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Relationships between study habits, burnout, and general surgery resident performance on the American Board of Surgery In-Training Examination

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ABSTRACT

Background: The American Board of Surgery In-Training Examination (ABSITE) is used by programs to evaluate the knowledge and readiness of trainees to sit for the general surgery qualifying examination. It is often used as a tool for resident promotion and may be used by fellowship programs to evaluate candidates. Burnout has been associated with job performance and satisfaction; however, its presence and effects on surgical trainees' performance are not well studied. We sought to understand factors including burnout and study habits that may contribute to performance on the ABSITE examination.

Methods: Anonymous electronic surveys were distributed to all residents at 10 surgical residency programs ($n = 326$). Questions included demographics as well as study habits, career interests, residency characteristics, and burnout scores using the Oldenburg Burnout Inventory, which assesses burnout because of both exhaustion and disengagement. These surveys were then linked to the individual's 2016 ABSITE and United States

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Study habits

Medical Licensing Examination (USMLE) step 1 and 2 scores provided by the programs to determine factors associated with successful ABSITE performance.

Results: In total, 48% ($n = 157$) of the residents completed the survey. Of those completing the survey, 48 (31%) scored in the highest ABSITE quartile (≥ 75 th percentile) and 109 (69%) scored less than the 75th percentile. In univariate analyses, those in the highest ABSITE quartile had significantly higher USMLE step 1 and step 2 scores ($P < 0.001$), significantly lower burnout scores (disengagement, $P < 0.01$; exhaustion, $P < 0.04$), and held opinions that the ABSITE was important for improving their surgical knowledge ($P < 0.01$). They also read more frequently to prepare for the ABSITE ($P < 0.001$), had more disciplined study habits ($P < 0.001$), were more likely to study at the hospital or other public settings (e.g., library, coffee shop compared with at home; $P < 0.04$), and used active rather than passive study strategies ($P < 0.04$). Gender, marital status, having children, and debt burden had no correlation with examination success. Backward stepwise multiple regression analysis identified the following independent predictors of ABSITE scores: study location ($P < 0.0001$), frequency of reading ($P = 0.0001$), Oldenburg Burnout Inventory exhaustion ($P = 0.02$), and USMLE step 1 and 2 scores ($P = 0.007$ and 0.0001 , respectively).

Conclusions: Residents who perform higher on the ABSITE have a regular study schedule throughout the year, report less burnout because of exhaustion, study away from home, and have shown success in prior standardized tests. Further study is needed to determine the effects of burnout on clinical duties, career advancement, and satisfaction.

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Introduction

The American Board of Surgery In-Training Examination (ABSITE) is offered yearly to trainees matriculating in general surgery residency programs. This multiple-choice examination encompasses questions designed to measure knowledge in both applied sciences and clinical management of surgical problems. Although its initial intent was to allow programs to evaluate their own clinical training programs and curriculum, since its inception, it has been increasingly used as a means for evaluation of residents for promotion and an important tool to assess resident applicants for fellowship positions.¹ In addition, data have shown that residents who score less than the 35th percentile have a higher fail rate on the American Board of Surgery qualifying examination.² As a result, there has been significant research into factors that may influence success or failure on this examination.

Burnout, defined as a work-related syndrome involving emotional exhaustion, depersonalization, and a sense of reduced personal accomplishment, has become prevalent at all levels of medical training.³ It has been associated with decreased work productivity and job satisfaction, depression, and increased substance abuse. Its presence is well documented in medical trainees, with residents having higher rates of burnout than age-matched peers in the US population.⁴ In addition, both surgeons and residents have been shown to have rates of burnout approaching nearly 40%, with 70% demonstrating high depersonalization scores and nearly 50% demonstrating high emotional exhaustion scores.^{5,6} To our knowledge, there have been no previous studies examining the effects of burnout on ABSITE performance. We, thus, sought to understand the effects of burnout and other study habits on the performance of the ABSITE by surveying residents at multiple institutions, in hopes of identifying factors predictive of success or failure.

Methods

General surgery residency programs were recruited to be involved via invitation on the Association for Program Directors in Surgery Listserve, with 10 centers ultimately contributing. A voluntary and anonymous electronic survey consisting of 55 questions, created using SurveyMonkey (Palo Alto, CA), was distributed via email to all trainees ($n = 326$) matriculating in these programs (Appendix A). After this initial invitation, a follow-up request was emailed 1 wk later, and data were collected for a total of 3 wk. Residents were given unique identifier numbers to enter into the survey, which were then used by participating centers to forward the trainees standardized test scores (United States Medical Licensing Examination [USMLE] and 2016 ABSITE) in an anonymized fashion to one centralized collection center (the University of Arkansas for Medical Sciences). The survey included questions on residents' study habits over the course of the academic year for both clinical care and preparation for the ABSITE, and sources used for this preparation, as well as questions on burnout using the Oldenburg Burnout Inventory (OLBI).⁷ Basic demographic information as well as educational background, academic productivity during residency, current professional interests after graduation, and current total debt burden was also collected.

The Institutional Review Board of the University of Arkansas reviewed our protocol before data collection and approved the study.

Oldenburg Burnout Inventory

The OLBI is based on the job demands-resources (JD-R) model of burnout that assumes burnout may develop when job demands are high and resources are limited, which leads to energy depletion and decreased motivation.⁷ This validated

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