

Comparison of Medical Knowledge Between Pediatric Residents Who Attend Continuity Clinic at Different Sites

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ABSTRACT

Objective: The objective of this study is to determine if a difference in medical knowledge exists between pediatric residents attending a private practice continuity clinic and pediatric residents attending an academic continuity clinic, as measured by the American Board of Pediatrics in-training examination.

Design: A retrospective evaluation of scores on the American Board of Pediatrics in-training examination was performed, comparing the scores of residents who attend a private practice continuity clinic and those who attend an academic continuity clinic.

Results: No significant difference was found in test scores of the 2 groups of residents for each year from 1999 to 2003. There was no significant difference between the mean differences of scores from the PL-1 year to the PL-3 year. Both groups showed improvement in scores between the first and last years of residency.

Conclusion: It is unlikely that there is a significant difference in medical knowledge between pediatric residents attending a continuity clinic in a private practice setting and pediatric residents attending a continuity clinic in an academic setting.

INTRODUCTION

To better prepare residents for general pediatric practice in the ambulatory setting, the Residency Review Committee in Pediatrics of the Accreditation Council of Graduate Medical Education requires pediatric residency training programs to provide an adequate continuity clinic experience for all residents.¹ This experi-

ence is expected to occur weekly throughout residency training, assuring that the resident sees an appropriate number of patients on a consistent basis. To satisfy these expectations, many pediatric training programs have enlisted the assistance of pediatricians in private offices. The pediatricians serving as preceptors for the residents in private practice settings are usually not full-time faculty members within a medical school department of pediatrics or within the residency training program. Few studies have evaluated whether there are differences with regard to knowledge and preparation for practice between residents who have their continuity clinic in a private practice, where they are supervised by volunteer preceptors, and those who have their continuity clinic at an academic clinic, where they are supervised by full-time faculty pediatricians.

The objective of this study was to determine if a statistically significant difference in medical knowledge, as measured by scores on the American Board of Pediatrics (ABP) in-training examination (ITE), existed between residents at a private practice continuity clinic and residents at an academic continuity clinic.

METHODS

A retrospective study was conducted for pediatric residents enrolled at the Medical College of Wisconsin from July 1999 to July 2003. Each resident was assigned to a weekly continuity clinic at either a private pediatrician's office or the Downtown Health Center, an academic inner-city continuity clinic, based on individual preference stated at the start of residency training. Residents who did not attend the same continuity clinic for their entire 3-year residency were excluded from the analysis.

Researchers evaluated all eligible residents' test scores from the ABPITE administered annually from 1999 to 2003. Test scores of the group of residents attending a continuity clinic precepted by private practitioners were compared to those of the group of residents attending the Downtown Health Center

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Table 1. In-Training Exam Score Comparisons Between Pediatric Residents at a Private Practice Continuity Clinic and Academic Continuity Clinic by Year of Training

Level of Training	Score in Private Practice Clinic Site			Score in Academic Clinic Site (Downtown Health Center)			t test, P-value
	n	Mean	Standard Deviation	n	Mean	Standard Deviation	
PL-1	34	203	100.4	45	187	118	0.5
PL-2	31	293	102.4	43	278	135	0.6
PL-3	28	336	102.9	41	356	92	0.4
Total	93	273	115.4	129	271	135.2	0.9

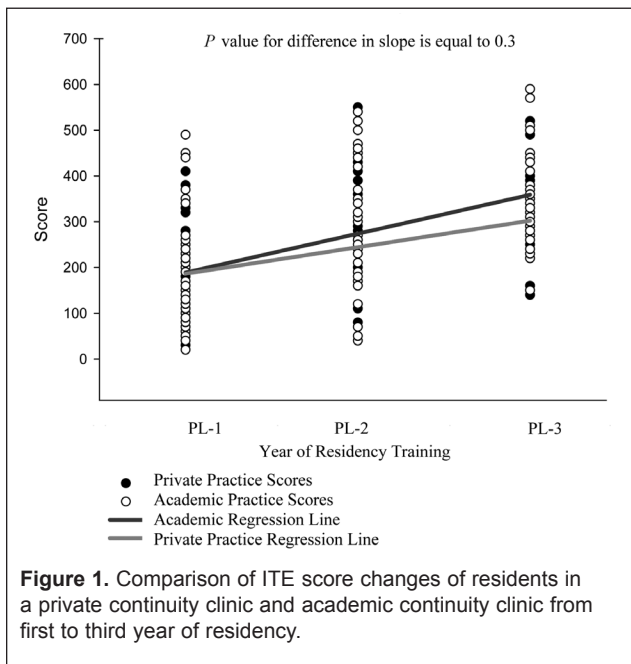


Figure 1. Comparison of ITE score changes of residents in a private continuity clinic and academic continuity clinic from first to third year of residency.

staffed by full-time general pediatric faculty from the Medical College of Wisconsin. Levels of training (eg, PL-1, PL-2, PL-3) were combined over the 4 years of the study. Comparisons were made between groups for each level of training. Mean improvement scores from the first to the third year of training were calculated and compared as well.

The student's t-test and Wilcoxon test were used to detect the score difference between the 2 groups of residents by level of training (PL-1, PL-2, PL-3), and the score difference between the first year (PL-1) and the third year (PL-3) in both clinic groups.

RESULTS

During the 4-year study period, the ITE was administered 5 times. Of the residents who attended a private practice clinic site, 93 ITE scores were evaluated. Of the residents who attended the Medical College of Wisconsin's academic clinic (Downtown Health Center), 129 ITE scores were evaluated. No signifi-

cant difference in test scores were found between the 2 groups of residents for each year of training. (Table 1)

Improvement in scores from the first year of residency to the last year was evaluated for all 5 years of ITE results (Figure 1). Although the improvements in scores were greater for residents attending a continuity clinic in an academic setting, these differences were not statistically significant. There was improvement in test scores between the PL-1 year and the PL-3 year of training in both continuity clinic groups.

DISCUSSION

Few studies have looked at an objective measure of outcome to evaluate any differences in knowledge acquired by residents with different continuity clinic experiences. This study used an objective measure, the ABP ITE, and determined that there was no difference in knowledge gained between residents participating in continuity clinics at the different types of sites.

Although no specific data is available from our clinics, resident supervision and responsibility appear to be similar. The community sites appear to see more suburban patients, more acute care, and fewer social problems, and they have less continuity with their patients than the residents at the Downtown Health Center.

Osborn examined the continuity experience at the University of Utah Health Sciences Center and found that residents in a private, community-based continuity clinic saw more patients, more acute care, and a broader range of patients, and were more likely to observe their preceptor and be observed.² Rice surveyed graduates of a residency program and found that those in private community continuity clinic sites saw more patients and acute care. They also observed more. However, they had less continuity with their patients and less well-child care compared to those in a public or university clinic.³ Subjective surveys to determine readiness to manage an office practice after graduation have been performed but have not distinguished between residents in different continuity clinic sites. Roberts surveyed residents

and employers and found overall resident preparedness as “well prepared” or “very well prepared.”⁴ Unlike our study, none of the studies described above was designed to measure potential differences in knowledge acquired by residents within different continuity clinic settings.

There are several limitations to our study. First, in-training examinations are administered at the beginning of the academic year and might bias the total data against detecting a difference since PL-1 residents will not yet have had a continuity clinic experience. However, when the data were analyzed looking at PL-2 and PL-3 residents only, there also was no difference. In addition, the lack of difference between PL-1s when analyzed independently confirms that baseline knowledge upon entry into residency training was equivalent in the 2 groups, thereby minimizing the possibility of selection bias. This study also could not separate and evaluate responses to individual questions on the ITE, which might have allowed us to evaluate specific knowledge of ambulatory pediatrics. It is possible that the number of questions testing ambulatory pediatric knowledge is insufficient to detect a difference. Finally, the study could not control for differences in elective rotations taken throughout residency and the possibility that ambulatory knowledge may be acquired through other experiences. All residents have a core curriculum consisting of conferences and journal clubs, and all residents in our program rotate through a Downtown Health Center block rotation and an outpatient private practice block month. Therefore, any potential differences in continuity clinic education could be compensated for by other educational activities during residency.

The ABP ITE may not be the most appropriate outcome measure due to the limitations summarized above. The main advantage of using the ABP ITE is that comparisons can be made between scores in different postgraduate training years. A more focused evaluation of specific ambulatory pediatric knowledge, as well as a specific evaluation of preparedness for practice, might allow the discovery of specific differences between the 2 groups. Nonetheless, as measured by the ABP ITE, it appears that major differences in general pediatric knowledge acquired by pediatric residents related to the site of their continuity clinic are unlikely. Future studies looking at other performance measures might help to confirm this finding.

CONCLUSION

Many pediatric residency programs use private practitioners and private offices as continuity clinic sites for pediatric residents. Although previous studies have

documented subjective differences in the experience gained by the resident, it appears that there is no difference in an objective measurement of outcome (the ABP ITE) between residents in a private practice setting and residents in an academic setting.

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