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Publication rates of podium presentations at the Society of Gynecologic Oncology (SGO) annual meetings

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ABSTRACT

Objectives Our study aimed to determine the publication rates of podium presentations from the 2017 and 2018 Society of Gynecologic Oncology (SGO) Annual Meetings; and to examine rates and predictors of oral presentations that resulted in publication.

Methods We reviewed podium presentations given at the 2017 and 2018 SGO Annual Meetings. Abstracts were evaluated for publication from January 1, 2017 to March 30, 2020 and January 1, 2018 to June 30, 2021, respectively, to allow for a 3 year period of publication.

Results In 2017 and 2018, 43 of 75 (57.3%) and 47 of 83 (56.6%) podium presentations were published within 3 years, respectively. No significant difference was found between the mean time to publication within 3 years (13.0 months vs 14.1 months for 2017 and 2018, respectively; $p=0.96$). Similarly, the mean difference of journal impact factors between both years did not reach significance (6.57 and 10.7 for 2017 and 2018, respectively; $p=0.09$). The median impact factor (IF) was 4.54 (range: 40.3) and 4.62 (range: 70.7) in 2017 and 2018, respectively. Of the presentations published, 53.4% (2017) and 38.3% (2018) appeared in the journal *Gynecologic Oncology*. Significant positive correlations for the likelihood of publication were determined among the following: funding status ($r=0.93$) including funding involving National Institutes for Health ($r=0.91$) or pharmaceutical ($r=0.95$), clinical trial study design ($r=0.94$), and pre-clinical research ($r=0.95$) (all $p<0.005$).

Conclusions At the 2017 and 2018 SGO Annual Meetings 57% of podium presentations were published in a peer-reviewed journal within 3 years. Publication in peer-reviewed journals is crucial for timely distribution of clinical information to the medical community.

INTRODUCTION

The Society of Gynecologic Oncology (SGO) Annual Meeting is a professional forum attended by experts to share evolving knowledge in the field of gynecologic oncology.¹ Timely sharing of medical research findings with the professional community is crucial for clinical translation and improved patient outcomes. While this can be achieved through conference podium presentations, publications expand the dissemination radius beyond national boundaries.^{2–4} Podium, or oral, presentations are highly respected and regarded by attendees as they are considered of

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Multiple studies have investigated publication rates of poster and oral presentations from the Society of Gynecologic Oncology Conferences with higher rates of publications resulting from oral presentations.

WHAT THIS STUDY ADDS

⇒ This research focuses on oral presentations and predictors that demonstrated significant correlations relating to the likelihood of publication.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ With consideration to funding and study design, these predictors can aid future investigators when designing projects to increase the likelihood of publication. With publications in peer reviewed journals, there is timely distribution of knowledge that may lead to practice changes.

higher scientific quality and impact compared with poster presentations.^{2–4} Furthermore, results from podium presentations have a higher rate of publication and can potentially lead to practice changes.² Publications are important for timely dissemination of new knowledge and implementation in clinical practice. However, oral presentations resulting in a publication in a peer-reviewed journal vary from 27–82% as seen in prior studies.^{1 3 5}

The objective of this study was to examine the rate of podium presentations from the 2017 and 2018 SGO Annual Meetings that resulted in published manuscripts in peer-reviewed journals within a 3 year time frame. A second objective was to determine predictors of the oral presentations that resulted in publication.

METHODS

All podium presentations were reviewed at the 2017 and 2018 SGO Annual Meetings using the SGO online program. Oral presentations that took place during the industry supported symposium and poster sessions were excluded. Panel discussions, debates, and workshop seminars were also excluded. All other podium



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presentation from the remaining conference tracks were evaluated, including late breaking oral presentations presented during the educational forum.

In order to review manuscripts published within 3 years of their respective conference, abstracts of podium presentations were evaluated for manuscript publication in a peer-reviewed journal from January 1, 2017 to March 30, 2020 and January 1, 2018 to June 30, 2021, respectively. Manuscripts published in January of the respective annual conference were evaluated to include manuscripts that were published before the annual meeting. The different end points were due to the differing months that the 2017 and 2018 SGO Annual Meeting took place, which were in March 2017 and June 2018, respectively. Our methods were adapted from Chua et al,⁶ who quantified publication rates for American Urology Association podium presentations at the annual meeting. Abstract authors were searched in PubMed[®] and the authors reviewed the matching publications. Chua et al considered podium presentations published if at least one author and conclusion was noted in the manuscript.⁶

Titles and abstract authors were individually searched via Google, Google Scholar, and PubMed. Articles were considered published if there was at least one abstract author, about 50% of the abstract title was listed, and if the objective corresponded with the abstract. Publication rates, time to publication from the date of the Annual Meeting, and journal IF of the respective published year were collected. For published oral presentations, we examined funding status and separately determined National Institutes of Health (NIH) funding status and pharmaceutical funding involvement. In addition, we investigated experimental designs, defined as a study involving a clinical trial, and determined if the study was pre-clinical (laboratory-based) research involving non-human study subjects.

We calculated Almetric Attention Scores via a supported browser plug-in of oral presentations that resulted in published manuscripts. Almetric Attention Scores are a metric that determines online presence via social media and is a weighted score comprised of mentions on commonly used social media platforms including Twitter, Facebook, blogs, and new sites (to list a few).⁷ Publication rates were sub-analyzed by gynecologic cancer subtype. A “miscellaneous” subgroup was included for studies that did not pertain specifically to one gynecologic cancer subtype, such as topics relating to perioperative outcomes, healthcare disparities, palliative care, and other non-tumor specific topics.

Using Statistical Package for the Social Sciences (SPSS) version 28, descriptive (percentage, mean, median, and range) data analysis was performed to determine rates of publications. We used the Mann Whitney U test to compare the 3 year mean time to publication and journal average Impact Factor in 2017 and 2018. Using the Spearman correlation, we assessed the relationship between cancer subtypes, funding status/type, pharmaceutical involvement, and study design to publication status in both 2017 and 2018. The Almetric Attention Scores dataset was normalized using log10 and a Pearson correlation test was used to determine the relationship between Almetric Attention Scores and publication status.

RESULTS

Publication Rates and Topics

Of the 75 podium presentations presented in 2017, 28 (37.3%) were related to ovarian cancer, 13 (17.3%) were endometrial cancer, 14 (18.7%) were cervical cancer related, 1 (1.3%) was vulvar cancer and 19 (25.3%) were miscellaneous and not relating to any specific cancer type. Of the 43 oral presentations published within 3 years, publication rates as stratified by cancer subtype were 46.4% of ovarian, 84.6% of endometrial, 57.1% of cervical, and 57.9% of miscellaneous presentations. No publications were found relating to vulvar cancer. (Table 1)

Of the 83 podium presentations made in 2018, 31 (33.3%) were ovarian cancer, 16 (19.3%) were endometrial, 13 (15.7%) were cervical cancer related, none (0%) were vulvar cancer related and 25 (30.1%) were miscellaneous. Of the 47 podium presentations that were published within 3 years, the publication rates as stratified by cancer subtype, were 54.8% of ovarian cancer, 56.3% of endometrial cancer, 46.2% of cervical cancer, and 65.2% of miscellaneous presentations. No publications relating to vulvar cancer were noted. When combining both 2017 and 2018 3-year publication rates, there was no statistically significant comparison between publication rate and any of the cancer subtypes ($p>0.5$). (Table 1)

Of the 2017 and 2018 presentations that were published within 3 years, 23 (53.4%) and 18 (38.3%) were in Gynecology Oncology, respectively. In addition to the Gynecology Oncology journal, the top five journals with at least two published podium presentations were:

Table 1 Publication rates by year and correlation with cancer type

Cancer subtypes	Podium presentations published within 3 years			P value
	2017	2018	2017–2018	
Ovarian	13 (46.4%)	17 (54.8%)	30 (52.6%)	$p=0.23$
Endometrial	11 (84.6%)	9 (56.3%)	20 (69.0%)	$p=0.15$
Cervical	8 (57.1%)	6 (46.2%)	14 (51.9%)	$p=0.56$
Vulvar	0 (0%)	0 (0%)	0 (0%)	$p=0.25$
Misc	11 (57.9%)	15 (65.2%)	26 (61.9%)	$p=0.45$
Total	43 (57.3%)	47 (56.6%)	90 (57.0%)	

Podium presentations are subdivided by cancer subtype for the SGO 2017 and 2018 Annual Meetings. Noted above are the podium presentations that were published within 3 years grouped by cancer type. The p-values listed above compare the correlation between the combined cancer subtype and likelihood of publication within 3 years. Misc, miscellaneous.

Lancet Oncology (IF: 41.3), Annals of Oncology (IF: 13.9), Obstetrics and Gynecology (IF: 5.0), Journal of Gynecology Oncology (IF: 3.3) in 2017. Of the 2018 SGO Annual Meetings podium presentations, the five most common journals besides Gynecology Oncology with at least two published podium presentations were: New England Journal of Medicine (IF: 70.7), Lancet Oncology (IF: 41.3), Journal of Clinical Oncology (IF: 33), Obstetrics and Gynecology (IF: 5.5), and Gynecology Oncology Reports (IF: 1.1). These represent the journals with the highest impact factors from each conference. Additionally, no statistical significance was noted between Altmetric Attention Scores and publications rates ($r=0.016$, $p=0.84$).

Time to Publication

No significant difference was found between the mean time to publication within 3 years (13 months vs 14.1 months for 2017 and 2018, respectively; $p=0.957$). Mean time to publication within 3 years for both conference years combined was 13.6 months. Similarly, the mean difference of journal IFs between both years did not reach significance (6.57 and 10.7 for 2017 and 2018, respectively; $p=0.09$). The median IF was 4.54 (range: 40.3) and 4.62 (range: 70.7) in 2017 and 2018, respectively. Of note, a total of seven articles were published in journals with an IF greater than 20.

Predictive Factors for Publication Status

In aggregate over 2017 and 2018, 29 (32.2%) of the 90 published oral presentations had NIH funding, 19 (21.1%) had non-NIH funding, 27 (30.0%) had no supplemental funding, and 15 (16.7%) involved pharmaceutical funding. Of these published oral presentations, 23 (25.6%) were experimental designs involving clinical trials, 52 (83.3%) were non-experimental study designs, and 15 (16.7%) were pre-clinical research, involving laboratory-based studies (Table 2).

When combining 2017 and 2018 published oral presentations, the following predictors were all highly and significantly (all with $p<0.01$) correlated to likelihood of publication: funding status ($r=0.93$), funding type such that NIH funding was involved ($r=0.91$), pharmaceutical funding involvement ($r=0.95$), experimental study

design to include clinical trials ($r=0.94$), and pre-clinical research ($r=0.95$).

DISCUSSION

Summary of Main Results

At the 2017 and 2018 SGO Annual Meeting, approximately 60% of podium presentations were published in a peer-reviewed journal within 3 years. Although slightly more than half of presentations were published, a large number remained unpublished. Cancer subtype and Altmetric Attention Scores did not impact the likelihood of publication. Interestingly, our data demonstrates that oral presentations involving NIH funding, pharmaceutical involvement, clinical trial design or pre-clinical (laboratory-based) research had an increased likelihood of publication in a peer-reviewed journal within 3 years.

Results in the Context of Published Literature

Compared with other biomedical conferences, the SGO Annual Meeting has a higher overall publication rate compared with the 44.5% publication rate reported in a Cochrane review.^{3,8–11} High publication rates at scientific conferences may be used to gage the quality of the research being presented.³ Publication in peer-reviewed journals allow for knowledge distribution among practitioners within the field. The availability of an accompanying journal with SGO, Gynecologic Oncology, may contribute to the high publication rate at SGO conferences.¹⁵

On the other hand, we present a lower publication rate compared with similar studies that specifically examined podium publication rates at SGO conferences, which had a rate ranging from 80–89%.^{1,3,5} A key difference is that these studies did not place a time restriction to publication, which can explain the skewed results. Furthermore, our study period encompassed the height of the Coronavirus (COVID-19) pandemic (2020–2021) when evaluating manuscripts published within a 3 year time frame. Multiple studies have cited the impact of the COVID-19 pandemic on the scientific and general community, resulting in increased publications

Table 2 Publications within 3 years of SGO annual meeting per funding type and study design between 2017 and 2018

	Podium presentations published within 3 years		
	2017	2018	2017–2018
Funding subtypes			
NIH	15 (34.9%)	14 (29.8%)	29 (32.2%)
Non-NIH	7 (16.2%)	12 (25.5%)	19 (21.1%)
None	16 (38.1%)	11 (23.4%)	27 (30.0%)
Pharmaceutical	5 (11.6%)	10 (21.3%)	15 (16.7%)
Study design subtypes			
Experimental	8 (18.6%)	15 (31.9%)	23 (25.6%)
Non-experimental	25 (58.1%)	27 (57.3%)	52 (83.3%)
Pre-clinical research	10 (23.3%)	5 (10.6%)	15 (16.7%)
Total	43	47	90
Table demonstrates the publication rates segregated by year and subdivided to include the following: funding and study design sub-types. NIH, National Institutes for Health.			

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specifically related to COVID-19, while research efforts unrelated to COVID-19 experienced a significant 10–12% decline in publication rates.^{8,9} This is likely due to reduced access to recruitment sites, researchers, and funding.⁸ Although our study did not specifically analyze the impact of COVID-19, it is a possible contributor to the reduced publication rates seen in the 2017 and 2018 annual SGO conferences compared with past annual meetings.

Removing the time constraint may increase the publication rates, especially for complex clinical trials.^{12,13} Notably, our data demonstrates that oral presentations for studies involving clinical trials are at an increased likelihood of being published. However, even with this significant positive correlation, only 60% of clinical trials are published with finalized results and outcomes.¹⁴ One reason may be that positive results are more likely to be published faster compared with negative or null results, thus resulting in publication bias.^{12–16} Furthermore, our data also displayed significant positive correlations for publication of oral presentations with studies funded, specifically by the National Institute of Health (NIH) or pharmaceutical companies, as well as pre-clinical (laboratory based) research. We speculate the reason for this positive correlation may be due to the additional support, resources and funding that can aid in publication in a timely fashion. Prolonged time to publication may result in outdated information and may delay distribution of knowledge presented at society meetings.¹³ Interestingly, our data may unveil additional bias on publication such that under-resourced studies may have significant results but lack visibility as distribution of knowledge relies on publications.

A manuscript published in a high impact journal represents a high number of articles cited in the journal and demonstrates its relevance within the field.^{3,14,15} Although journals with a higher IF are meant to identify the quality of scientific papers, this is not necessarily the case with the arrival of newer journals. Newer journals may have lower IFs, but the published articles may have a higher number of citations and vice versa.¹⁷ Therefore, it is important to note that IF alone is not an accurate quantitative measurement of scientific merit.^{15,17} Our study did not determine the IFs between 2017 and 2018 to be statistically significant. However, when re-assessing the median between 2017 and 2018, the IFs are similar, and the wide range can indicate that median may be a better modality for comparison. Eyre-Walker demonstrated that scientific reviewers had an implicit bias and over-rated articles published in high impact journals. When accounting for this bias, the correlation was lessened suggesting that reviewers are unable to objectively distinguish the scientific quality of an article.¹⁷

Pagani et al proposed a method to ascertain the quality of an article and to rank them via the Methodi Ordinatio.¹⁵ Journal IF, number of article citations, and year of publication are components of the algorithm. Articles are ranked by InOrdinatio index, which may be a more accurate measure of an article's scientific impact.¹⁵ A similar model may be considered as a quality measurement tool to predict which podium presentations will have the greatest impact on clinical practice. Our study investigated the Altmetric Attention Scores of published oral presentations and its relationship to publication rates. The results were not statistically significant, which demonstrates no correlation between Altmetric Attention Scores and the likelihood of publication. Of note, Sharma et al also demonstrated that Altmetric Attention Scores are also not related to a journal's impact. This may be useful for widespread online

presence and distribution; however, it should not be confused with quality of research.¹⁸

Strengths and Weaknesses

Our study had some strengths but also some limitations. It is limited in its descriptive evaluations. One major limitation is the small study size, which may have been due to the limited time frame in the dataset of the study. In addition, generalizability may be limited in our study despite statistically significant correlation results. For example, it is difficult to make conclusions regarding topics related to vulvar cancer given its known rarity and small sample size. Reasons for non-publication and complex characteristics of the published manuscripts were not identified. A comparison between academic institutions, community hospitals and the scientific quality of the published manuscripts were not evaluated.

Implications for Practice and Future Research

Future directions for this study are to expand the time frame and to include all abstracts, including podium and poster presentations, from all SGO conferences (late breaking meeting, winter, and annual meeting) and evaluate the publication rates. Reasons for non-publication can be assessed to overcome barriers and increase publication rates. Moreover, the COVID-19 pandemic significantly impacted conference attendance as the societal conferences worldwide were virtual for over 2 years. Publication rates of podium presentations arising from the virtual conferences compared with in-person attendance will give further insight on the impact of COVID-19 and research progress.

CONCLUSION

While the majority of presentations during 2017–2018 SGO annual meetings were published, a significant portion remain unpublished. Predictive factors for oral presentations resulting in a peer-reviewed manuscript included funding by NIH or industry sponsors, and studies that were clinical trials or laboratory-based research. Considering these predictive factors can aid future researchers when designing studies. While publication of oral presentations is not the sole objective, publication in peer-reviewed journals can support timely distribution of knowledge that can eventually be incorporated into clinical practice.

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Correction notice This article has been corrected since it was first published. Middle initial has been added to author name Eric A Singer.

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Contributors KJC is the guarantor of the study. KJC and DG collected data and contributed to the manuscript with KJC being lead on the study project. SM and

SH performed statistical analysis and SM contributed to manuscript. EAS and EG supervised the study protocol, data collection, and manuscript production.

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