Gamification of Patient Cases to Simulate Longitudinal Chronic Disease Management

Rebecca Schoen, PharmD, BCACP; Wajiha Khan, PharmD; Lisa Chastain, PharmD, BCACP
Texas Tech University Health Sciences Center, School of Pharmacy

Introduction

Rationale for Intervention: New course materials developed for addition of "Activity Days" in 6 week Advanced Ambulatory Care Elective course prior to exams in Spring 2018

Gamification – applying game-based mechanics to real world problems to facilitate learning and participation1,2,3

- Reinforce lecture material
- Simulate decisions encountered in pharmacy practice
- Enable clinical skills development
- Increase motivation
- Provide a collaborative environment
- Encourage interactive learning

Purpose: Pilot study to assess the impact of gamification on self-reported abilities and confidence with anticoagulation and diabetes management during course “Activity Days”

Methods

Participants: Third-year pharmacy students enrolled in an Advanced Ambulatory Care Elective course

Game-Based Learning Activities:

- "Choose your Antidiabetic"
- "Choose your Anticoagulant"

- Delivery Method: TTUHSC Sakai web based system
- Course Placement: Case day prior to exam after traditional lecture delivery
- Format: Serial patient case of anticoagulant or diabetes therapy
- Multiple treatment options to choose from with corresponding monitoring parameters, adverse events, therapeutic outcomes, and drug interactions
- More than one successful path may be available
- Feedback: formative
- Built into activity by proceeding through case
- Low risk environment for mistakes
- Prompted reflection with errors
- Cost: No financial costs to implement

Assessment: Optional survey after game-based activity

- Primary Outcomes: Self assessed abilities and confidence
- Secondary Outcomes: Engagement and enjoyment

Results

Choose your Antidiabetic

Response Rate: 50/57 enrolled students
52% of students with prior ambulatory care rotation

Choose your Anticoagulant

Response Rate: 42/57 enrolled students
55% of students with prior ambulatory care rotation

Discussion

- Students engaged in and enjoyed the experience
- Most reported improved confidence and abilities with key disease state management objectives
- Self assessed abilities scored lower than confidence, indicating confidence may not be directly tied to perceived ability
- Disease states chosen require clinical judgement and interpretation of available treatment algorithms
- Confidence and abilities may need more experience and practice for significant gains

Strengths:
- Studied a “low-tech” option feasible across distance campuses
- Explored confidence and engagement for future research directions

Limitations:
- No comparator group
- Self perceived changes rather than objective measures of ability
- Unable to assess long-term impact

Future Directions:
- Comparison to alternative active learning methodologies
- Objective measures of ability outcomes
- Refinement of game or development of additional disease states

Conclusion

- Including game-based elements in serial patient cases can increase engagement and enjoyment of student learners with minimal resources required.
- Additional impacts on self-perceived abilities and confidence may be noted with this intervention.

References

Disclosures
Authors of this presentation do not have any possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

This study was supported in part by the TTUHSC CLINICAL RESEARCH INSTITUTE.