

Background

- As the role of pharmacy expands into more direct patient care experiences, the knowledgeable management of chronic diseases will become essential in providing optimized care and improving outcomes
- 60% of adults in the United States live with one chronic disease; 40% of adults live with two or more¹
- Pharmacy students at Southern Illinois University Edwardsville (SIUe) receive limited exposure to application-based chronic disease management in the didactic curriculum until their Advanced Pharmacy Practice Experience (APPE) rotations
- The lack of exposure to chronic disease management led to the development of a didactic ambulatory care elective in the third professional year of the pharmacy curriculum
- The elective focuses on expanding the student's therapeutic knowledge of several chronic disease states and the application of clinical guidelines to case scenarios
- The elective aims to improve the student's ability to formulate comprehensive evidence-based care plans and communication skills through self-directed learning, team-based care planning and case presentations, as well as individual case presentations
- This is the first study to assess the effect of didactic ambulatory care elective completion on APPE performance using multi-year data

Objective

The purpose of this study is to assess the impact of the didactic ambulatory care elective on student APPE performance.

Methods

- Retrospective cohort study; received IRB approval
- Student performances on fourth year clinical APPE rotations were compared between students who had completed the didactic elective and those who had not
- Included all students' final APPE assessments on ambulatory care, internal medicine, and patient care electives completed in May 2016 through July 2019
- Primary outcome: final score received on the rotation, reported on a continuous scale with a maximum possible score of 100
- Secondary outcomes: scores received on clinical competencies and communication skills, scored on a Likert-scale with a corresponding numerical value between 0 (unacceptable) and 10 (above average):
 - Independent self-learning ability
 - Integration of patient-related data into therapeutic decision-making
 - Ability to interact with and provide recommendations to healthcare providers
 - Required case presentation
- Descriptive statistics and student t-test were used to analyze the data
- Alpha was set at 0.05

Results

Table 1: Grade Composition

| Performances Analyzed (n = 1,207; 100%) | |
|---|------------------------|
| APPE | Number of Performances |
| Ambulatory Care APPE grades | 328 (27.2%) |
| Internal Medicine and Patient Care Elective APPE grades | 879 (72.8%) |

Chart 1: Primary Outcome

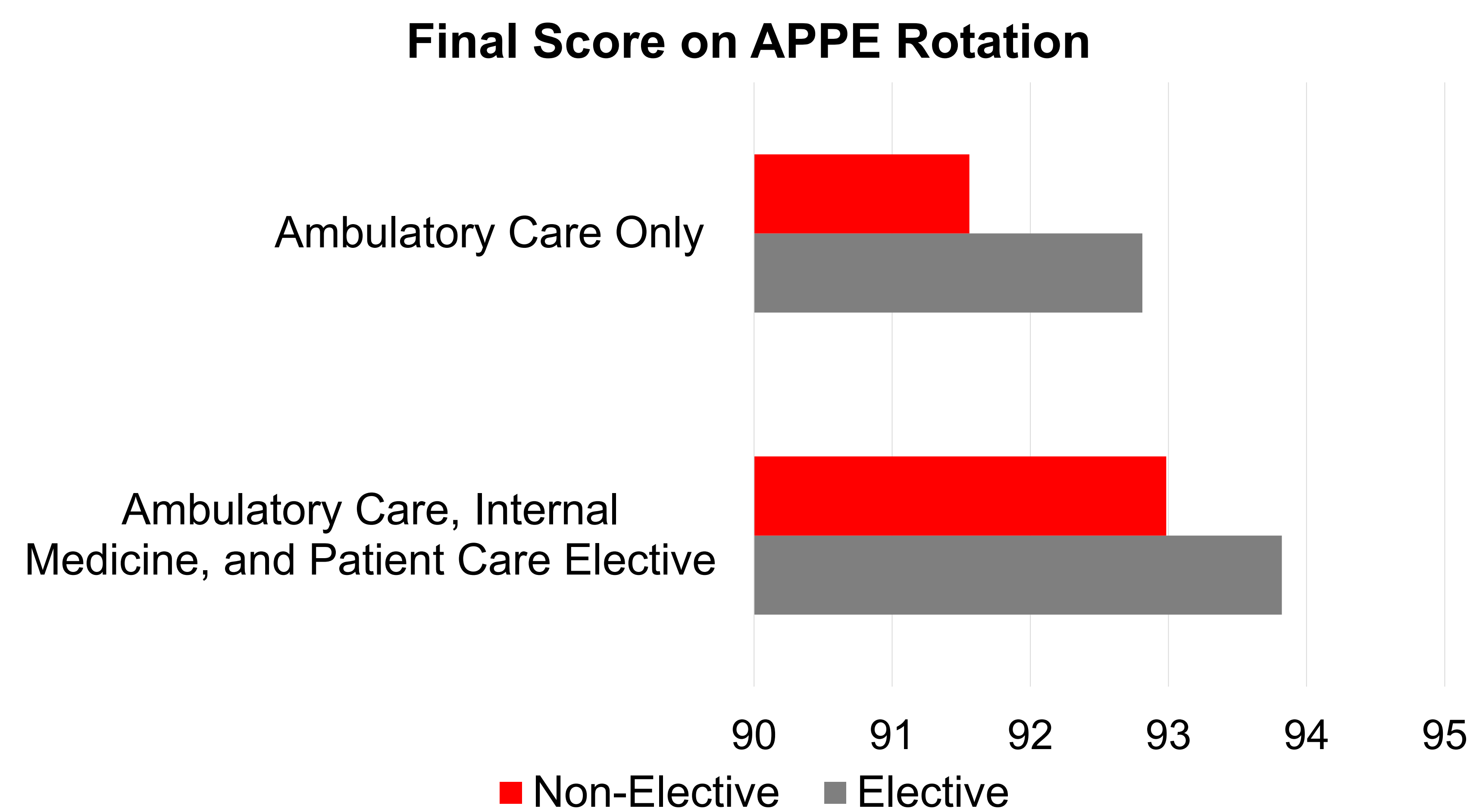


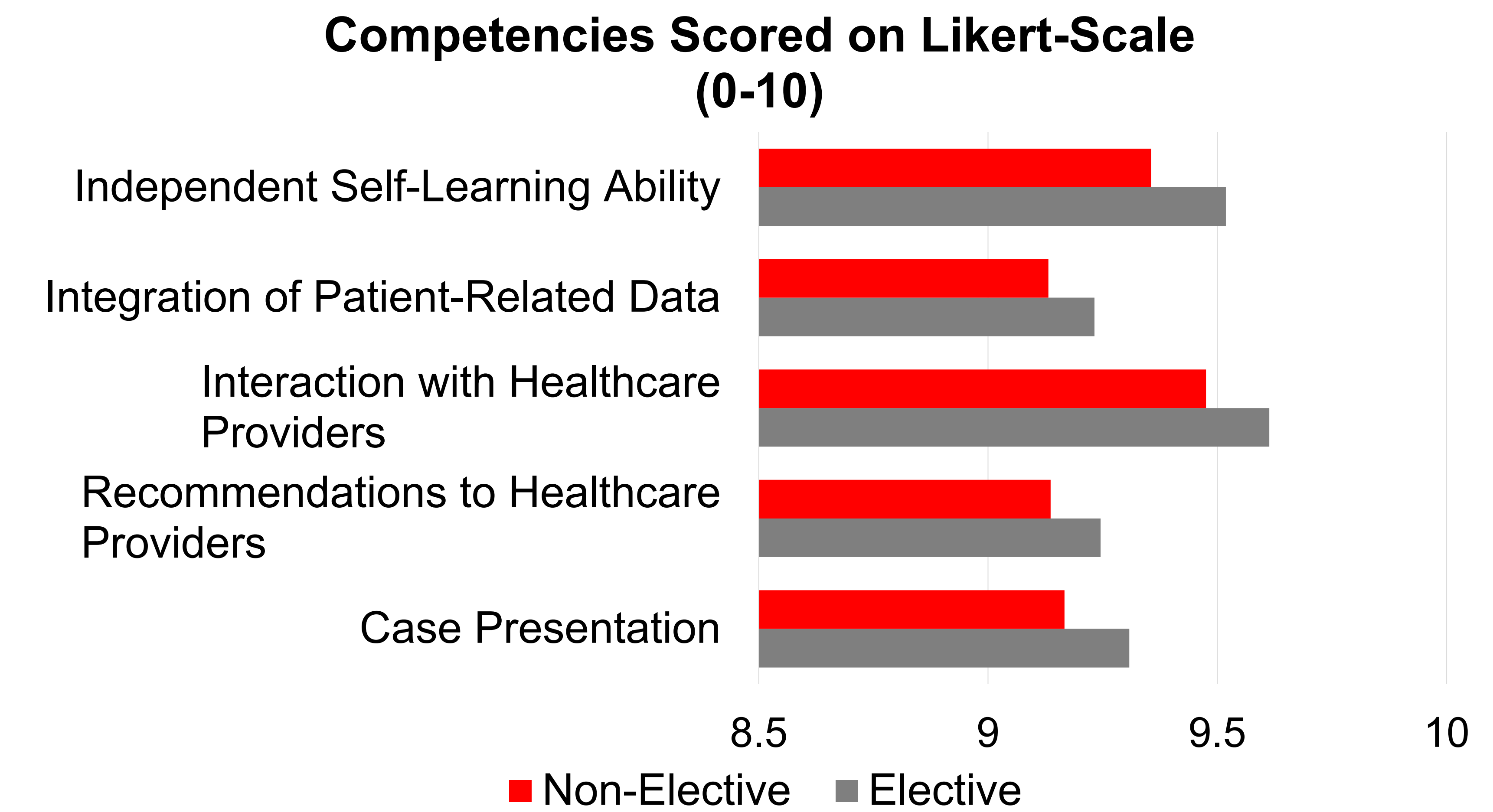
Table 2: Primary Outcome

| Final Score Received on APPE Rotation | | | |
|---|-----------------------|-----------------|---------|
| APPE | Elective/Non-Elective | Mean Score (SD) | P-value |
| Ambulatory Care only | Elective | 92.81 (4.58) | 0.0287 |
| | Non-Elective | 91.56 (5.27) | |
| Ambulatory Care, Internal Medicine, and Patient Care Elective | Elective | 93.82 (3.91) | 0.0031 |
| | Non-Elective | 92.98 (5.65) | |

SD; standard deviation

Results

Chart 2: Secondary Outcomes



Primary Outcome

- Considering only the ambulatory care APPE final grades, students who had taken the elective scored on average 1.25 points higher than students who were not enrolled
- Considering final grades from all included APPEs, students enrolled in the elective scored 0.84 points higher on the final evaluation

Secondary Outcomes

- Students enrolled in the elective scored significantly higher in all of the assessed competencies (See Chart 2)

Limitations

- Several confounding variables were not adjusted for in the analysis:
 - Simultaneous enrollment in other electives that either develop similar skills or increase student workload
 - Varying expectations among different preceptors
 - Selection bias: higher performing students may have chosen an elective that is perceived to be more difficult than others
- Statistically different scores did not result in significantly different letter grades
- During the study period, other didactic courses evolved to include more case application experiences

Conclusion

This study showed higher patient care APPE scores were received by students who completed the ambulatory care elective compared to those who did not take the elective. Follow-up studies with additional years of APPE data and surveys to investigate student perception would be necessary to develop more definitive conclusions.

References:
1. National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). Centers for Disease Control and Prevention. Updated October 23, 2019. Accessed November 28, 2019. <https://www.cdc.gov/chronicdisease/about/index.htm>