Utilization of SP Hybrid Simulation in a Physician Assistant Program

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Introduction

Instruction during the didactic year of Physician Assistant (PA) education often is more heavily weighted toward traditional classroom and laboratory training. In order to help prepare PA students for success in the clinical portion of their education, an SP hybrid team activity was developed. The hybrid session aimed to provide an authentic arena in which PA students could practice collaborative communication and initial medical management of an acute cardiovascular complaint.

Method

Near the end of their first curricular year, thirty- nine PA students took the Clinical Medicine course. Developed as a portion of the cardiovascular lecture unit, coursework included three acute cardiovascular diagnoses for study in advance of the activity. Additionally, the students were instructed to self-select into groups of four. Functioning as a team, they were asked to prepare, when assigned one of the three acute cardiovascular conditions, to perform the following :

- Take a history
- Perform a physical examination
- Order or perform any necessary diagnostic testing or procedures in the acute setting
- Order or administer appropriate medications in the acute setting

The SPs for this exercise had previous training in head-to-toe physical examination. Additional training for this purpose included portrayal of chest pain, intravenous access set-up, and 12-lead EKG placement. Glycerin syrup was applied topically to the SPs to simulate diaphoresis.

This activity also utilized a hybrid "arm" for intravenous access and phlebotomy. This required the SPs to be trained in the realistic management and positioning of this device. The hybrid design of the activity allowed students to administer various oral and intravenous medications to the SP.

Prior scripting required the SPs to change their symptomatology based on the medications administered which afforded the students an opportunity to react to changes in the patient's condition. Oral medications consisted of edible pill-shaped candies in labeled bottles. Intravenous medications consisted of morphine sulfate which was administered through the hybrid arm.

During the exercise, a PA faculty member was present to score the medical management portion. The SP filled the integral role of scoring the students' teamwork objectives and interpersonal skills.

Immediately following the encounter, a debriefing session was held with the PA faculty member, SP, and student team. This allowed for instructional feedback and provided a unique arena in which the students could ask the SP questions that shed light on the patient's perspective when receiving care in an acute situation.

Results

As a method of course evaluation and curricular development, three self-evaluations were completed by students for this activity. The evaluations were administered after classroom lecture, following group study and collaboration on the assigned topics, and at the conclusion of the SP hybrid activity.

Using a Likert scale rating, students were asked to rank their perception of confidence in managing the assigned acute cardiovascular complaints. After classroom instruction, the students' perceived confidence was rated with a mean value of 3.48 out of 5. The mean confidence ranking increased to 3.95 after group collaboration and to 4.4 out of 5 after hybrid simulation.

Student satisfaction with the addition of the hybrid experience to the didactic year curriculum was also assessed. The students rated the value of hybrid simulation favorably, with a mean score of 4.79 out of 5.

The authentic feel of this collaborative team activity helped to increase buy-in from learners, SPs, and faculty facilitators alike, resulting in a high-quality instructional experience.

Conclusions

The hybridization of this activity provided for a successful portrayal of an acute cardiovascular condition that resulted in realism, not theatrics. Students' perceived confidence in managing acute cardiovascular conditions increased through the use of the hybrid activity.

The faculty's involvement in this innovative experience resulted in a planned increase in utilization of SPs by this program in the future. It also showcased the variety of ways in which the inclusion of SPs can enrich the Physician Assistant Studies curriculum.

Future Directions

In the future, designated educational research on this type of activity could prove the value of hybrid simulation in terms of objectively measurable educational outcomes such as exam performance or preceptor evaluations. The collaborative aspect of this activity would also lend itself nicely to the inclusion of an interdisciplinary team to manage acute care presentations.

References

Alinier, Guillaume. "A Typology of Educationally Focused Medical Simulation Tools." *Medical Teacher* 29.8 (2007): e243-e250.

Issenberg, S. Barry. "The Scope of Simulation-based Healthcare Education." *Simulation in Healthcare* 1.4 (2006): 203-208.

Noeller, Thomas P., et al. "A Theme-based Hybrid Simulation Model to Train and Evaluate Emergency Medicine Residents." *Academic Emergency Medicine* 15.11 (2008): 1199-1206.

Rosen, Kathleen R. "The History of Medical Simulation." *Journal of Critical Care* 23.2 (2008): 157-166.

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