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Scientific Writing Seminar for Early-stage Investigators in Substance Abuse Research

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Abstract

Background—There is little information on how to increase the scientific writing productivity of early-stage investigators in the addictions field. A scientific writing seminar is presented in this article, aiming to encourage manuscript writing and dissemination of addiction research, and outcomes are reported for 14 years of the seminar.

Methods—In 14 years there were 113 postdoctoral fellow enrollments in a 6-month writing seminar. Records of submission and publication rates of manuscripts were collected for 14 cohorts.

Results—Of the 113 participant enrollments, 97 (86%) submitted a manuscript for publication, and 87 participants (77%) published their manuscript.

Conclusions—A scientific writing seminar may benefit writing productivity, but more research is needed to compare this training model to other existing models.

Keywords

Substance Abuse Research; Scientific Writing; Dissemination; Training; Addiction Research

INTRODUCTION

A high publication rate in scientific journals is essential for career advancement in academic research, yet there are few evidence-based training models that help early-stage investigators

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AUTHOR CONTRIBUTIONS

The writing seminar described in this manuscript was led by GS and CM during the 14 year period reported. AF prepared the first draft of the Introduction, and MS prepared the first draft of the results section. All authors contributed to the paper through planning, review and revision of the paper.

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achieve this standard. Research publication supports both the development of the investigator, and early-stage investigators may benefit from a workshop to help them write, submit, and publish quality manuscripts. These investigators may also benefit from training that provides encouragement for honing their writing skills, guides them in selecting appropriate journals, teaches them how to view their work from the reviewers' perspective, and offers suggestions on how to respond to reviewer critiques and negotiate with journal editors.

Few research articles have addressed the benefits of a workshop to increase the productivity of early stage investigators, and we found no published studies addressing how to increase writing productivity among early-stage investigators in the addictions field. Nevertheless, a few articles about writing workshops offer suggestions to increase writing productivity, ranging from brief "check ins"¹ to formal writing groups.² Drotar described a writing program for psychology graduate students who met regularly to review manuscript drafts, an approach which resulted in both published journal articles and grant submissions.³ Writing groups designed to increase the scholarship and productivity of experienced faculty members have also been described.⁴⁻⁶ For example, a writing seminar that was nested within a mentorship program and entailed participants working in pairs to set goals and offer social support resulted in increased productivity⁵.

This article describes an annual writing seminar for postdoctoral fellows enrolled in addiction research training programs, and outcomes of the seminar over 14 years.

METHODS

Participants

Participants were fellows in postdoctoral training programs at the University of California San Francisco, who enrolled in the annual writing seminar in 14 cohorts from 1999 through 2013. During this time there were 113 participant enrollments in the seminar, but this reflects only 69 individuals, as 26 participated in the seminar for two cohorts and 9 participated for 3 cohorts. Most participants came from two postdoctoral programs, one concerned drug abuse treatment and services research and the other concerned tobacco control research, where participation in the writing seminar was required for first year fellows.

The Writers' Task Force Model

The writing seminar, called the Writers' Task Force, was developed to help fellows increase their writing productivity. The term "task force" was chosen to emphasize that the aim of the seminar was the process of completing and submitting a manuscript rather than acquiring knowledge about the mechanics of writing (e.g., style, grammar, or formatting issues). A secondary aim was to educate participants about barriers to publication and how to resolve those barriers. The Writers' Task Force began in December and ended in May of each year for a total of 10 bi-weekly sessions.

Recruitment was through email invitation to first-year fellows in the two primary training programs, up to a maximum of 10 fellows. Any unfilled spaces were then opened to other

fellows in these programs and to postdoctoral fellows in other training programs on a first-come, first-served basis. As fellows enrolled in the seminar they provided a title for the paper they planned to present, and the name of their faculty mentor. That they should be lead author on the paper they proposed was not required, but was usually the case.

In each annual seminar, the initial meeting is designed to frame expectations, to model the review process used in the seminar, and to have students commit to future reviews. The seminar leaders explain that the main activities are presenting one's work and critiquing that of others. Next, seminar co-leaders present information from one substance abuse journal showing number of papers received, number sent to review, and the decisions received. Participants see that few papers are accepted on the first review and that papers receiving a "revise and resubmit" decision have a good chance of eventual acceptance. Co-leaders also present information about the Writers' Task Force including, for recent years, the number of seminar papers that were submitted for publication and the number that were published. This review of past performance communicates that the goal of the seminar is to improve the writing skills of each participant, and that achievement of this goal is measured by the number of seminar papers that are submitted and published. After this discussion, one participant presents their paper, and two participants and one co-leader provide critiques. For this initial review, the co-leaders recruit persons who have previously participated in the seminar. These experienced participants know what is expected, and they model the process that will be used in all remaining sessions. At the end of the session, co-leaders give members a seminar schedule, listing dates for the remaining meetings, and participants sign up as presenters and reviewers for the next two sessions.

All remaining meetings focus on the review process. Each session begins with "writing stories," in which participants discuss writing experiences that have occurred since the last meeting. Writing stories most often involve students reporting on a recent submission, or a recent editorial decision. Other issues that come up in this period are when to contact an editor about a delayed review, whether to argue when a paper has been rejected, and themes involving co-authorship and collaboration. Writing stories are discussed for about 15 minutes before moving on to review the scheduled papers. Participants who will have their manuscript reviewed in a given week send their draft to the group about 5 days in advance. In this model, two papers are reviewed per session with about 30 minutes per review. The first presenter describes, in one minute, the paper and any specific area where they would like feedback. Three reviewers provide comments, limited to 5 minutes each, and are encouraged to avoid repetition. During the critique the author remains silent. This is to encourage careful listening, to reduce the tendency to defend one's work, and allow the critique to occur as it would when a paper is submitted to a journal (i.e. without the author's explanation, defense, or response). After the three reviewer critiques, the presenter and all participants discuss questions that emerged in the critique and strategies for improving the paper. The process is repeated for the second presenter. At the end of the session, co-leaders circulate a list of all seminar sessions, both completed and upcoming, to show which participants have presented and reviewed, and any who have not. Participants then sign up as presenters and reviewers for the next two sessions.

In our experience postdoctoral fellows are prepared for scientific writing and have often published one or more papers previously. However, some fellows make less progress than others in the seminar, usually shown by waiting until late in the seminar to present their work for critique. We set clear expectations in the initial invitation, reinforce those through the course of the seminar, and preference those who have not presented their work for the next available opening. Reviews are supportive, noting strengths as well as weaknesses so that less experienced writers become willing to bring their paper forward. When needed, co-leaders will talk with the fellow's mentor to understand reasons for delay and to enlist the mentor in encouraging the fellow to produce and to present draft manuscripts.

Based on the interests of participants, the seminar sometimes include presentations on topics such as: how to identify an appropriate journal for a given manuscript, the role of the journal reviewer, the perspective of the editor, ethical issues in publication, resolving disputes among coauthors, and advantages and disadvantages of different venues for publications (e.g., traditional journals, edited book chapters, open access journals). For these topics, experienced outside speakers are invited to present for the first part of the session, and the last 30 minutes are always reserved for presentation and review of one paper. This keeps the focus on the process of doing writing and reviews.

While there is an emphasis on presenting and critiquing work, the seminar creates a forum for discussion of writing issues, and combines learning through observation, modeling and practice with a small number of didactic presentations. For example, participants learn how to make useful comments by hearing critiques from other students and faculty, through the discussion that follows, and when they receive critiques of their own paper. Issues concerning how to handle a revise and resubmit come up in the context of writing stories, or when participants present work they are currently revising for a journal.

Although the seminar was developed for trainees in the area of substance abuse, it could be viewed as a generic model for early career investigators. The approach is more didactic than a model focused only on peer support, yet it is time-limited and emphasizes publication as a measureable outcome. The seminar is organically tailored to substance abuse, including tobacco, because participants are drawn predominantly from substance abuse and tobacco training programs and their faculty mentors work in these areas. Seminar presentations also shape the seminar since, for example, presentations from journal editors have represented *Addiction*, *Tobacco Control* and the *Journal of Psychoactive Drugs*. The presenter on identifying an appropriate journal provides a list of the Journal Citation Reports impact factors for substance abuse and tobacco journals.

In the final session, co-leaders solicit feedback regarding the seminar. While participants may be less critical with the co-leaders present, they do offer feedback on what might be improved. Based on prior feedback we added discussion of seminar outcomes to the initial meeting, the size of the seminar was limited to 10 participants to allow more presentation and review opportunities to each participant, and the number of presenters per session was reduced from 3 to 2 to increase discussion time.

Evaluation Methods

Evaluation is focused on manuscript submission and publication. Co-leaders contact participants to track the outcome of papers presented in the seminar. To achieve a transparent metric that reflects the success of each participant enrollment, we count one paper per participant per year. If a participant brings more than one paper to review in a given year, we count only the first paper that is submitted and published for that participant. We also identified the eventual careers and employment participants held after the time of the writing of this paper by: contacting participants, conducting internet searches, and following up with fellowship programs.

RESULTS

Of the 113 participant enrollments in 14 seminar cohorts, 97 (86%) submitted a manuscript for publication, and 87 (77%) published their manuscripts. Of the 87 publications, 85 appeared in the peer-reviewed journals listed in Table 1. One publication was a book chapter and one appeared in a report published by the World Health Organization. In 82 publications the writing seminar participant was first author. Among the papers published, 19 concerned substance abuse or substance abuse treatment, for example: treatment outcomes among older patients, women, and drug-involved offenders; treatment barriers, issues and utilization among pregnant women; and the relationship of gender to treatment outcomes. Fifteen papers concerned the tobacco industry, for example: descriptions of the tobacco industry in China and Pakistan; historic relationships between the U.S. tobacco industry and the Black press; efforts to link tobacco marketing with alcohol; and papers related to smoke-free bars, smoke-free homes, and secondhand smoke. Thirteen papers explored smoking in vulnerable populations, for example, smoking among persons engaged in substance abuse or mental health services. Other papers concerned tobacco-related biomarkers, HIV medication adherence, research recruitment and consent, research instruments and methods, and other topics. A list of the 87 published papers is included in an online appendix.

Mean time to publication after the end of the writing seminar was 1.68 years ($SD = 1.50$) and the median time to publication was 1 year. The 14 cohorts varied on their manuscript submission and publication rates. The lowest submission rate for any cohort was 43%, the highest submission rate was 100%, and the median across all cohorts was 88%. Similarly, the lowest publication rate for any cohort was 29%, the highest was 100%, and the median across cohorts was 78% (see Table 2).

Of the 69 individuals who participated in the seminar, 32 (47.1%) went on to faculty positions, 13 (19.1%) worked as research scientists or in other career research roles (e.g., program officer), 11 (16.2%) continued as postdoctoral fellows at the time of this writing, and others entered clinical practice ($n=10$, 14.7%) or other careers ($n=3$, 4.3%).

DISCUSSION

This article describes a seminar aimed at improving the writing knowledge, skills, and productivity of early-stage investigators in addiction research. For 113 enrollments over 14 years, 86% submitted and 77% published their manuscript. Although there is variability in

submission and publication rates across cohorts, this is due mainly to an outlier cohort where both submissions and publications were low. Excluding this outlier, annual submission rates ranged from 75 – 100% and publication rates ranged from 60 – 100%.

Our strategy has been to foster writing productivity, thus we have found it helpful to focus on reviewing manuscripts rather than focusing exclusively on teaching the technical aspects of writing. The Writers' Task Force model has been detailed here so that it can be adopted in, or adapted for, similar educational settings. Last, the evaluation methods reported here may provide a benchmark against which similar programs can be measured and improved.

This work also has limitations. Submission and publication rates were selected as outcomes because they relate to the academic needs of the participants. Other settings could focus on qualitative measures, such as satisfaction, which may provide more direct suggestions for improving the seminar. Other factors could also be considered, such as the number of times that manuscripts were submitted before acceptance or the impact factor of journals where papers were published. In this evaluation there was no control group, and the outcomes for these papers without the seminar is unknown. It seems likely that the submission and publication rates observed were influenced by the writing seminar, but they may also be influenced by the personal characteristics, prior training, and selection of the participants into the training programs. Similarly the replicability of the approach may depend to some extent on the leaders' expertise, experience, and ability to motivate students. In the first three seminar cohorts were led by coauthors JG and JS, while in the last 11 cohorts were led by JG and CM, offering stability in seminar leadership.

The work of the Writers' Task Force is aimed at peer-reviewed journal articles, however research information is also disseminated in conference presentations, newsletters, organizational reports, and books and book chapters. The Writers' Task Force focused on a narrow spectrum of research products, but the model could be directed to other writing and communication strategies. The seminar model described here relies on learning by doing, and by observation and practice, with a small emphasis on didactic presentation. This may be well-suited to postdoctoral research training programs where each participant is also working with an individual faculty research mentor. Adaptation to other settings may benefit from more didactic presentation on, for example, how to write a good review or how to respond to critiques from journal reviewers and editors. We note that the training model did not provide systematic access to writing resources, especially resources in the writing about substance use. The online appendix includes resources that may be helpful to substance abuse research authors and those who teach them.

There is a need to develop a stronger knowledge base for the training of emerging professionals in the addictions who will advance the field in future generations. This paper provides an overview of a model that could be used to support, guide and encourage the publication of manuscripts in addiction research, and findings suggest that a writing seminar may be useful among early-stage investigators

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Table 1

Journals where articles reviewed in the writing seminar were later published*

Journal Title	# of Papers per Journal
Addiction	1
Addiction Research & Theory	1
Addictive Behaviors	5
AIDS Care	2
Alcohol: Clinical and Experimental Research	2
American Journal of Drug and Alcohol Abuse	1
American Journal of Preventive Medicine	1
American Journal of Public Health	4
American Journal on Addictions	2
Archives of Internal Medicine	1
Asia-Pacific Journal of Public Health	1
Behavioral Modification	1
BMC Public Health	1
Cancer Causes and Control	1
Cancer Epidemiology, Biomarkers & Prevention	2
Cognitive Therapy & Research	1
Drug and Alcohol Dependence	2
European Journal of Public Health	1
European Journal of Applied Physiology	1
Evaluation and the Health Professions	1
Global Public Health	1
Health Promotion Practice	1
Health Psychology	3
International Journal Geriatric Psychiatry	1
International Journal of Behavioral Medicine	1
JAMA	1
Journal of Addictions Nursing	1
Journal of Behavioral Medicine	1
Journal of Counseling Psychology	1
Journal of Drug Issues	3
Journal of Empirical Research on Human Research Ethics	1
Journal of Immigrant and Minority Health	1
Journal of Perinatology	1
Journal of Psychoactive Drugs	3
Journal of Psychosocial Oncology	1
Journal of Social and Personal Relationships	1

Journal Title	# of Papers per Journal
Journal of Studies on Alcohol	2
Journal of Substance Abuse Treatment	2
Journal of Substance Use	1
Journal of Allergy and Clinical Immunology	1
Nicotine & Tobacco Research	7
Psychiatric Services	3
Psychological Medicine	1
Psychology of Addictive Behaviors	6
Social Psychiatry and Psychiatric Epidemiology	1
Substance Use and Misuse	1
Tobacco Control	5
Violence and Victims	1

* The table reflects 85 publications in peer-review journals. Not included are one book chapter and one paper that appeared in a World Health Organization report. A complete list of references to these papers is found in the online appendix.

Table 2

Submission rates, publication rates, and time to publication for each cohort

Cohort	n	Submission Rate	Publication Rate	Year to Publication	
				Mean	Median
1999 – 2000	8	87.5	87.5	2.71	2.0
2000 – 2001	8	100.0	75.0	4.00	3.5
2001 – 2002	6	100.0	100.0	2.33	1.5
2002 – 2003	5	80.0	60.0	1.33	1.0
2003 – 2004	4	100.0	100.0	.75	1.0
2004 – 2005	7	42.9	28.6	2.50	2.5
2005 – 2006	10	90.0	90.0	1.89	2.0
2006 – 2007	8	62.5	62.5	1.40	1.0
2007 – 2008	5	80.0	80.0	1.00	1.0
2008 – 2009	9	88.9	88.9	1.25	1.0
2009 – 2010	9	77.8	77.8	1.00	1.0
2010 – 2011	13	84.6	76.9	1.50	1.0
2011 – 2012	10	100.0	80.0	1.25	1.0
2012 – 2013	11	100.0	72.7	.88	1.0