



HHS Public Access

Author manuscript

Am J Gastroenterol. Author manuscript; available in PMC 2022 March 01.

Published in final edited form as:

Am J Gastroenterol. 2021 March 01; 116(3): 613–616. doi:10.14309/ajg.0000000000001183.

Equal opportunity: women representation on editorial boards and authorship of editorials in gastroenterology and hepatology journals.

Mythri Subramaniam, MD¹, Nabila Azad, MD², Sharmeel K. Wasan, MD³, Michelle T. Long, MD, MSc³

¹Evans Department of Medicine, Boston Medical Center, Boston University School of Medicine, Boston, MA

²Hospital Medicine, Mayo Clinic Health System, Mankato, MN

³Section of Gastroenterology, Boston Medical Center, Boston University School of Medicine, Boston, MA

Abstract

Background: The proportion of women editorial board members and authors of editorials in major gastroenterology journals is not known.

Methods: We determined the gender of editorial board members (n=2282) and authors of editorials (n=1705) across 6 journals from 1985 to 2020 at 5-year intervals.

Results: The proportion of women editorial board members increased from 2.9% in 1985 to 19.8% in 2020 (p<0.0001) and women authors of editorials increased from 0% in 1985 to 22.2% in 2020 (p<0.0001).

Conclusions: The proportion of women represented over time has improved but opportunities likely exist to improve further.

Keywords

Trainees; Women; Inclusion; Implicit bias

Introduction

Women comprise 34% of gastroenterology fellows¹ and 18% of practicing gastroenterologists², however, there is a gender gap among higher academic and leadership

Correspondence: Michelle T. Long, MD, MSc, Boston University School of Medicine, Section of Gastroenterology, 85 East Concord Street 7th Floor, Boston MA 02118, mlong@bu.edu, Tel: (617) 638-8392, Fax: (617) 638-6529.

Author contributions:

Design and concept: MTL

Data collection: MS, NA

Data interpretation: MS, NA, SKW, MTL

Drafting of manuscript: MS, MTL

Critical editing of manuscript: MS, NA, SKW, MTL

Conflicts of Interest:

The other authors have no conflicts to report.

positions in gastroenterology. Women comprise less than 20% of gastroenterology program directors and less than 10% of division chiefs.³ Membership on editorial boards of medical journals is an important marker of academic achievement and impact, both of which are critical to academic promotion. Moreover, editorial board members can have a substantial impact on emerging areas of research, which may be important for future grant funding.⁴ A review of over 50 journals across medical specialties noted the proportion of women editorial board members was less than expected, even in specialties dominated by women.⁵ Invited authors of editorials also have the opportunity to exert significant influence. In a large case-control study, women were less likely to have authored invited commentaries compared to men with similar scientific expertise, number of publications, and citation impact.⁶ We previously observed no significant increase in women authors of editorials in major gastroenterology journals from 1992 to 2012.⁷

There are a paucity of data on the gender distribution of editorial boards of gastroenterology journals and data on the gender distribution of editorial authors is not contemporary. Thus, we evaluated the proportion of women editorial board members and authors of editorials in 6 major gastroenterology journals over 35 years.

Methods

We included 6 major gastroenterology journals: *American Journal of Gastroenterology* (AJG), *Clinical Gastroenterology and Hepatology* (CGH), *Gastrointestinal Endoscopy* (GIE), *Gastroenterology*, *Hepatology*, and *Journal of Hepatology* (JOH). We selected journals based on readership and impact factors. For editorial board membership, we extracted the names of editorial board members and editors-in-chief from the January issue of each journal from 1985 to 2020 at 5-year intervals. Since *CGH* was established in 2003, we extracted data starting from 2005. The only available editorial board data for *Hepatology* in 2005 was from a September issue. Additionally, data for editorial board members were unavailable in either hard copy or online for the selected journals: *AJG* (2005, 2010, 2015) and *Hepatology* (1990 and 2000). We additionally abstracted editorial board members in 2020 from three cardiology journals: *Journal of the American College of Cardiology* (JACC), *JAMA Cardiology*, and *Circulation*. We extracted the names of all authors of editorials published in the selected journals for all editions in the above listed years. For the year 2020, editorial authors were extracted from January to April editions. The first and last author of the editorials was determined for each journal for the selected years above. The percentage of active physicians and fellows, by specialty and gender was obtained from the American Association of Medical Colleges workforce data report from 2017.²

The gender of each editorial board member, editor-in-chief, and author was determined by an initial inspection of the first name. For less discernible names, gender was determined by using the software service genderize.io⁸ or visiting the institutional web sites. We quantified the percentage of women editorial board members, editor-in-chief, and authors by calculating frequencies and proportions. To evaluate differences between journals, we used the chi-square test, and to determine trends over time we used the Cochran-Armitage test. The level of significance was set to a two-sided p-value of 0.05 and dedicated software was used for all analyses (SAS 9.4, Cary, NC).

Results

A total of 2282 editorial board members, 40 editors-in-chief, and 1705 authors of editorials (1158 first or only author and 547 last author) were included. Gender was determined for all names extracted.

Overall, the proportion of women editorial board members increased from 2.9% in 1985 to 19.8% in 2020 ($p<0.0001$) (Table 1). We observed significant differences in the cumulative proportion of women editorial board members between journals examined, with the highest proportion observed in *Hepatology* (16.6%) and lowest for *AJG* (7.1%) ($p=0.007$) (Table 1). When analyzing trends in women representation on editorial boards by journal and by year, we observed a significant rise in women representation for *Gastroenterology*, *Hepatology*, and *JOH* (Table 2). Of the 40 editors-in-chief examined, only 2 were women: Dame Sheila Sherlock in *JOH* in 1985 and Fasiha Kanwal in *CGH* in 2020. In 2020, *Hepatology* and *JOH* had a higher proportion of women editorial board members compared to active gastroenterologists (17.6%) (Figure). In comparison, for the cardiology journals evaluated in 2020, both *JAMA Cardiology* and *Circulation* had more women editorial board members than active cardiologists (14.1%) (Figure). For both gastroenterology and cardiology, the proportion of women among fellows is higher compared to proportion of women active physicians (Figure), which highlights the changing demographics of these sub-specialties.

The proportion of women authors of editorials, regardless of authorship position, significantly increased from 0% in 1985 to 22.2% in 2020 ($p<0.0001$). The cumulative proportion of women authors was not significantly different by journal (Table 1). When comparing authorship by journal and year, we observed significant increases in women authors in all journals except *AJG*, *CGH*, and *JOH* (Table 2). For editorials with multiple authors ($n=548$), 19% of first authors were women and 14.4% of senior authors were women. There was no association between the gender of first and senior authors ($p=0.53$).

Discussion

Overall, we observed increases in women on editorial boards and women authors of editorials in 6 major gastroenterology and hepatology journals, over 35 years of observation. Though the increases in women representation should be applauded, many opportunities for improvement exist. First, we observed significant differences between journals in terms of editorial board membership, with some editorial boards comprising less than 20% women in 2020. The trend of increasing women representation was strongest for the liver-specific journals analyzed, with more general or procedure-related journals lagging. Notably, only 5% of editor-in-chief positions were held by women. Finally, with regards to authorship of editorials, though there were no statistical differences between journals, women represented over 20% of editorial authors in only 3 journals in 2020.

The reasons for the gender gaps observed are likely multifaceted and difficult to discern. Certainly, as demonstrated by the increase in the number of women in gastroenterology fellowship programs, the number of women in gastroenterology is increasing over time and will hopefully mean that we will see a significant change in representation over the next 20

years. However, women are still significantly underrepresented in the field.² Additional factors may contribute to women having less time available for academic pursuits compared to men including, more women working part-time⁹, women spending more time on household or parenting-related tasks¹⁰, or women spending more time per patient and in direct patient care or documenting in the electronic health record compared to men.¹¹ In a paper published in *Nature*, women, who were underrepresented as reviewers of academic papers for the American Geophysical Union's academic journals, were more likely to decline invitations to serve as referees and were less often asked to participate in the peer-review process.¹² In response, *Nature* published the gender distribution of referees and renewed an earlier pledge to address gender bias in peer-review.¹³ In cardiology, which is among the specialties in which women are most underrepresented², similar gender gaps exist¹⁴; however, certain journals are clearly actively working to improve gender diversity. In a time when the Director of the National Institute of Health publicly pledges to end all-male speaking panels ("manels")¹⁵, we suggest that gastroenterology and hepatology journals should evaluate the editorial board and peer-review selection process to ensure women representation better reflects the gender distribution of the field. By proposing this solution, we may be able to take a further step to improve the gender gap. In 2019, 20% of American College of Gastroenterology, 24% of American Gastroenterology Association, and 34% of American Association for the Study of Liver Disease society members were women (personal communication), and these proportions may be reasonable targets. A limitation of our work is that data on the number of women invited to join editorial boards or write editorials are not known. We acknowledge that efforts to improve women representation of editorial boards and as authors of editorials may place an increased burden on women academic gastroenterologists. Given the barriers women may feel toward academic pursuits as noted above, women must be supported, both locally and systemically, so that they can engage in academic efforts.

To improve the pipeline of available talent, we must encourage women students and trainees to consider a career in gastroenterology. Mentoring programs targeting women may allow for closer monitoring of professional development and improve advancement. Women trainees and early-stage career faculty need to be supported to participate in the peer-review process. In our study, we noted that 52% of editorials were authored by single authors, so opportunities for mentorship exist. Experts authoring editorials should consider mentoring early stage career faculty in this process and journals should encourage invited authors to include co-authors. Trainees need to be instructed on how to critically appraise a manuscript so they have the skills necessary to participate in peer-review. Journals need to encourage more experienced scientists to partner with early-stage scientists for writing editorials and for peer-review. To decrease the potential for unconscious bias, editors should continue to consider using natural language processing of bibliographic databases to identify experts for invited papers.⁶ Since invitations for editorials or board membership are often extended based on the quality of prior peer-review, publication record, and content expertise, journals need to have systems in place to track and measure the participation of early-stage scientists in the peer-review process so their efforts can be appropriately recognized. By closing gender gaps, there is potential to increase academic research, improve health care delivery,

and advance the management of specific diseases in women, especially with regards to women's health in gastroenterology.

Acknowledgments

Grant Support

Dr. Long is supported in part by the National Institute of Diabetes and Digestive and Kidney Diseases K23 DK113252, the Doris Duke Charitable Foundation, Gilead Sciences Research Scholars Award, Gilead Sciences, Echosens Corporation, the Boston University School of Medicine Department of Medicine Career Investment Award and the Boston University Clinical Translational Science Institute UL1 TR001430.

Abbreviations:

| | |
|-------------|---|
| AJG | American Journal of Gastroenterology |
| CGH | Clinical Gastroenterology and Hepatology |
| GIE | Gastrointestinal Endoscopy |
| JOH | Journal of Hepatology |
| JACC | Journal of the American College of Cardiology |

References

1. American Association of Medical Colleges: ACGME resident and fellows by sex and specialty, 2017. . [aamc.org/data-reports/workforce/interactive-data/acgme-residents-and-fellows-sex-and-specialty-2017](https://www.aamc.org/data-reports/workforce/interactive-data/acgme-residents-and-fellows-sex-and-specialty-2017). Accessed 07/16/2020.
2. American Association of Medical Colleges: ACGME active physicians by sex and specialty, 2017. . [aamc.org/data-reports/workforce/interactive-data/acgme-active-physicians-sex-and-specialty-2017](https://www.aamc.org/data-reports/workforce/interactive-data/acgme-active-physicians-sex-and-specialty-2017). Accessed 7/16/2020.
3. Pascua M, Kushner T, Woodward Z. Promoting Leadership by Women in Gastroenterology-Lessons Learned and Future Directions. *Gastroenterology*. 2019;156(6):1548–1552. [PubMed: 30849311]
4. Jagsi R, Tarbell NJ, Henault LE, Chang Y, Hylek EM. The representation of women on the editorial boards of major medical journals: a 35-year perspective. *Arch Intern Med*. 2008;168(5):544–548. [PubMed: 18332302]
5. Morton MJ, Sonnad SS. Women on professional society and journal editorial boards. *J Natl Med Assoc*. 2007;99(7):764–771. [PubMed: 17668642]
6. Thomas EG, Jayabalasingham B, Collins T, Geertzen J, Bui C, Dominici F. Gender Disparities in Invited Commentary Authorship in 2459 Medical Journals. *JAMA Netw Open*. 2019;2(10):e1913682. [PubMed: 31642926]
7. Long MT, Leszczynski A, Thompson KD, Wasan SK, Calderwood AH. Female authorship in major academic gastroenterology journals: a look over 20 years. *Gastrointest Endosc*. 2015;81(6):1440–1447 e1443. [PubMed: 25887727]
8. genderize.io. Determine the gender of a first name. <https://genderize.io/>. Accessed 7/10/2020.
9. Rouse LP, Nagy-Agren S, Gebhard RE, Bernstein WK. Women Physicians: Gender and the Medical Workplace. *J Womens Health (Larchmt)*. 2020;29(3):297–309. [PubMed: 31967945]
10. Jolly S, Griffith KA, DeCastro R, Stewart A, Ubel P, Jagsi R. Gender differences in time spent on parenting and domestic responsibilities by high-achieving young physician-researchers. *Annals of internal medicine*. 2014;160(5):344–353. [PubMed: 24737273]
11. Ganguli I, Sheridan B, Gray J, Chernew M, Rosenthal MB, Neprash H. Physician Work Hours and the Gender Pay Gap - Evidence from Primary Care. *N Engl J Med*. 2020;383(14):1349–1357. [PubMed: 32997909]

12. Lerback J, Hanson B. Journals invite too few women to referee. *Nature*. 2017;541(7638):455–457. [PubMed: 28128272]
13. Gender imbalance in science journals is still pervasive. *Nature*. 2017;541(7638):435–436.
14. Balasubramanian S, Saberi S, Yu S, Duvernoy CS, Day SM, Agarwal PP. Women Representation Among Cardiology Journal Editorial Boards. *Circulation*. 2020;141(7):603–605. [PubMed: 32065777]
15. Time to end the manel tradition. <https://www.nih.gov/about-nih/who-we-are/nih-director/statements/time-end-manel-tradition>. Published 2019. Accessed September 28, 2020, 2020.

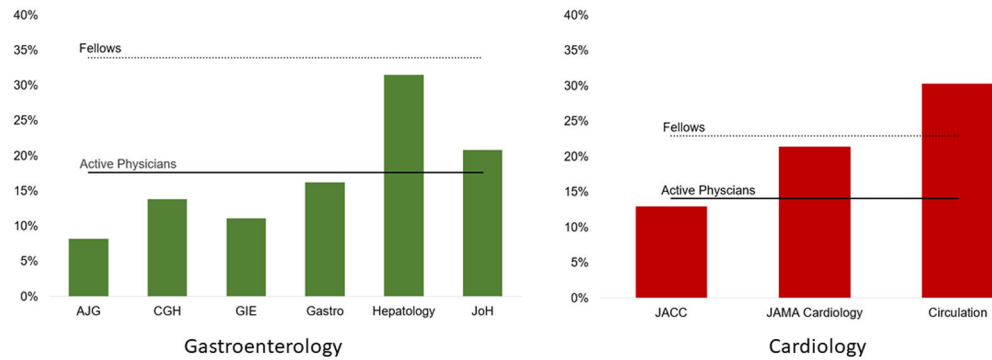


Figure: Proportion of Women Editorial Board Members for Gastroenterology and Cardiology Journals in 2020.

In 2020, women comprised 8.2% of *American Journal of Gastroenterology*, 13.8% of *Clinical Gastroenterology and Hepatology (CGH)*, 11.1% of *Gastrointestinal Endoscopy (GIE)*, 16.2% of *Gastroenterology (Gastro)*, 31.5% of *Hepatology*, and 20.8% of *Journal of Hepatology (JOH)* of editorial board members. In 2017, 17.6% of active gastroenterologist were women and 33.9% of fellows were women. For cardiology journals in 2020, women represented 12.9% of *Journal of the American College of Cardiology (JACC)*, 21.4% of *JAMA Cardiology*, and 30.3% of *Circulation* editorial board members. In 2017, 14.1% of active cardiologists were women and 22.9% of fellows were women.

Table 1:

Percentage of women editorial board members and women authors of editorials, by year or journal

| | % Women editorial board members (n/N) | P Value | % Women authors of editorials, (n/N) | P Value |
|----------------|--|----------------|---|----------------|
| Year | | p<0.0001 | | P<0.0001 |
| 1985 | 2.9 (4/140) | | 0 (0/72) | |
| 1990 | 5.1 (5/98) | | 1.6 (1/62) | |
| 1995 | 7.3 (17/234) | | 5.9 (9/152) | |
| 2000 | 9.6 (21/220) | | 11.7 (23/197) | |
| 2005 | 10.5 (31/294) | | 14.3 (44/307) | |
| 2010 | 11.3 (37/329) | | 17.5 (48/274) | |
| 2015 | 15.0 (63/421) | | 15.4 (73/479) | |
| 2020 | 19.8 (109/546) | | 22.2 (36/162) | |
| Journal | | p = 0.007 | | P = 0.26 |
| AJG | 7.13(13/178) | | 11.9 (24/201) | |
| CGH | 11.6 (26/224) | | 17.3 (27/156) | |
| GIE | 7.6 (6/79) | | 10.5 (35/334) | |
| Gastro | 13.0 (71/546) | | 15.5 (69/445) | |
| Hepatology | 16.6 (90/542) | | 14.1 (48/341) | |
| JOH | 11.2 (80/713) | | 13.6 (31/228) | |

AJG, *American Journal of Gastroenterology*; CGH, *Clinical Gastroenterology and Hepatology*; GIE, *Gastrointestinal Endoscopy*; Gastro, *Gastroenterology*; JOH, *Journal of Hepatology*

Table 2:

Percentage of women editorial board members and authors of editorials, by journal and year

| Journal | 1985 | 1990 | 1995 | Year 2000 | 2005 | 2010 | 2015 | 2020 | P value |
|---|------------|-------------|-------------|--------------|--------------|--------------|---------------|---------------|---------|
| American Journal of Gastroenterology | | | | | | | | | |
| % Women editorial board members (n/N) | 0.0 (0/19) | 11.5 (3/26) | 3.7 (1/27) | 8.8 (5/57) | NA | NA | NA | 8.2 (4/49) | 0.59 |
| % Women authors of editorials, (n/N) | 0.0 (0/1) | 0.0 (0/11) | 2.9 (1/35) | 15.4 (10/65) | 15.2 (7/46) | 16.7 (4/24) | 0.0 (0/10) | 22.2 (2/9) | 0.13 |
| Clinical Gastroenterology and Hepatology | | | | | | | | | |
| % Women editorial board members (n/N) | NA | NA | NA | NA | 10.9 (6/55) | 12.5 (7/56) | 9.1 (5/55) | 13.8 (8/58) | 0.78 |
| % Women authors of editorials, (n/N) | NA | NA | NA | NA | 13.6 (3/22) | 5.0 (1/20) | 16.1 (14/87) | 33.3 (9/18) | 0.05 |
| Gastrointestinal Endoscopy | | | | | | | | | |
| % Women editorial board members (n/N) | 0.0 (0/11) | 0.0 (0/11) | 0.0 (0/11) | 9.1 (1/11) | 12.5 (1/8) | 22.2 (2/9) | 11.1 (1/9) | 11.1 (1/9) | 0.06 |
| % Women authors of editorials, (n/N) | 0.0 (0/13) | 0.0 (0/20) | 5.3 (1/19) | 8.0 (2/25) | 3.4 (2/59) | 18.2 (10/55) | 13.6 (11/81) | 14.5 (9/62) | 0.004 |
| Gastroenterology | | | | | | | | | |
| % Women editorial board members (n/N) | 0.0 (0/24) | 8.3 (2/24) | 10.5 (4/38) | 11.4 (5/44) | 10.7 (6/56) | 11.5 (7/61) | 15.1 (19/126) | 16.2 (28/173) | 0.02 |
| % Women authors of editorials, (n/N) | 0.0 (0/32) | 0.0 (0/10) | 7.7 (5/65) | 14.6 (6/41) | 20.9 (14/67) | 19.8 (16/81) | 14.2 (16/113) | 33.3 (12/36) | 0.003 |
| Hepatology | | | | | | | | | |
| % Women editorial board members (n/N) | 7.8 (4/51) | 10.1 (9/89) | NA | NA | 7.7 (6/78) | 11.4 (9/79) | 18.5 (22/118) | 31.5 (40/127) | <0.001 |
| % Women authors of editorials, (n/N) | 0.0 (0/25) | 5.0 (1/20) | 8.3 (2/24) | 5.6 (2/36) | 14.3 (8/56) | 20.8 (10/48) | 19.3 (23/119) | 15.4 (2/11) | 0.001 |
| Journal of Hepatology | | | | | | | | | |
| % Women editorial board members (n/N) | 0.0 (0/35) | 0 (0/37) | 4.4 (3/69) | 9.3 (10/108) | 12.4 (12/97) | 9.7 (12/124) | 14.2 (16/113) | 20.8 (27/130) | <0.001 |
| % Women authors of editorials, (n/N) | 0.0 (0/1) | 0.0 (0/1) | 0.0 (0/9) | 10.0 (3/30) | 17.5 (10/57) | 15.2 (7/46) | 13.0 (9/69) | 13.3 (2/15) | 0.53 |