

A Mandatory Orthopaedic Surgery Rotation Improves Medical Student Perceptions of the Field for Women and Under-Represented Minorities

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INTRODUCTION: Orthopaedic surgery is behind other fields in representation of women and under-represented minorities. These groups have more negative perceptions of diversity and acceptance in orthopaedic surgery compared to their peers. Negative perceptions of orthopaedic surgery by women and under-represented minorities improve after an orthopaedic rotation, but less than half of medical schools have an option to complete a clinical orthopaedic rotation during the clinical year. Prior studies have characterized perceptions of orthopedic surgery by medical students choosing to complete elective rotations in the field, but the effect of a mandatory orthopaedic surgery rotation on perceptions of the field has not been determined. We sought to characterize the perceptions of orthopaedic surgery before and after a mandatory one-week clinical rotation at our institution.

METHODS: We received 267 pre-rotation and 153 post-rotation survey responses for medical students in their clinical year completing a mandatory one-week orthopaedic surgery rotation. Students were asked for their gender, age, race/ethnicity, and “three words that describe your perception of orthopaedic surgery.” Words were classified into two classification systems by 6 independent reviewers (2 attending orthopaedic surgeons, 2 orthopaedic surgery residents, and 2 medical students). The broad classification system categorized each word by the overall connotation as either positive, negative, neutral, or unclear (connotation not clear enough to be categorized). The detailed classification system categorized each word into specific groups (objective, demographic stereotypes, athletic stereotypes, competitive, challenging/demanding, positive about people, positive about work, negative about people, negative about work, impactful, prestige/pay, interesting/fulfilling, unclear). All reviewers met to discuss final categorization of words with <50% agreement. All quantitative analyses were conducted within the Excel software using 2-proportion, 2-tailed z-tests to compare differences in proportions.

RESULTS: The most frequent pre-rotation words associated with orthopedic surgery were bones (10.1% of words), intense (6.5% of words), and bros (6.4% of words). The most frequent post-rotation words were bones (6.2% of words), fun (5.9% of words), and intense (2.9% of words). The percentage of negative and neutral words decreased after the rotation (negative: 27.5% to 14.1%, $p<0.01$; neutral: 50.2% to 38.3%, $p<0.01$) while the percentage of positive words increased (21.3% to 47.4%, $p<0.01$). Women included more negative words both pre-rotation compared to men (women: 34.2%, men: 20.1%; $p<0.01$) and post-rotation (women: 17.6%, men: 10.4%; $p=0.038$). African American/Black students had the most positive words across racial groups both pre- and post-rotation (pre: 34.7%, post: 62.0%; $p<0.01$), and Hispanic/Latino students had the most negative words both pre- and post-rotation (pre: 37.9%, post: 21.4%; $p<0.01$); however positive words increased and negative words decreased after the rotation across all racial groups.

DISCUSSION AND CONCLUSION: We demonstrate that negative perceptions of orthopaedic surgery improve after a clinical rotation, opening the door for students to pursue additional electives and consider orthopaedic surgery as a career. A mandatory orthopaedic surgery rotation may improve the perceptions of under-represented groups in the field who have more negative perceptions of the field before a rotation, keeping them from gaining exposure to the field at all.

