Diversity in Orthopedic Surgery Residency: Is There Equal Academic Productivity?

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INTRODUCTION: Despite advancements toward gender equality in medicine, women continue to be underrepresented in orthopedic surgery, making up only 15% of residents, compared to 40% in general surgery. Limited literature exists on gender disparities and academic performance among orthopedic residents. The aim of this study was to assess whether academic productivity varies between underrepresented minorities and female orthopedic residents varied compared to their orthopaedic surgery resident counterparts.

METHODS: A search was conducted using the 'NIH Awards by Location and Organization' tool to identify the top 50 highest-funded orthopedic residency programs in the United States. Data were obtained from 34 of the 50 programs due to information availability. Resident demographics including sex, race, residency, representation in medicine status (underrepresented [URM], over-represented [ORM]), and academic productivity (number of publications, number of citations, and h-index during residency) were collected from publicly available sources including residency websites, ResearchGate, PubMed, Google Scholar, and LinkedIn. The Association of American Medical Colleges definitions of URM and ORM were used. Residents were separated into male, female, URM, and ORM cohorts. Bivariate analysis was performed to compare academic productivity among the different cohorts.

RESULTS: A total of 192 orthopedic surgery residents (n=37 females, n=155 males; n=17 URM, n=175 ORM) from the graduating class of 2022 were included in this analysis. Females had significantly fewer total publications (6.7 vs 11.5, p=0.007), fewer middle-author publications (4 vs 7.6, p=0.003), fewer total citations (41.2 vs 100.3, p=0.0001), and fewer h-index (2.7 vs 4.6, p=0.0007) compared to males. No differences were observed in number of first and last-author publications between these genders. URM and ORM residents were comparable among all academic productivity measurements (all, $p > 0.399$).

DISCUSSION AND CONCLUSION: Female orthopaedic surgery residents exhibited lower publication output, citation count, and h-index compared to their male counterparts, highlighting the significant gender disparities among resident support, opportunity and academic productivity. These findings underscore the need for interventions to address barriers faced by female residents and promote gender equity within the field. Efforts should focus on enhancing mentorship, improving resource distribution, and raising awareness about the importance of equity in academic productivity for female residents.