

Fluid and Electrolyte Escape Room

Faculty are encouraged to use a variety of teaching and learning strategies to engage nursing students within the classroom. Although simulation and games are commonly used in health science education, the concept of an escape room as an active learning strategy is gaining momentum with diverse, generational learners. An escape room is a game in which a team of players work together to navigate through clues in order to leave the room. The goal is to escape the room in a limited amount of time while solving multiple connected clues. The escape room strategy allows for collaborative learning in a safe educational environment (Hermanns et al., 2018). This immersive activity encouraged students to participate in their learning compared with passively receiving information from faculty.

Students identified, via course evaluations, that the concept of fluid and electrolyte imbalance was challenging material. Faculty decided to implement an escape room with the theme of fluid and electrolyte imbalance so that students could actively participate in the lesson, potentially increasing their comprehension and retention of the material (Bristol et al., 2019).

Faculty established the learning objectives and then developed the escape room framework. The learning objectives for the escape room included describing the pathophysiology of hypovolemia and using the nursing process to effectively restore normal fluid and electrolyte balance.

The escape room framework was designed to define the clinical decision making pathway that students would need to provide optimal, safe patient care. Faculty were able to incorporate laboratory values, nursing interventions, and nursing implications, including several hints to assist students along the correct path. A PowerPoint® presentation introduced the scenario and set the stage for the students. Students were provided vital signs and health care provider orders for student reference throughout the case.

Students were expected to come prepared to engage in the escape room

through assigned textbook readings. Students attended a traditional style fluid and electrolyte lecture before participating in the escape room. Faculty also recruited three senior nursing students to pilot the escape room to prevent any unforeseen issues or problems in traversing the room. The use of debriefing following this pilot allowed faculty to revise the planned pathway or clarify any confusing information that was discovered. Senior nursing students made several suggestions regarding improvement, and faculty were able to refine the process.

A university videotaping release form was completed by the participants so the exercise could be recorded. Students were provided with the rules prior to entering the escape room. First, no electronic resources were permitted in the escape room. Second, students were expected to collaborate as a team. Third, students could call on a classmate up to three times if they were experiencing challenges in working through the escape room. Finally, students were encouraged to think like a nurse.

The patient was a 60-year-old woman with a past medical history of coronary artery disease, hypertension, chronic renal insufficiency, and congestive heart failure who was admitted for nausea, vomiting, and diarrhea during the past 24 hours. The patient presented with vital signs consistent with fluid volume deficit. Prior to the activity, a student volunteer was briefed to serve as the standardized patient. During the session, the standardized patient did not interact with students beyond answering a few questions.

The students had to answer three questions correctly prior to entering the room. The students' first clue included interpreting a health care provider's order regarding fluid resuscitation. After correctly determining the infusion rate, the students were prompted to the first combination lockbox. The intravenous fluid rate was the answer to open the combination lockbox.

Next, students were required to select the correct type of intravenous solution. A note was attached to the correct IV solution providing them with their next clue. Key critical thinking points

included nursing interventions for a patient complaining of shortness of breath, prioritizing nursing actions, identifying signs and symptoms associated with a low potassium level, and providing an SBAR report to the incoming shift.

After the students successfully completed the escape room, a faculty member facilitated debriefing following the learning activity. Students reflected on the experience of the escape room, their rationales for decision making, and what they might have done differently. Students explored the issues and concerns related to the care of a patient with a fluid volume deficit.

Overall, the entire activity took approximately 45 minutes and was video recorded with student permission. Although faculty did not offer students the opportunity to view the video, students could be asked to view the video if they thought reinforcement of the content was required.

Student and faculty feedback toward the activity was positive. Anecdotally, students expressed satisfaction with the activity and reported feeling more confident with the material. Statements made by students included that they "enjoyed being a part of it and enjoy any classroom experience that is interactive," and "It helped to reinforce what was being taught."

References

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