Effective Quality Improvement Education for Pediatric Residents

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Introduction

- The ACGME holds systems-based medicine and quality improvement (QI) as core competencies for pediatric resident education.
- The literature has shown that curricula that are longitudinal, project based, and in-person result in stronger QI knowledge and resident confidence in QI[1,2,3].
- However, not all residencies can provide these resources for their curriculum and may choose give lectures or online modules only. In the wake of COVID19, many residencies are forced to use online modules only.
- The goal of this study is to determine if there are knowledge or attitude differences in pediatric residents who receive online learning compared to those who also receive experiential learning.

Methods

- First year pediatric residents were assigned to online modules only (control) or in-person experiential learning in addition to online modules (intervention).
- Due to the COVID-19 pandemic, residents who had their rotation early in the academic year were in the control group while those who had their rotation later in the academic year were in the intervention group.
- All residents were given the AQIKS assessment[4], a validated assessment tool for pediatrics Quality Improvement Education, at 2 time points: prior to any quality improvement curricula (pre-test), at the end of their first 2-week rotation (post-test). Residents also completed a survey after the post-test.
- In total, 30 residents participated in the curriculum, and 25 consented to have their AQIKS scores and survey results to be included in this study.
- Shapiro Test was used to check normality. Paired t-tests and unpaired t-tests were used to compare changes from pretest to posttest within groups and test scores across groups respectively. Wilcoxon Rank Sum test was used to compare Likert scores between the two groups.

Results

Online Modules are Sufficient For Learning QI Knowledge

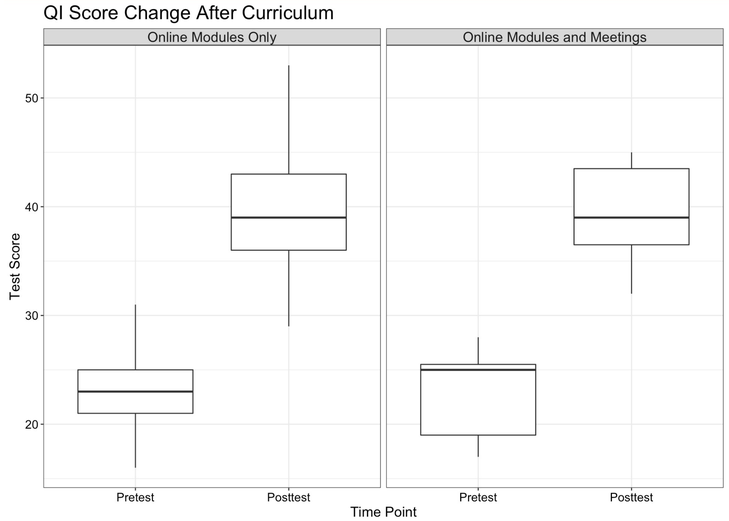

Figure 1: **AQIKS Exam Score Changes Before and After Curricular Intervention.** 25/30 residents participated in the study. There were no differences across groups for either the pretest of the posttest. The average pre-test score was 23.1 and 22.7 for the control and intervention groups (p = .87). The average post-test score was 39.9 and 39.4 for the control and intervention groups (p = .851). For both groups, the difference between post-test and pretest were significant (p < .001).

QI Meetings May Have the Advantage in Leaving a Better Impression

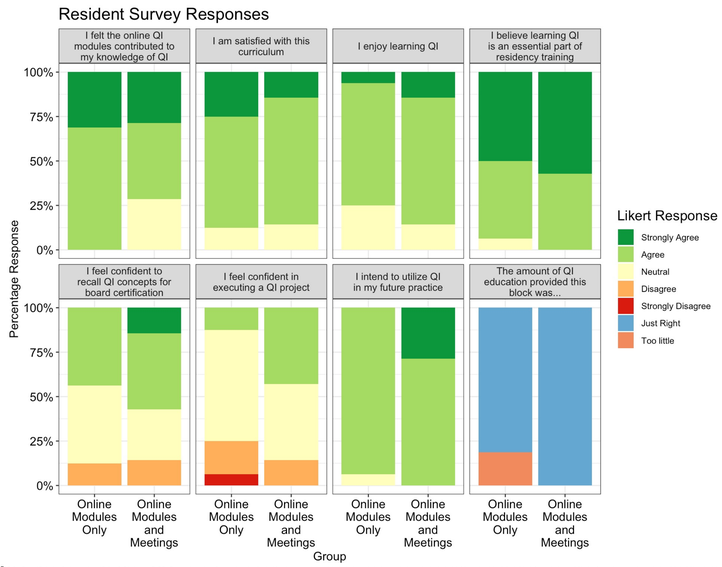

Figure 2 : **Resident Attitudes Towards Their QI Curriculum.** Likert survey responses were generally similar between the two groups. Both groups believed their curriculum was useful and contributed to their knowledge. However, the intervention group was more likely to report greater confidence and intention applying QI to clinical practice (p = .040).

Conclusions

- There was no difference in QI test performance between control and intervention groups.
- In terms of meeting ACGME requirements and resident expectations, online modules seem to be sufficient for achieving QI competency in pediatric residents.
- However, interactive QI meetings may still be useful in demonstrating how QI can be applied to clinical practice.

Future Work

- It is still not determined if QI meetings have any impact on longer term retention. As part of the curriculum, an additional test will be administered at the end of the spring term which will elucidate this difference.
- In the next academic year, more residents will experience the curriculum helping increase the power of this study.

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