegates tasks or assignments, as appropriate	3.35 (1.50)	3.65 (1.23)	.519
Conducts briefs, huddles, and debriefs	2.22 (1.17)	3.83 (1.07)	<.001**
Role models teamwork behaviors	3.96 (0.88)	3.83 (1.11)	.665
SITUATION MONITORING			
Monitors the status of the patient	3.35 (1.30)	4.30 (0.88)	.009**
Monitors fellow team members to ensure safety and prevent errors	3.83 (1.15)	4.48 (0.67)	.029*
Monitors the environment for safety and availability of resources (e.g., equipment)	3.26 (1.25)	4.22 (1.04)	.017*
Monitors progress toward the goal and identifies changes that could alter the plan of care	2.87 (1.06)	3.52 (1.04)	.070
Fosters communication to ensure that team members have a shared mental model	3.35 (1.27)	3.96 (1.02)	.036*
MUTUAL SUPPORT			
Provides task-related support and assistance	3.39 (1.27)	4.22 (1.04)	.022*
Provides timely and constructive feedback to team members	3.09 (1.35)	3.43 (1.34)	.350
Effectively advocates for patient safety using the Assertive Statement, Two-Challenge Rule, or CUS	2.87 (1.49)	3.43 (1.65)	.183
Uses the Two-Challenge Rule or DESC Script to resolve conflict	2.30 (1.26)	3.39 (1.59)	.013*

† Paired-samples t-test * $p<.05$ ** $p<.01$

Results

The TPOT consisted of 23 items. The mean item score increased for both the Control and Treatment group participants for 22 of the 23 items. The increase was statistically significant for 15 of the 23 items, the five subscale means, and the total scale from pre-training to post-training for both the Intervention and Control group (see Table 1).

Furthermore, the Control group pre-training mean was greater for all five subscales and for the total scale (see Table 2). Although no scale differences were statistically significant, this suggests a small edge for the Control group.

The post-training mean score was greater for the Intervention group than for the Control group for the communication, leadership and situation monitoring subscales, while the Control group mean was greater than the Treatment mean for the team structure and mutual support subscales and the total scale (see Table 3).

Table 2. Pre-Training subscale scores, by Group

	Control (N=13)	Intervention (N=10)	
	Mean (SD)	Mean (SD)	p†
TEAM STRUCTURE (4 items)	3.13 (0.78)	3.03 (1.22)	.796
COMMUNICATION (4 items)	3.67 (0.67)	3.10 (0.85)	.085
LEADERSHIP (6 items)	3.22 (0.78)	3.08 (0.92)	.708
SITUATION MONITORING (5 items)	3.38 (0.93)	3.26 (0.72)	.730
MUTUAL SUPPORT (4 items)	3.06 (1.07)	2.73 (0.97)	.450
TOTAL SCALE (23 items)	3.29 (0.58)	3.05 (0.74)	.395

Table 3. Post-Training subscale scores, by Group

	Control (N=13)	Intervention (N=10)	
	Mean (SD)	Mean (SD)	p†
TEAM STRUCTURE (4 items)	3.92 (0.95)	3.78 (1.06)	.728
COMMUNICATION (4 items)	4.02 (0.68)	4.08 (0.53)	.833
LEADERSHIP (6 items)	3.77 (0.65)	4.08 (0.26)	.133
SITUATION MONITORING (5 items)	4.09 (0.64)	4.10 (0.42)	.974
MUTUAL SUPPORT (4 items)	4.00 (0.75)	3.13 (0.98)	.024*
TOTAL SCALE (23 items)	3.95 (0.57)	3.87 (0.38)	.691

† Independent samples t-test * $p<.05$

Conclusions

Evidence from this pilot study suggests TeamSTEPPS training and simulation enriched the learning experience and improved learner outcomes. Moreover, simulation enhanced TeamSTEPPS training for the treatment group showed promise in further improving performance.