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Residency Case Mix Impact on In-Service Training Exam Scores

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Table.

	Graduate 2000 (n=12)	Graduate 2021 (n=21)	Total (n=33)	P-Value
Age Group				
25-30	5 (42%)	8 (38%)	13 (39%)	0.579
31-35	5 (42%)	11 (52%)	16 (49%)	
36-40	2 (17%)	1 (5%)	3 (9%)	
>40	0 (0)	1 (5%)	1 (3%)	
Gender				
Female	7 (64%)	10 (48%)	17 (53%)	0.472
Male	4 (36%)	11 (52%)	15 (47%)	
COVID-19 changed the career path	4 (33%)	12 (57%)	16 (49%)	0.282
Planning or considering a Fellowship prior to COVID-19	6 (60%)	7 (33%)	13 (42%)	0.247
COVID-19 changed Fellowship plans				
No answer	5 (42%)	1 (5%)	6 (18%)	0.168
Decided against a fellowship	0 (0)	1 (5%)	1 (3%)	
Decided in favor of a fellowship	0 (0)	1 (5%)	1 (3%)	
Undecided	1 (8%)	2 (10%)	3 (9%)	
Still doing a fellowship	2 (17%)	4 (19%)	6 (18%)	
Never considered a fellowship	4 (33%)	12 (57%)	16 (49%)	
COVID-19 changed the post-graduate attending schedule	6 (50%)	5 (24%)	11 (33%)	
How much did COVID-19 change the post-graduate attending schedule?				
None	6 (50%)	16 (76%)	22 (67%)	0.189
<25%	2 (17%)	1 (5%)	3 (9%)	
26-50%	3 (25%)	1 (5%)	4 (12%)	
>50%	1 (8%)	3 (14%)	4 (12%)	
Moving expenses and sign-on bonuses were reduced due to COVID-19?	1 (8%)	9 (43%)	10 (30%)	0.054

16 Residency Case Mix Impact on In-Service Training Exam Scores

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Learning Objectives: To examine the effect of increasing clinical exposure to common EM complaints had on in-service training exam scores, and provide some insight into how to further strengthen the relationship between these two pillars of training.

Background: The in-service training exam (ITE) for Emergency Medicine (EM) residents has been shown to predict subsequent pass rate on the American Board of Emergency Medicine (ABEM) qualifying exam. Multimodal learning theory suggests that clinical exposures to common EM presentations would be beneficial for acquiring and retaining medical knowledge. It is unknown whether greater clinical exposure is associated with higher scores on the annual ITE.

Objective: To determine whether a higher number of clinical patient encounters in a given domain correlates with higher ITE score across the corresponding ABEM domain.

Methods: This is a retrospective review examining ITE scores and chief complaints seen by EM residents from 2013-2021 at our main clinical site. Visits were attributed to the first assigned resident. Patient encounters were categorized by chief complaint into one of 20 domains of the ABEM Model of Clinical Practice using a previously published consensus process. ITE scores during the third year of training were broken down into percentages by domain. Linear regressions were performed comparing clinical exposure within a domain to the ITE score.

Results: Data were available for 70 residents. Correlation coefficients ranged between 0.01 and 0.29, indicating weak or no correlation (Table 1). Only 3 domains had significant correlations identified: Head, Ear, Eye, Nose, and Throat (multiple R=0.25, p<0.05), Musculoskeletal Disorders (multiple R=0.25, p<0.05), and Psychobehavioral Disorders (multiple R=0.29, p<0.05). Twelve of the categories demonstrated a negative correlation.

Conclusion: We found mostly weak, nonsignificant correlation between clinical exposure and ITE score within core EM domains. This may inform programmatic decisions for EM training, and further investigation is necessary to adequately describe the relationship between clinical training and exam performance.

Table 1. ABEM domain clinical exposures and correlations with ITE scores. *Bolded are significant.

Topic	Correlation Coefficient	P value
Abdominal and Gastrointestinal Disorders	0.14	0.021
Cardiovascular Disorders	0.03	0.84
Cutaneous Disorders	0.05	0.7
Endocrine, Metabolic, and Nutritional Disorders	0.06	0.64
Environmental Disorders	0.05	0.7
Head, Ear, Eye, Nose, and Throat Disorders	0.25	0.03
Hematologic Disorders	0.04	0.75
Immune System Disorders	0.01	0.93
Musculoskeletal Disorders (Non-traumatic)	0.25	0.04
Nervous System Disorders	0.07	0.56
Obstetrics and Gynecology	0.04	0.77
Other Components	0.03	0.81
Procedures and Skills	0.2	0.1
Psychobehavioral Disorders	0.29	0.02
Renal and Urogenital Disorders	0.04	0.74
Signs, Symptoms, and Presentations	0.03	0.82
Systemic Infectious Disorders	0.17	0.16
Thoracic-Respiratory Disorders	0.1	0.39
Toxicologic Disorders	0.04	0.72
Traumatic Disorders	0.12	0.31