

Gender Authorship Trends in the Transorbital Neuroendoscopic Surgery (TONES) Literature

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Purpose

- TONES is a minimally invasive approach to the skull base.
- Recent studies suggest narrowing of gender gaps in skull base workforce and research productivity.¹⁻⁴
- Aims: investigate gender author contributions in the history of TONES research over time.

Methods

- Retrospective observational study
- PubMed search: “transorbital endoscopic”, human studies, 377 articles screened
- **N = 253 articles from 2001-2025** included
- Outcomes: Gender, specialty, and country of authors.

Results

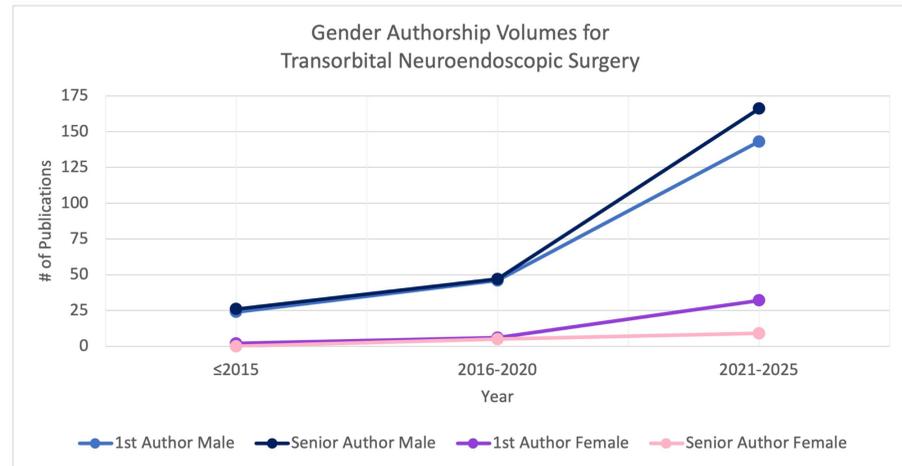


Figure 1. Gender Authorship Volumes for TONES.

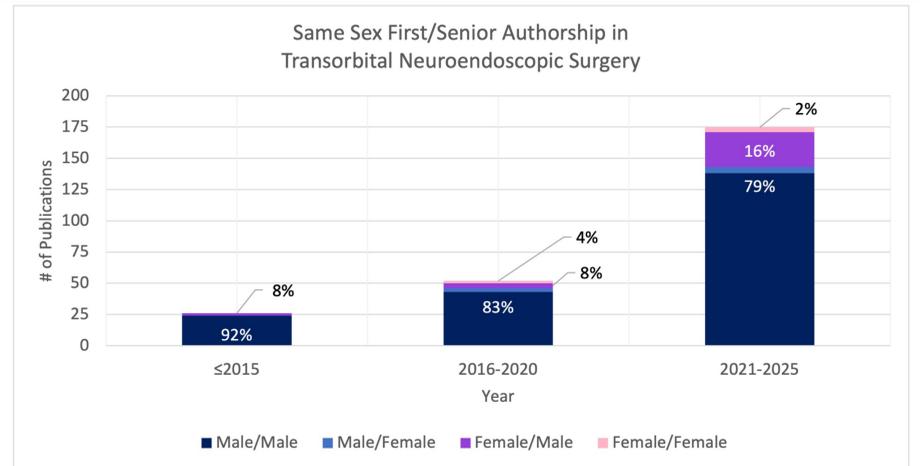


Figure 2. Mixed Gender Teams for TONES.

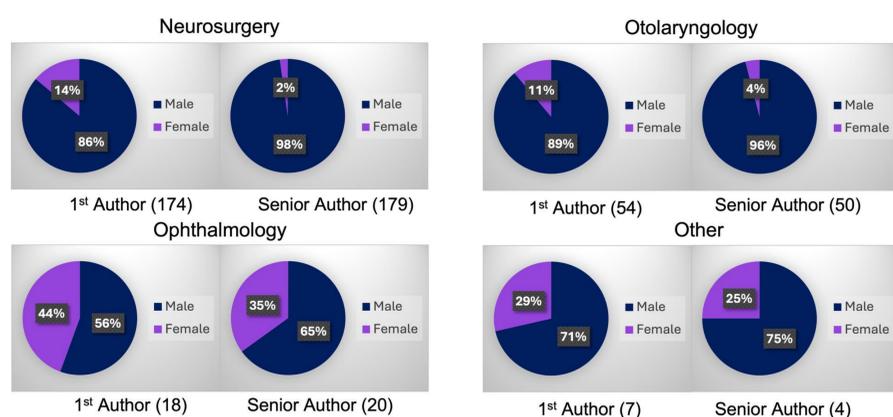


Figure 3. Gender Authorship by Subspecialty for TONES

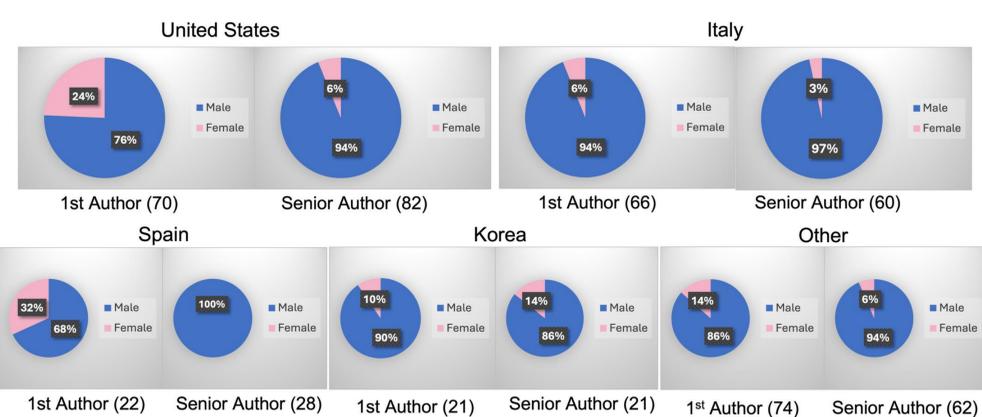


Figure 4. Gender Authorship by Country for TONES

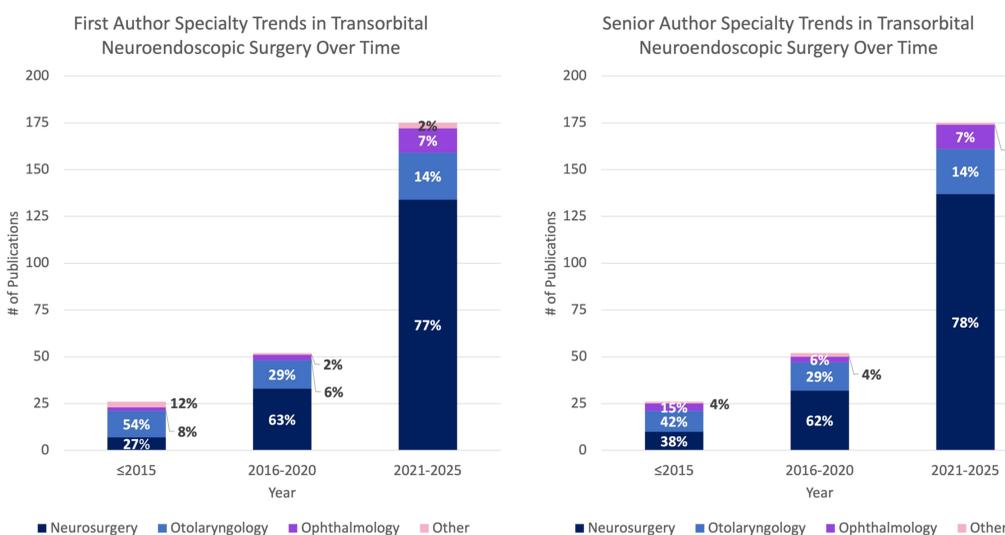


Figure 5. Subspecialty over Time for TONES

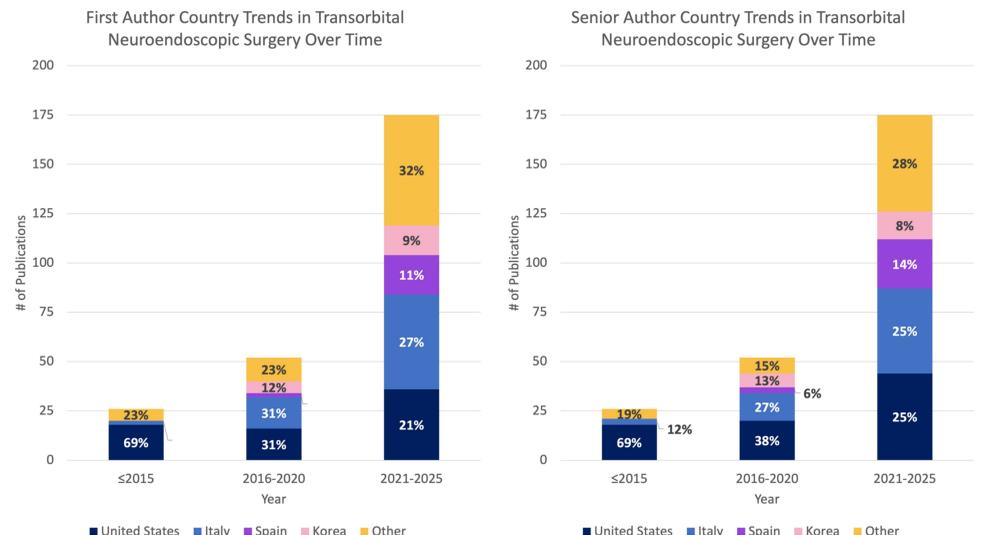


Figure 6. Country over Time for TONES

Conclusions

- Females remain vastly underrepresented overall, especially in senior authorship.
- The highest female representation was found in Ophthalmology specialty, and U.S. and Spain countries.
- Neurosurgeons are increasingly involved, and U.S. representation is decreasing as more countries contribute over time.
- Promising strides toward gender parity have been made in first authors and mixed gender teams.
- These findings suggest a need for greater attention to promoting diversity in TONES scholarly contributions in our field.

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