

Gender Differences Among Shoulder Arthroplasty Surgeons: Past, Present, and Future

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INTRODUCTION:

The demand for shoulder arthroplasty continues to grow nationally and internationally. Reducing gender disparity among shoulder arthroplasty surgeons may optimize patient care by providing patients with surgeons they better identify with. This work aims to determine (a) the current gender-distribution of surgeons performing shoulder arthroplasty, (b) recent changes in this distribution, and (c) anticipate future gender-distribution trends.

METHODS:

The Medicare Provider Utilization and Payment Data for years 2012-2018 was utilized to identify orthopedic surgeons performing shoulder arthroplasty (current procedural terminology [CPT] code 23472; anatomic and reverse TSA). The dataset provides self-reported gender, credentials, national provider identifier (NPI), annual volume for all procedures (based upon CPT) that were performed at least 11 times in the calendar year, and location for all included providers. All non-physician providers were removed, and the dataset was linked to the Medicare physician compare dataset using NPI numbers to determine hospital affiliations, year of medical school graduation, and graduating medical school. All included hospitals were queried to determine academic status (affiliated orthopedic residency or fellowship program). Finally, the American Shoulder and Elbow Surgeons society (ASES) directory was reviewed to determine gender breakdown of current members.

RESULTS:

The number of surgeons performing at least 11 shoulder arthroplasty annually increased from 821 (13 females; 1.6%) in 2012 to 1,624 (46 females; 2.8%; $p=0.06$) in 2018. Over this time period, the total number of shoulder arthroplasty performed in this cohort increased from 20,726 (238 by females; 1.6%) to 43,996 (1,105 by females; 2.5%; $p<0.001$). 481 of the male surgeons included in this cohort were active in all years of the study (20.9%; 481/2300) compared to 7 (9.9%; 7/71; $p=0.02$) female surgeons. Female surgeons graduated more recently from medical school (mean: 2003) compared to their male counterparts (mean: 1996; $p<0.001$). 1 female ranked in the top 100 surgeons by shoulder arthroplasty volume in 2012 and 3 ranked within the top 100 in 2018. Of surgeons in whom we could identify the practice environment, over one-third of females (34.9%; 22/63) practiced at hospitals with orthopedic trainees compared to one-quarter of males (25.6%; 548/2142). Female surgeons performing shoulder arthroplasty were less likely than males to perform total knee arthroplasty (15.5% versus 52.5%; $p<0.001$), total hip arthroplasty (2.8% versus 33.3%; $p<0.001$), and non-arthroplasty knee procedures (5.7% versus 33.1%; $p<0.001$). When assessing gender diversity of ASES members, there were 47 female members (6%; 47/816). More females were fellow and candidate (30/352; 8.6%) members compared to associate, active, or senior members (17/464; 3.7%; $p=0.003$).

DISCUSSION AND CONCLUSION:

Female representation among shoulder arthroplasty surgeons is slowly increasing. Female shoulder arthroplasty surgeons are more likely to be younger, practice in academic settings, and have a more specialized scope of practice compared to male shoulder arthroplasty surgeons. While increasing female representation has been slow and remains low, the young age of these surgeons and higher representation in the early membership ASES categories are promising trends. Focused recruitment, mentorship, and continued early career engagement are crucial for these trends to continue.