Gender Disparities in Academic Neurosurgery Publications: An Analysis of Two Journals over 25-Years

Courtney Pendleton MD1; Patricia Zadnik Sullivan MD2; Steve S. Cho BS3; Sonia Ajmera BS4; Jack I. Jallo MD PhD5

1 Mayo Clinic, Department of Neurosurgery, Rochester, MN 2 University of Pennsylvania, Department of Neurosurgery, Philadelphia, PA 3 University of Tennessee Health Science Center, College of Medicine, Memphis, TN 4 Thomas Jefferson University, Department of Neurosurgery, Philadelphia, PA

INTRODUCTION

In recent years, there has been a concerted effort to reduce gender disparities within the field of neurosurgery. These efforts have met with successes, but there remain inequities, particularly in the realm of academic neurosurgery, where a variety of factors play a role.

OBJECTIVE

To assess the current state of academic neurosurgical publication, and see how far the field has progressed, we reviewed academic articles in The Journal of Neurosurgery (JNS), and Neurosurgery, from 1995-2019. While substantial progress has been made in reducing gender discrepancy in academic neurosurgery, there remains additional work to achieve parity in the field.

METHODS

Using Scopus, all articles published in JNS and Neurosurgery from 1995-2019 were catalogued. These journals were chosen because of their longevity and their links to organized academic neurosurgery in the US.

Papers with a senior author based at a US institution, and with the majority of authors associated with a US institution were further analyzed. This was done to avoid confounding through cultural norms in international institutions. We excluded: editorials, letters, commentaries, book reviews, videos, journal clubs, obituaries, personal reflections, special articles, invited reviews, conference proceedings, and miscellaneous publications that were not classified as academic articles.

Author lists were compiled via PubMed and the journal websites. Names were inspected to determine author sex. In instances where the name was not recognized, an internet search was performed using the full name, institution, and/or degrees. In cases where 30 search items failed to identify an author’s sex, that author was excluded from the analysis.

We analyzed all instances of authorship, and did not assess unique authors. Statistical significance of results was determined using Chi-Squared and linear regression models.

RESULTS

In total, 8,013 articles were included in the review, with a combined total of 44,748 author instances with identifiable gender.

Women made up 14.7% of author entries, with 10.9% of first authors and 4.72% of senior authors. To determine the change in female authorship over the 25-year period, we performed a sub-group analysis on 5-year periods.

Female authorship in general has significantly increased over time 11.7% (1995-1999) to 17.8% (2015-2019) (p<0.0001). There has been a significant increase in female first authorship 7.3% to 14.6% (p<0.0001), and in female senior authorship 6.5% to 9.8% (p=0.0007).

CONCLUSIONS

Although female authors remain a minority, there are trends over time indicating a move towards more parity in the field. Future directions of this research include analysis of unique authorship, as well as determining what characteristics make female authorship more likely.