THE OHIO STATE UNIVERSITY COLLEGE OF PHARMACY

Medication Reconciliation Rotation Impact on Second Year Pharmacy Students' Self-Perceived Competencies

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BACKGROUND

- Medication reconciliation (MedRec) is a recognized patient safety strategy and requirement of healthcare accreditation in the United States.[1,2]
- MedRec training interventions for health profession students vary, with few publications reporting on learning outcomes in medical/pharmacy education.[3-5]
- Students at The Ohio State University (OSU) College of Pharmacy (COP) complete MedRec rotations at the Wexner Medical Center (WMC), in order to:
  - Improve patient outcomes by engaging in MedRec process
  - Complete introductory experiential rotations and enhance students' drug knowledge, patient care, and transitions-of-care experiences
  - Enhance resources available to OSUWMC by gathering complete medication histories under pharmacist supervision

OBJECTIVE

To assess change in pharmacy students' self-perceptions of MedRec impact and achievement of individual competencies, after participating in a first, required introductory pharmacy practice experience (IPPE) rotation.

METHODS

STUDY DESIGN

- Observational, cohort study of pre-post survey data completed by second-year PharmD students (Class of 2025; N=115), after MedRec IPPE (Figure 1)
- Retrospective post-then-pre[6] design prompted students to reflect upon experiences and rate change in skill levels, at end of OSUWMC rotation

SURVEY INSTRUMENT

- Online survey addressing three dimensions of MedRec learning outcomes:
  - Core skills: clinical competency (10 questions), confidence (5 questions), and communication skills (7 questions)
    - Likert scale of 0 (not competent) to 10 (fully competent)
  - Rating of patient impact, per Centers for Medicare/Medicaid Services patient quality measures (1 question, post-rotation only)
    - Likert scale of 0 (no positive impact) to 10 (extreme positive impact)
  - Prior healthcare, pharmacy, and MedRec experiences (3 questions)

ANALYSIS

- Primary endpoint: change in competency areas by composite score
  - Estimated power of >90% to detect medium effect size difference between pre- and post-training for primary endpoint, when n=73 included participants
- Secondary endpoints: change on individual questions and patient impact
- Changes analyzed by paired Student t-test (for significance) and Cohen's difference (d) (for effect size)
  - d ≥0.80 = large effect; 0.50 - 0.79 = moderate effect; <0.50 = small effect
- Interim analysis completed May 2023 (study period Sept 2022 – Sept 2023)

Figure 1. OSU COP-WMC MedRec IPPE: Rotation Training Model and Expectations

Week 1	Week 2	Week 3	Week 4	Week 5
Trained by APPE Student	Supported by Week 4 P2 Peer	Works Independently; Competency Assessed	Supports and Observes Week 2 Student	Works Independently; Final Assessment
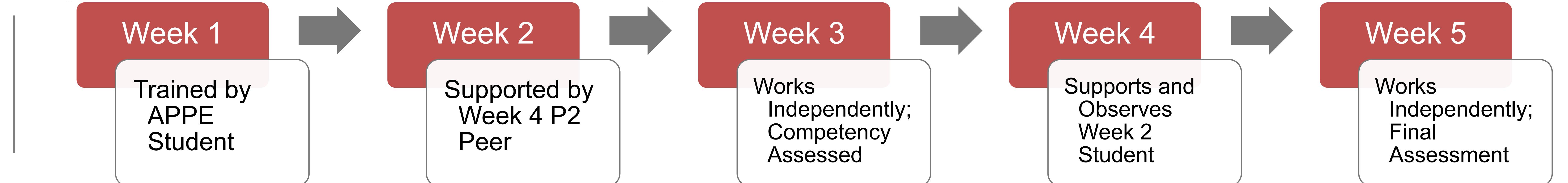
*All students complete five, 4-hour blocks for P2 MedRec IPPE, with a target of 2 patient histories per block. All MedRecs supervised/finalized by pharmacist preceptor.

PRELIMINARY RESULTS

Figure 2. Composite Scores for Core Outcomes, Pre- & Post-Rotation

p <0.001, d =1.53 (Clinical Competency)
p <0.001, d =1.99 (Confidence)
p <0.001, d =1.66 (Communication)
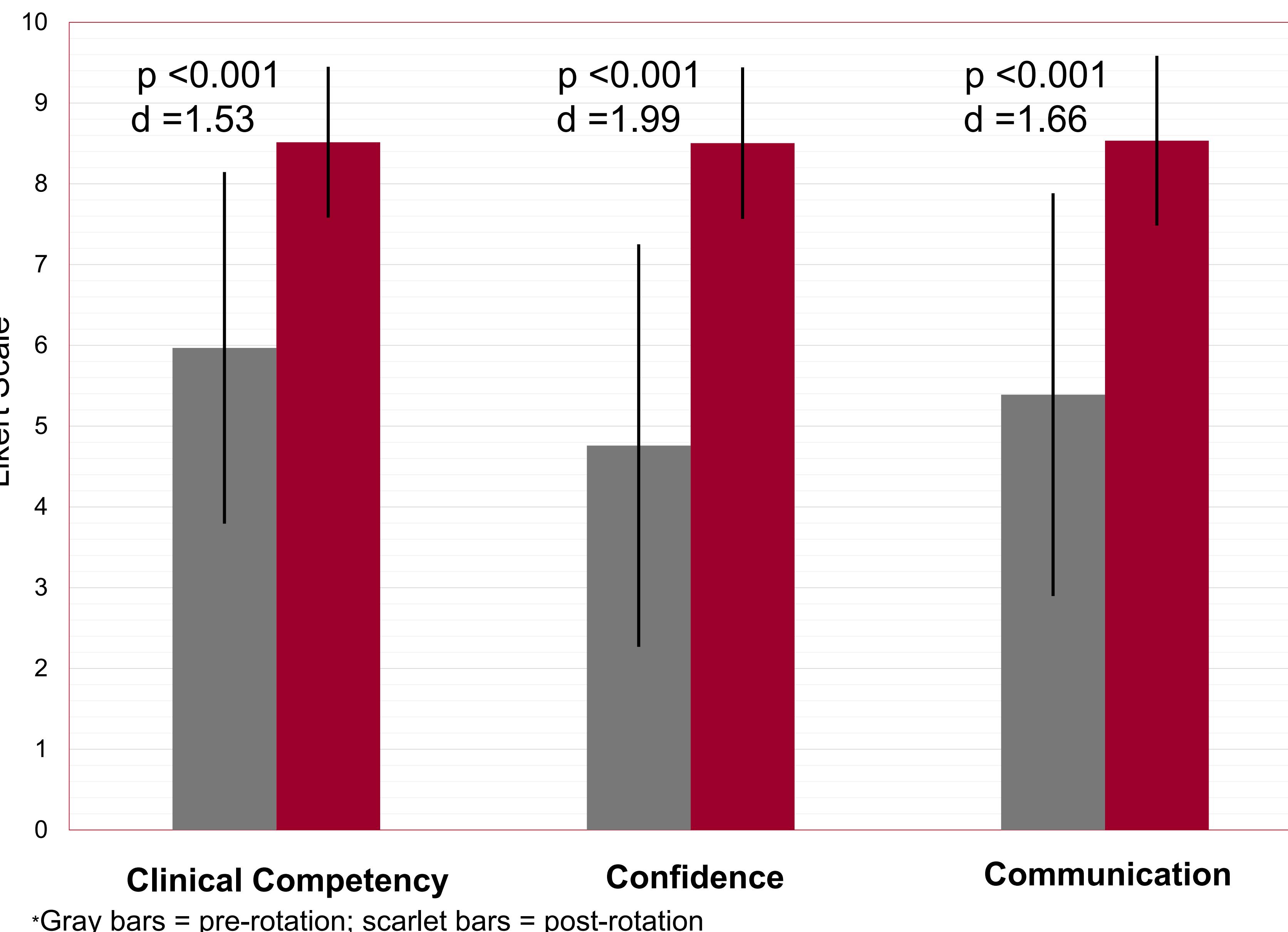
*Gray bars = pre-rotation; scarlet bars = post-rotation

- To-date, student survey participation = 81.5% (75/92 completing P2 MedRec IPPE)
  - Sixty-nine students (92.0%) reported current pharmacy work experience
  - Two students (2.6%) reported previous pharmacy work experience and four students (5.3%) reported no previous pharmacy experience
  - Five students (6.7%) reported non-pharmacy healthcare experience
- Patient impact (patient quality measures) score: 7.31±1.65
- Secondary endpoints:
  - p <0.001 for all individual pre-post questions (N=22)
  - d >0.80 for all individual questions except Communication Q6: competency in communication with nursing staff, d =0.68

Figure 3. Students' Previous MedRec Experience

- 65.3% (n=49) No Experience
- 24.0% (n=18) Completed MedRec
- 11.7% (n=8) Observed MedRec
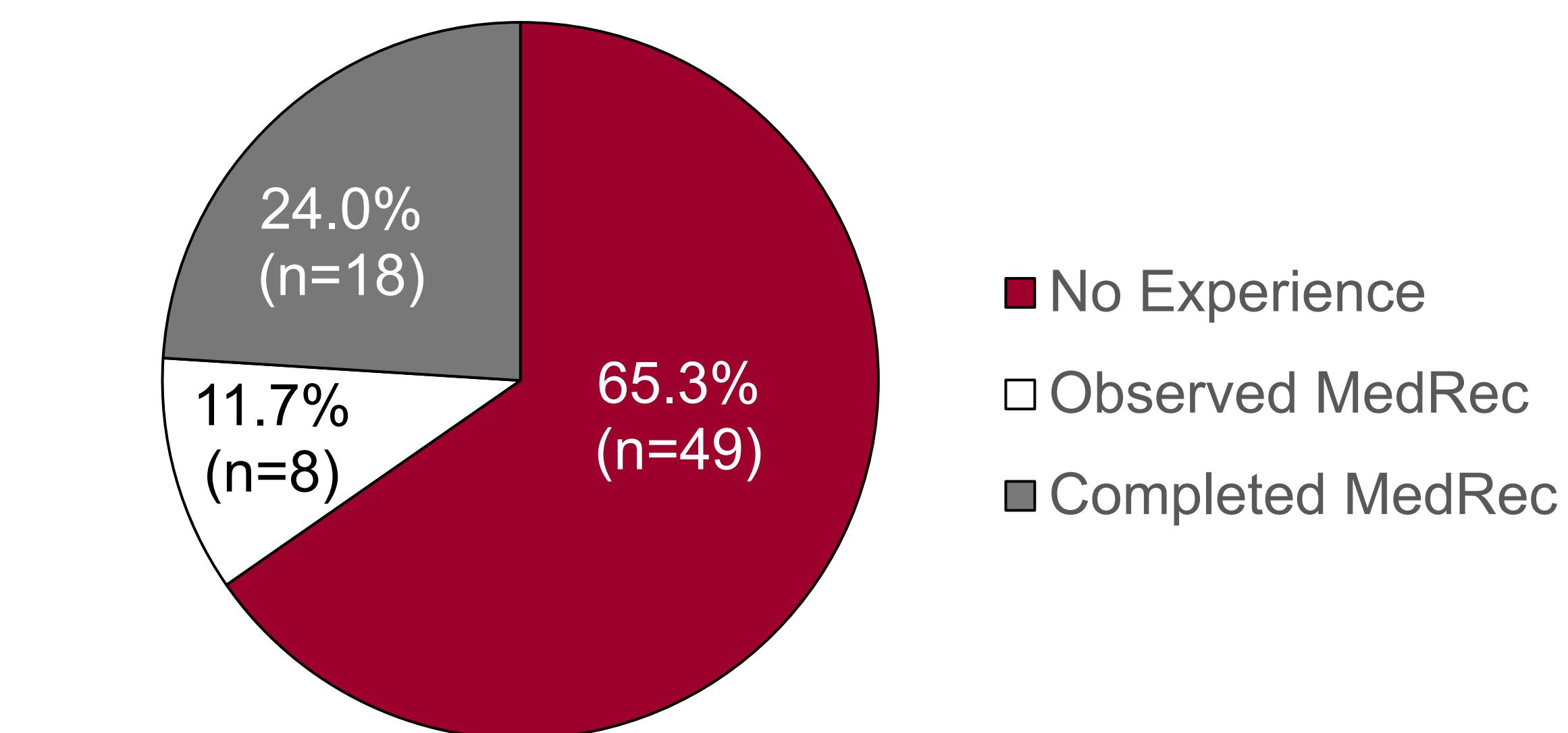
LIMITATIONS

- Interim analysis without full population results
- Self-reported nature of data, without objective learning assessments
- Generalizability is unknown: one cohort from one pharmacy school
- Student survey tool not previously validated

CONCLUSIONS

Preliminary analysis suggests that OSU student pharmacists achieve MedRec learning goals related to improved clinical competence, confidence, and communication skills. Students report a positive impact on OSUWMC patient care. Despite wide variability in pre-rotation ratings, consistency across domains in post-rotation results suggests that the MedRec IPPE experiences adequately support learners with differing healthcare and pharmacy experiences. Future plans include finalizing data collection through the end of current P2 MedRec IPPE period (anticipated Autumn semester 2023), and additional sub-group analyses. Results will inform and improve the OSU MedRec IPPE model.

References
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