

Publication Outcomes of Abstracts Presented at Meetings of the American Society of Retina Specialists

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Abstract

Purpose: To assess the publication outcomes of abstracts presented at the American Society of Retina Specialists (ASRS) meetings and identify characteristics associated with a more favorable publication rate, impact factor, and time to publication. **Methods:** We recorded abstract characteristics for abstracts presented at the 2017 and 2018 ASRS meetings and conducted a PubMed search to identify matching publications. We used descriptive statistics, univariate χ^2 test, and multivariate logistic and linear regression to analyze outcomes and associations. **Results:** Of the 572 analyzed abstracts, 59.6% (341/572) were translated into publications, resulting in a median impact factor of 3.6 and time to publication of 466 days. Oral presentation, sample size greater than 100, and university affiliation for multivariate logistic regression predicted a higher publication rate, with odds ratios of 1.78 (95% CI, 1.19–2.65), 1.57 (95% CI, 1.03–2.38), and 1.56 (95% CI, 1.06–2.30), respectively. In multivariate linear regression, the presenting author holding an MD or DO credential was significantly related to faster time to publication. **Conclusions:** The publication rate was 59.6%, with an increased likelihood of publication for those with a university affiliation, sample size greater than 100, or oral presentation type.

Keywords

retina, scientific meeting, abstract, publication, American Society of Retina Specialists

Introduction

As is customary at medical conferences, the Annual Scientific Meeting of the American Society of Retina Specialists (ASRS) includes the presentation of research abstracts. These abstracts generally pertain to ongoing or recently completed studies and allow an opportunity to communicate information before publication. Given the considerable time required for the submission, review, and publication of scientific material, sharing abstracts is instrumental in increasing the pace of scientific discovery and enabling collaboration among research groups. However, studies presented in this format must eventually commit to the comprehensive publication process to ensure exposure to peer review and enable the widespread distribution of results.

Abstracts presented at ophthalmology meetings have been the subject of a multitude of publications over time. Although these investigations have different methodologies and results, they agree that a substantial portion of abstracts deemed acceptable for presentation are not translated into full-length publications. The most comprehensive study on this topic, a systematic review by E et al¹ published in 2020, reported a weighted publication rate of 38.0%, signaling a need for improvement. This study and others expand on this analysis by investigating the association between particular abstract characteristics and publication rates

and examining alternative publication outcomes, such as journal impact factor and time to publication.^{1–5} However, there are no published data regarding the outcome of abstracts presented at large national and/or international meetings of the retina subspecialty, signifying a limitation of the existing studies. Additionally, most published data regarding ophthalmology abstracts relates to meetings held over a decade ago, calling for continued evaluation with more contemporary data.

To address this gap in the existing studies, we analyzed abstracts presented at ASRS meetings.⁶ The ASRS is the largest organization of retina specialists in the world, representing more than 3000 physicians from the United States and more than 60 countries. We aimed to quantify the publication rate, journal impact factor, and time to publication for these abstracts and identify characteristics associated with more favorable outcomes.

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Methods

We reviewed all abstracts presented at the 2017 and 2018 ASRS meetings. In the systematic review conducted by E et al,¹ the Kaplan-Meier analysis showed the percent of abstracts translated into publications still increased considerably in the fourth and fifth years following presentation before showing a more definitive plateau. We analyzed multiple years of abstracts presented at least 5 years before our data collection in 2024, namely 2017-2019. However, a portion of the 2019 abstracts were not accessible via the online ASRS abstract archive. To avoid introducing an incomplete sample and potentially skewing our dataset, we proceeded with 2017 and 2018 abstract data.

For each abstract, we collected data on the title, credential of the presenting author (MD/DO vs non-MD/DO), institutional affiliation (university vs other), nationality of institutional affiliation (United States vs non-US), study timing (retrospective vs prospective), study design (randomized control trial vs other), number of study sites (single center vs multicenter), sample size (≤ 100 vs > 100), research topic (clinical vs nonclinical), rare disease relevance (yes vs no), and publication status (published vs not published). For full-length abstracts, we also recorded the date of publication, journal of publication, and journal impact factor. For consistency, all data regarding institutional affiliation were based on the primary affiliation of the presenting author. Additionally, we defined university-affiliated institutions as only those that are part of a university or medical school system, not including private centers with academic medicine partnerships. We defined “rare diseases” using the criteria specified in the Rare Disease Act of 2002, and the impact factor was determined based on Clarivate Analytics 2022 ratings (released in 2023)⁷ and publisher listings.

To determine the publication outcomes, we conducted a PubMed search for each abstract, with no defined start or end date. We used the following search algorithm: “First Author Name” [Author] AND “Last Author Name” [Author] AND “Keyword” [Title/Abstract]. If the initial search did not identify a matching publication, we conducted a second search with the following terms: “First Author Name” [Author] OR “Last Author Name” [Author] AND “Keyword” [Title/Abstract]. If necessary, we conducted a third search with the terms: “Keyword” [Title/Abstract] AND “Keyword” [Title/Abstract] AND “Keyword” [Title/Abstract] (each with a keyword). We then reviewed potentially matching results to ensure the publication’s content aligned with the abstract. We accepted a variation in sample size between the abstract and publication, but we did not consider publications with otherwise distinct methodology as a match.

Similar studies analyzed the association between the last author’s credential and publication outcomes.^{4,5} Although we consider this valuable information, the ASRS abstract archives do not clearly identify the conventional “last author.” For example, in several instances, a medical student is the last listed author for a project involving multiple attending physicians, indicating that author names are likely listed in an alternative format. Given this uncertainty and to avoid producing misleading data, we did not analyze this covariate.

We used Microsoft Excel version 2405, SPSS version 29, and Stata version 18 for statistical analysis. We conducted a χ^2 test to determine which abstract characteristics correlated with publication rate, and we fitted a multivariate logistic regression model for each abstract characteristic and the categorical outcome of publication status. For this test, we quantified associations using odds ratios (ORs), accompanied by 95% CIs. We also fitted a multivariate linear regression to examine the relationship between abstract characteristics and the continuous variables impact factor and time to publication. We quantified these relationships using β coefficients with 95% CIs. We considered $P < .05$ statistically significant across all measures and analyses. This study adhered to the principles of the Declaration of Helsinki and did not require an institutional board review as it did not include human subjects.

Results

On review of the 581 presented abstracts, we identified abstracts that were closely aligned to manuscripts published before the meeting occurred. Many of these were published after the submission period for the conference opened, but 9 abstracts seemed to be associated with projects published before this window. To avoid introducing selection bias into the analysis of publication rates, we excluded these abstracts from all subsequent statistical analysis.

Of the 572 abstracts we analyzed, 229 (40.0%) were presented orally, while the remaining 343 (60.0%) were posters. The presenting authors of 516 (90.2%) abstracts held an MD or DO, while the remaining 56 (9.8%) presenting authors held other credentials [e.g., MS, BS, PhD, PharmD]. The primary affiliations of 365 (63.8%) presenting authors were in the US, while 380 (66.4%) were part of a university system. For study timing, 354 (62.1%) of abstracts were retrospective, while 216 (37.9%) were prospective. Of all analyzed abstracts, 45 (7.9%) related to randomized controlled trials, and 150 (26.2%) presented multicentered data. For sample size, 213 (38.7%) abstracts had more than 100 subjects, and 337 (61.3%) had less than or equal to 100. Clinical research comprised 548 (95.8%) of the abstracts, while 24 (4.2%) had nonclinical focuses. Finally, 100 (17.5%) of the abstracts examined rare diseases (Table 1).

For the publication outcome, 341 (59.6%) of the 572 abstracts were translated into full-length publications. Abstracts presented in 2017 were translated into publications at a 60.7% rate (173/285), while 58.5% (168/287) of those presented in 2018 became full-length publications. The median time to publication for all published abstracts was 466 days. Of these full-length publications, 93.3% (318/341) were published in journals with an impact factor, with a median impact factor of 3.6. The median time to publication for abstracts published in a journal with an impact factor was 462.5 days, and this number rose to 719 days for abstracts published in journals without an impact factor. The most common journals of publication were *RETINA* (51 publications, 14.9%), *Ophthalmology* (34 publications, 10.0%), *Ophthalmic Surgery, Laser and Imaging Retina* (30 publications, 8.8%), and *Ophthalmology Retina* (29 publications, 8.5%) (Supplemental Table 1).

Table 1. Characteristics and Publication Rate Analyses for 2017 and 2018 ASRS Abstracts.

Characteristic	Abstracts, n (%)	Subsequent Publications, n (%)	Univariate Analysis	
			χ^2	P Value
Total	572 (100.0)	341 (59.6)		
Presentation type				
Oral	229 (40.0)	158 (69.0)	13.96	<.001
Poster	343 (60.0)	183 (53.4)		
Presenting author				
MD/DO	516 (90.2)	318 (61.6)	8.86	.003
Non-MD/DO	56 (9.8)	23 (41.1)		
University affiliation				
University	380 (66.4)	238 (62.6)	4.28	.004
Other	192 (33.6)	103 (53.6)		
Nationality				
US	365 (63.8)	223 (61.1)	0.91	.338
Non-US	207 (36.2)	118 (57.0)		
Study timing				
Prospective	216 (37.9)	136 (63.0)	1.43	.233
Retrospective	354 (62.1)	205 (57.9)		
Study design				
Randomized control trial	45 (7.9)	36 (80.0)	8.43	.004
Other	527 (92.1)	305 (57.9)		
Centricity				
Multicenter	150 (26.2)	104 (69.3)	7.98	.005
Single center	422 (73.8)	237 (56.2)		
Sample size				
>100	213 (38.7)	146 (68.5)	11.46	.001
≤100	337 (61.3)	182 (54.0)		
Clinical research				
Clinical	548 (95.8)	325 (59.3)	0.52	.472
Nonclinical	24 (4.2)	16 (66.7)		
Rare disease focus				
Yes	100 (17.5)	58 (58.0)	0.13	.717
No	472 (82.5)	283 (60.0)		

Abbreviation: ASRS, American Society of Retina Specialists.

Our univariate analysis identified an association between the following abstract characteristics and higher odds of publication: oral presentation type ($P < .001$), sample size over 100 ($P = .001$), presenting author MD/DO credentialing ($P = .003$), university affiliation ($P = .004$), randomized control trial design ($P = .004$), and multicentricity ($P = .005$) (Table 1).

Our multivariate logistic regression between abstract characteristics and publication status identified several predictors of a higher publication rate, including oral presentation (OR, 1.78; 95% CI, 1.19-2.65), sample size greater than 100 (OR, 1.57; 95% CI, 1.03-2.38), and university affiliation (OR, 1.56; 95% CI, 1.06-2.30). Randomized control trial design and the presenting author holding an MD or DO credential also exhibited some association with publication, with respective ORs of 2.18 (95% CI, 0.93-5.09) and 1.76 (95% CI, 0.95-3.26), but these associations were not statistically significant (Table 2 and Figure 1).

In our multivariate linear regression between abstract characteristics and the impact factor of the publishing journal, no

characteristic exhibited a statistically significant relationship with the impact factor. We observed a slight trend in multicentricity, which showed a positive effect on the impact factor, with a β coefficient of 2.31 (95% CI, -0.56 to 5.19), as well as prospective timing (β coefficient, 2.13; 95% CI, -0.57 to 4.82) (Table 3).

In our multivariate linear regression between abstract characteristics and time to publication in days, the only abstract characteristic with a statistically significant effect was the presenting author's MD or DO credentialing, producing a β coefficient of -260.09 (95% CI, -507.76 to -12.42), indicating a relationship with reduced time to publication (Table 4).

Conclusions

We examined the publication outcomes and associated characteristics for abstracts presented at the 2017 and 2018 ASRS meetings. We found a publication rate of 59.6%, with the majority published in high-impact ophthalmology journals (impact factor > 3) within approximately 15 months from the

Table 2. Multivariate Logistic Regression for 2017 and 2018 ASRS Abstract Characteristics and Publication.

Characteristic	OR	95% CI	P Value
Oral presentation vs poster	1.78	1.19-2.65	.005
Presenting author with MD/DO vs non-MD/DO	1.76	0.95-3.26	.071
University affiliation vs other	1.56	1.06-2.30	.025
United States affiliation vs non-US	0.70	0.46-1.05	.087
Prospective timing vs retrospective	0.91	0.60-1.36	.632
Randomized control trial vs other	2.18	0.93-5.09	.072
Multicenter vs single center	1.20	0.74-1.95	.467
Sample size >100 vs ≤ 100	1.57	1.03-2.38	.036
Clinical research vs nonclinical	0.42	0.05-3.90	.446
Rare disease focus vs other	0.93	0.59-1.48	.763

Abbreviations: ASRS, American Society of Retina Specialists; OR, odds ratio.

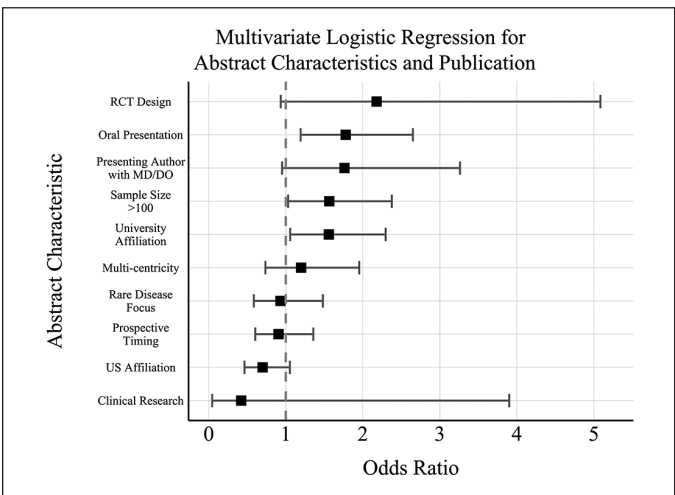


Figure 1. Multivariate logistic regression for association of abstract characteristics with publication. Values are odds ratios with 95% CIs. Abbreviations: RCT, randomized controlled trial; MD, doctor of medicine; DO, doctor of osteopathic medicine.

meeting time. Oral presentation, university affiliation, and sample size greater than 100 were associated with increased publication rates.

In a systematic review of abstracts presented at ophthalmology conferences, E et al¹ reported that only 38.0% of all abstracts and 35.8% of abstracts where “retina” was the designated topic were eventually translated into full-length publications. This review encompasses 19 manuscripts describing abstract data from US and international meetings between 1984 and 2014. The publication rate of ASRS abstracts analyzed in our study compared favorably to these figures, as well as more recently published data from other subspecialty meetings. Vagge et al² reported that 53.4% of (437/819) abstracts presented at the 2013-2017 American Association for Pediatric Ophthalmology and Strabismus (AAPOS) meetings led to full-length publication in scientific journals. Lin et al⁴ added that only 31.3% of (234/747) abstracts presented at the 2017 American Society of Cataract and Refractive Surgery (ASCRS) meeting were translated into publications. Most recently, ElSheikh et al⁵ found that

55.4% of (276/498) abstracts presented at the 2017-2019 American Glaucoma Society (AGS) meetings were eventually published in full-length. Given the wide degree of variance in results among prior conferences, the value of comparing our publication rates to other conferences is unknown. However, more recently conducted analyses, including our own, reporting that a majority of abstracts eventually reach publication may reflect a trend toward improvement in this area.^{2,5} We acknowledge that repeated analysis of outcomes from the same conference over time is required to identify further trends, and we view our data as a useful baseline for this purpose.

Regarding the abstract characteristics associated with increased publication, a portion of our results echo findings reported in the existing studies. We identified oral presentation, university affiliation, and sample size greater than 100 as characteristics associated with a higher frequency of publication. Studies by Vagge et al² and ElSheikh et al⁵ report the association with oral presentation. This finding stands to reason, as these abstracts were reviewed by representatives of the ASRS and selected for presentation to an audience, indicating perceived novelty and methodological validity. Regarding university affiliation, Lin et al⁴ similarly found that abstracts with academic affiliations were significantly more likely to be published. Since physicians in academia commonly prioritize research more than their private practice counterparts, this finding is unsurprising. In our study, sample size greater than 100 was associated with higher publication rates. Although this association was not seen in multivariable analysis in other subspecialties of ophthalmology, greater sample size yields increased statistical power. Likewise, depending on the methodology of the study in question, a sample size exceeding 100 may indicate a substantial investment of time and resources into the project, providing additional motivation to complete the project and submit for publication. The aforementioned shared findings from existing publications are only those identified through multivariate logistic regression, given the increased statistical power of this method, although additional characteristics were identified through other tests.

Our analysis indicates a median journal impact factor of 3.6 for analyzed ASRS abstracts translated into full-length publications.

Table 3. Multivariate Linear Regression for 2017 and 2018 ASRS Abstract Characteristics and Impact Factor.

Characteristic	β Coefficient	95% CI	P Value
Oral presentation vs poster	0.61	−1.87 to 3.09	.630
Presenting author with MD/DO vs non-MD/DO	−0.58	−5.39 to 4.24	.814
University affiliation vs other	1.34	−1.24 to 3.91	.308
United States affiliation vs non-US	1.14	−1.46 to 3.77	.385
Prospective timing vs retrospective	2.13	−0.57 to 4.82	.121
Randomized control trial vs other	−3.99	−8.27 to 0.29	.068
Multicenter vs single center	2.31	−0.56 to 5.19	.114
Sample Size > 100 vs ≤ 100	−1.19	−3.75 to 1.38	.362
Clinical research vs nonclinical	−8.11	−11.07 to 9.45	.877
Rare disease focus vs other	−0.24	−3.35 to 2.87	.880

Abbreviation: ASRS, American Society of Retina Specialists.

Table 4. Multivariate Linear Regression for 2017 and 2018 ASRS Abstract Characteristics and Time to Publication.

Characteristic	β Coefficient	95% CI	P Value
Oral presentation vs poster	26.79	−102.27 to 155.84	.683
Presenting author with MD/DO vs non-MD/DO	−260.09	−507.76 to −12.42	.040
University affiliation vs other	34.56	−97.97 to 167.10	.608
United States affiliation vs non-US	47.52	−88.65 to 183.69	.493
Prospective timing vs retrospective	−39.58	−181.23 to 102.06	.583
Randomized control trial vs other	196.25	−33.09 to 425.58	.093
Multicenter vs single center	105.09	−46.98 to 257.17	.175
Sample size > 100 vs ≤ 100	−12.69	−146.12 to 120.75	.852
Clinical research vs nonclinical	2.72	−549.17 to 554.61	.992
Rare disease focus vs other	76.51	−80.77 to 233.79	.339

Abbreviation: ASRS, American Society of Retina Specialists.

This number exceeds that of recent publications describing ophthalmology meetings, which fall in the range of 2.7 to 3.1.^{2,4,5} ElSheikh et al⁵ identified oral presentation as a characteristic related to increased impact factor in the field of glaucoma, but this finding was not shared in our analysis. The median time to publication for manuscripts related to analyzed abstracts was close to 15 months (466 days). Previously, Mimouni et al³ reported a similar median time to publication of 426 days for abstracts presented at the 2008 American Academy of Ophthalmology (AAO) meeting, but the scarcity of available data on time to publication for abstracts presented at ophthalmology conferences limits further interpretation. Our multivariate linear regression model identified only 1 characteristic with a significant effect on this measure: the presenting author holding an MD or DO credential. Manuscripts with individuals holding advanced degrees that were prominently involved from the abstract presentation may require less extensive editing and revision before acceptance, resulting in decreased time to publication. We pose this idea as speculation and encourage additional investigation of this relationship.

There are several limitations to our study. First, publications corresponding with ASRS abstracts may not have been successfully identified for inclusion in analysis, resulting in underrepresentation of publication rates. This could occur as a result of simple human error or the limited scope of our research, given

that we used only the PubMed scientific database. Additionally, publications related to presented abstracts could still be generated after our data was collected. However, we consider this risk very minor, as we identified no manuscripts aligned with presented abstracts published in the 3 months preceding our data collection. Another limitation, the effect of which cannot be known, is the occurrence of the COVID-19 pandemic in the years following these conferences. Although the ophthalmology community was affected less than others, a degree of research attention may have diverted away from existing projects during the pandemic, which could negatively skew publication outcomes. Further, given the source of our data, our results are most relevant to the abstract presentation process of the ASRS. Therefore, we caution generalization of our conclusions to abstracts associated with other conferences. Despite these limitations, our study offers substantial value as the most up-to-date analysis of abstracts presented at retina conferences and the only analysis of ASRS abstracts to our knowledge.

Our study finds a publication rate of 59.6%, a median impact factor of 3.6, and a median time to publication of about 15 months for ASRS abstracts. We identified oral presentation, university affiliation, and sample size greater than 100 as characteristics significantly associated with increased publication rate. Although the publication outcomes we found are more favorable than previously

reported for ophthalmology and retina-specific abstracts, we recognize that 40.4% of the abstracts do not lead to publication.

Ethical Approval

Ethical approval was not required given that our study did not involve human subjects.

Statement of Informed Consent

Informed consent was not required given that our study did not involve human subjects.

Declaration of Conflicting Interests

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Data Availability Statement

The abstract data used in this study were extracted from the ASRS online annual meeting archives, available at <https://www.asrs.org/annual-meeting/archives>.

Supplemental Material

Supplemental material is available online with this article.

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