



Factors Associated with the Journal Publication of Oral Abstracts From the American College of Foot and Ankle Surgeons: 2010-2014



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Statement of Purpose

Despite acceptance by conference selection committees, not all abstracts presented at national society conferences ultimately go on to navigate the more rigorous peer review process, and achieve journal publication; despite its obvious merits. The purpose of the present retrospective study was to identify factors associated with the journal publication, and time to publication for oral abstracts from the ACFAS conference from 2010 to 2014.

Introduction

National foot and ankle society conferences are used to disseminate the latest research, and innovations through oral, and poster abstract presentations annually (1-4). However, not all abstracts accepted for oral presentation by conference selection committees ultimately go on achieve journal publication; despite its obvious merits. Although the American College of Foot and Ankle Surgeons (ACFAS) oral abstract publication incidence from 2010 to 2014 (76.9%, 83/108) is currently the highest reported for any national foot and ankle society conference to date; factors associated with the successful conversion of an oral abstract to a journal publication following the conference remain undetermined (1-3). The purpose of the present retrospective study was to identify factors associated with the journal publication, and time to publication for oral abstracts from the ACFAS conference from 2010 to 2014.

Patients/Materials and Methods

From a previous study (1), a database containing information on all the oral abstracts accepted for presentation at the ACFAS conference from 2010 to 2014 was procured. The database included basic information originally compiled, and provided by the ACFAS office (author names, abstract titles, year of presentation), as well as information determined subsequently thereafter (publication incidence, meantime to publication, journal of publication, and publication within 3 years of conference presentation) for the purposes of the original study (1). Using the database, two investigators (CJR, DCR) performed manual searches (www.google.com) to identify, and record predictor variables potentially associated with the successful conversion of an oral abstract. These variables were classified as either abstract-or author specific (5). Abstract specific variables included the: institution type (academic versus non-academic), number of authors, number of centers, type of research (patient oriented, basic/laboratory), study design (meta-analysis, systematic review, randomized controlled trial, prospective cohort, retrospective cohort, case-control, case-series, or laboratory study), funding (yes, or no), and the ACFAS regional division (Big West, Great Lakes, Gulf States, Mid-Atlantic, Midwest, Northeast, Pacific, Southeast, and Tri-State) (Figure 1). Author specific variables included the primary authors: level of training (faculty, fellow, resident, student), number of prior journal publications (preceding the respective date of abstracts presentation at the conference), and the presence of a formal research degree (doctoral, masters, none).

Statistical Analyses

Data were collected, and entered into a statistical database. Duplicate searches, assessments of reliability, and logic checks (accuracy of data entered) were performed. Univariate descriptive statistics were calculated for all study variables. Bivariate analysis were conducted using the Mann-Whitney U-Test, Fisher's Exact test, chi-square test of independence, or Spearman's rank correlation as appropriate. Multivariable logistic regression or a generalized linear model regression were employed to analyze variables as potential predictors of successful abstract conversion (yes vs, no) and time-to-publication (months). Variables in the final logistic models with p-values less than 0.20 from the bivariate analysis were selected. R 3.4.2 was used for all data analysis (6), and statistical significance was a $P<0.05$.

Results

A total of 108 abstracts were accepted for oral presentation at the annual ACFAS conference from 2010 to 2014. Of these abstracts, 76.9% (83/108) achieved journal publication prior to the previously established cutoff off date (1); at mean of 9.6 (range 0 to 44) months following the conference. Overall, the majority of accepted projects were unfunded (93%), led by attending faculty (72%) without a formal research degree (93%) from the Mid-west (30%), Great Lakes (14%), and Pacific (13%) regions of the college (Figure 1). Eight-six percent were patient oriented research, while 14% were basic/laboratory research. Retrospective cohorts were the most frequently accepted study design (n=40, 37%), followed by case series (n=31, 29%), and prospective cohorts (n=11, 10%). Per project, the mean number of authors was 3.9 ± 1.42 (range, 2 to 8), the mean number of institutions 1.9 ± 1.0 (range, 1 to 5), and the mean number of prior journal publications for the primary authors 10.2 ± 18.95 (range, 0 to 144). Descriptive statistics for the abstract/author specific variables, and bivariate associations with respect to the journal publication (JP), and time to publication (TP) are summarized in Tables 1-2. A logistic regression model was employed to predict successful journal publication (academic degree, number of prior publications, and number of institutions), and a generalized linear regression model employed to predict time to publication (academic degree, number of institutions, and funding). Funding was excluded from the logistic regression model since all funded studies were published, and the ACFAS regional divisions excluded due to too many geographical locations. When controlling for the number of prior publications, and number of institutions; authors without a formal research degree were 12.72 times (95% CI: 2.25, 71.67) more likely to achieve journal publication.

Tables

Table 1:

Predictor	Total Sample (n= 108)	P-Value (JP/TP)
Institution type		
Academic	54 (50%)	0.820/0.042*
Non-Academic	54 (50%)	
Number of authors	3.9 ± 1.4 (2-8)	0.781/0.480
Number of centers	1.9 ± 1 (1-5)	0.191/0.030*
Type of Research		
Patient oriented	93 (86%)	
Basic/laboratory	15 (14%)	
Study Design		
Retrospective cohort	40 (37%)	0.912/0.501
Case-series	31 (29%)	
Prospective cohort	11 (10%)	
Laboratory study	10 (9%)	
Systematic review	8 (7%)	
Case-control	3 (3%)	
Cross sectional	3 (3%)	
Meta-analysis	2 (2%)	
Randomized controlled trial	0 (00%)	
Funded		
No	100 (93%)	0.112/0.154
Yes	8 (7%)	
ACFAS Regional Division		
Midwest	32 (30%)	0.086/0.012*
Great Lakes	15 (14%)	
Pacific	14 (13%)	
Gulf States	12 (11%)	
Tri-State	12 (11%)	
Big West-B	8 (7%)	
Southeast	7 (6%)	
Northeast-O	6 (6%)	
Mid-Atlantic-Y	2 (2%)	

Table 2:

Predictor	Total Sample (n= 108)	P-Value (JP/TP)
Level of training (primary author)		
Faculty	78 (72%)	0.853/0.528
Fellow	12 (11%)	
Resident	17 (16%)	
Student	1 (1%)	
Prior journal publications (primary author)	10.2 ± 18.95 (0-144)	0.156/0.560
Research Degree		
None	100 (93%)	0.002*/0.472
Masters	8 (7%)	
Doctoral	0 (0%)	



Discussion

One hundred and eight abstracts were accepted for oral presentation at the ACFAS conference from 2010 to 2014. Of these abstracts, 76.9% (83/108) achieved journal publication, at mean of 9.6 (range 0 to 44) months (1). Overall, no associations were identified between any of the abstract specific variables, and the successful conversion of an oral abstract to a journal publication (Table 1). Projects from academic and non-academic institutions were equally represented over the conference years analyzed (n=54), although a significantly shorter time to publication was identified for abstracts from academic institutions ($p=0.042$), and those involving fewer centers ($p=0.03$). Specifically, 86% (n=93) of projects were patient oriented, while 14% (n=15) were basic/laboratory research. Retrospective cohorts were the most frequently accepted study design (37%), followed by case series (29%), prospective cohorts (10%), and laboratory studies (9%). Trends were identified between both funding, and the ACFAS regional division; and the conversion of an abstract to a journal publication, and time to publication. However, because all funded abstracts were published, and owing to the large number of geographical locations, inclusion into the regression models, and an appropriate statistical analysis could not be performed. Still, it should be noted that projects from the Midwest (n=32) region exceeded the number from any other region; and, together with the Great lakes region (n=15), the two accounted for almost half of the accepted abstracts over the conference years analyzed. While projects from the Pacific (n=14), Gulf (n=12), and Tri State (n=12) regions were fairly equally represented, projects from the Big West (n=8), Southeast (n=7), Northeast (n=6), and Mid-Atlantic (n=2) were scarcer. At least 1 oral abstract from each of the colleges regions (but no more than 4) failed to achieve journal publication. However, the total number of journal publications from the Midwest (n=28) still exceeded the total number from the Tri-State (n=11), Big West (n=6), Southeast (n=3), Northeast (n=3), and Mid-Atlantic (n=1) regions combined; and ironically, the three regions with the lowest publication incidence (50%) were also the least represented at the conference.

Regarding the author specific variables, a significant association was identified between the absence of a research degree, and the successful conversion of an oral abstract to a journal publication ($p=0.002$) (Table 2). A trend was also identified with respect to the number of prior journal publications; hence, projects led by authors with previous publication experience were more likely to achieve journal publication; irrespective of any formal research training (PhD, Masters). Over the conference years analyzed, the majority of the accepted projects were led by attending faculty (72%). Twelve (11%) projects were led by fellows, 17 (16%) by residents, most of who were in their 3rd postgraduate year of training; and 1 (1%) by a student. Of the 25 abstracts that failed to achieve journal publication, only 5 were led by either a fellow (n=2), or a resident (n=3); who's prior publications ranged from 2 to 8, and 0 to 5, respectively. Secondary analysis revealed predictably however, that in most instances; foot and ankle surgeons (FAS's) with considerable publication experience were also involved. This explains to some extent, the lack of an identifiable association between the level of the primary authors training (faculty, fellow, resident, student), and the conversion of an oral abstract to a journal publication. Although not directly assessed in this study, the value of the guidance, mentorship, and bulwark of support provided by the involvement of these research focused FAS's cannot be overstated; especially considering the inherent difficulties in conducting research for trainees during their years of graduated responsibility (7-8).

In conclusion, the present study broadens our understanding regarding the factors associated with the journal publication, and time to publication of oral abstracts from the ACFAS: 2010 to 2014. Given the essential role of research within the health care system; the onus is on all of us to conduct research, now more than ever.

References

- 1) Rushing CJ, Galan GP, Ivankiv R, Oxios AJ, Rathnayake VJ, Ramil MC, Chussid F, Spinner, SM. Publication Rates for Oral Manuscript and Poster Presentations From the American College of Foot and Ankle Surgeons: 2010 to 2014. J Foot Ankle Surg. 57(4), 2018.
- 2) Roukis TS. Publication Rates of Manuscript Presentations at the American College of Foot and Ankle Surgeons Annual Scientific Conference between 1999 and 2008. J Foot Ankle Surg. 50:416-419, 2011.
- 3) Bradley PA, Donnerwerth MP, Borkosky SL, Pivonich EJ, Roukis TS. Publication Rates of Poster Presentations at the American College of Foot and Ankle Surgeons Annual Scientific Conference between 1999 and 2008. J Foot Ankle Surg. 51:45-49, 2011.
- 4) Williams BR, Kunas GC, Deland JT, Ellis SJ. Publications rates for podium and poster presentations from the American Orthopedic Foot & Ankle Society: 2008-2012. Foot Ankle Int 38:558-563, 2017.
- 5) Smart RJ, Susarla SM, Kaban LB, Dodson TS. Factors Associated With Converting Scientific Abstracts to Published Manuscripts. J Craniofac Surg 24: 667/0, 2013.
- 6) R Core Team (2018). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <http://www.R-project.org/>.
- 7) Rushing CJ, Roland D, Pham A, Marcelo V, Blum S, Soldano S, Rushing DC, Ramil M, Chussid F, Spinner SM, Hardigan P. A Formal Work Hour Analysis of the Resident Foot and Ankle Surgeon (Under Review-J Foot Ankle Surg. 2018.)
- 8) Rushing DC, Rushing CJ, Ospina A, McClure S. Publication Incidence for Oral Abstracts and Posters From the American Association of Oral and Maxillofacial Surgeons: 2010-2014. (Accepted-JOMS, 2018.)