

### Improving Assessment Skills: Flipping the Large Classroom Using High-Fidelity Manikins

The American Association of Colleges of Nursing (2008) stated that Bachelor of Science in Nursing (BSN) graduates must be able to perform a comprehensive physical examination, recognize abnormal findings, and connect classroom learning to clinical situations. Assessment is essential to the nursing process; however, current educational demands such as increasing student enrollment, faculty shortages, and strict budgets create innovative teaching limitations. These limitations necessitate the inclusion of simulation into didactic education addressing the challenges of time, space, and financial resources. Exploration of curriculum design should achieve learner engagement, impact faculty workload, and solidify clinical and theoretical connections beyond the customary small laboratory space (Carson & Harder, 2016). Large classroom simulation, defined as simulation performed by large numbers of students in the lecture classroom, is an emerging strategy to bridge classroom and clinical decision making in the conventional didactic environment when compared with more traditional small-group simulations. Assessment of high-fidelity manikins in a large classroom capitalizes on philosophies of the flipped classroom, in which students apply previously learned concepts using active participation during class time. This differs markedly from conventional simulation, typically designed as small-group activities that take place within a simulation laboratory in small rooms, where prebriefing, debriefing, and collaboration take place (Carson & Harder, 2016).

In a health assessment course with large classroom enrollment (90 students per class), faculty sought to identify a hands-on learning activity to blend classroom and clinical assessment that deviated from traditional didactic instruction and small-space simulation. The course is part of an accelerated BSN program in a college of nursing within a larger medical university, and it is the only undergraduate program within the college. The Inter-

national Nursing Association for Clinical Simulation and Learning standards for outcomes and objectives were used to design the activity. The International Nursing Association for Clinical Simulation and Learning (2016) standards require simulation-based experiences to have specific, measurable, achievable, realistic, time-based objectives that attain reaction, learning, behavior, and results-based outcomes. Design objectives included (a) identify an alternative activity to improve beginning-level nursing assessment skills; (b) facilitate a large number of students with a flipped classroom using high-fidelity manikins; and (c) evaluate students synthesizing classroom and clinical content.

#### Activity Description

Ninety students shared the activity in a large lecture classroom. The class was divided into groups of eight to 10. Groups were given a rotation schedule and activity objectives during prebriefing, which applied what they learned throughout the semester. Specific simulation objectives to be achieved by the end of the activity included (a) demonstrate beginning-level skill in conducting and documenting a comprehensive assessment that includes health history, cultural and spiritual assessment, and physical examination; (b) analyze assessment data for variables that affect health; (c) apply history-taking skills to perform risk assessment, including social and family history and lifestyle choices; and (d) demonstrate effective communication with clients and other professionals. The 1.5-hour activity was facilitated by three faculty members and involved 15-minute station rotations. Students followed a case study where they assumed care for a patient on a hospital unit, assessed a high-fidelity manikin set with nine abnormal predetermined physical examination findings for 15 minutes, and interviewed a family member portrayed by scripted faculty for 15 minutes. Case study specifics included a geriatric patient admitted with ischemic stroke manifesting neurologic deficits, adventitious breathing sounds, hypoactive bowel sounds, a murmur, lower extremity ede-

ma, and a variety of social and economic issues. Working together, students elicited pertinent history and social findings from the family member and identified the nine abnormal physical assessment findings on the manikin, all of which related to the case study. Each student within the group was an active participant and interviewed the actor and assessed the manikin during their designated time slot. When not assessing or interviewing, students collaboratively answered case study-related nursing care questions. All students were prebriefed and debriefed in the classroom, providing the opportunity to ask questions and for course faculty to address consistent challenges noted during rotations. Students submitted a deliverable written assignment addressing the simulation objectives noted above, requiring them to document history and social findings, the nine abnormal physical examination findings, and anticipated interdisciplinary care needs.

#### Discussion

Assignment submission indicated successful identification and documentation of assessment findings. The activity received excellent reviews in a 14-item postactivity survey that addressed activity objectives attainment, increased clinical confidence, and planned to incorporate learned skills into practice. One limitation was the student-to-manikin ratio (8:1) at each station; however, use of two additional manikins in future semesters will reduce this ratio to 4:1. Suggestions for faculty implementing large classroom simulation include ensuring detailed prebriefing, as coordination of large numbers of student rotations requires knowledge of intention of aspects such as activity and timing. Students overwhelmingly indicated that they thought the objectives of synthesizing didactic and clinical assessment were met, and that they would enjoy participating in more activities of this type during large classroom time, given the engaging and stimulating nature of the activity. Use of this style activity can serve as an example of facilitation of a large number of students with a flipped classroom using high-fidelity manikins,

mitigating small laboratory simulation space, time, and faculty workload resource issues, and meeting American Association of Colleges of Nursing goals.

### References

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