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Using an Educational Escape Room to Promote Clinical Judgment in Maternal–Newborn Nursing Education

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Introduction and Background

Nursing faculty continually seek innovative teaching strategies that integrate course content while actively engaging students in learning. These strategies must extend beyond knowledge acquisition and provide opportunities for students to develop higher-level thinking skills that support safe, high-quality patient care. In recent decades, game-based learning and gamification have become increasingly common across educational settings [1-3]. When intentionally designed and aligned with learning objectives, game-based activities can promote motivation, active engagement, problem-solving, and collaborative learning [4].

Escape rooms initially emerged as recreational games in which participants worked together to locate clues, solve interconnected puzzles, and escape from a designated space. Educators subsequently recognized the potential to adapt this recreational format for teaching and learning. Rather than focusing solely on escaping a physical room, educational escape rooms require learners to “unlock” knowledge by applying course content, solving discipline-specific problems, and completing sequential challenges.

Educational escape rooms are designed to create interactive, immersive, and collaborative learning experiences. Small groups of learners explore a physical or virtual environment and solve a series of puzzles. This structure promotes active participation and provides an alternative to passive, lecture-based instruction. The skills used during educational escape-room activities parallel professional competencies such as communication, collaboration, creative thinking, critical thinking, and problem-solving [5].

These competencies are particularly important in nursing education. Nurses must interpret complex patient information, recognize changes in clinical status, establish priorities, communicate with members of the healthcare team, and make timely decisions. Because multiple and rapidly changing factors can influence nursing care, students need opportunities to practice clinical reasoning and decision-making in realistic but psychologically and physically safe environments.

Educational escape rooms can simulate the cognitive and collaborative demands of clinical practice by requiring students to analyze patient information, determine appropriate actions,

and collaborate under pressure. When puzzles and scenarios are intentionally aligned with course outcomes, escape rooms can provide higher-level thinking opportunities while reinforcing the knowledge and skills needed for safe patient care. Previous studies in nursing and other health-professions education have described educational escape rooms as engaging learning activities that can promote teamwork, problem-solving, and critical thinking [6-11].

Debriefing is an essential component of the educational escape-room experience. Following gameplay, structured debriefing allows students and faculty to review performance, examine the reasoning that guided clinical decisions, and determine whether the learning objectives were achieved. Students can reflect on their communication, teamwork, prioritization, and decision-making while identifying areas for improvement. Through immersive gameplay and guided reflection, educational escape rooms offer nursing faculty an innovative approach to promoting engagement, collaborative learning, and clinical judgment. Educational escape rooms may also provide opportunities for students to practice clinical judgment through sequential patient-care decisions and collaborative problem-solving [12].

The growing emphasis on competency-based nursing education further supports the use of active and experiential teaching strategies. The American Association of Colleges of Nursing [13] Essentials emphasizes the development and assessment of competencies necessary for professional nursing practice. The Next Generation NCLEX similarly evaluates candidates' ability to apply clinical judgment and make safe decisions in realistic patient-care situations. The NCSBN Clinical Judgment Measurement Model includes recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking action, and evaluating outcomes [14]. Educational escape rooms

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can be structured around these processes, offering students opportunities to practice clinical judgment while faculty observe their reasoning, teamwork, and performance.

Although educational escape rooms have been used in nursing and other health-professions programs, additional evidence is needed regarding their feasibility and perceived value in undergraduate maternal–newborn nursing education. Escape-room simulation has also been applied to obstetric emergencies, demonstrating its potential to support recognition, communication, and coordinated responses during high-risk maternal situations [15]. Therefore, the purpose of this educational project was to develop, implement, and evaluate a postpartum hemorrhage educational escape room for third-semester prelicensure BSN students. The project examined student and faculty perceptions of the activity's feasibility, acceptability, clinical relevance, and effectiveness in supporting course learning outcomes.

Materials and Methods

Project Design and Setting

A postpartum hemorrhage educational escape room was developed and implemented as a required learning assignment within a traditional prelicensure BSN program. The activity was incorporated into a third-semester maternal–newborn didactic and clinical course. At this stage of the program, students had acquired foundational nursing knowledge but were continuing to develop their ability to apply that knowledge to complex clinical situations.

Maternal–newborn nursing introduces students to a substantial amount of new specialty content. The educational escape room was designed to provide an engaging opportunity to integrate course concepts and apply clinical judgment during a simulated obstetric emergency. The primary objective was to strengthen students' clinical judgment, critical thinking, teamwork, communication, and rapid decision-making when recognizing and managing postpartum hemorrhage.

Participants

A combined total of 106 undergraduate nursing students enrolled in the maternal–newborn course participated in the educational escape room. Students were placed in small groups to encourage active participation, communication, and shared decision-making. Six nursing faculty members facilitated the activity. Faculty members served as facilitators and observers and assisted with student orientation, implementation, observation, and debriefing.

Escape-Room Development

The educational escape room was developed through four sequential phases: planning, building, implementation, and evaluation, consistent with recommendations for developing nursing escape-room activities [9,16].

During the planning phase, faculty identified postpartum hemorrhage as the primary clinical focus. The activity's learning outcomes were aligned with maternal–newborn course outcomes, clinical competencies, the AACN Essentials,

and relevant clinical judgment processes within the NCSBN Clinical Judgment Measurement Model. The intended learning outcomes were for students to:

- Identify early manifestations and risk factors associated with postpartum hemorrhage.
- Recognize abnormal vital signs and other relevant clinical cues.
- Estimate and interpret blood loss.
- Prioritize appropriate nursing interventions.
- Communicate effectively with the healthcare team.
- Implement appropriate responses safely and promptly.
- Collaborate effectively with peers.

During the building phase, faculty developed four sequential puzzle stations requiring students to analyze patient information and determine appropriate nursing actions. Materials included a simulated patient chart, vital signs, blood-loss estimation materials, intervention cards, mock medication information, equipment cards, locks or secured containers, and communication prompts. Faculty guidance materials included setup instructions, puzzle answers, facilitation guidance, observation criteria, and structured debriefing questions.

Postpartum Hemorrhage Puzzle Stations

The postpartum hemorrhage EER was organized around a “Stop the Bleed” theme. Successful completion represented recognition and management of the patient's hemorrhage rather than simply escaping from the room.

Station 1: Recognition of Postpartum Hemorrhage

Students reviewed a simulated patient chart containing a blood pressure of 80/45 mm Hg, a heart rate of 132 beats per minute, and documentation of heavy vaginal bleeding. Students were expected to recognize these findings as evidence of postpartum hemorrhage and clinical instability. Correct recognition allowed the team to obtain the “Hemorrhage Alert” card and advance to the next station.

Station 2: Quantification of Blood Loss

Students examined simulated soaked pads and a collection drape with measurement markings. They estimated the patient's cumulative blood loss as approximately 900 mL. An accurate estimate provided the information needed to open the next lock.

Station 3: Prioritization of Nursing Interventions

Students received cards representing potential nursing actions, including uterine massage, notification of the healthcare provider, initiation or adjustment of intravenous fluids, notification of the blood bank, and administration of prescribed medications. The team arranged the interventions in an appropriate priority sequence. Correct prioritization allowed students to open the medication box and proceed to the final station.

Station 4: Clinical Communication

Students organized and delivered a Situation-Background-Assessment-Recommendation handoff to a faculty member acting as the healthcare provider. The report required

students to communicate the patient's clinical condition, relevant assessment findings, actions already completed, and recommendations for continued management. An accurate and complete SBAR report provided the final code and represented stabilization of the patient.

Faculty and Student Preparation

Faculty facilitators completed an online orientation to review the activity plan, followed by an in-person review of the room setup, clinical materials, equipment, puzzles, expected responses, and facilitation procedures. Faculty preparation was intended to promote consistency across student groups and ensure that facilitators understood when and how to provide assistance.

Before beginning the activity, students participated in a structured prebriefing. Faculty reviewed the EER theme, learning objectives, safety expectations, ground rules, group assignments, and student roles. Students were informed that successful completion depended on recognizing and managing postpartum hemorrhage effectively rather than simply solving puzzles. Team roles included leader, recorder, communicator, and interventionist.

Implementation

Students worked collaboratively to analyze patient information, recognize abnormal findings, solve clinically focused puzzles, establish priorities, and communicate appropriate nursing responses. Faculty facilitators monitored student progress and provided predetermined hints when teams could not advance. Faculty observers used a structured checklist to document behaviors related to critical thinking, teamwork, prioritization, communication, and clinical reasoning.

Debriefing

A structured debriefing was conducted immediately after the EER. Students reflected on the clinical cues that indicated postpartum hemorrhage, how their teams established priorities, how communication influenced their performance, and what they would do differently in clinical practice. Faculty reviewed student performance, clarified clinical concepts, and connected student decisions with clinical judgment, teamwork, communication, and patient-safety competencies.

Evaluation Instruments

Three faculty-developed evaluation tools were used:

- An observation checklist addressing critical thinking, teamwork, prioritization, communication, and clinical reasoning.
- An optional student postactivity survey containing Likert-type items and open-ended reflection questions.
- A structured debriefing guide containing key learning and reflection questions.

The student survey asked participants to rate the difficulty of the scenario, evaluate the perceived effectiveness of the activity in meeting each learning outcome, and identify their preferred placement of the EER within the course. Open-ended questions asked students what they liked, what they did not like, and what

could be added or changed during future implementation.

Faculty completed a postactivity evaluation addressing scenario difficulty, achievement of the learning outcomes, student engagement, teamwork, communication, clinical reasoning, organization, and recommendations for improvement.

Data Analysis

Survey responses were summarized using descriptive statistics, including frequencies and percentages. Because student response rates varied across survey items, percentages represented the students responding to each item. Responses to open-ended questions and faculty comments were reviewed to identify recurring feedback related to engagement, clinical application, teamwork, organization, and opportunities for improvement.

Results

Participation and Survey Response

All 106 students participated in the postpartum hemorrhage EER. Six faculty members facilitated the activity. Completion of the student postactivity survey was optional, and response rates varied by item from 85% to 100%.

Scenario Difficulty and Perceived Achievement of Learning Outcomes

Most responding students considered the scenario appropriately challenging, with 58% rating the rapid-response scenario as somewhat difficult. Students generally perceived the EER as effective in helping them achieve the intended learning outcomes.

Among students responding to the respective items:

- 76% rated the activity as very effective in helping them recognize abnormal vital signs in a patient experiencing bleeding.
- 69% rated it as very effective in helping them prioritize nursing interventions.
- 73% considered it very effective in helping them perform the role of a rapid response nurse.
- 75% rated it as very effective in helping them interpret clinical findings.
- 81% rated it as very effective in supporting collaboration with peers to complete the puzzles.

Students generally preferred that the EER be placed toward the end of the course, after they had developed sufficient foundational maternal–newborn nursing knowledge. Student evaluation findings were most favorable regarding the activity's relevance to clinical practice and overall satisfaction. Students also indicated that they learned valuable information during the experience.

Student Feedback

Responses to the open-ended questions reflected engagement and enthusiasm for the EER. Students valued its interactive, team-based design and the opportunity to apply classroom knowledge to a realistic patient-care situation. They described the simulated environment as a safe setting in which to practice

critical thinking, communication, prioritization, and decision-making without placing an actual patient at risk.

Students also valued the opportunity to observe how their decisions influenced the progression of the simulated patient's condition. Their comments suggested that the activity helped them connect classroom concepts with clinical practice and increased their perceived confidence in responding to postpartum hemorrhage.

Student recommendations focused primarily on improving the clarity and organization of the activity. Suggested improvements included clearer instructions, additional prebriefing guidance, more clearly defined team roles, and smoother transitions between puzzle stations.

Faculty Evaluation and Feedback

Five of the six faculty facilitators completed the faculty survey, resulting in an 83.3% response rate. Not every respondent answered every item. Most responding faculty rated the scenario as somewhat difficult, and all considered the EER somewhat or very effective in helping students meet the intended learning outcomes.

Faculty observers reported that students were actively engaged and demonstrated teamwork, communication, critical thinking, and clinical reasoning while completing the puzzles. Faculty generally viewed the EER as a valuable learning activity but identified opportunities for improvement. Recommendations included clearer student instructions, smoother transitions between stations, more thorough equipment checks, and continued faculty preparation. Faculty also perceived the EER as a useful approach for observing student collaboration and clinical reasoning, and several expressed interest in adapting the strategy for other nursing specialties.

Discussion

The purpose of this educational project was to examine the feasibility and perceived value of a postpartum hemorrhage EER for supporting learning outcomes in a prelicensure maternal–newborn nursing course. Overall, students and faculty viewed the activity as an engaging and clinically relevant learning experience that promoted collaboration, critical thinking, and application of course content. These findings provide preliminary support for incorporating EERs into specialty nursing courses as a structured approach to experiential learning and clinical judgment development.

Students perceived the EER as particularly effective in promoting peer collaboration, prioritization of nursing interventions, and interpretation of clinical findings. The strongest rating was associated with collaborating with peers to complete the puzzles, emphasizing the value of the EER's team-based design. Students were required to communicate, share information, establish priorities, and reach decisions while responding to a simulated obstetric emergency. These behaviors resemble the collaborative processes nurses use when responding to rapidly changing patient conditions.

The findings are consistent with previous literature describing

escape rooms as enjoyable and engaging activities that promote teamwork, problem-solving, clinical judgment, and critical thinking in nursing and other health-professions education [7-12]. The predominantly positive student responses also align with literature describing gamification and game-based learning as strategies that can increase learner motivation and engagement.

Students' perceptions of meeting the learning objectives were generally consistent with faculty observations. Faculty reported that students demonstrated active engagement, communication, teamwork, and clinical reasoning while completing the puzzle stations. This agreement between student self-evaluation and faculty observation provides additional support for the acceptability of the EER as a learning and formative-assessment strategy. However, because objective changes in knowledge or clinical judgment were not measured, the findings represent perceived achievement of learning outcomes rather than demonstrated improvement in competence.

The EER reinforced course outcomes related to recognizing abnormal assessment findings, identifying early manifestations of postpartum hemorrhage, quantifying blood loss, interpreting clinical information, prioritizing nursing interventions, and communicating with the healthcare team. By requiring students to respond to a simulated obstetric emergency, the activity provided an opportunity to apply didactic knowledge in a realistic but safe environment. The structured debriefing further supported learning by allowing students to examine their reasoning, reflect on team performance, and connect their decisions with safe clinical practice.

Students' preference for completing the EER toward the end of the course may reflect the value of using it as a culminating learning experience. Placement later in the course may allow students to integrate previously learned maternal–newborn concepts and identify areas requiring further review before subsequent clinical experiences or licensure preparation.

Although student responses were generally positive, ratings related to ease of understanding and organization were less favorable. Faculty similarly recommended clearer instructions, smoother transitions, additional equipment checks, and continued facilitator preparation. These findings demonstrate the importance of careful prebriefing, standardized faculty orientation, clearly defined student roles, and pilot testing of all puzzles and equipment. Addressing these logistical elements may allow students to focus more fully on clinical reasoning and the intended learning objectives.

The activity was aligned with competencies identified in the AACN Essentials and with processes represented in the NCSBN Clinical Judgment Measurement Model. Students were expected to recognize and interpret clinical cues, establish priorities, select appropriate interventions, take action within the scenario, and consider patient outcomes. Although the project did not directly measure Next Generation NCLEX performance, the EER allowed students to practice clinical judgment processes relevant to contemporary licensure expectations. Educational escape rooms may therefore serve as a supplemental strategy

for reinforcing competency-based education and preparing students to approach complex clinical situations.

Limitations

This project had several limitations. The EER was implemented with students from one traditional prelicensure BSN program at one institution, limiting the generalizability of the findings. The project did not include a control or comparison group; therefore, improvements specifically attributable to the EER could not be determined. Because this was the students' first EER experience in the program, no previous performance data were available for comparison.

Student survey participation was optional, and response rates varied across items. Consequently, the findings may not represent the perceptions of all participating students. The evaluation primarily measured student and faculty perceptions rather than objective changes in knowledge, clinical judgment, confidence, or clinical performance.

The evaluation tools were developed by faculty for this educational activity, and their reliability and validity were not established. Faculty observations may also have been affected by differences in facilitation or interpretation of the evaluation criteria. Future research should include larger and more diverse samples, validated instruments, objective preactivity and postactivity assessments, and comparison groups. Longitudinal evaluation could examine knowledge retention, transfer of learning to clinical practice, and potential associations with clinical judgment or licensure outcomes.

Implications for Nursing Education

Educational escape rooms can provide nursing students with an active and collaborative method of applying classroom content to clinically relevant situations. The sequential puzzle format can be aligned with specific course outcomes and clinical judgment processes, while faculty observation and debriefing can support formative assessment and reflective learning.

Successful implementation requires clear instructions, intentional alignment between puzzles and learning objectives, standardized facilitator preparation, appropriate student roles, functional equipment, and structured debriefing. Educators considering this strategy should pilot the activity before implementation and ensure that the challenge of the puzzles does not interfere with the intended clinical learning.

Although the present findings do not demonstrate improvements in objective clinical competence, they suggest that an EER can be feasibly integrated into a maternal–newborn nursing course and accepted by students and faculty. Similar activities could be adapted to other high-risk nursing situations and specialty courses.

Conclusion

Implementation of a postpartum hemorrhage educational escape room in a traditional prelicensure BSN curriculum was feasible and acceptable to students and faculty. Participants perceived the activity as engaging, clinically relevant, and

supportive of teamwork, critical thinking, prioritization, and clinical decision-making. Faculty observations indicated that the EER provided a useful opportunity to observe students' collaborative behaviors and application of clinical reasoning within a simulated obstetric emergency.

By aligning the learning objectives and puzzle stations with the AACN Essentials and the NCSBN Clinical Judgment Measurement Model, the EER offered an experiential approach to reinforcing competencies relevant to nursing practice and Next Generation NCLEX expectations. However, the findings support feasibility, acceptability, and perceived learning rather than confirmed improvements in competence or licensure readiness. With continued refinement and rigorous evaluation, educational escape rooms may serve as a valuable supplemental strategy for promoting active learning and clinical judgment in undergraduate nursing education.

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