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Peer Teaching in High-Fidelity Simulation *Participant Experiences and Reflections*

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Abstract

Peer teaching provides students with opportunities to experience the educator role and increase self-confidence and problem-solving skills. To address the shortage of meaningful leadership experiences for senior baccalaureate nursing students, faculty implemented an alternative leadership experience involving senior students taking on the role of peer teachers in the high-fidelity simulation (HFS) laboratory. We conducted focus groups to assess peer teachers and learners' experiences and used thematic analysis to examine and interpret the data. Findings included the intersection of learning, HFS, clinical experience, and teaching; the benefits of practicing teaching in a safe environment; how empathy enhanced understanding of the continuum of expertise; and power differentials experienced by peer teachers and learners.

Keywords

high-fidelity simulation; leadership; nursing education; peer learners; peer teaching; simulation

Peer teaching in nursing education provides students with opportunities to experience expanded roles and perspectives.¹ Advantages reported by peer teachers include increased confidence in personal knowledge, enhanced reflection on their own learning, and acquisition of skills, which may be applied to future teaching situations.¹ Previous research indicates increased valuing of teaching among students involved in peer education experiences.^{2–4} Noting evidence that peer teaching was associated with increased independent study and enhanced problem-solving skills among peer teachers, Stone et al⁵ postulated that peer teaching was at least as good as faculty-led teaching, with significant improvements in both self-reported self-efficacy and measured knowledge among students in the learner role. Other acknowledged advantages of peer teaching include improved communication skills and self-efficacy among peer teachers and decreased learner anxiety.^{1,3}

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Peer teacher initiatives currently reported in the nursing literature were conducted in basic skills laboratories in which students first learn psychomotor skills, as well as in hospitals and community clinics.¹⁻⁷ Despite the increasingly common use of high-fidelity simulation (HFS) in prelicensure nursing education,^{8,9} we found no reports of peer teaching initiatives in conjunction with HFS. The aim of this qualitative study was to explore the experiences and perceptions of nursing students who had participated in a peer teaching initiative in HFS. The purpose of this article is to report findings from this study from the perspective of peer teachers and peer learners. We use the terms *peer teacher* to refer to a more advanced student who is available to assist with skills and act as a resource and *peer learner* to refer to less advanced students who take the role of the nurse in HFS. Specifically for this study, peer teachers were senior students in their final semester having demonstrated content mastery in previous medical surgical courses, and peer learners were first-semester juniors in their first adult medical-surgical course. We conceptualized peer learning as the process of gaining knowledge and skills with the assistance and support of a near-equal in a way that is beneficial to both learner and teacher.

Context and Setting

Faculty faced a number of challenges that led to the creation of the HFS peer teaching experience associated with the Nursing Leadership and Management course for senior-level BSN students. In previous semesters, each student shadowed a nurse manager for two 4-hour periods with a goal of enhancing understanding of this leadership role. Student evaluations from these experiences indicated a wide range of responses by students to the quality and usefulness of these shadowing experiences. The experiences varied greatly and often appeared to be dependent on the nurse manager's workload and other contextual factors. These experiences and the challenges of engaging a sufficient cohort of nurse managers willing to precept students mirrored those of nurse educators nationally, who face shrinking resources for clinical education and increasing competition for clinical sites.^{10,11} An additional staffing challenge was lack of clinical faculty available to assist in the simulation laboratory activities for junior nursing students enrolled in a lower level medical-surgical nursing course. The implementation of a peer teaching experience in HFS laboratory addressed these challenges.

The goals for this activity were to (1) provide senior peer teachers with perspective on nursing leadership in the context of nursing education and (2) enhance the HFS experience for junior peer learners by providing support for their clinical decision making during their laboratory time. Desired outcomes included (1) leadership experience for peer teacher in a relatively safe environment, (2) effective communication with peer learners, and (3) evaluation of ways in which their clinical judgment had advanced since their junior year. Goals for peer learners depended in part on the content of the 2 specific HFS scenarios but included being able to describe the pathophysiology of the simulated patient's condition and how the symptoms experienced by the patient related to the pathophysiology. Overall goals included the ability to effectively prioritize nursing interventions and identify and address potential patient educational needs.

HFS Peer Teaching Experience

We offered the HFS peer teaching opportunity to students enrolled in the Nursing Leadership course in lieu of a portion of their nurse management clinical requirement. Twenty-one senior students enrolled in the peer teaching option and attended a required orientation session. Most students were female ($n = 13$); 18 were white, 3 were African American, and 1 was Asian. This voluntary sample closely reflected program demographics. The peer teacher orientation consisted of a 1-hour information session, co-led by the simulation coordinator and the Nursing Leadership course faculty member. Theoretical content included Benner's¹² Theory of Novice to Expert, the context of simulation in nursing education, and the role of the peer teacher. An on-site orientation to the simulation laboratory included a review of manikin functions and an overview of considerations relevant to actually running the simulation scenarios. After participating in the orientation session, peer teachers spent a minimum of 2 hours in HFS scenarios with peer learners.

Peer learners were junior students enrolled in their first medical-surgical course. Twice during the semester, each of the 34 students enrolled in the course attended simulation laboratory for 2 hours in lieu of their usual hospital-based clinical experience, thus replacing 10% of their clinical time with simulation. Course faculty assigned laboratory times for the peer learners; the senior peer teachers chose laboratory sessions that fit with their schedules without knowledge of which junior students were assigned to a given session. Each HFS session consisted of 2 peer teachers with a group of 2 to 3 peer learners. Peer teachers assisted in 1 of 2 scenarios: a 73-year-old male patient with congestive heart failure exacerbation or a 24-year-old male patient who had suffered a pneumothorax in a motor vehicle accident and had a chest tube.

Before the simulation, peer teachers were expected to review the written scenarios, which included specific goals and objectives of the simulation for learners, clinical information, and expected learner actions. They were expected to have understanding of the pathophysiology as well as potential nursing interventions and patient educational needs. Peer teachers reported to the HFS laboratory 15 minutes before the simulation and received assignments to either the patient room with the junior students or the control room with the simulation coordinator. When peer learners arrived for their scheduled simulation, the simulation coordinator explained the role of the peer teachers to the learners and then presented the usual prebriefing information. During the simulation, peer teachers were available to answer questions that learners might have and to offer direction, although they were encouraged by faculty to allow learners to work through situations on their own. Peer teachers in the control room with the simulation coordinator observed how the simulation was run and noted events that warranted discussion in debriefing. Approximately halfway through the simulation scenario, the peer teachers switched roles. All HFS experiences were video- and audio-recorded, and these recordings were used to facilitate debriefing, led by the faculty member, who encouraged input from peer teachers.

Approximately 2 weeks after the HFS session, course faculty extended an invitation to the peer teachers and learners to participate in a focus group about their experiences. The simulation coordinator conducted 6 audiotaped focus groups with a convenience sample of

peer teachers (3 groups) and peer learners (3 groups) to explore perceptions of effectiveness of peer teaching in HFS and to elicit peer teachers' views on the impact of the experience on their perception of nursing education. Benner's¹² Novice-to-Expert Theory informed the peer teaching intervention and served as a framework for the postactivity focus group interview guide. The university institutional review board (IRB) determined that this educational research was not subject to IRB oversight.

Data Collection and Analysis Procedures

Of the 21 peer teachers, 8 participated in the focus groups. Five participants were female; 7 were white, and 1 was Asian. Of the peer learners, 7 participated in focus groups, all of whom were white women. The questions posed to the peer teachers inquired about their overall impression of the simulation experience as a leadership activity, how the experience influenced their view of simulation and nursing education, and what aspects of the experience they found most beneficial. Questions posed to peer learners, in separate focus groups, concentrated on how helpful they found the simulation experience as well as their views of senior peer teachers' activities and contributions. Both teacher and learner focus groups lasted between 45 and 60 minutes. Each focus group was digitally audio-recorded, and the recordings were professionally transcribed. The lead author subsequently compared the transcripts against the audio-recordings before distributing transcripts to the other investigators for analysis.

The first stage of analysis involved independent open coding by 3 investigators who then met to compare and discuss their coding. Subsequently, the lead author engaged in focused coding and developed an initial thematic schema. After development of the schema, each analyst revisited the data in light of these themes. The team then reconvened to discuss and refine the analysis and identification of the 4 major themes: (1) the intersection of learning, HFS, clinical experience, and teaching; (2) experience of practicing teaching in a safe environment (ie, HFS laboratory); (3) empathy that enhanced understanding of the continuum of expertise; and (4) power differentials experienced by peer teachers and learners. Participant quotes have been edited slightly for grammar while retaining the authenticity of their comments.

Findings

Intersection of Learning, HFS, Clinical Experience, and Teaching

Reflecting on this experience, the peer teachers readily recognized how much they had learned, crediting a combination of didactic learning, simulations, and clinical experiences as contributing to their gain in knowledge. They recognized how both classroom learning and simulation experience had contributed to increased experience and confidence to care for patients in clinical settings and noted that the experience of peer teaching contributed to their learning. Seniors were consistently positive about the opportunity to act as peer teachers and indicated that they transferred learning acquired in the clinical setting. Peer teachers also noted how the experience benefited them personally, as they had the opportunity to synthesize knowledge gained in classroom, clinical, and simulation settings. Both peer teachers and learners anticipated that what they learned from teaching in HFS

would translate into the clinical setting: “As we go through [the program], we test to see what we’re learning, but I think this gives us the chance to put the whole puzzle pieces together.”

Another peer teacher noted the personal benefit of “helping someone else walk through it [chest tube care]—it made it more concrete in my mind.” Several peer teachers explained that their increased confidence in performing skills enhanced their ability to think about a clinical situation more critically. Collectively, they shared a desire to help junior students feel more confident in skills as a means of enhancing clinical judgment skills: “I did my first day of [precepted] clinical, and I was so worried about doing it right, I didn’t even think about what was going on; but then I...went back the next day and was more focused on what could be going on?” This learner reflected on the attitudes she learned from working with peer teachers in the educational setting that might intersect with her future working environment: “If you learn that you have to work together regardless of what level you’re on, it establishes a mindset that it’s a norm to find cooperation.”

Experience of Practicing Teaching in a Safe Environment

An advantage of HFS is that it is a learning environment where students can practice skills such as assessment, decision making, psychomotor skills, and nursing interventions without incurring safety risks for actual patients.⁸ Peer teachers noted similar advantages of being able to practice teaching skills in a safe environment with fellow students. They indicated that they valued being able to practice teaching skills, including the need to create a balance between providing support and allowing learners to practice clinical reasoning and run the risk of making mistakes. One peer teacher recognized the importance of learning from one’s own mistakes, having personal restraint, and not immediately “jumping in” to help students in challenging situations:

I definitely learned that it is hard to know when to step in and when to let them learn from their mistakes or [when to] let them make a mistake...not holding their hand the entire way. Definitely more practice would help us from a leadership perspective get a better feel for that. Recording it so you can go back and watch as you talk about it is a benefit.

Another recognized benefit of taking on the role of peer teacher was that it contributed to students’ personal assessment of their learning progression: “It was definitely a good way to see how much we’ve learned over the years and the challenges in teaching.”

Empathy Enhanced Understanding of the Continuum of Expertise

Heightened empathy and recognition of their own progress and advances in critical thinking were other advantages identified by the peer teachers, who found that the experience not only served as an indicator of personal growth (eg, “how far I have come”) but also “showed how the lower level students think” and “how much different we look at things and analyze.” In a similar vein, another peer teacher observed that students had their medication list and “went back to get their meds and grabbed everything. I said, ‘Did you even check to see if that’s what’s ordered? If that’s what you need?’”

Beyond developing organizational and planning skills, peer teaching highlighted students' understanding of how HFS can contribute to students' critical thinking skills, given that they are "getting to a point in their nursing career where they need to start thinking more critically instead of I'm just doing these steps, right. They need to think, 'Why am I doing these steps?'"

From the peer learners' perspectives, another advantage was a higher level of comfort they felt with the peer teachers, with whom they could more closely relate as a peer on the continuum of novice to expert. Peer learners noted ways that the experience was mutually beneficial, which included being a "confidence boost" and "working together [as opposed to [faculty] already knowing everything and we know nothing."

Beyond the personal benefits, peer teachers related feelings of empathy for learners, recalling their own previous experiences as juniors. Peer learners, in turn, related feelings of empathy for peer teachers, recognizing that the senior students were continuing to face challenges of learning, only farther along the novice to expert continuum. There was a mutual recognition that both groups were learning new roles and responsibilities. Another peer learner highlighted the benefits of mutual learning: "It helps both of us. It helps us because we can ask [our peer teachers]. They are currently experiencing all of this in the hospital, and it is helping them catch onto things we are doing wrong."

Power Differentials Experienced by Peer Teachers and Learners

Although both levels of students expressed empathetic understanding of the others' position, there was a clear power differential noted between levels of students and between students and faculty. One learner expressed her empathy for peer teachers: "I think they were nervous... obviously they knew more than I do, because they are far ahead, but I could tell they were nervous. They looked at [leadership faculty] when we would ask a question, and the [faculty] would say, 'You can answer it.'" Others observed that the peer teachers were helpful, without being intimidating about their more advanced level of nursing knowledge. A peer learner highlighted the perceived knowledge gap between her cohort of junior students and the more advanced seniors: "In our minds they know all this information, and we have had 4 classes."

A dialogue between participants highlighted both the advantages and challenges of peer support. One peer learner noted her initial nervousness in front of the more advanced peers, "because you do not want to look dumb." However, another observed that the peer teachers provided support but also "gave us our independence.... It didn't make me feel intimidated." Positive aspects of being a peer teacher included being able to share one's own knowledge with peers and also enhance or reinforce that knowledge. One peer teacher particularly enjoyed "being able to interact with them and teach them things I didn't learn the first go round, [things] that I've learned in the clinical setting since then."

Limitations

Limitations of this research include the small sample that consisted of participants in a single baccalaureate nursing program. The fact that the faculty member who conducted the

focus groups is the director of simulation at the same institution may have influenced some participants' willingness to provide feedback that was critical or negative.

Discussion

In this research, we explored senior leadership students' peer teaching experiences and junior students' experiences as peer learners in HFS. We identified 4 major themes in the focus group data: the intersection of didactic learning, HFS, clinical experience, and peer teaching; experience of practicing teaching in a safe environment (ie, the HFS laboratory); the contribution of empathy and mutuality of experience to the understanding of the continuum of expertise; and power differentials and differing vulnerabilities experienced by peer teachers and learners. Similar to previously reported findings, these peer teachers reported reinforcement of previous knowledge, and both groups noted the advantage of practicing skills in a safe environment.

Of particular note is the degree to which these peer teachers spoke of the intersectionality of their student experiences and how didactic learning, HFS, and clinical experiences came together for them as they taught their peers. Peer teachers' perceptions of the relationship of skills and higher-order thinking were a unique finding. They related experiences of becoming more comfortable with skills and then feeling that they could focus on the more complex considerations of critical thinking and clinical judgment. This could be because, in previous studies, peer teachers engaged in teaching psychomotor skills to lower level learners and did not share thoughts and experiences related to higher-order thinking skills. In their systematic review of peer teaching research, Irvine et al³ noted that none of researchers examined learning associated with higher-order thinking. In the case of this experience of peer teaching in HFS, the peer teachers were expected and encouraged to help learners work through problem recognition and prioritization. This may account for the responses from peer teachers, which explored the relationship between psycho-motor skills and higher-order thinking.

Similar to previous findings, these nursing students reflected on how learning from peer teachers was less anxiety provoking than interacting with faculty. Although they reported decreased anxiety and increased comfort in working with peer teachers, both peer teachers and learners clearly described a mutuality of experience and a power differential between groups of peer teachers and learners that have not been previously reported in the literature. They also described the continuum of expertise, viewing junior students as novices, seniors as advanced beginners, and faculty as experts. Although HFS has been recognized as a safe environment in which to practice patient care skills, these data highlight the potential use of HFS as a safe environment for students to practice teaching skills. Previous researchers have found peer teaching to be effective for both peer teachers and learners in a variety of nursing education settings, but this is the first examination of peer teaching and learning within the context of HFS. Findings from this investigation of peer teaching in the context of HFS highlight the need for further research aimed at elucidating the complex relationships between didactic instruction, HFS, and clinical experiences. Further exploration of the experiences of peer teachers and learners would be useful in understanding the interpersonal dynamics of this relationship and how the use of peer teachers might contribute to the

enrichment of nursing education for both peer teachers and learners. Faculty who wish to use peer teaching in their nursing curricula face both logistical and educational challenges. Clear goals, detailed orientation plans, schedule coordination, and clearly stated outcome objectives should be developed before beginning a peer teaching experience.

Conclusion

Teaching is an essential skill for nurses in a variety of settings. Practice with peer teaching as students has the potential to increase nurses' expertise and comfort level with teaching. In turn, assurance in teaching may enhance engagement with future students and new nurses in the practice setting. Furthermore, the opportunity to practice teaching may promote interest in nursing education. Challenges faculty may face in adopting peer education approaches in simulated learning environments include scheduling issues and both preparation and evaluation for peer teachers. Adequate preparation and evaluation are essential to make the experience of peer teaching safe, productive, and meaningful.

As this analysis of findings related to peer teaching in HFS indicates, potential benefits of peer teaching include students' increased comfort level with peer teachers, when compared with faculty. Preparation for peer teachers should include, at the least, an explanation of the goals and philosophy of simulated learning, which will necessarily vary depending on the program goals and objectives. Furthermore, peer teachers should be exposed to basic tenants of adult learning theory and should be given an opportunity to review the HFS scenario ahead of the laboratory experience so that they can feel comfortable with their own knowledge level as they offer assistance to peer learners. Given thoughtful preparation of all involved, peer teachers could make an important contribution to nursing education.

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