

Comparative Assessment of Grit, Conscientiousness, and Self-Control in Applicants Interviewing for Residency Positions and Current Orthopaedic Surgery Residents

Anne M. Kelly, MD,* Kimberly W. Townsend, BS,[†] Shauna Davis, MBA, C-TAGME,^{||} Lola Nouryan, PhD,[‡] Mathias P.G. Bostrom, MD,^{*,§} and Karla J. Felix, PhD^{||}

*Department of Orthopaedic Surgery, Hospital for Special Surgery, New York, New York; [†]The Pennsylvania State University, State College, Pennsylvania; [‡]Psychology Department, Hofstra University, New York, New York; [§]Orthopaedic Surgery, Hospital for Special Surgery, New York, New York; and ^{||}Academic Training, Education and Academic Affairs Division, Hospital for Special Surgery, New York, New York

OBJECTIVE: The purpose of this study was to quantify grit, conscientiousness, and self-control in orthopaedic residency applicants and current orthopaedic surgery residents. As part of a continual reassessment of the selection process, this study will help to improve this process by assessing the introduction of these non-cognitive assessments. This is the first study to both evaluate and compare the applicants' scores to those of current residents. This introduction will allow selection of not only the current top performers but those who have the wherewithal (read grit) to sustain their efforts throughout their residency.

DESIGN: A cross-sectional study composed of a confidential electronic survey consisting of a 17-item Grit scale, 10-item Self-control scale, and 9-item Conscientiousness scale was completed by medical school applicants and orthopaedic residents.

SETTING: Department of Orthopaedic Surgery, Hospital for Special Surgery.

PARTICIPANTS: Fifty-six (100%) medical student applicants (mean age = 27) were invited to participate in our study following a full day of interviews. Forty-five residents (mean age = 31) were asked and 32 (72%) completed the same surveys 4 months later.

RESULTS: There was a significant difference in grit for medical students ($M = 4.19$, $SD = 0.34$) and residents

($M = 3.86$, $SD = 0.48$); $t(86) = 3.76$, $p = 0.000$. All grit subscales were also significantly different for medical students versus residents. Medical students (conscientiousness $M = 4.60$, $SD = 0.41$; self-control $M = 3.51$, $SD = 0.30$) and residents (conscientiousness $M = 4.42$, $SD = 0.53$; self-control $M = 3.31$, $SD = 0.73$) scored similarly in the conscientiousness $t(86) = 1.75$, $p = 0.084$ and self-control scales $t(86) = 1.74$, $p = 0.086$. Academic performance indicators such as the USMLE scores and residency ranking were also compared among medical student applicants.

CONCLUSIONS: The similar and above average levels of conscientiousness and self-control demonstrate the persevering nature of the individual who elects to pursue an orthopaedic residency program. Although the grit levels were different between medical school student and residents, they were above average for both groups, again demonstrating the type of individual willing to pursue an orthopaedic residency program. This study was the first to demonstrate varying degrees of grit for high-performing students versus residents in a competitive program, which seems to suggest that grit can vary over time. Future studies will investigate the validity of these non-cognitive variables in predicting achievement prospectively in a residency program. (J Surg Ed ■■■■-■■■. © 2017 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: grit, non-cognitive assessment, conscientiousness, self-control, orthopaedic residents

COMPETENCIES: Practice-Based Learning and Improvement, Interpersonal and Communication Skills, System-Based Practice

Correspondence: Inquiries to Karla Felix, PhD, Director, GME Curriculum and Evaluation, Academic Training, Education and Academic Affairs Division, Hospital for Special Surgery, 535 East 70th Street, New York, NY 10021; fax: (212) 606-1477; e-mail: felixk@hss.edu

INTRODUCTION

The orthopaedic residency selection process is a highly competitive process that evaluates a candidate based on criteria such as medical school grades/rank, board scores, letters of recommendation, medical school Dean's letter, and research productivity.¹⁻⁶ Some residency programs are increasingly turning to other factors such as moral and ethical reasoning, emotional intelligence, responsibility, teamwork, and communication as additional humanistic factors to consider when selecting an applicant.^{7,8} The resident selection process across institutions differs and although no two systems are identical, most use anecdotal observations and subjective views of candidates (i.e., letters of recommendation) combined with academic performance indicators for their decision-making strategies.⁹⁻¹² These measures have not always successfully predicted achievement in a residency program. Academic objective measures were used as predictors for residency outcomes in a retrospective study. Findings included that medical school academic measures correlated with residency academic measures such as Orthopaedic In-training Exam and American Board of Orthopaedic Surgery examination score.¹¹ However, academic measures did not correlate with overall ratings of residents provided by chairs or program directors. This suggests that the current cognitive measures of performance alone are inadequate predictors of residency achievement. In the following study, 3 non-cognitive variables are assessed, 2 historical and 1 newly defined, grit. In 2007, Duckworth defined grit as "passion and perseverance for long-term goals." Yet another way to think of grit is as a "never yielding form of self-discipline."⁷

What is predictive of residency success? To determine the answer, measures of self-control, conscientiousness, and grit along with current cognitive measures of the selection process (i.e., academic performance indicators) will be examined. Personal characteristics are important in determining an individual's fit in a program but are they strong enough to predict a person's success in residency? One surgical residency program included personal characteristics and qualities of the applicant from the reference letter. The personal characteristics such as attitude, motivation, professional integrity, problem solving, interpersonal relationships, as well as qualities demonstrated from the reference letter significantly correlated with subsequent clinical performance.⁹ This study demonstrates that personality variables may prove significant in resident's clinical competence. However, few published studies have focused on personal characteristics in orthopaedics as a major factor in contributing to successful clinical competencies in residency.

The residency process can be challenging on many levels. Studies have found that to achieve difficult goals, talent alone is not enough; one should have a sustained prospective focus of application of that talent over time.^{1,13} Talent and moreover sustained focus are critical in orthopaedic

surgery residency, as both are essential to become a successful surgeon. Learning the necessary skills for orthopaedic surgery requires both innate talent and development of further talents over time and, in fact, over a lifetime. In the current study, the concept of grit was included in the selection process for orthopaedic surgery residency. Specifically, the goals were to (I) quantify grit, conscientiousness, and self-control in current orthopaedic surgery residents and residency applicants, (II) identify potential differences between these 2 groups of young orthopaedists, and (III) continue to follow these study participants over time to determine whether these scores can be used to predict the most successful candidates. All candidates accepted will be observed longitudinally throughout residency and beyond. It is expected that grit will play a role in the success of the applicants; and the hypothesis is that current residents who have successfully matched into orthopaedics will demonstrate increased grit, conscientiousness, and self-control scores compared to applicants interviewing for residency positions. In addition, as grit is variable over time, future studies will continue to evaluate residents throughout their training. This continued assessment will provide data for grit not only as a predictor of success in orthopaedic residency, but also, the effect of orthopaedic residency on grit.

MATERIALS AND METHODS

Residency applicants were invited to take part in a study following their half day of interviews at Hospital for Special Surgery in January 2014. A total of 56 (100%) medical student applicants (mean age = 27) completed an IRB approved paper copy of an informed consent form in the medical library and were asked to take part in a 7-minute study online via the data collection tool, Survey Monkey[®]. Study participants were also informed survey results would not be shared with interviewers nor would it affect their ranking into the program. Only 2 study co-investigators had access to applicants' Association of American Medical Colleges identification numbers, which were used to distinguish residency applicants from current residents. Confidential survey results were intended to examine the general applicant pool with respect to personality and were not shared with interviewers. Participants completed a 17-item Grit scale,¹ 10-item Self-Control Scale,² and 9-item Conscientious scale^{3,4} (Fig.).

In May of the same year, 45 residents (mean age = 31) were also invited to participate in the study and 32 (72%) completed the same surveys as medical students. USMLE scores were obtained when available for applicants and residents. Due to current requirements in ERAS applications, 100% of the scores were obtained via the application for residency for the 2014 interview candidates but upon further review of existing resident applications, USMLE

Download English Version:

<https://daneshyari.com/en/article/8834683>

Download Persian Version:

<https://daneshyari.com/article/8834683>

[Daneshyari.com](https://daneshyari.com)