

Osteopathic Representation on Editorial Boards of Orthopedic Surgery Journals

Christopher L. Hoehmann^{1*}, Christian Belisario¹, Alexandra Dattilo¹, Scott Hyland², Lucas Knewstubb¹ and Arron Gravina¹

¹Old Westbury, NY, USA

²Blacksburg, VA, USA

Submission: March 19, 2017; **Published:** March 30, 2017

***Corresponding author:** Christopher L. Hoehmann, BS, New York Institute of Technology College of Osteopathic Medicine, Northern Boulevard, Old Westbury, New York 11568 USA, Tel: +1 (631) 520-1416; Email: choehman@nyit.edu

Abstract

Objective: In the present study, we comparatively analyze the degrees of editorial board members of orthopedic surgery journals.

Methods: Editorial members of 98 orthopedic surgery journals were analyzed. The number of allopathic physicians, osteopathic physicians, and other health care professionals serving as editor-in-chief, associate editor, editor emeritus, other editor, and editorial board members were analyzed and compared.

Results: Of the 5,159 editorial board members analyzed, 28 (0.55%) were osteopathic physicians, 2,367 (77.46%) were allopathic physicians, and 696 (21.79%) were neither. Statistical significance was observed upon comparing the number of osteopathic versus allopathic physicians ($p < 0.0001$).

Conclusion: These data establish a significant underrepresentation of osteopathic physicians on editorial boards of orthopedic surgery journals. Future investigation should identify causative factors.

Keywords: Orthopedic Surgery; Medical Education; Editorial Boards; Osteopathic Medical Schools; Quantitative Statistics

Abbreviations: ACGME: The Accreditation Council for Graduate Medical Education; AOA: American Osteopathic Association; GME: Graduate Medical Education

Introduction

Frontier physician Andrew Taylor Still founded osteopathic medicine more than 130 years ago. Ever since, osteopathic medicine has progressively blossomed. In 2014, there were 66,644 active osteopathic physicians, occupying 7.4% of the active physician population in the United States, with the rest being allopathic physicians [1]. Furthermore, there are currently 19,374 orthopedic surgeons in the U.S., of which 5.1% are osteopathic physicians [2].

Osteopathic medicine is growing, however, osteopathic representation on editorial boards appears to be lagging behind. Recent research by Ashurst and Galuska identified a disparity of osteopathic physicians occupying positions on the editorial boards of 8 major journals [3]. Furthermore, recent research by Hoehmann et al. discovered a disparity of osteopathic physicians occupying positions on editorial boards of 50 journals in the sub-specialty of neurological surgery [4]. Both studies note a lack of investigation regarding the osteopathic representation on editorial boards in other sub-specialties of medicine [3,4].

The Accreditation Council for Graduate Medical Education (ACGME) and the American Osteopathic Association (AOA) are merging to form a single Graduate Medical Education (GME) Accreditation System by 2020. This provides new opportunity and indication to develop modernized standards for academic endeavors for each specialty.

In the present study, and in light of the ACGME and AOA merger, we explored whether the disparity identified by Ashurst and Galuska, and also Hoehmann et al., could be expanded to include the osteopathic representation on editorial boards of journals in the sub-specialty of orthopedic surgery.

Materials and Methods

The editorial boards of 98 continuing orthopedic surgery journals were analyzed; all of which were found via two websites: <http://www.mdlinx.com/orthopedics/journals.cfm>, <http://www.omicsonline.org/orthopedic-surgery-journals-conferences-list.php> (Table 1).

Table 1: List of Orthopedic Surgery Journals Analyzed.

Academic Emergency Medicine	Journal of Orthopaedic Science
Acta Orthopaedica Belgia	Journal of Orthopaedic Surgery and Research
Acta Ortopedica Brasileira	Journal of Orthopaedic Trauma
Acta Rheumatologica	Journal of Orthopaedics Trauma Surgery
Advances in Orthopedics	Journal of Orthopaedics
Archives of Orthopaedic and Trauma Surgery	Journal of Orthopedics Research
Archives of Osteoporosis	Journal of Orthopaedics and Traumatology
Arthroscopy	Journal of Osteoporosis and Physical Activity
Arthroscopy: Journal of Arthroscopic and Related Surgery	Journal of Pediatric Orthopaedics
Arthritis	Journal of Shoulder and Elbow Surgery
BMC Musculoskeletal Disorders	Journal of Spine
Bone	Journal of Spinal Disorders
Bone & Joint Research	Journal of Spinal Disorder & Techniques
Bone Reports & Recommendations	Journal of Sport Rehabilitation
Calcified Tissue International	Journal of Surgical Orthopaedic Advances
Clinical & Experimental Orthopaedics	Journal of the American Academy of Orthopedic Surgeons
Clinical Journal of Sport Medicine	Journal of the American Podiatric Medical Association
Clinical Orthopedics and Related Research	Knee Surgery, Sports Traumatology, Arthroscopy
Clinics in Orthopedic Surgery	Nature
Clinics in Podiatric Medicine & Surgery	New England Journal of Medicine
Clinics in Sports Medicine	Operative Techniques in Orthopaedics
Clinical Research on Foot & Ankle	Orthopaedics and Trauma
Current Opinion in Orthopaedics	Orthopedics and Sports Medicine
Current Orthopaedic Practice	Orthopedic Clinics of North America
Current Osteoporosis Reports	Orthopedic Journal at Harvard Medical School
European Journal of Orthopaedic Surgery & Traumatology	Orthopedic Oncology
European Spine Journal	Orthopedics, traumatology: Free Medical Journals
Foot & Ankle International	Osteoarthritis

Foot and Ankle Clinics	Rheumatology: Current Research
Foot and Ankle Surgery	Scoliosis
HAND	Seminars in Arthroplasty
Hand Clinics	Shoulders & Elbow
HSS Journal (Musculoskeletal Journal of Hospital for Special Surgery)	Spine
Indian Journal of Orthopaedics	Sports Medicine and Arthroscopy Review
Injury	Techniques in Foot & Ankle Surgery
International Journal of Orthopedics and Rehabilitation	Techniques in Hand & Upper Extremity Surgery
International Journal of Shoulder Surgery	Techniques in Knee Surgery
International Musculoskeletal Medicine	Techniques in Orthopaedics
International Orthopaedics	Techniques in Shoulder & Elbow Surgery
Internet Journal of Orthopedic Surgery and Related Subjects	The American Journal of Orthopedics
Journal of the American Academy of Orthopaedic Surgeons	The American Journal of Sports Medicine
Journal of Arthroplasty	The Bone & Joint Journal
Journal of Back and Musculoskeletal Rehabilitation	The Foot
Journal of Bone and Joint Surgery	The Journal of Bone & Joint Surgery
Journal of Children's Orthopaedics	The Journal of Foot & Ankle Surgery
Journal of Clinical Neuromuscular Disease	The Journal of Hand Surgery
Journal of Exercise, Sports & Orthopedics	The Knee
Journal of Experimental Orthopaedics	The Lancet
Journal of Hand Surgery (European Volume)	The Spine Journal
Journal of Musculoskeletal and Neuronal Interactions	Zeitschrift für Orthopädie und Unfallchirurgie

Cell contents depict the orthopedic surgery journals analyzed in this study. Cells containing a journal with an osteopathic editorial board member are highlighted in gray.

The editorial board of each journal was analyzed for the following positions: editor-in-chief, associate editor, editor emeritus, "other" editor (e.g., section editor, deputy editor, consulting editor), and editorial board members. Editorial staff, such as social media manager and office manager, was excluded from the analyses. Each member's credentials were ascertained on the basis of the suffix following the last name. If the journal did not provide a suffix or detailed information regarding the member's credentials, an Internet search was executed to determine the member's credentials. Members who held advanced degrees besides MD and DO (e.g., PhD, DPT, et cetera)

were listed as "other". Allopathic physicians who held additional advanced degrees (e.g., PhD, MS, MBA) were allocated to the allopathic criteria for analyses and were only represented once.

Statistical analysis was performed with IBM SPSS version 20.0 for Windows. To analyze the collected data, descriptive statistics was performed with percentages to determine the number of allopathic, osteopathic, or "other" non-physician healthcare professional fulfilling each editorial role. Furthermore, a paired t test was performed to compare the number of osteopathic physicians against the number of allopathic physicians serving editorial roles on each of the orthopedic surgery journals.

Results

A total of 5,159 individuals occupying positions on the editorial boards of 98 orthopedic surgery journals were included in this analysis. Of these data, 28 (0.55%) were osteopathic physicians, 2,367 (77.46%) were allopathic physicians, and 696 (21.79%) did not have a doctoral medical degree (Table 2).

Table 2: Quantitative Description of Degrees Held by Editorial Board Members.

Editorial Positions	Allopathic	Osteopathic	Other
Editor-in-chief (n=124)	97 (78.23)	1 (0.8)	15 (12.10)
Associate Editor (n=739)	590 (79.84)	8 (1.08)	141 (19.08)
Editor Emeritus (n=121)	107 (88.43)	0 (0)	14 (11.57)
Other Editor (n=1095)	835 (76.26)	2 (0.18)	258 (23.56)
Editorial Board (n=3080)	2367 (76.86)	17 (0.55)	696 (22.6)
Total Members (n=5159)	3996 (77.46)	28 (0.54)	1124 (21.79)

Table represents the pooled data of degrees held by editorial board members for each of the 98 journals analyzed in this study. Number outside parenthesis indicates raw number while number in parenthesis indicates the percentage. n represents total number per positions.

Osteopathic physicians held a total of 28 editorial positions in 12 of the 98 orthopedic surgery journals, including: *Arthroscopy: Journal of Arthroscopic and Related Surgery*, *Clinical Journal of Sport Medicine* (6 members), *Foot & Ankle International* (3 members), *Journal of Back and Musculoskeletal Rehabilitation*, *Journal of Children's Orthopaedics*, *The Journal of Hand Surgery*, *Journal of Orthopaedic Trauma*(5 members), *Journal of Pediatric Orthopaedics*, *Techniques in Foot & Ankle Surgery*, *Scoliosis Spine*, and *The Spine Journal*(5 members). Also of note, an osteopathic physician occupied the Editor-in-Chief position of only one journal: *Spine*. Of the 28 total osteopathic physicians occupying editorial board positions, 7 were reported as family medicine physicians while the remaining 21 were reported as orthopedic surgeons.

The mean number of allopathic physicians serving editorial roles for each journal was 40.69 (with a standard deviation of 39.52). The mean number of osteopathic physicians serving editorial roles for each journal was 0.28 (with a standard deviation of 0.99). Statistical significance was observed upon comparing the number of osteopathic physicians against the number of allopathic physicians serving editorial roles for each of the 98 orthopedic surgery journals analyzed ($p < 0.0001$).

Discussion

To our knowledge, the present study is the first to analyze the osteopathic representation on the editorial boards of

orthopedic surgery journals. Although osteopathic physicians comprise 7.4% of the U.S. physician population, and 5.1% of the U.S. orthopedic surgeon population, our study demonstrated that osteopathic physicians occupied only 0.55% of the editorial positions analyzed in orthopedic surgery journals. This in contrast to allopathic physicians, who occupied 77.46% of the editorial board positions analyzed. These data represent a disparity between the osteopathic physician population and the osteopathic representation on the editorial boards of orthopedic surgery journals.

These findings are in accordance with those identified in similar recent research. A study by Ashurst and Galuska investigated 2058 editorial board positions of 8 major medical journals and found 1921 (93.3%) to be occupied by allopathic physicians, 134 (6.5%) to be occupied by non-physician healthcare professionals, and only 3 (0.15%) to be occupied by osteopathic physicians [3]. Follow-up research by Hoehmann et al., demonstrated a disparity between osteopathic and allopathic physicians in the sub-specialty of neurological surgery [4]. This study investigated 2826 editorial board positions of 50 major neurological surgery journals and found 2645 (93.6%) to be occupied by allopathic physicians, 177 (6.3%) to be occupied by non-physician healthcare professionals, and only 4 (0.14%) to be occupied by osteopathic physicians [4].

Both of these studies suggest the under-representation of osteopathic physicians serving on editorial boards of medical journals and are further supported by the findings of the present study. Moreover, the osteopathic representation identified by Ashurst and Galuska and also Hoehmann et al., was found to be 0.15% and 0.14% respectively, however the 0.55% osteopathic representation identified in the present study suggests that osteopathic underrepresentation may be less conspicuous in the orthopedic surgery community [3,4]. Nevertheless, it seems osteopathic physicians are indeed underrepresented on all forms of medical journal editorial boards that have been examined in recent research.

The etiology for the inadequate osteopathic representation on editorial boards is complex, multi-faceted, and possibly related to differences in training between osteopathic and allopathic medical students. The American Association of Colleges of Osteopathic Medicine performed a survey of medical students regarding their medical training and found that 47% of osteopathic medical students expressed an inadequate amount of time was appropriated to learning research techniques, literature analysis skills, and biostatistics [5]. This finding may be secondary to the large emphasis that osteopathic medical education places on patient centered medical treatment versus disease oriented medicine [3]. This is further compounded by the fact allopathic medical schools receive more funding for research and development than their osteopathic counterparts, which ultimately provides allopathic students with more opportunities for scholarly activity than osteopathic students [6]. Moreover,

osteopathic medical students are less likely to simultaneously hold separate advanced degrees, such as a doctor of philosophy (PhD), or a Master's (MA) degree [7]. Pursuing such degrees often provides more opportunities and time dedicated to scholarly activity and research, while also conferring a larger interest in an academic career.

It is unclear what this means in regards to the imminent ACGME and AOA merger. A single GME Accreditation System provides an interesting opportunity to rectify the underrepresentation of osteopathic physicians serving editorial roles. Alternatively, it may provide an unfortunate opportunity to perpetuate this established discrepancy. More research is indicated in this field to establish causative factors for this disparity so that precautions can be made while planning the details of the transition to a single GME Accreditation System.

Limitations

The present study analyzed 98 orthopedic surgery journals that were retrieved from two websites identified by a web search; however, many more orthopedic surgery journals exist and were not included in the study. Since the journals were obtained from a list, there was no clear inclusion or exclusion criteria for journals utilized in this study. Additionally, although the sample size used in this study is larger than that of similar studies, it is still possible that orthopedic surgery journals that were not included in the study could conceivably maintain a larger percentage of osteopathic physicians serving editorial roles. Furthermore, it is impossible to control for some confounding factors, such as the number of osteopathic physicians in academic appointments, or their sub-specialties.

Conclusion

In the current study, we identified a significant disparity between the number of osteopathic physicians and allopathic physicians serving on the editorial boards of orthopedic surgery journals. These data support the recent work by Ashurst and Galuska, and also Hoehmann et al., which suggests an underrepresentation of osteopathic physician serving on editorial boards of various types of medical journals. These findings should be considered in light of the imminent AOA and ACGME merger. More research is needed in this field to identify causative factors and to assist the transition to a single GME Accreditation System.

References

1. Association of American Medical Colleges State Physician Workforce Data Book (2015).
2. Association of American Medical Colleges 2014 Physician Specialty Data Book (2014)
3. Ashurst JV, Galuska M (2016) Osteopathic physicians on the editorial boards of major medical journal over the past 30 years. *J Am Osteopath Assoc* 116(2): 92-95.
4. Hoehmann CL, Young CT, Fennie CN, Giniyani L, Cuoco JA (2016) Osteopathic physicians on editorial boards of neurosurgical journals: A quantitative analysis. *Journal of Spine & Neurosurgery* 5: 6.
5. American Association of Colleges of Osteopathic Medicine American Association of Colleges of Osteopathic Medicine 2014-2015 Academic Year Survey of Graduating Seniors Summary (2015).
6. Moy E, Griner PF, Challoner DR, Perry DR (2000) Distribution of research awards from the National Institutes of Health among medical schools. *N Engl J Med* 342(4): 250-255.
7. Pheley A, Lois H, Strob J (2006) Interests in research electives among osteopathic medical students. *J Am Osteopath Assoc* 106(11): 667-670.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/OROAJ.2017.05.555670](https://doi.org/10.19080/OROAJ.2017.05.555670)

Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
(Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>