Escaping Traditional Teaching Methods: How to Use Escape Rooms in Undergraduate Nursing Education

Susan Farus-Brown
Ohio University Zanesville

Claire Tiberio
Ohio University Zanesville

Stacie Sweet
Ohio University Zanesville

Matthew Fox
Ohio University Zanesville

The purpose of the pilot study was to assess the undergraduate nursing students' perceptions of how teamwork and collaboration, communication and critical thinking emerged and were utilized in the escape room environment, in comparison to the more traditional laboratory experience. The pilot study utilized a descriptive design. IRB approval was obtained, consent forms were signed and an explanation of the study was given to all the participants. A convenience sample was utilized. There were a total of 51 participants. The participants were enrolled in a nontraditional associate degree nursing (ADN) program. A post experience questionnaire was the source of data collection for the study. The questionnaire was developed by the study team and was evaluated for content validity by an expert nurse educator. The questionnaire measured student response to four yes or no questions: 1) Did the escape room cause you to engage in more communication verses the traditional laboratory experience? 2) Did the escape room cause you to think more critically about safety verses the traditional laboratory experience? 3) Did the escape room cause you to engage in more team work and collaboration verses the traditional laboratory experience? and 4) Did the escape room cause you to think more critically about patient centered care verses the traditional laboratory experience? The responses were analyzed utilizing basic descriptive statistics. The results found that nursing student perceptions of improved communication, critical thinking, and teamwork and collaboration occurred by utilizing the escape room modality verses a traditional laboratory activity. Faculty members strive to engage nursing students in active learning. As this pilot study found, technology may not always be the answer to engaging the 21st century student. Escape room activities not only developed student assessment skills, but also encouraged communication and critical thinking, as well as, teamwork and collaboration.

Nursing educators have the responsibility to find creative and interactive ways to teach and provide students with the information and skills needed to practice safe and effective patient care. Recreational "escape rooms" have gained popularity in creating a life-like environment that rewards participants for working together, solving puzzles, and completing successions of mind-bending tasks in order to effectively escape the room (Zhang et al., 2018). The development of the neurological nursing escape room assisted in fostering teamwork and collaboration, communication and critical thinking, to solve questions about assessment, prioritization, and patient care. This new laboratory experience engaged the students in an innovative activity that would improve their clinical skills.

Background

The escape room concept is thought to be derived from video games from the late 1990's and early 2000's (Kutzin, 2019). The development of simulation escape rooms for health professional training has also expanded rapidly in the last decade. Training opportunities in teamwork must be safe, low stakes, high impact, and dynamically engaging if they are to nurture the development of collaborative behaviors. Although teamwork is a consistent goal of nursing education, there is no consensus as how to teach this skill (Zhang et al., 2018). Although previous studies have shown the use of games can produce positive results, the vast majority are based on questions and answers or on clinical situations. Previously, the information would have been covered by lecture, "hands-on" skills check-off, video or simulation. As an alternative, the "escape room" teaching game is a much more dynamic option to assess theoretical and practical knowledge, and it may also develop teamwork and the ability to perform under pressure (Gomez-Urquiza et al., 2019). Escape rooms put participants in direct contact with each other and require them to collaborate in the physical world instead of having each participant lost in their own screen, therefore, they are excellent activities to enhance an in-person classroom setting (Monaghan, 2017). Whereas many schools of nursing have published studies of escape room scenarios, none have been found based on neurological case studies, the use of the Glasgow Coma Scale, prioritizing neurological patients, and what the most immediate nursing intervention would be for these patients.

Sample

The pilot study utilized a convenience sample from an ADN student cohort. The cohort was in their final medical surgical course, completing their final nursing laboratory experience. All participants agreed to participate in the study. If anyone would have declined to participate there was an alternate traditional laboratory experience that would have been required to complete course requirements. Institutional Review Board (IRB) approval was obtained prior to the beginning of the study. Consent forms were signed and an explanation of the study was given to all the participants.

There were a total of 51 participants, 82% were females (n=41) and 17% were males (n=9). The participants were enrolled in a nontraditional ADN program located on a regional campus. The youngest participant was 20 years of age and the oldest was 56 years of age.

Design

The pilot study utilized a descriptive design. A post experience questionnaire was the source of data collection for the study. There are many advantages to using a questionnaire including less time is spent collecting data because the instrument can be given to a number of individuals simultaneously, and the questionnaire is also standard from one participant to the next and is not susceptible to changes in emphasis. The study design utilized a questionnaire that was developed by the researchers and evaluated by an expert nurse educator for content validity. The intent was to gage student perception of an escape room laboratory experience verses the traditional laboratory experience, which may include case studies, high fidelity patient simulations, group activities and lecture.

Methodology

The questionnaire measured student response to four yes or no questions: 1) Did the escape room cause you to engage in more communication verses the traditional laboratory experience? 2) Did the escape room cause you to think more critically about safety verses the traditional laboratory experience? 3) Did the escape room cause you to engage in more teamwork and collaboration verses the traditional laboratory experience? and 4) Did the escape room cause you to think more critically about patient centered care verses the traditional laboratory

experience? The responses were analyzed utilizing basic descriptive statistics, the mean and percentage were calculated for each question.

Procedure

The individuals designing this activity consisted of four undergraduate nursing faculty. All but one of the faculty members were directly involved in the classroom or lab component of the course. The faculty member not involved in teaching the course serves as the simulation expert for the nursing program. The four faculty members had a similar goals, which included incorporating an interactive activity into the course that would enhance the participant's teamwork and collaboration, critical thinking and communication skills, as well as, help students learn and apply often difficult neurological content.

Faculty designed the escape room with neurological nursing themed stations. The escape room was set up by the faculty in a nursing skill check-off room, which resembled a hospital room containing one mannequin lying in a bed. Groups of five to six students participated in the activity and were given preparatory instructions. Students were directed into the escape room and began to solve the first puzzle. For students to reach the final puzzle and obtain the key to get out of the room, they must quickly and accurately solve all five puzzles by applying information they had learned in class. During this experience students were motivated to validate the knowledge acquired during lecture so they could “escape” the room within the allotted 25-minute period. Once the students escaped the room, there was a five-minute debriefing session.

Specific learning objectives for the Escape Room experience were:

- To improve student communication
- To increase teamwork and collaboration
- To improve critical thinking

The first puzzle consisted of students deciding which neurological patient out of four was the most critical by interpreting lab results, vital signs and clinical manifestations. This puzzle required students to work together comparing clinical manifestations, differential diagnoses, and outcomes. The group then chose an envelope with the patient’s name on it that corresponded with their chosen critical patient. If they were correct, they

were given the next puzzle; otherwise they were directed to make another selection.

The second puzzle consisted of choosing and prioritizing appropriate care using critical thinking skills. Once the group determined appropriate prioritization of care, they chose the corresponding envelope. If they were correct, they were given the next puzzle. If they were wrong students were instructed to try again.

The third puzzle covered the brain lobes and definitions/functions of each lobe in the brain. Students were required to work against the clock to correctly match the part of the brain with the correct definition or function. Matching all answers correctly allowed students to progress to the next puzzle.

The fourth puzzle included a Glasgow Coma score for a patient. The Glasgow Coma Scale provides a practical method for assessing impaired level of consciousness in response to defined stimuli. The Glasgow Coma Scale is an integral part of clinical practice and is an objective assessment tool. In order to solve this puzzle, students had to discuss the categories within the Glasgow Coma Scale and apply it to the assessment of the patient. They had to use critical thinking skills to accurately determine the correct score for the patient.

Lastly, students had to utilize assessment skills and the hints provided to accurately solve the final puzzle and "escape the room." Assessment is a critical part of nursing care and must be done thoroughly and competently. Often there are multiple injuries or complications a patient is experiencing. It is important that the registered nurse assess patients thoroughly using many different assessment skills and techniques. If students accurately assessed the patient-both the anterior and posterior body-based on the hints, they would find a key hidden under the mannequin. This key then opened the locked box. Within the locked box were all the final materials needed to complete the exercise and escape the room.

Results

The results supported utilizing the escape room as a teaching modality for undergraduate nursing students. Ninety-eight percent (49/50) of the participants reported that the escape room increased engagement in communication with their peers, 90% (46/51) reported that the escape room fostered critical appraisal of patient safety, 96% (49/51) reported that

the escape room increased team work and collaboration, and 90% (46/51) reported an increase in their critical appraisal of patient centered care. In addition, the data supported that the objectives of this activity were met successfully.

Discussion

At the conclusion of the activity, the four faculty members involved in the creation and implementation of the escape room held a debriefing session. The debriefing session focused on both positive and negative aspects of the escape room activity. Overall, student feedback regarding the escape room activity was positive. Students verbalized that is was a fun, interactive activity, that lent itself to the utilization of teamwork and collaboration, and development of communication and critical thinking skills. Students reported that a couple of the brain puzzles within the escape room could have been be more challenging. Students also reported being more comfortable making mistakes and taking risks without faculty members being present in the room.

In the future, development of challenging brain puzzles to enhance the learning objectives of the activity will be taken into consideration. An aspect for improvement is the length of the activity due to many student groups escaping the room within 20 minutes. The length of completion may be prolonged by increasing the rigor of the challenges as previously noted. In addition, there were no faculty in the escape room during the learning activity. This limited the faculty's ability to evaluate individual student learning and their individual active participation. In the future we may need to consider videotaping the actual experience so this evaluation can be completed.

Limitations

The pilot study has very limited generalizability. It is limited to this particular group of 51 ADN students that found this learning activity to be a better learning experience than the traditional laboratory experience. In addition, other limitations included the small sample size, homogeneity of the sample, utilization of the convenience sampling method and the limited statistical analysis.

Future Directions

Faculty members strive to engage students in active learning. As this pilot study shows, technology may not always be the answer to engaging the 21st century student. The escape room activity described above has minimal use of technology yet engages undergraduate students in an active learning environment. Faculty members are continuously challenged to provide nursing students with the skills needed to function as a member of a healthcare team. Patient outcomes are dependent on a registered nurse's ability to assess and communicate clinical findings. Escape room activities not only develop student assessment skills, but also encourage communication, and critical thinking, as well as, collaboration and teamwork.

Regional Higher Education programs are often challenged with the cost associated with developing new classroom activities. Escape rooms can be a low-cost option. All disciplines in the undergraduate arena can apply the concept of escape room challenges to provide students with a fun, and effective active learning activity.

References

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