Gender Trends in Cardiothoracic Surgery Authorship

Objective: In recent years, the historically low proportion of female cardiothoracic surgeons and trainees has been a subject of more intense focus. Publications remain a key metric of academic success and career advancement. We sought to identify trends in the gender of first and senior author publications in cardiothoracic surgery.

Methods: We searched for publications between 2011 and 2020 in the two major U.S. cardiothoracic surgery journals, identifying those with the MESH publication types of clinical trial, observational study, meta-analysis, commentary, and case report. A commercially available, validated software (Genderize.IO) was used to associate gender with author names. Names with less than 90% gender probability or infrequent availability within the database (<100 occurrences) were excluded. AAMC Physician Specialty Data Reports were used to identify concurrent changes in trainee and practitioner genders in cardiothoracic surgery.

Results: We identified 11,599 unique publications, including 484 clinical trials, 486 observational studies or meta-analyses, 3,695 case reports, and 6,934 editorials or pieces of commentary. 9,501 first author names were included in the analysis after the application of exclusion criteria. 750 last author names for clinical trials, observational studies, and meta-analyses were available for analysis. Over the ten year study period, female first-authorship rose from 8.5% to 16% (0.55% per year), while the percentage of active U.S. female cardiothoracic physicians rose from 4.6% to 8% (0.42% per year) and female ACGME cardiothoracic trainees rose from 18.7% to 26% (0.9% per year) (Fig 1A). Female senior authorship rose from 7.5% to 11.5% (0.1% per year) during the same period (Fig. 1B). For clinical trials specifically, female first authorship rose 0.62% per year, while female last authorship declined by 0.1% per year.

Conclusions: Over the past decade, female first authorship has steadily increased. However, there are limitations to this data. Author gender identification, beyond binary classification, at the time of manuscript submission may be useful to follow trends in gender and authorship more accurately.

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