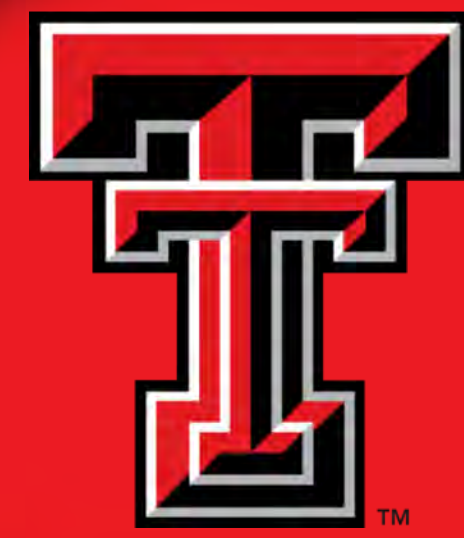


Gamification of Patient Cases to Simulate Longitudinal Chronic Disease Management

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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 participation^{1,2,3}

- 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
- Couse 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

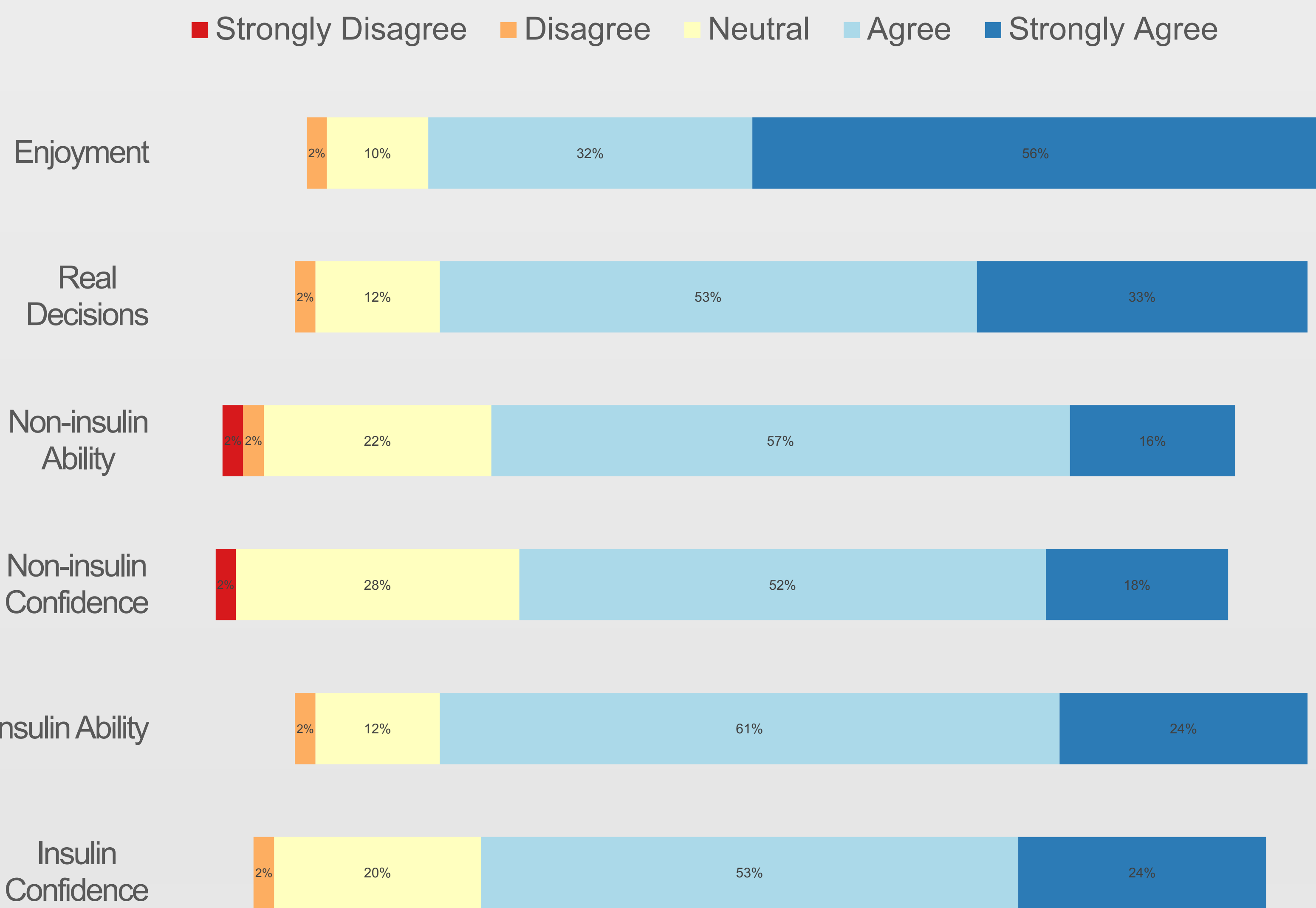
Assessment: Optional survey after game-based activity

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

Results

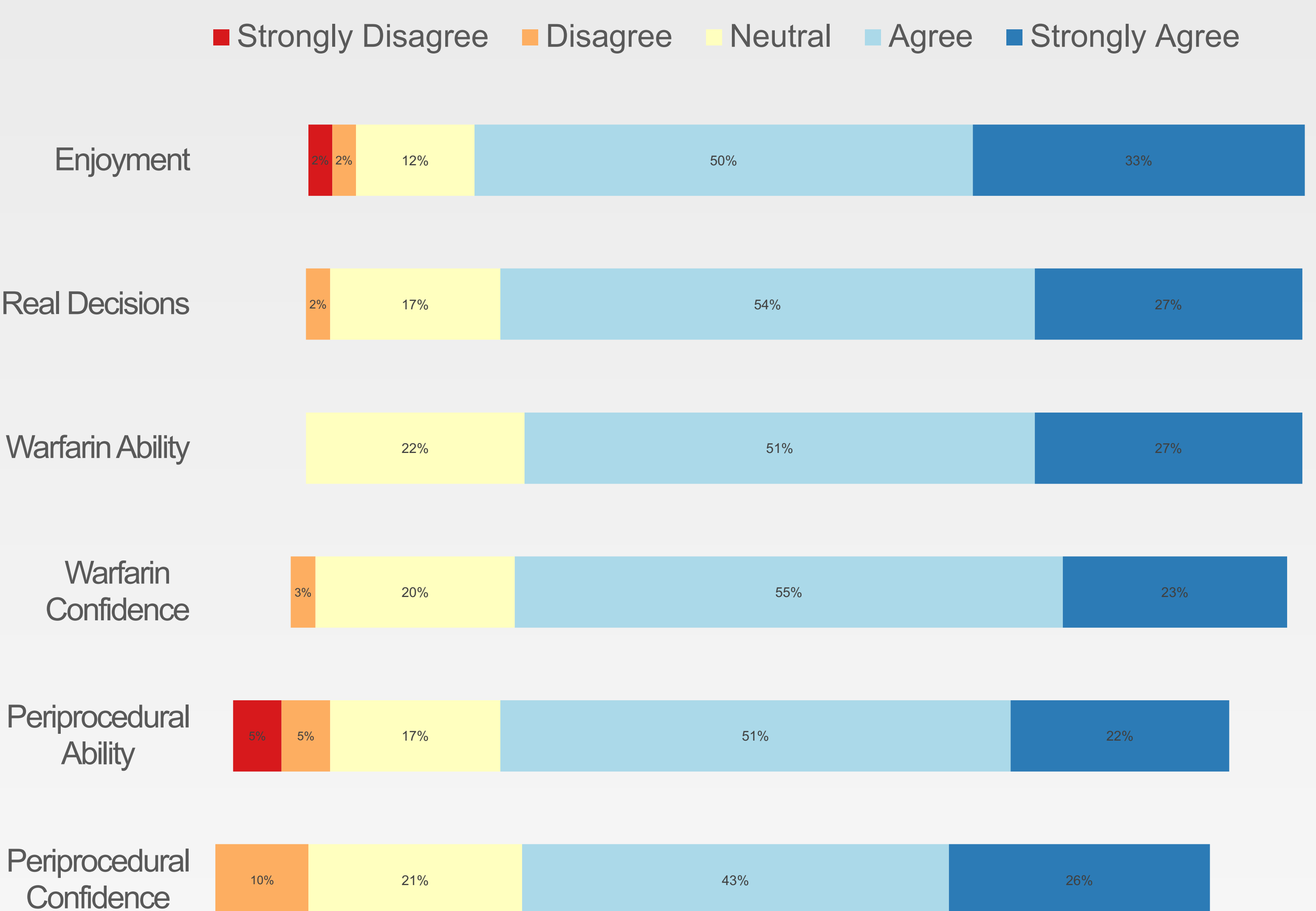
Choose your Antidiabetic

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



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.

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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.

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