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The American Board Style Practice In-Training Examination as a Predictor of Performance on the American Board of Surgery In-Training Examination

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BACKGROUND: The American Board of Surgery In-Training Examination (ABSITE), is an annual 250 question, multiple-choice test that assesses residents' surgical knowledge in preparation for board examinations. At our program, we developed a Surgical Council on Resident Education-based American Board Style Practice In-Training Examination: The ABSPITE. The 40-question examination was designed to help with test preparation. The purpose of this study was to evaluate the ABSPITE's predictive value on ABSITE performance.

METHODS: From 2013 to 2016, the ABSPITE was administered to residents at our program. Performances ($N = 134$) were graded based on a standardized scale to determine resident percent and percentile performance, then compared to average ABSITE performance.

RESULTS: Combined analysis showed a statistically significant positive correlation between average ABSITE and ABSPITE percentages and percentiles. This held true when categorical and preliminary residents were compared. When stratified by resident PGY level, the same results were seen for PGY 1 and PGY 2 residents but correlations failed to reach statistical significance for higher resident training levels.

CONCLUSIONS: The practice ABSPITE examination strongly correlates with ABSITE performance among junior residents at our program, and may be a valuable tool to predict ABSITE performance and guide review efforts. (J Surg Ed ▮:▮▮▮-▮▮▮. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEYWORDS: Surgical Education, ABSITE, In-Training Examination, Surgery Residency, Standardized Testing, Performance Prediction

COMPETENCIES: Medical Knowledge competency

INTRODUCTION

Certification by the American Board of Surgery (ABS) after completing a general surgery residency consists of a 2-step process, which involves completing the ABS qualifying examination (QE) followed by the ABS certifying examination (CE). Failure to pass these examinations has significant consequences for the individual as well as the training program. A surgeon who is not board-certified may find difficulty in obtaining hospital credentials. Programs that do not achieve a minimum pass rate may lose their accreditation.

This has pushed residency programs, program directors and residents to look for predictors of performance on the ABS examinations. Among the factors evaluated, the American Board of Surgery In-Training Examination (ABSITE) was found to strongly correlate with performance on the ABS QE in a study in several studies.[1-4]

The ABSITE, initially administered in 1975,[5] is offered annually to general surgery residency programs. The examination has undergone several modifications over the years and currently consists of around 225 multiple-choice questions over 5 hours. Standardized scores, percentage correct and resident percentiles are subsequently reported to programs and residents.

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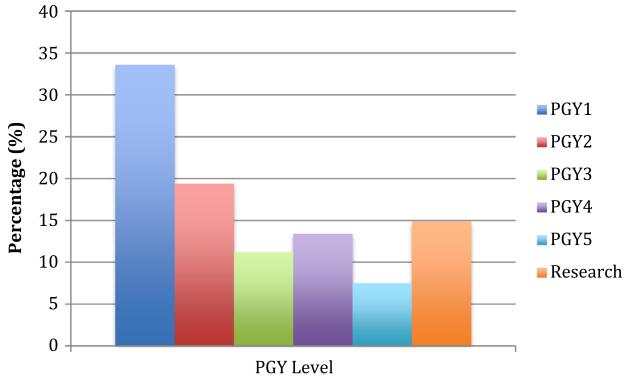

FIGURE. Resident distribution by PGY level.

Based on the reported correlation between ABSITE and ABS QE performances, several studies have evaluated methods and factors to improve ABSITE scores. These have included but are not limited to online training,[6] resident evaluations,[7] attending surgery conferences,[8] structured study curricula,[4,9-12] writing ABSITE questions[13] and even individual resident behavioral and motivational characteristics.[8,14]

In light of surgical residents' limited duty hours, a convenient and ideal method to evaluate ABSITE performance would be brief, easily reproducible and representative of the actual examination. We developed a Surgical Council on Resident Education (SCORE) curriculum based, American Board Style Practice In-Training Examination: The ABSPITE.

The 40 questions multiple-choice examination was designed to be representative in content to the ABSITE. The main objective of our study was to evaluate whether the ABSPITE could serve as a tool to predict ABSITE performance and therefore guide study and review efforts.

METHODS

Our study was a retrospective analysis of the correlation between ABSPITE and ABSITE performance. The ABSPITE was developed by our program director and was administered to residents at our program on an annual basis between 2013 and 2016, 3 months before the ABSITE. The ABSPITE is an optional 40 multiple-choice questions, 50-minute examination, based on and covering a comprehensive range of high-yield topics in the SCORE curriculum. The format of questions administered in the ABSPITE was similar to that of questions encountered in SCORE and in the ABSITE.

The examinees were recruited on a voluntary basis from a single academic general surgery residency that includes 6 categorical residents per year, 4 preliminary residents at the PGY1 and 2 levels, and a 2-year research requirement. Our study was exempt from institutional review board review.

The test was graded, and residents provided an absolute percent correct score. In addition, an estimated percentile score was generated. The percentile scores were estimated by assigning the highest percent correct as the 95th percentile. A percentile scale was then created by correlating resident percent and percentile performance on the ABSITE examination. Resident ABSPITE percentile scores were then assigned based on this scale. Residents taking the ABSPITE examination also received a detailed report highlighting areas of weakness and the questions that they answered incorrectly. Furthermore, ABSITE review sessions are conducted at our program on a weekly basis in the 3 months leading to the examination. Chief residents usually lead these sessions, and the content of the reviews are based on areas of weakness identified through the ABSPITE practice examination by our program director.

The data were analyzed using SPSS software. Mean percentage correct, mean percentiles, and standard deviations were calculated and the results were subsequently stratified based on the following: categorical vs preliminary residents, PGY level of training, and year the test was administered. Correlations between the ABSITE and the ABSPITE exams were then evaluated using Pearson's coefficient (r) and a $p < 0.05$ was considered statistically significant. ANOVA was used for group comparisons.

RESULTS

From 2013 to 2016, 134 ABSPITE examinations were administered to 82 individual residents. Examinee characteristics

TABLE 1. Resident Characteristics by Academic Year

Variable ($N = 134$)	Year				p Value
Categorical/Preliminary, *n* (%)	2013	2014	2015	2016	
Categorical	32 (23.9)	28 (20.9)	21 (15.7)	21 (15.7)	0.69
Preliminary	8 (6.0)	7 (5.2)	8 (6.0)	9 (6.7)	
PGY level, *n* (%)					
PGY 1	14 (10.4)	9 (6.7)	11 (8.2)	11 (8.2)	0.95
PGY 2	7 (5.2)	10 (7.5)	5 (3.7)	4 (3.0)	
Research	6 (4.5)	3 (2.2)	4 (3.0)	7 (5.2)	
PGY 3	5 (3.7)	5 (3.7)	2 (1.5)	3 (2.2)	
PGY 4	5 (3.7)	5 (3.7)	5 (3.7)	3 (2.2)	
PGY 5	3 (2.2)	3 (2.2)	2 (1.5)	2 (1.5)	