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Mohammad Halaibeh MD

Marshall University, halaibeh1@live.marshall.edu

Alexander H. Slocum Jr, PhD, MD

Yousif Mohammed MD

Zain N. Qazi MD

Franklin D. Shuler MD, PhD

Marshall University, shulerf@marshall.edu

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Research Days at West Virginia's Allopathic Medical Schools: Ten Year Publication Rates and Impact

Mohammad Halaibeh, MD

Alexander H. Slocum, Jr., PhD, MD

Yousif Mohammed, MD

Zain N. Qazi, MD

Franklin D. Shuler, MD, PhD

Corresponding Author: Franklin D. Shuler, MD, PhD, Marshall University, Department of Orthopaedic Surgery, 1600 Medical Center Drive, Suite G-500, Huntington, WV 25701. E-mail: shulerf@marshall.edu

Abstract

Participation in research and scholarly activity is critical to successful medical student and resident matriculation and to faculty development. Both Marshall University and West Virginia University sponsor yearly peer-reviewed School of Medicine Research Days' to support these missions. This article evaluates the successful publication of Research Day presentations for West Virginia's Allopathic Medical Schools.

Both Marshall University (MU) and West Virginia University's (WVU) School of Medicine use a competitive review process for abstract selection ensuring high-quality research is presented. Over a 10-year period, MU published 12% (74/616) of its abstracts while WVU published 22% (265/1185) of its abstracts.

We hope that this article will stimulate improvement in publication rates.

Introduction

At West Virginia's two allopathic medical schools, the school-sponsored research day is an essential educational tool for exposing medical students and

residents to best practices in the production of peer-reviewed work. Guidelines for medical education curricula, as established by the American College of Graduate Medical Education (ACGME), encourage exposure to research.¹ A survey of medical students at Stanford University found that, of those who conducted research as a student, nearly 75% were motivated to pursue further research later on in their careers and almost all of them were positively influenced by the experience.² Another survey evaluating the value of research on post-residency practice showed improved attitudes regarding its value in guiding treatment decisions.¹ Furthermore, research is almost an essential piece of the puzzle for a successful residency applicant in certain competitive specialties. In 2014, of those applicants who successfully matched into one of the top 5 most competitive specialties (Plastic Surgery, Radiation Oncology, Orthopaedic Surgery, Dermatology, and Neurosurgery) nearly all had completed at least one or more research project resulting in a publication, with program directors of these specialties placing greater emphasis on research experience for resident selection.^{3,4}

It is the goal of this work to evaluate the academic rigor of Research Day at Marshall University's School of Medicine (MUSOM) and the Van Liere and Research Day at West Virginia University's School of Medicine (WVUSOM). While the peer review process is potentially less selective as compared to regional or national conferences who often require

manuscript generation as a condition of meeting presentation, the exercise of publishing and presenting work at an in-house conference has a significant positive impact on the medical student or resident, influencing them for the duration of their careers.² Further, the gathering of minds at research day can help to build collaborations among students, residents and faculty, as well as improve the intellectual environment across a university. From the standpoint of maximizing educational potential, participation in a school-sponsored research day will better prepare a student or resident for competitive conferences organized by most professional societies.

Methods

The ultimate goal in academia is the peer-reviewed journal article; these are often used to help guide interventions, faculty promotion decisions and build credibility with which to support applications for grant funding. The evaluation of research day at each school is achieved by determining the rate at which presented work is subsequently published in peer-reviewed journals. Impact factors and publication counts provide objective measures of the respective rigor of each research day event with both schools employing a peer-review process. A school can therefore have an opportunity to act as its own reviewer system before research is submitted to outside journals, thus increasing the quality of initial submissions and maximizing the opportunity for publication in a scholarly journal.

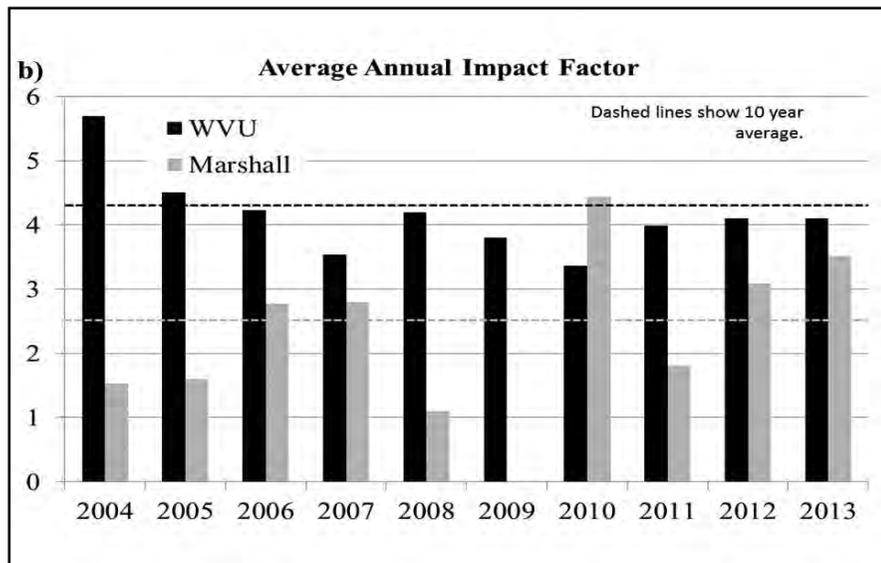
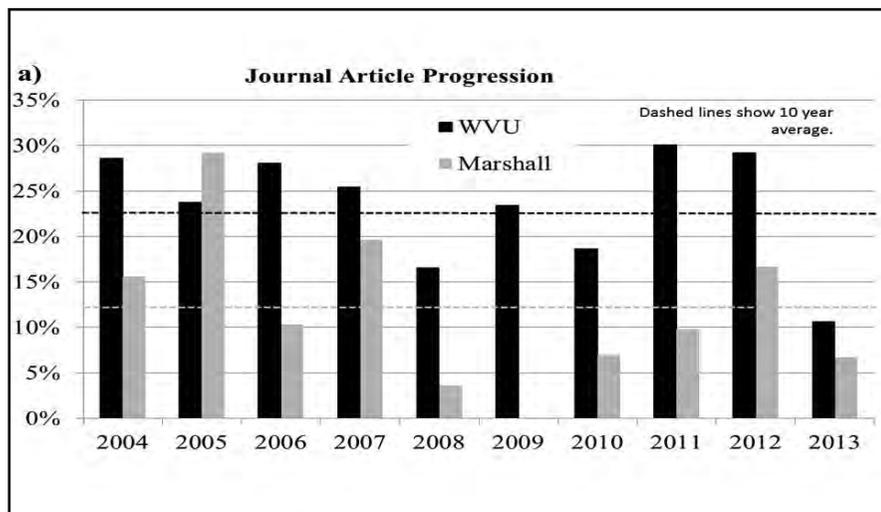


Figure 1: Bar graphs showing a) progression rate of articles and research topics from research day to publication in peer-reviewed journals for the years 2004 to 2013; b) average annual impact factor of peer-reviewed journals publishing research that was presented at research day that year.

A syllabus of work presented during research day at MUSOM and WVUSOM is created each year; these syllabi provide insight into the research activities at each school during the previous year as conducted by attendings, residents and students. To evaluate submission progression to journal articles, each year's syllabus was converted into a spreadsheet with author names and article titles in columns. The research day abstract title and leading author's last name were entered into three research search engines (PubMed, Google Scholar and Web of Science); a "positive" result (i.e. journal article publication) was one that had a significant number of authors as well as title words in common with the research day abstract submission.⁵⁻⁷ The total number of research day works that had progressed to, and had been published in, peer-reviewed journals was found for both schools each year from 2004 to 2013. Journal impact factor, a proxy for journal importance reflecting the number of citations of recent articles, was also recorded and included in the analysis. There currently is no impact factor for the *West Virginia Medical Journal* and a score of 0.0 was used in the analysis. All of the data used in this analysis (impact factor, research day

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Totals
MUSOM	# Abstracts	45	48	58	51	56	0	72	82	84	120	616
	# Published	7	14	6	10	2	0	5	8	14	8	74
	% Published	16%	29%	10%	20%	4%	0%	7%	10%	17%	7%	12%
WVUSOM	# Abstracts	70	80	82	110	139	128	118	133	137	188	1185
	# Published	20	19	23	28	23	30	22	40	40	20	265
	% Published	29%	24%	28%	26%	17%	23%	19%	30%	29%	11%	22%

syllabi and journal publications) are available on the World Wide Web.

Results

Publication rates are shown in **Table 1**. A lower rate of publication of articles in peer-reviewed journals by MUSOM (12%, 95%CI 10.5-15.7%) as compared to WVUSOM (22%, 95%CI 20.3-24.3%) occurred in every year from 2004-2013. There was no formal MUSOM Research Day in 2009.

The highest publication rate was 30% for WVUSOM in 2011. For MUSOM, the highest publication rate was 29% in 2005. While the number of articles published is representative of the quantity of ongoing investigations at a particular school, the quality of that research must also be evaluated (**Figures 1A and 1B**).

The average impact factor of journal publications from each research day, queried over the same time period, yielded a similar degree of separation between the two schools: the ten-year average impact factor for articles published in a peer reviewed journal was 4.15 (range 0.81 – 12.13) at WVUSOM and 2.52 (range 0.84 – 4.91) at MUSOM.

Conclusion

There is a low rate of publication for accepted abstracts following MUSOM or WVUSOM annual research days with cumulative rates not exceeding 22% over the 10 year period analyzed. The highest rate of publication was 30% for WVUSOM and 29% for MUSOM. We hope that this article will stimulate the successful publication of research from both institutions.

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304-933-1030
bhallmd@wvmp.php.org
www.wvmp.php.org

**West Virginia Medical Professionals
 Health Program**
 4013 Buckhannon Pike
 Mount Clare, WV 26408