

Academic and Demographic Profile of Orthopedic Vice Chairs of Research: Implications for Leadership and Diversity

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INTRODUCTION: Vice Chairs (VCs) of Research play an integral role in the Department of Orthopedics at academic medical centers, strategically leading research efforts and supporting the research careers of faculty and trainees [1]. To our knowledge, no analysis of orthopedic VCs of Research exists in the literature and no similar analyses have been completed in other medical specialties. The objectives of this study were to investigate (1) Are there academic characteristics common to orthopedic VCs of Research? (2) Are there demographic characteristics common to orthopedic VCs of Research? (3) Do orthopedic VCs of Research lead their respective institution's Center for Musculoskeletal Research?

METHODS: *Doximity* was used to identify orthopedic surgery residencies in the United States. Each program's VC of Research was identified using personal and program websites. These websites were queried to obtain characteristics such as sex, race/ethnicity, academic rank, residency or postdoctoral training, fellowship training, and specialty within orthopedics. Scopus database and Google Scholar were used to determine each individual's h-index. The NIH RePORTER database was used to identify the number and type of NIH grants awarded to each investigator.

RESULTS: Of the 206 orthopedic residency programs identified, 71 (34%) had a VC of Research named in the Department of Orthopedics. Among the top 50 medical schools, 42 were affiliated with orthopedic residency programs that had a VC of Research. Most VCs were men (89%). Their racial/ethnic background was majority White (85%), followed by Asian (14%), and Black (1%). None of the VCs were identified as Hispanic. Most (78%) held the rank of Professor, followed by Associate Professor (18%), and Assistant Professor (14%). Over half were PhDs (55%), followed by MDs (37%), and MD/PhDs (8%) (**Figure 1**). On average, VCs had a Hirsch index (h-index) of 40.5 (**Figure 2**). Furthermore, 65% had been awarded at least one NIH grant for their research, with 48% awarded at least one R01 (**Figure 3**). Only 11% led a Center for Musculoskeletal Research at their institution.

DISCUSSION: The role of VCs in orthopedics has been understudied. This omission is surprising given that VCs have a unique opportunity to influence the future of the specialty by mentoring trainees and developing opportunities for them to participate in novel research that advances the field [1]. Individuals in this role are predominantly White and hold the academic rank of Professor. These leaders have strong academic productivity (h-index) and are likely to have at least one NIH grant. Although orthopedic VCs of Research are predominantly male, these findings emphasize a relatively higher diversity among individuals in this position compared to other leadership roles in academic orthopedic surgery, such as Division Chief [2][3].

The majority (55%) of VCs were PhDs. Notably, analysis of the sex breakdown revealed differences in education types, with a higher proportion of female VCs (88%) holding only doctoral degrees (PhDs) compared to male VCs (51%). Moreover, only one female VC held an MD degree, suggesting potential disparities in the educational pathways leading to these leadership positions (**Figure 1**).

Despite the novelty of our study's findings, we acknowledge several limitations. First, the inability to locate all VCs due to limited up-to-date information on publicly available websites may have introduced selection bias. Second, our study design was cross-sectional. Therefore, metrics such as h-index and number of NIH grants, which are subject to continual change, may not reflect the qualifications possessed by VCs at the time of their appointment. Third, we identified race/ethnicity using the country of origin of the last names of VCs, supplemented by profile pictures for confirmation. While this allowed us to assess the demographics of VCs, it may not fully reflect individuals' self-identified race/ethnicity, introducing potential discrepancies in the reported data.

SIGNIFICANCE: Given the mentorship component of this position, faculty members in this role may have the opportunity to increase diversity awareness and recruitment within academic orthopedics.

REFERENCES:

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- [3] Maqsoodi N., *et al.*, "Academic, Leadership, and Demographic Characteristics of Orthopaedic Sports Medicine Division Chiefs in the United States", *J Am Acad Orthop Surg Glob Res Rev*. 2022.

IMAGES AND TABLES:

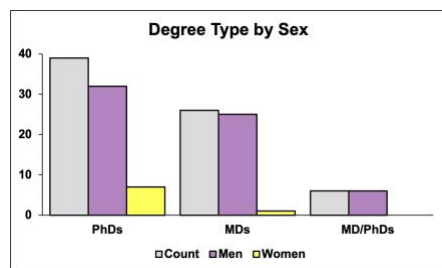


Figure 1: Differences in degree representation among Orthopedic VCs of Research by sex.

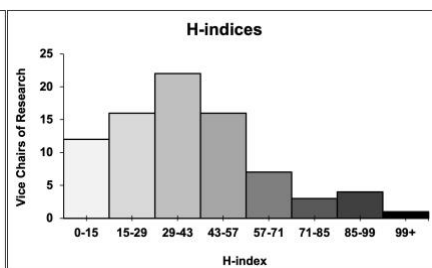


Figure 2: Hirsch Index (h-index) distribution among Orthopedic VCs of Research. Recorded values span from 4 to 100, with an average h-index of 40.5

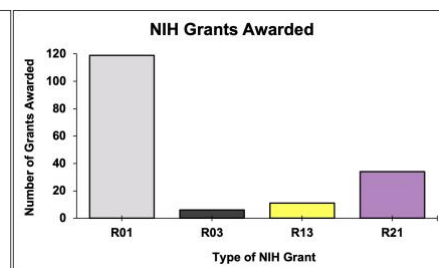


Figure 3: Count of NIH grants awarded to Orthopedic VCs of Research to date, by grant mechanism: R01, R03, R13, R21.