ORIGINAL REPORTS

Residents and Program Director Perspectives Often Differ on Optimal Preparation Strategies and the Value of the Orthopedic In-Training Examination ☆

Christopher L. Camp, MD, Ryan M. Degen, MD,† Arlen D. Hanssen, MD,* Joshua S. Dines, MD,† Matthew D. Karam, MD,‡ and Norman S. Turner, MD**

*Department of Orthopedic Surgery, Mayo Clinic, Rochester, MN; †Sports Medicine and Shoulder Service, Hospital for Special Surgery, New York, NY; and ‡University of Iowa Hospitals and Clinics, Iowa City, IA

OBJECTIVES: The purpose of this work was to compare resident and program director (PD) perspectives on the value of the Orthopaedic In-Training Examination (OITE), resident study habits, and best resources for optimal performance.

DESIGN: A national survey of orthopedic surgery residents and PDs.

SETTING: Mayo Clinic, Rochester, MN

PARTICIPANTS: The survey was completed by 445 (41.5%) eligible orthopedic surgery residents and 37 (77.1%) PDs.

RESULTS: Although residents and PDs agreed on when ($p = 0.896$) and how much ($p = 0.171$) residents currently study, residents felt that the OITE was not as valuable of an assessment of their knowledge, and also felt their individual scores were less likely to remain confidential compared to PDs ($p < 0.001$). The mean OITE score below which residents were concerned about their ability to pass American Board of Orthopaedic Surgeons Part 1 was 9.7 percentile points higher than PDs threshold (42.3% vs. 32.6%, respectively, $p = 0.003$). Both groups agreed that it is important to dedicate focused study time to the OITE ($p = 0.680$) and to perform well ($p = 0.099$). Regarding the best resources and preparation strategies, both residents and PDs tended to agree on the value of most (6 of 10) study methods. Residents ranked practice question websites (mean ranking of 2.6 vs. 3.8 of 10, respectively; $p < 0.001$) and formal rotations in a subspecialty (6.0 vs. 7.7 respectively, $p < 0.001$) higher than PDs. In contrast, PDs tended to value their program's formal OITE prep program (4.1. vs. 5.3, respectively, $p = 0.012$) and reading primary literature (5.6 vs. 6.6, respectively, $p = 0.012$) more than residents.

CONCLUSION: Residents and PDs agreed on many critical components of this process; however, a number of key differences in perspectives exist. (J Surg Ed ▮:▮▮▮-▮▮▮. © 2017 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: Orthopaedic In-Training Examination, OITE, resident, program director, perspectives

ACGME COMPETENCIES: Medical knowledge, Practice-based learning

INTRODUCTION

For more than 50 years, the Orthopaedic In-Training Examination (OITE) has been administered to orthopedic surgery residents across North America on an annual basis to provide them, and their Program Directors (PDs), with an objective assessment of orthopedic knowledge.[1-3] Initiated in 1963, this permitted the first standardized quantification of knowledge that could be compared within and across residency programs. Although orthopedic surgery was the first to develop and implement such an examination,

☆Extramural funding was not required for this work.

Correspondence: Inquiries to Christopher L. Camp, MD, Department of Orthopedic Surgery, Mayo Clinic, 200 First St, SW, Rochester, MN 55905; fax: +(507) 266-1803; e-mail: camp.christopher@mayo.edu

  1931-7204/$30.00 http://dx.doi.org/10.1016/j.jsurg.2017.06.017

many other medical subspecialties followed shortly thereafter.[2,3] Since its creation, the OITE has become the most studied and discussed objective measure of orthopedic resident knowledge in the United States.[4-14] On one hand, It is thought to be a very valuable tool with a multitude of studies demonstrating its ability to predict the likelihood of passing the written Part 1 of the American Board of Orthopaedic Surgeons (ABOS) examination.[5,6,14-17] Despite this, many feel that truly objective assessment of resident performance and knowledge remains a challenge, and some have suggested that this may be, in part, due to inherent differences between the values and perspectives of residents and educators.[13,18-20]

Although, to our knowledge, resident and PD perceptions of the OITE have not yet been directly compared, a multitude of studies have been published on potential methods to improve OITE performance. Ultimately, this body of work has demonstrated improvement in OITE scores for programs that implement formal OITE preparatory curricula, add subspecialty conferences, place increased emphasis on the examination, reward residents for high achievement, and initiate formal reading programs for underperformers.[4,7,8,10,12-14] In 2007, Miyamoto et al. looked specifically at the effect of individual resident study habits on OITE performance for 44 residents at a single institution. They concluded that regular review of certain peer-reviewed orthopedic journals, completion of daily reading programs, increased time dedicated to studying specifically for the OITE, and review of prior OITE examination questions all correlated with improved test performance.[8] Although this work provided valuable insight into this important topic, it is worth noting that the landscape of orthopedic knowledge acquisition has shifted in recent years with increased reliance on web-based learning programs that are likely used by a higher proportion of residents than the 9% (4 of 44 residents) reported in this 2007 study.[8] Accordingly, an updated assessment is indicated.

To better understand the differing perspectives between residents and educators (especially in the rapidly evolving landscape of resident education and study strategies), the purpose of this work was to compare and contrast resident and PD perspectives on a number of critical issues surrounding the OITE. Specifically, we sought to better understand their views on (1) the overall value of the OITE as an objective measure of orthopedic knowledge, (2) the current study and preparation habits of residents, and (3) what they felt to be the best resources for optimization of OITE performance. We hypothesize that residents and PDs would likely agree on the overall value of the OITE and the importance of performing well, but they may not always agree on optimal study strategies and resources. A better understanding of these perspectives may help bridge any potential gaps between these groups, both of whom have vested interests in orthopedic education.

MATERIALS AND METHODS

Once approved by the Institutional Review Board, orthopedic surgery educators from 3 different US orthopedic surgery residencies discussed a number of key issues regarding resident preparation and performance on the OITE. This discussion was used to create an electronic survey that focused on the value of the OITE, current resident study habits, and the best study resources. This survey was distributed via e-mail to 153 program coordinators of US orthopedic surgery residencies 1 week following the administration of the 2015 OITE. They were asked to forward it onto their residents and PDs for completion. PD and resident surveys were structured similarly with the only difference being the viewpoint from which questions were asked (i.e., PD vs. resident). All surveys were completed anonymously without any record of identifying information. Reminder e-mails were sent at 3-week intervals, and the survey was closed after 10 weeks. To calculate response rates, program coordinators were asked how many residents were active in their program and if they had sent it onto their residents or PDs or both.

For the value-based questions, participants were asked how valuable they felt the OITE was as an assessment of orthopedic knowledge, how important it was for residents to perform well, the importance of studying specifically for the OITE, and the value of completing a rotation in a given subspecialty to improve OITE performance for that same subspecialty. This was completed using a 1 to 5 sliding Likert scale where 1 indicated strong agreement, 3 represented neutrality, and 5 indicated strong disagreement with the given statement. Similarly, they were asked how soon they (if they were a resident) or their residents (if they were a PD) start studying specifically for the OITE and how much time is dedicated to OITE study each week leading up to the test. Respondents were subsequently asked to rank 10 commonly used resources in order of most valuable (#1) to least valuable (#10). Finally, participants were asked about how confidential they felt OITE scores remained within their institution and below what percentile score they began to worry about a resident's ability to pass Part 1 of the ABOS boards.

Statistical Analysis

For all sliding Likert scale questions, means are reported with standard deviations, ranges, and medians. For the best resources and preparation strategies, the mean ranking for each response is reported separately for residents and PDs. These means were then placed in sequential order for each group to determine how they would collectively rank the 10 resources. Differences in mean rankings are compared between residents and PDs. All pairwise comparisons between resident and PD responses were performed using a student *t*-test. Results are reported with mean differences