Background

- Historically, yearly education was provided on department-specific topics and clinical skills utilizing lecture-based learning activities and limited hands-on demonstrations to reinforce knowledge of pediatric patient care.
- With the lecture-based format, staff reported that reviewing an abundance of pertinent information on multiple topics in one sitting made it difficult to retain the content.
- Staff reported dissatisfaction with lecture-based learning and self-learning modules.
- Limited participation from staff was observed, therefore the Educators were eager to find a way to develop "innovative activities to play on fun themes while reinforcing key clinical concepts for staff."³
- Gamification is defined as the process of adding game-based elements to training sessions to engage people, motivate action and incentivize the learner to use critical thinking skills.³
- Additionally, gaming has a positive impact on knowledge retention, confidence levels, motivation, and engagement.⁴

Objectives

- Improve staff engagement and comprehension
- Enhance knowledge retention
- Strengthen confidence and comfort level in emergent situations
- Create a fun and safe learning environment

Methods

- Learning objectives were created following revised Bloom's Taxonomy, to help develop a plan, design valid assessment strategies, and evaluate that staff comprehension aligned with the desired outcomes for each learning event.⁴
- Pre and post surveys were developed utilizing the Likert scale (1-5) to evaluate effectiveness of format, content, and staff's comfort level of the information presented.
- Pre and post surveys were administered for an additional 5 training sessions. However, only post surveys were administered for an additional 5 training sessions.
- Staff responses were summarized with descriptive statistics including the mean, median, Q1, Q3, range, standard deviation, and p-values.
- Pre and post surveys were reviewed, the comfort levels were compared using Kruskal-Wallis tests.
- Kruskal-Wallis tests were also used to compare overall comfort levels with the respective topic by game type.

Implementation

- Introduced gamification to pertinent education topics between November 2021 to December 2022:
  - Escape Room – Malignant Hyperthermia (MH)
  - Family Feud – Fire and Laser Safety
  - Perioperative House of Horrors – Skills Lab
  - Relay Races – Code and Airway Emergencies
  - Escape Room was a timed event where staff had to identify MH and solve puzzles to treat on MH crisis. Educators developed a PowerPoint for clue prompts during the learning event.
  - Family Feud customized Bingo cards to test staff's knowledge of MH and MH Treatments.
  - Perioperative House of Horrors – created multiple challenges to treat MH.
  - Relay Races – Revised Bloom's Taxonomy; theoretical foundation and low fidelity manikins to simulate the patient decompensation scenarios.
  - Family Feud – Family Feud PowerPoint to facilitate the learning event.
  - Perioperative House of Horrors – created challenging scenarios to treat MH.
  - Relay Races – Code and Airway Emergencies.

Results

- Not all training sessions have pre surveys, therefore we discovered early on that we were unable to directly analyze the effectiveness of the trainings without developing pre and post surveys for all training sessions, not mandatory.
- A paired analysis could not be done because the pre and post surveys of the participants were not linked.
- Not all staff members answered each survey
- Staffing challenges created a barrier for staff to attend

References


Future Implications

- Investigate linking pre and post survey staff responses
- With a paired analysis we would be able to show how much staff's scores changed, however currently we can only compare the staff's overall scores to self learning modules and lecture-based learning
- Overall, gamification improved comfort level when comparing pre and post survey data
- Post survey results illustrated gamification was effective, regardless of game type
- Therefore, gamification allowed staff to apply critical thinking skills in a fun and safe environment, further building their confidence and knowledge in Perioperative emergencies

Successful Practice

- Prior to implementing gamification, staff showed a lack of engagement and dissatisfaction with training methods
- Surveys demonstrated staff training method preference for self-learning and gamification when compared to self learning modules and lecture-based learning
- Overall, gamification improved comfort level when comparing pre and post survey data
- Post survey results illustrated gamification was effective, regardless of game type
- Therefore, gamification allowed staff to apply critical thinking skills in a fun and safe environment, further building their confidence and knowledge in Perioperative emergencies

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Contact

Scan the QR Code to contact the authors