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Evaluation of Pharmacists' and Student Pharmacists' Perceptions of the Use of a Medication Therapy Management (MTM) Based Medication Related Falls Risk Assessment Tool (MFRAT)
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Background

❖ Falls can be a devastating event to community dwelling elders with multifactorial causes including physiological changes due to aging, concomitant diseases, gait abnormalities, environmental factors and medications effects on multiple systems

❖ A number of approaches to addressing medication related fall risk have been developed which focus on the presence or absence of certain medications or medication classes. To date, no existing systems can rapidly identify fall risks increasing drugs (FRIDs) nor have been widely used in the community pharmacy setting.

❖ The Medication Falls Risk Assessment Tool (MFRAT) is a prototype clinical decision support tool designed to be integrated into a medication therapy management (MTM) encounter. This tool has been used by students at the University at Buffalo (UB) School of Pharmacy and Pharmaceutical Sciences (SPPS) and by practicing pharmacists across the continuum of care.

Objectives

❖ The objective of this study is to assess users' perceptions of the MFRAT in terms of its usability in workflow, clinical utility, patient usability of the generated reports and technical difficulties encountered.

Methods

Design:
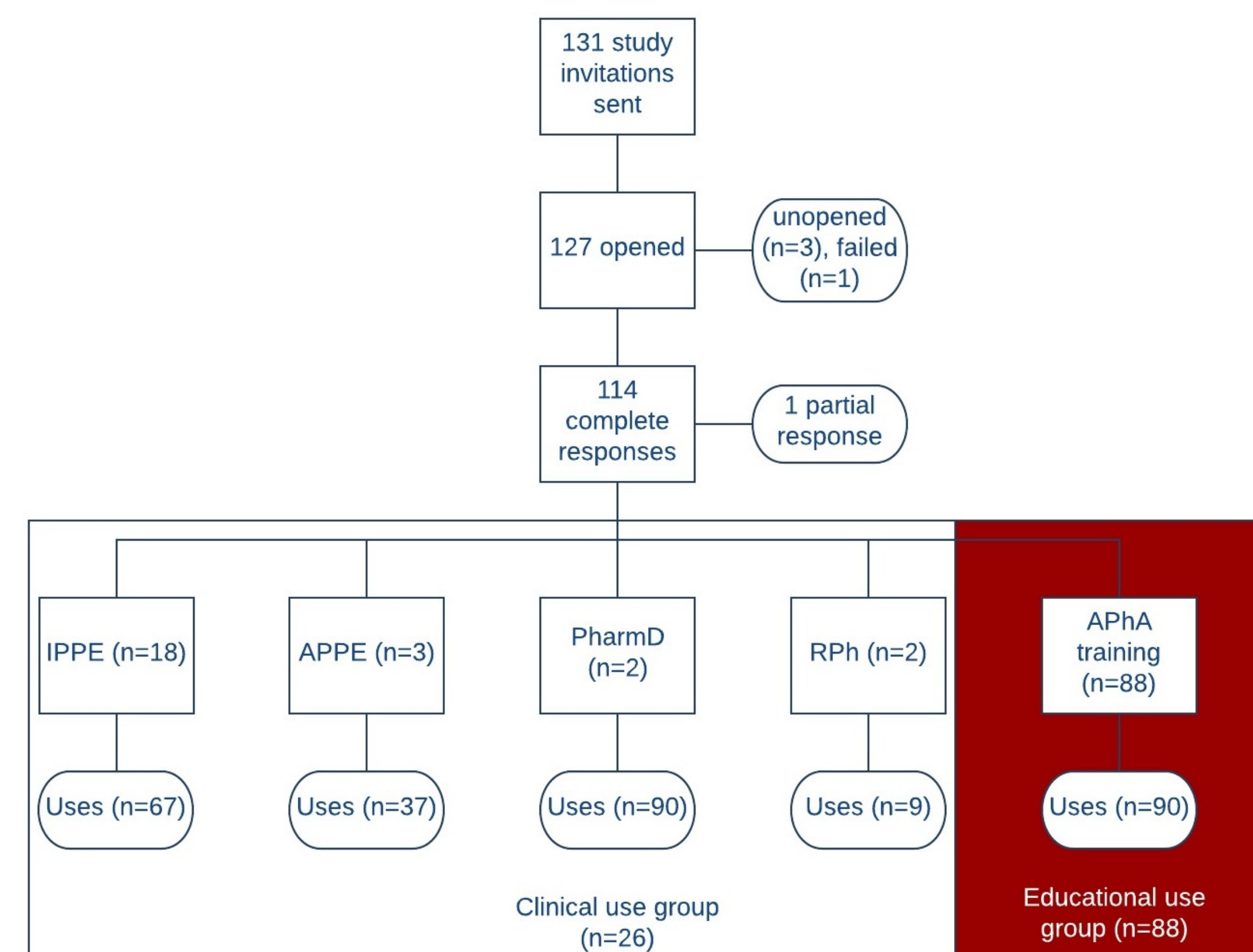❖ Cross-sectional survey distributed via email

Inclusion criteria:
❖ All pharmacists and student pharmacists who had used the MFRAT as part of clinical practice or as part of an educational exercise.
  ❑ Clinical group – Used the MFRAT as part of established MTM procedures in pharmacy practice or as part of a mobile Fall Risk Reduction MTM clinic.
  ❑ Educational group – Completed required MTM for APhA training certificate with a patient who met CMS criteria for MTM services using the MFRAT.

Survey Details:
❖ Demographic data collected included education level and number of MFRAT uses.
❖ Fourteen survey questions queried MFRAT users perceptions of the tool in 3 use domains: Workflow; Clinical Utility; Patient Usability
❖ Five point Likert scale questions included responses of strongly disagree /disagree /neutral /agree /strongly agree.
❖ Quantitative and qualitative data were collected with the intent to improve the tools usability by clinicians and patients.
❖ Differences in perceptions between the clinical and educational groups were evaluated.
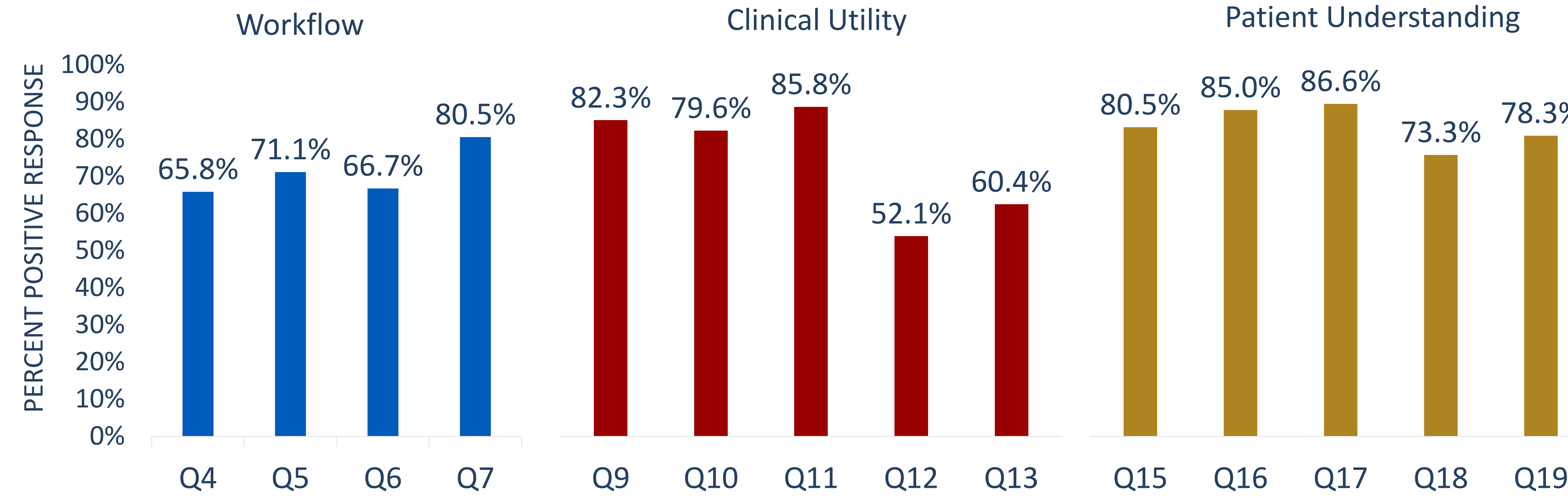
Statistical Analysis:
❖ A between group analysis was performed to test for a difference in positive response rate (agree and strongly agree) between the Clinical and Educational group.
❖ Chi-squared and Fisher's exact test were used as appropriate and a *p*-value of less the 0.05 was considered statistically significant.

Results

Workflow: Q4 65.8%, Q5 71.1%, Q6 66.7%, Q7 80.5%

Clinical Utility: Q9 82.3%, Q10 79.6%, Q11 85.8%, Q12 52.1%, Q13 60.4%

Patient Understanding: Q15 80.5%, Q16 85.0%, Q17 86.6%, Q18 73.3%, Q19 78.3%

Pharmacy Workflow:
Q4) The MFRAT is available in a format compatible with accessible pharmacy/personal computing devices.

Q5) Information can be input into the tool forms at a rate consistent with the pace necessary to conduct an MTM session live with a patient.

Q6) If you completed more than one MFRAT report, the pace of data entry improved with each subsequent case.

Q7) The tool is organized with a convenient layout for the completion of an MTM with a patient.

Clinical Utility:
Q9) The MFRAT accurately identified and prioritized medications associated with risk of fall.
Q10) Based on your clinical judgment, the grading system used accurately stratified patients identified at being at a higher risk of falls.
Q11) The MFRAT tool provided a rapid evaluation of medication related falls risk that was useful to you.
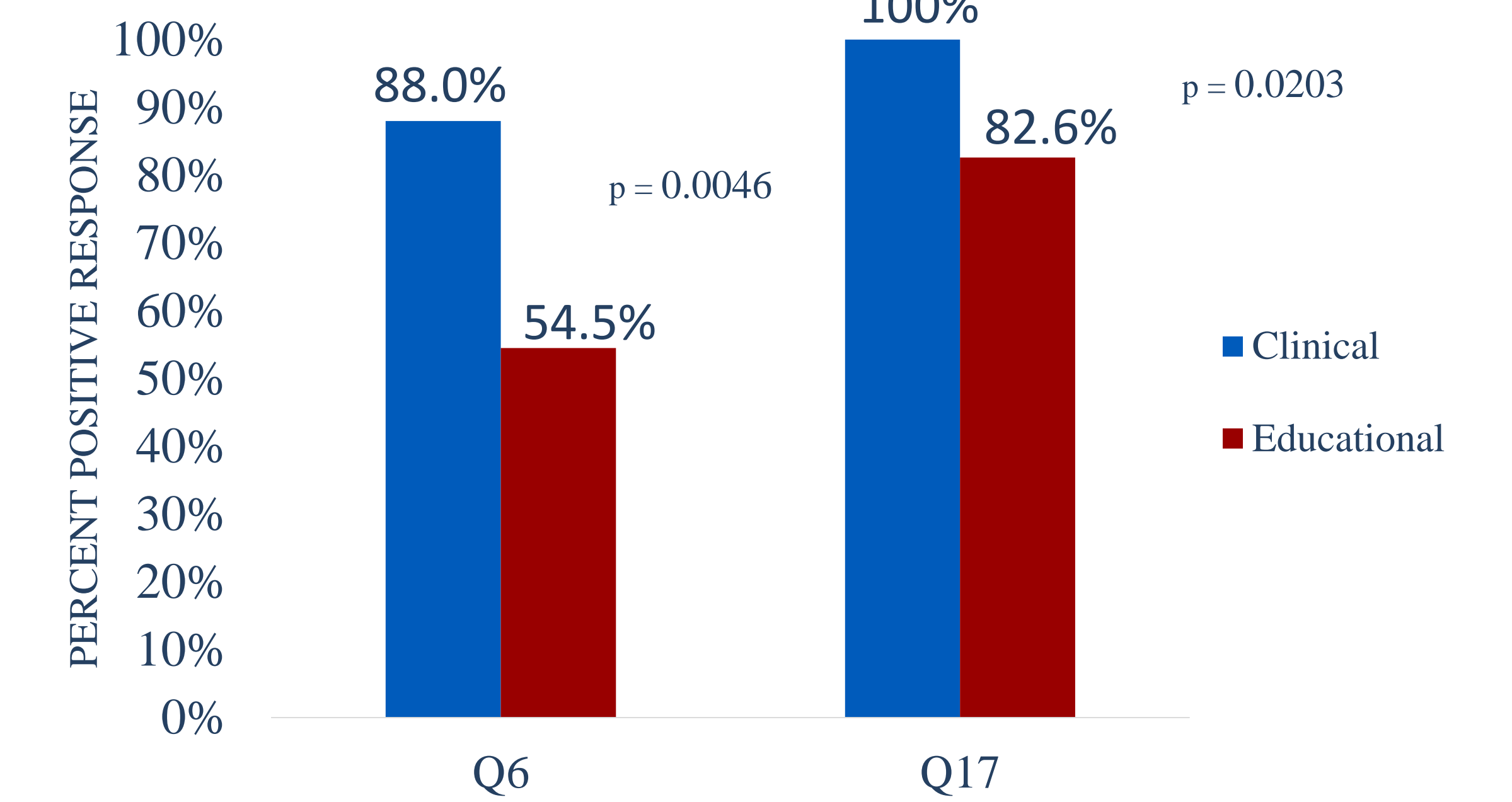Q12) The medication related falls risk grade has prompted you to contact a provider with a recommendation.
Q13) In your experience providers would be been willing to accept recommendations accompanied by the MFRAT printout.

Patient Usability:
Q15) The Patient Medication Record (PMR), Medication Action Plan (MAP) and MFRAT can be printed in a format easily read by the patient.
Q16) Patients can clearly read and understand the information presented in the Medication Action Plan (MAP).
Q17) The MFRAT presents information that is easily understood by your patients
Q18) In your experience, patients are receptive to the idea of sharing the information provided on the MAP and MFRAT with their primary healthcare provider.
Q19) In your experience, patients responded positively to the MFRAT incorporated into the MTM encounter.

Qualitative Feedback

Domain	Comment	Number
Workflow	Cumbersome data entry	3
	Difficult to use drop down menu	9
Clinical utility	Missing medications in database	3
	No dose included in risk score	1
	Comorbidities not included in fall risk	2
	No list of alternative medications to FRIDs	1
Patient use	Patients liked the print outs they received	2
	Patients receptive to sharing with primary care	2
Technical difficulties	Prototype incompatible with Mac devices	24

Significant Findings: Clinical Vs. Educational

Q6: Clinical 88.0%, Educational 54.5% (p = 0.0046)
Q17: Clinical 100%, Educational 82.6% (p = 0.0203)

Discussion

Pharmacy Workflow:
❖ Issues with data entry into the Excel interface were identified as the main workflow and technical difficulty.
❖ However, the significant finding that data entry speed improved with subsequent uses validated our premise that data entry would be reduced to a minor workflow barrier with time.
❖ Developing this prototype into a clinical decision support tool integrated within health care software platforms will eliminate these barriers.

Clinical Utility:
❖ Clinical utility was in general perceived as high. However, users supplied a number of suggestions that would make it more useful.
❖ As with any clinical decision support tool, database maintenance will need to be performed to add new medications as they are approved and to update fall risk scores as more literature becomes available.
❖ Lower responses related to provider communication questions in this domain (Q12 & Q13) were appreciated and expected as many users finding a low risk of falls would not feel compelled to make contact.
❖ Low positive response to provider communication questions could have also been influenced by a large student group in which there was no expectation that a provider would be contacted.

Patient Usability:
❖ Perceptions of patient response were encouraging based on the results of this study. More experienced respondents were unanimously positive regarding patients' ability to understand the presented fall risk information.
❖ Several of those in the clinical group expressed that patients were enthusiastic about their encounter and about sharing the results with their primary care provider.
❖ This suggests that pharmacists offering fall risk reduction assessments could be a meaningful way to improve patient safety.

Strengths:
❖ The study had a relatively high response rate of 87% and respondents reported an aggregate of 300 uses of the MFRAT.
❖ Few statistically significant differences were detected between the clinical group, which had more experience with the tool, and the educational group. This suggests that the aggregate data are not skewed by the larger student group.

Limitations:
❖ Only 4 of 8 pharmacists surveyed responded.
❖ A considerably larger number of students used the tool outside of a community pharmacy setting so conclusions about its use in established MTM workflow are limited.

Conclusions

❖ Pharmacists and future pharmacists found the MFRAT to be a useful tool in workflow, clinical utility and patient usability to identify FRIDs and address medication fall risk within an MTM format.
❖ Deficits in the present configuration of the prototype were minor and can be rectified through collaboration with software engineers.
❖ Continued development of the MFRAT is reasonable based on these findings to improve provider and patient satisfaction.

Acknowledgements

Disclosures:
❖ All study authors have no interests to disclose.