

Factors Associated with and Barriers to the Journal Publication of Oral Abstracts from the American Podiatric Medical Association

2010 to 2014

Calvin J. Rushing, DPM*
Tom Arena, DPM†
Steven M. Spinner, DPM*
Patrick Hardigan, PhD‡

Not all abstracts accepted for oral presentation at the annual conference of the American Podiatric Medical Association ultimately go on to successfully navigate the peer-review process to achieve journal publication despite its obvious merits. The purpose of the present study was to identify the factors associated with and barriers to journal publication and time to publication for oral abstracts from the American Podiatric Medical Association conference from 2010 to 2014. Databases containing information on the abstracts were procured and predictor variables categorized as abstract- or author-specific. Bivariate analysis was conducted using the Mann-Whitney *U* test, Fisher's exact test, chi-square test of independence, or Spearman rank correlation. Multivariable logistic regression and generalized linear regression models were used to analyze predictor variables. A questionnaire was distributed to the primary authors of any unpublished abstracts to determine the current status of the abstract, in addition to the reasons for the failure to pursue or achieve journal publication. Overall, oral abstracts by authors without a formal research degree were published more often than abstracts by authors with a research degree, as were funded projects ($P = .031$). No other associations were identified between any of the abstract- and author-specific variables and successful conversion of an oral abstract to a journal publication or the time to publication. Six barriers questionnaires were completed. At the time of the survey, two oral abstracts had since achieved publication, two had been submitted for publication but were rejected, and two had never been submitted. The principal reason cited by the authors for the failure to pursue or achieve journal publication was insufficient time for manuscript preparation. (J Am Podiatr Med Assoc 110(4): 1-5, 2020)

National society conferences are used to disseminate the latest research and innovations through oral and poster abstract presentations annually.¹⁻⁶ However, not all of the presented abstracts ultimately go on to successfully navigate the more rigorous peer-review process to achieve journal publication, despite its obvious merits. From 2010 to 2014, 14 of the 31 (45.2%) oral abstracts presented at the annual American Podiatric Medical Association

(APMA) conference subsequently achieved journal publication. However, the factors associated with and barriers to the successful conversion of the abstracts remains unclear. The purpose of the present study was to identify the factors associated with and barriers to journal publication and time to publication for oral abstracts from the APMA conference from 2010 to 2014.

Materials and Methods

Factors Associated with Publication

From a previous study,¹ a database containing information on the oral abstracts accepted for presentation at the APMA conference from 2010 to

*Westside Regional Medical Center, Plantation, FL.
†Temple University School of Podiatric Medicine, Philadelphia, PA.
‡Nova Southeastern University, Fort Lauderdale, FL.
Corresponding author: Calvin J. Rushing, DPM, AACFAS, Westside Regional Medical Center, 8201 W Broward Blvd, Plantation, FL 33324 (E-mail: calvin.rushing@mymail.barry.edu)

2014 was procured. The database included basic information originally compiled and provided by the APMA office (author names, abstract titles, year of presentation), in addition to information determined subsequently thereafter (publication incidence, mean time to publication, journal of publication, and publication within 3 years of conference presentation) for the purposes of the original study.¹ For each abstract ($n = 31$), PubMed, Google Scholar, and Scopus searches were repeated to confirm the publication status (published, unpublished) previously identified.¹ Manual searches (www.google.com) were then performed using the database to identify and record predictor variables potentially associated with the abstract's successful conversion. The variables were classified as either abstract- or author-specific.⁷ Abstract-specific variables included the institution type (academic versus nonacademic), 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), and funding (yes, or no). Author-specific variables included the primary author's level of training (faculty, fellow, resident, student), number of prior journal publications (preceding the respective date of abstracts presentation), and presence of a research degree (doctoral, masters, none).

Barriers to Publication

Questionnaires were distributed in November of 2018 to the primary authors ($n = 17$) of the unpublished oral abstracts by means of e-mail (APMA membership directory, or private e-mail) to assess the current status of the projects.⁸ In the e-mail, a summary of information relevant to the study was provided along with the title of the authors' unpublished oral abstract, and the barriers questionnaire summarized below. If a response was not obtained within 2 weeks of the initial query ($n = 14$), repeated attempts were made to contact the authors by means of e-mail until communication was established or three failed attempts.

Questionnaire

The primary authors were first asked to select one of the following statements: 1) the oral abstract has been published in a journal, 2) the oral abstract has been published outside of a journal, 3) the oral abstract has been accepted for journal publication (in press), 4) the oral abstract is currently under

peer review by a journal, 5) the oral abstract was submitted to and rejected by a journal, 6) the oral abstract was submitted but withdrawn before journal publication, and 7) the oral abstract was never submitted for journal publication. If an author responded with either statement 2 (the oral abstract has been published outside of a journal) or statement 7 (the oral abstract was never submitted for journal publication), they were subsequently prompted to select one or more reasons (limit of three) for why journal publication had not been pursued or achieved. These reasons included the following: 1) insufficient time, 2) insufficient institutional support (financial, material, staff) or formal research mentorship, 3) low priority, 4) difficulty with coauthors, 5) responsibility tasked to another coauthor, 6) poor results and/or outcomes, 7) low likelihood of perceived journal acceptance because of methodologic weaknesses, and 8) the study is still currently ongoing.

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 analyses were conducted using the Mann-Whitney U test, Fisher's exact test, χ^2 test of independence, or Spearman's rank correlation as appropriate. Multivariable logistic regression or a generalized linear model regression was used to analyze variables as potential predictors of successful abstract conversion (yes versus no) and time to publication (in months). Variables in the final logistic models with values of $P < .20$ from the bivariate analysis were selected. R 3.4.2 was used for all data analysis,⁶ and statistical significance was defined as a value of $P < .05$. All data were analyzed using STATA version 12 (StataCorp, College Station, Texas).

Results

Factors Associated with Publication

A total of 31 abstracts were accepted for oral presentation at the APMA conference from 2010 to 2014. Of these abstracts, 45.2% (14 of 31) achieved journal publication before the previously established cutoff date¹ at a mean of 24.2 months (range, 0–47 months) following the conference. Overall, most accepted abstracts were led by attending faculty (97%) from nonacademic institutions (55%)

and were unfunded (87%). Ninety percent of projects were patient-oriented research, whereas 10% were basic/laboratory research. Retrospective cohorts ($n = 8$ [26%]), case series ($n = 8$ [26%]), and prospective cohorts ($n = 5$ [16%]) were the most frequently accepted study designs. Per project, the mean number of prior journal publications for the primary presenting authors was 34.5 (range, 0–153), and most did not possess a formal research degree ($n = 26$ [86%]). Descriptive statistics for the abstract- and author-specific variables, bivariate associations with respect to journal publication, and time to publication are summarized in Tables 1 and 2. A logistic regression model was used to predict successful journal publication (academic degree, number of prior publications), and a generalized linear regression model was used to predict time to publication (academic degree, and funding).⁷ Funding was excluded from the logistic regression model because all funded studies were published. Neither multivariate model identified any significant predictors with respect to journal publication or time to publication. However, bivariate analyses revealed that abstracts by authors without a formal research degree were published more often than abstracts by authors with a research degree ($P = .031$).

Barriers to Publication

A total of 17 oral abstracts (17 of 31 [54.8%]), each from a different primary presenting author, failed to achieve journal publication before the previously established cutoff date.¹ Of the 17 authors surveyed, statements were recorded for six questionnaires, representing a response rate of 35.3% (six of 17). At the time of the survey, two abstracts (12%) had since achieved journal publication, two (12%) had been submitted for journal publication but were rejected, and two (12%) had never been submitted for journal publication (Table 3). Thus, the overall journal publication incidence for oral abstracts from the APMA from 2010 to 2014 increased from 45.2% (14 of 31) to 51.6% (16 of 31). Regarding the reasons for failing to pursue or achieve journal publication, an insufficient amount of time for manuscript preparation (100%) was most commonly cited.

Discussion

The publication of an abstract in a peer-reviewed journal is the natural and expected outcome for such a presentation and represents the completion of the research pathway, and a forum for the dissemination of the findings.⁹ However, not all

Table 1. Descriptive Statistics for Abstract-Specific Predictors, and Bivariate Analysis for Journal Publication and Time to Publication

Predictor	No. (%)	P Value	
		JP	TP
Institution type			
Nonacademic	17 (55)	.623	.415
Academic	14 (45)		
Type of research			
Patient-oriented	28 (90)	.081	.482
Basic/laboratory	3 (10)		
Study design			
Case series	8 (26)	.218	.387
Retrospective cohort	8 (26)		
Prospective cohort	5 (16)		
Systematic review	4 (13)		
Laboratory study	3 (10)		
Case-control	1 (3)		
Cross sectional	1 (3)		
Randomized controlled trial	1 (3)		
Meta-analysis	0 (0)		
Funded			
No	27 (87)	.031	.670
Yes	4 (13)		

Abbreviations: JP, journal publication; TP, time to publication.

presented abstracts from national society meetings ultimately go on to successfully navigate the more rigorous peer-review process to achieve journal publication, despite its obvious merits. To the best of our knowledge, no previous study had sought to assess the factors associated with or the barriers to journal publication and time to publication of oral abstracts from the APMA conference. For this purpose, we categorized potential predictor variables as either abstract- or author-specific, and surveyed the primary authors of the unpublished abstracts.¹

Overall, APMA abstracts by authors without a formal research degree achieved journal publication more often, as did funded projects ($P = .031$). No other associations were identified between any of the abstract- and author-specific variables and the successful conversion of an oral abstract to a journal publication (Tables 1 and 2). Similarly, no associations were identified with respect to the time to publication of an abstract in a peer-reviewed journal. Regarding the barriers to journal publication, six of the 17 questionnaires originally distributed were completed and returned. At the time of the survey, two oral abstracts had since achieved journal publication, two had been submitted for journal publication but were rejected, and two had

Table 2. Descriptive Statistics for Author-Specific Predictors, and Bivariate Analysis for Journal Publication and Time to Publication

Predictor	No. (%)	P Value	
		JP	TP
Total sample	31		
Level of training (primary author)			
Faculty	30 (97)	NS	NS
Student	1 (3)		
Research degree			
None	26 (84)	.048	NS
Masters	5 (16)		
Doctoral	0 (0)		

Abbreviations: JP, journal publication; NS, not significant; TP, time to publication.

never been submitted for journal publication (Table 3). The principal reason cited by the presenting authors for the failure to pursue or achieve journal publication was an insufficient time for manuscript preparation, identical to the findings of a previous study that assessed barriers to journal publication of abstracts from the American College of Foot and Ankle Surgeons (ACFAS) conference.⁸

The issue of how best to increase research productivity among APMA and ACFAS members remains the subject of continued debate. Recommendations to improve the publication incidence for future abstracts from the ACFAS have been suggested previously, and are similarly applicable.⁸ These include 1) allocation of a realistic and consistent amount of dedicated research time (weekly, monthly) to complete a project within a predetermined time frame, 2) inclusion of coinvestigators equally as committed to the project, 3) clear outlines regarding the roles and responsibilities for those coinvestigators to attain eventual authorship (abstract, manuscript), and 4) involvement of podiatric physicians with a research focus and/or considerable publication experience. From an organizational standpoint, suggestions include 1) increasing the availability and funding for investigator-initiated research grants, 2) establishment of a consortium to record patient-reported outcome measures, and 3) recruitment of young research-oriented APMA members to committees and task forces within the organization. Although it can be argued that research at any point in a physician's career is perhaps the most challenging of any professional endeavor, it remains critical to the continued advancement of the profession. Given that abstracts by authors without a formal research degree from both societies' annual meet-

Table 3. Current Oral Abstract Status

	No. (%)
Total	17
Published in a journal	2 (12)
Submitted, but rejected by a journal	2 (12)
Never submitted for journal publication	2 (12)
Response not obtained	11 (65)

ings were more likely to achieve journal publication compared to projects by authors with a formal degree, it is clear that meaningful research contributions stand to be made by all podiatric physicians; irrespective of any formal research experience.

This study has several limitations inherent in its design. These include selection biases as discussed previously.¹ For each abstract (n = 31), PubMed, Google Scholar, and Scopus searches were initially performed to confirm the publication status (published, unpublished) previously identified.¹ Manual searches (www.google.com) for the primary presenting authors were then performed using any and all available online resources to identify and record the abstract- and/or author-specific predictor variables at the time of the respective conference. These efforts were exhaustive, and especially difficult for abstracts that failed to achieve journal publication. In particular, determining funding and the study design for unpublished abstracts was problematic. It is plausible that unpublished abstracts deemed "unfunded" might have indeed received funding, or a study design might have been miscategorized. The listing of only a single primary author for a majority of the abstracts presented was also problematic and complicated comparison efforts with abstracts presented at other national foot and ankle society conferences.^{7,8} Furthermore, unidentified factors may have contributed to the publication of an abstract and therefore represent potential confounding variables. Regarding the barriers questionnaire, the response rate (35.3%) was lower than the authors had originally anticipated. Although it is unclear why authors would choose not to participate, reporting false information offers no foreseeable advantage(s) for those who chose to respond, and therefore we are confident in the results obtained. Strengths of the present study include the duplicate database searches, duplicate assessments of the data reliability, and multiple accuracy checks of the data entered (logic checks).

Conclusions

In conclusion, the present study broadens our understanding regarding the factors associated with and the barriers to journal publication and time to publication of oral abstracts from the annual APMA conference from 2010 to 2014. However, the issue of how best to increase research productivity among APMA members remains a question of continued debate. Although research at any point in a physician's careers remains perhaps the most challenging professional endeavor, it is critical to the advancement of the profession. Given that abstracts by authors without a formal research degree from both the APMA and ACFAS annual meetings were more likely to achieve journal publication compared to projects by authors with a formal degree, it is clear that meaningful research contributions stand to be made by all podiatric physicians, irrespective of formal research training.

Financial Disclosure: None reported.

Conflict of Interest: None reported.

References

1. RUSHING CJ, MERRITT G, TARAK A, ET AL: Publication rates for oral and poster abstracts from the American Podiatric Medical Association: 2010-2014. *JAPMA* **109**: 226, 2019.
2. RUSHING CJ, GALAN GP, IVANKIV R, ET AL: Publication rates for oral manuscript and poster presentations from the American College of Foot and Ankle Surgeons: 2010 to 2014. *J Foot Ankle Surg* **716**, 2018.
3. 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, 2011.
4. BRADLEY PA, DONNENWERTH MP, BORKOSKY SL, ET AL: 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, 2011.
5. WILLIAMS BR, KUNAS GC, DELAND JT, ET AL: Publications rates for podium and poster presentations from the American Orthopedic Foot & Ankle Society: 2008-2012. *Foot Ankle Int* **38**: 558, 2017.
6. RUSHING DC, RUSHING CJ, OSPINA A, ET AL: Publication incidence for oral abstracts and posters from the American Association of Oral and Maxillofacial Surgeons: 2010-2014. *J Oral Maxillofac Surg* **76**: 2051, 2018.
7. RUSHING CJ, RUSHING DC, SPINNER SM, ET AL: Factors associated with the journal publication of oral abstracts from the American College of Foot and Ankle Surgeons: 2010-2014. *J Foot Ankle Surg* **58**: 692, 2019.
8. RUSHING CJ, GORANSSON M, SPINNER SM: Publication barriers of oral abstracts from the American College of Foot and Ankle Surgeons: 2010-2014. *J Foot Ankle Surg* **58**: 852, 2019.
9. SPRAGUE S, BHANDARI M, DEVEREAUX PJ, ET AL: Barriers to full-text publication following presentation of abstracts at annual orthopaedic meetings. *J Bone Joint Surg Am* **85**: 158, 2003.