JSES Reviews, Reports, and Techniques 4 (2024) 204–207

Contents lists available at ScienceDirect

JSES Reviews, Reports, and Techniques

journal homepage: www.jsesreviewsreportstech.org

Publication rates of abstracts presented at American Shoulder and Elbow Surgeons annual open and closed conferences: 2015-2019

Paul G. Mastrokostas, BA, BBA[a], Brandon Klein, DO, MBA[b,*], Anthony L. Cappellino, MS[c], Lucas E. Bartlett, DO[b], Stephen A. Parada, MD[d], Randy M. Cohn, MD[b]

[a]College of Medicine, State University of New York (SUNY) Downstate, Brooklyn, NY, USA
[b]Department of Orthopedics, Northwell Health, Donald and Barbara Zucker School of Medicine, Huntington, NY, USA
[c]Philadelphia College of Osteopathic Medicine, Philadelphia, PA, USA
[d]Department of Orthopaedic Surgery, Medical College of Georgia at Augusta University, Augusta, GA, USA

ARTICLE INFO

Keywords:
Publication
Abstract
ASES
American Shoulder and Elbow Surgeons
Education
Academic Conference
Shoulder
Elbow
JSES

Level of evidence: Level V; Review Article

Background: The annual meetings hosted by the American Shoulder and Elbow Surgeons (ASES) present the latest prepublication literature in shoulder and elbow surgery, facilitating early dissemination of novel findings that impact clinical decision-making. Evaluating the publication rate of presented abstracts at ASES conferences becomes crucial in assessing the quality of research showcased, as these presentations often precede the peer-review process.

Methods: The ASES conference programs from 2015-2019 were reviewed to identify presented abstracts. For each abstract, the title, author(s), conference year, and meeting type (open vs. closed) were recorded. The names of the author(s) of each abstract were searched in the PubMed and Google Scholar databases to determine if there was an associated published manuscript. For each identified manuscript, the title, author(s), date of publication, publishing journal, impact factor of the publishing journal, level of evidence, and number of citations were recorded.

Results: A total of 316 abstracts were presented as podium lectures at ASES open and closed meetings between 2015 and 2019. Within 3 years of presentation, 240 (75.9%) of the presented abstracts resulted in publication. There was an increase in the proportion of abstracts resulting in publication within 3 years of the presentation from 2015-2019 ($R = 0.8733$, $P = .053$). Overall, the proportion of presented abstracts that went on to publication in peer-reviewed journals also increased ($R = 0.8907$, $P = .043$). Manuscripts of abstracts presented at open meetings had a shorter time to publication (8.78 vs. 11.82 months; $P = .0160$) and were cited more often (40.89 vs. 30.11, $P = .0099$) than those presented at closed meetings.

Conclusion: There has been an increase in the publication rate of abstracts presented at ASES annual meetings in the study period. Published manuscripts of abstracts presented at ASES open conferences were published faster, and were cited more often, than closed conferences. ASES conferences allow for the presentation of high-quality prepublication literature in shoulder and elbow surgery.

Annual meetings hosted by the American Shoulder and Elbow Surgeons (ASES) provide a platform for the presentation of the latest prepublication literature in shoulder and elbow surgery. Prepublication literature allows for the early dissemination of novel findings that may contribute to clinical decision-making. However, the quality of prepublication literature must be assessed to assist attendees in determining which findings should be implemented into their own patient management, as this research is usually presented prior to the peer-review process. Therefore, the publication rate of presented abstracts can be used to define the quality of research disseminated at ASES conferences.

ASES hosts an open and a closed conference annually. While registration for the open meeting allows nonmembers to attend, the closed meeting is limited to ASES membership. The open meeting prioritizes mainstream topics that provide an immediate clinical impact, while closed meeting allows for the constructive discussion of new literature that can eventually be implemented into clinical practice.[4] Prepublication abstracts are screened by the meeting's program committee before acceptance for presentation. However, abstract submissions are limited to 300 words, which

Institutional review board approval was not required for this review article.

*Corresponding author: Brandon Klein, DO, MBA, Department of Orthopedics, Northwell Health, Donald and Barbara Zucker School of Medicine, 270 Park Avenue, Huntington, NY 11743, USA.
E-mail address: bklein2417@gmail.com (B. Klein).

https://doi.org/10.1016/j.xrrt.2023.12.005

may not fully demonstrate the quality of evidence. Therefore, without the same level of scrutiny and peer-review as scientific journals, it is uncertain if these studies are of high enough quality to result in future publication.[4]

Previous literature has attempted to define the quality of prepublication abstracts presented at society meetings by evaluating the future publication rate.[1,2,5-7,11] To assess the quality of prepublication literature presented at recent ASES annual conferences, authors sought to answer the following questions: (1) Has there been a change in the future publication rates of abstracts presented at ASES annual meetings?, (2) Which journals most commonly publish the corresponding manuscripts of presented abstracts?, and (3) Are there differences in the future publication rate of abstracts or the characteristics of published manuscripts between open or closed ASES meetings?

Materials and methods

Electronic conference programs of ASES (open and closed) annual meetings from 2015-2019 were obtained through the organization's website. Conference programs that were not publicly available were provided by an ASES representative upon request. As previous literature has demonstrated that abstracts are usually published within 3 years of presentation, conferences after 2019 were not evaluated to provide adequate time for publication.[1,7,8] For each identified abstract, the title, author(s), conference year, meeting type (open vs. closed), study design, type of study (clinical vs. basic science), level of presenting author (student, resident, attending, chief, research fellow, and PhD researcher), and affiliated country (United States, non–United States, and combined United States and non–United States) were recorded. Studies presented at both open and closed conferences (n = 14) were excluded from the analysis to evaluate meeting type as an independent predictor of publication. Exclusion criteria used to identify these studies included identical titles and/or author lists.

A comprehensive search was performed to identify associated published manuscripts of presented abstracts. Two reviewers independently searched the PubMed and Google Scholar databases for manuscripts using author name(s) and keywords from the abstract titles and/or abstract body, which is consistent with methods of previous studies assessing the abstract publication rate of orthopedic society meetings.[1,8] If a manuscript was not identified by searching the abstract title, the first, second, and/or last authors' names were cross-referenced with a string of keywords from the title to identify publications that underwent a title change between abstract submission and publication. Publications were included if the title, abstract body, and at least 2 or more of the first, second, and last author's names were consistent between the conference presentation and the published manuscript, even if not all authors were identical across both platforms.

For each identified published manuscript, the title, author name(s), publishing journal, date of publication, level of evidence (LOE), impact factor of the publishing journal (IF), and number of citations were recorded. Individual time to publication values were calculated by subtracting the date of the conference from the date of publication. The IF was determined using the Web of Science Journal Citation Report for the year in which the study was published, which has been used in previous studies to represent journal quality.[9] The LOE for each manuscript was recorded as listed in their respective journal. Manuscripts in which no LOE was listed by the journal (n = 95) were excluded from associated calculations to prevent subjectivity by the reviewers. The number of citations for each manuscript was recorded, as reported in Google Scholar, at the time of manuscript identification.

Statistical analysis was performed using Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) and Python 3.11.3 (2023; Python Software Foundation, Wilmington, DE, USA). Descriptive outcomes were described as numerical totals and percentages. Unpaired student's *t*-tests, Mann-Whitney U tests, 2-sample Z-test for proportions, analysis of variance, Kruskal-Wallis tests, and linear regression were used to compare variables. A *P* value less than .05 was designated to determine statistical significance.

Results

There were 316 abstracts presented at 2015-2019 ASES open (n = 103) and closed (n = 213) annual meetings. Of these abstracts, 75.9% (240/316) resulted in published manuscripts within 3 years of their respective meeting date. There was an increasing trend in the 3-year publication rate of abstracts presented at ASES conferences from 2015-2019, although this did not reach statistical significance within the first 3 years after presentation at ASES (R = 0.8733, *P* = .053). When considering published manuscripts irrespective of timeframe, there was a statistically significant increase in the proportion of presented abstracts that went on to publication (R = 0.8907, *P* = .043). Additionally, there was an increase in the publication rate of abstracts presented at closed conferences over the study period (R = 0.9055, *P* = .034). There was no change in the publication rate of abstracts presented at open conferences over the study period (R = 0.6641, *P* = .222). No differences were observed in the 3-year publication rate based on prospective vs. retrospective study design (74.7% vs. 73.9%, *P* = .9011), clinical vs. basic science study (75.1% vs. 79.4%, *P* = .5863), US vs. non-US study (75.7% vs. 75.9%, *P* = .9689), or level of presenting author (*P* = .8768) (Table I).

Manuscripts were published in 39 unique journals. The most common journals of publication were *Journal of Shoulder and Elbow Surgery* (*JSES*; n = 98, 40.8%), *American Journal of Sports Medicine* (*AJSM*; n = 22, 9.2%), *Arthroscopy* (n = 18, 7.5%), *Journal of Bone and Joint Surgery* (n = 13, 5.4%), *Orthopaedic Journal of Sports Medicine* (n = 10, 4.2%), and *Orthopedics* (n = 9, 3.8%). Among journals comprising at least 5% of the overall published number of manuscripts, manuscripts published in *AJSM* had the shortest time to publication (5.90 months), followed by *Arthroscopy* (7.56 months), *JSES* (10.45 months), and *Journal of Bone and Joint Surgery* (12.85 months). There were no significant differences between open and closed meetings in publishing journals (Table II).

Table I
Trends in 3-year publication rate of ASES abstracts.

	3-y publication rate (%)						R-value	*P* value*
	2015	2016	2017	2018	2019	Total		
Open Meetings	64.3	89.7	78.9	91.7	86.7	80.6	0.6641	.222
Closed Meetings	57.6	70.0	79.4	77.8	82.0	73.7	0.9055	**.034**
Overall	60.7	76.4	79.2	81.2	83.1	75.9	0.8733	.053

ASES, American Shoulder and Elbow Surgeons.
*Bolded *P* value indicates statistical significance.

Table II
Journals of publications for abstracts presented at ASES meetings (2015-2019).

Journal	Median impact factor (range)	Time to publication (mo)*	Overall published n (%)	Open meetings n (%)	Closed meetings n (%)	*P* value†
Journal of Shoulder and Elbow Surgery	2.730 (2.412-2.865)	10.45	98 (40.8)	36 (43.4)	62 (39.5)	.5624
American Journal of Sports Medicine	5.810 (4.517-6.093)	5.90	22 (9.2)	11 (13.3)	11 (7.0)	.1116
Arthroscopy	4.292 (3.724-4.433)	7.56	18 (7.5)	8 (9.6)	10 (6.4)	.3625
Journal of Bone and Joint Surgery	4.840 (4.578-5.163)	12.85	13 (5.4)	4 (4.8)	9 (5.7)	.7674
Orthopaedic Journal of Sports Medicine	0.935 (0.476-1.407)	2.40	10 (4.2)	2 (2.4)	8 (5.1)	.3240
Orthopedics	1.143 (1.143-1.608)	15.44	9 (3.8)	3 (3.6)	6 (3.8)	.9363
All other journals	-	9.53	70 (29.2)	19 (22.9)	51 (32.5)	-
Total	-	10.77	240	83	157	-

ASES, American Shoulder and Elbow Surgeons.
*Time to publication was reported as the mean. Individual time to publication values were calculated by subtracting the date of the conference from the date of publication.
†A 2-sample Z-test for proportions was performed to compare open and closed meeting types.

Table III
Quality measures of published manuscripts.

	Open meetings	Closed meetings	*P* value*
Mean Time to Publication (mo)	8.78	11.82	**.0160**
Median Impact Factor	2.82	2.73	.0525
Mean Level of Evidence	2.83	2.96	.4783
Mean Number of Citations	43.89	30.11	**.0099**

*Bolded *P* value indicates statistical significance.

There was no difference in the 3-year publication rate of abstracts presented at ASES open (80.6%) and closed (73.7%) meetings ($P = .1813$). There were 14 manuscripts that were published after 3 years from their presentation date (open = 9, closed = 5). Even when accounting for manuscripts reaching publication after 3 years, there was no difference in the future publication rate between open (85.4%) and closed (77.9%) meetings ($P = .1162$). Manuscripts corresponding with abstracts of open meetings (8.78 months) were published faster than those presented at closed (11.82 months) meetings ($P = .0160$). Published manuscripts of abstracts presented at ASES open meetings had a higher number of citations than those presented at closed meetings (43.89 vs. 30.11; $P = .0099$). There was no difference in the average LOE or median journal IF of manuscripts between open and closed meetings. Level of presenting author and affiliated country were not associated with mean time to publication. While level of presenting author was not associated with median journal IF, non-US studies were associated with a higher median journal IF than US studies (3.097 vs. 2.730, $P < .0001$) (Table III).

Discussion

Annual conferences hosted by the ASES provide an opportunity for the presentation of prepublication literature in orthopedic shoulder and elbow surgery. Since the most recent evaluation of ASES abstract publication rate in 2012, the publication rate of abstracts presented at other annual society meetings has significantly changed.[3,5-7,11]

The 3-year publication rate of abstracts demonstrated in this review (75.9%) was higher than that previously reported for 2008-2012 ASES meetings (61%).[1] Although the publication rate reported by Collins et al was lower than the current review, it still demonstrated an increase from 2005-2010 meetings (49.2%), supporting our findings of an increasing trend in the proportion of published abstracts over time.[1,4] Given the increased future publication rate of abstracts, which suggests continued improvement in the quality of prepublication literature, attendees can be assured that the research being presented is of sufficient quality to likely result in publication.

Abstracts presented at ASES conferences have a future publication rate higher than other prominent orthopedic society meetings. Manuscripts of abstracts presented at Arthroscopy Association of North America (AANA) annual meetings had a 3-year publication rate of 63.4%, while American Orthopaedic Society for Sports Medicine (AOSSM) annual meeting abstracts had a 3-year publication rate of 67.1%.[5,11] This suggests that the ASES conference showcases high-quality prepublication literature, similar to other prominent orthopedic society meetings.

Manuscripts of abstracts from ASES annual meetings were most commonly published in *JSES*, *AJSM*, and *Arthroscopy*. As *JSES* is the affiliated journal of the ASES, it is not surprising that a large proportion of manuscripts were published in their own journal. Individual orthopedic societies may have different policies regarding abstracts presented at their annual meetings. AOSSM maintains a "right of first refusal" policy, which mandates that manuscripts corresponding to presented abstracts be submitted first to an AOSSM-affiliated journal (*AJSM*).[10] However, ASES has no such policy for abstracts presented at their meetings, suggesting that authors choose to submit their manuscripts to the *JSES family of journals*. Besides *JSES*, manuscripts were commonly published in *AJSM* and *Arthroscopy*. This highlights the crossover in some aspects of literature between the Shoulder and Elbow and Sports Medicine Societies.

There was no difference in the publication rate of presented abstracts between ASES open and closed meetings. However, manuscripts corresponding to abstracts presented at open meetings had a higher number of citations and a shorter time to publication than those presented at closed meetings. As open meetings prioritize topics with a greater clinical impact, this objective has the potential to influence the number of citations received by these articles upon publication and contribute to a shorter time to publication.[4] The faster time to publication of open meetings, compared to closed meetings, may also contribute to an increased citation rate, as earlier-published manuscripts have more time to accumulate citations. Manuscripts corresponding to abstracts presented at ASES conferences were published faster (10.77 months) than those presented at AOSSM (11.22 months), AANA (12.2 months), and American Academy of Orthopaedic Surgeons (15.94 months) annual meetings.[3,6,11] Manuscripts of published abstracts at ASES conferences were published faster than those at AANA conferences in *JSES* (10.45 months vs. 22.2 months), *AJSM* (5.90 months vs. 12.6 months), and *Arthroscopy* (7.56 months vs. 15.4 months) despite *Arthroscopy* being the affiliated journal of AANA.[11] This provides further evidence to the quality of the research being presented at the ASES annual meetings.

This review is not without limitations. As only the PubMed and Google Scholar databases were used to identify published manuscripts, it is possible that publications not included in these

databases were not recognized, and therefore were inaccurately considered unpublished. Given the publication rate seen in this study when compared to other orthopedic society annual meetings, it is unlikely that many published manuscripts were not accounted for. It is also possible that additional abstracts will be published from the later meetings after the 3-year timeframe. We identified less than 5% of abstracts from the earlier meetings in this series that were published after 3 years of presentation, so this would be unlikely to cause a significant effect on the overall publication rate. Additionally, a large number of manuscripts without a reported LOE were excluded from the LOE analysis, thereby limiting the scope of this particular analysis. As LOE was obtained directly from the journals' websites, journals may have used different grading criteria, which may have led to an inaccurate display in this manuscript characteristic. It is important to note that the number of citations for each published manuscript was not collected at the same time point following initial publication. This could lead to a misrepresentation of the number of citations between manuscripts published at an earlier vs. later date, considering the limited time for newly published manuscripts to be cited.

Conclusion

The increased publication rate of abstracts presented at ASES meetings is slightly higher than other prominent orthopedic society meetings. In comparison to ASES closed meetings, abstracts presented at open meetings had a shorter time to publication and manuscripts produced a higher number of citations. Attendees at ASES annual conferences can be assured that the research being presented has a high likelihood of eventual publication in peer-reviewed journals.

Disclaimers:

Funding: No funding was disclosed by the authors.
Conflicts of interest: The authors, their immediate families, and any research foundation with which they are affiliated have not received any financial payments or other benefits from any commercial entity related to the subject of this article.

References

1. Abstract and instructional course submissions [Internet]. American orthopaedic society for sports medicine. Available at: https://www.sportsmed.org/education/speaker-resources/abstract-and-instructional-course-submissions. Accessed July 13, 2023.
2. Baweja R, Kraeutler MJ, McCarty EC. An in-depth analysis of publication characteristics of podium presentations at the arthroscopy association of north america annual meetings, 2011-2014. Arthroscopy 2018;34:884-8. https://doi.org/10.1016/j.arthro.2017.09.026.
3. Collins MJ, Arns TA, Frank RM, Cvetanovich GL, Black A, Romeo AA, et al. Publication rates of podium presentations at the American shoulder and elbow surgeons annual open versus closed meetings 2008 to 2012. JSES Open Access 2017;1:35-8. https://doi.org/10.1016/j.jses.2017.02.002.
4. Daluiski A, Kuhns CA, Jackson KR, Lieberman JR. Publication rate of abstracts presented at the annual meeting of the orthopaedic research society. J Orthop Res 1998;16:645-9.
5. Gowd AK, Liu JN, Cabarcas BC, Cvetanovich GL, Garcia GH, Verma NN. Analysis of publication trends for the 2011-2015 american orthopaedic society for sports medicine annual meeting abstracts. Orthop J Sports Med 2018;6:232596711879285. https://doi.org/10.1177/2325967118792851.
6. Kay J, Memon M, de SA D, Duong A, Simunovic N, Athwal GS, et al. Five-year publication rate of clinical presentations at the open and closed American shoulder and elbow surgeons annual meeting from 2005-2010. J Exp Orthop 2016;3:21. https://doi.org/10.1186/s40634-016-0059-z.
7. Kinsella SD, Menge TJ, Anderson AF, Spindler KP. Publication rates of podium versus poster presentations at the American orthopaedic society for sports medicine meetings. Am J Sports Med 2015;43:1255-9. https://doi.org/10.1177/0363546515573939.
8. Le R, Anderson A, Chalmers CE, Scolaro JA, Lee Y-P, Bhatia N. Major orthopaedic conference abstract publication: an analysis of abstracts accepted for the aaos annual meetings between 2014 and 2017. J Am Acad Orthop Surg 2021;29:e601-8. https://doi.org/10.5435/JAAOS-D-20-00501.
9. Lehman JD, Nwachukwu BU, Ferraro R, Rebolledo BJ, Makhni EC, Verma NN, et al. Publication rates of podium presentation abstracts at the arthroscopy association of north america annual meetings 2004-2012. Arthroscopy 2017;33:835-9. https://doi.org/10.1016/j.arthro.2016.11.023.
10. Narain AS, Hijji FY, Kudaravalli KT, Yom KH, Singh K. Publication rates of abstracts accepted to the 2010-2012 annual meetings of the north American Spine society. Spine 2017;42:1723-9. https://doi.org/10.1097/BRS.0000000000002203.
11. Saha S, Saint S, Christakis DA. Impact factor: a valid measure of journal quality? J Med Libr Assoc 2003;91:42-6.