

## LETTERS

### Equal Contributions and Credit Assigned to Authors in Pharmacy Journals

Authorship of publications in peer-reviewed journals is important for career success and promotion for those in academic pharmacy. The first and last author (ie, senior author) are often viewed as the most important author positions, and the remaining authors are usually listed in decreasing order of contribution.<sup>1</sup> However, it can be difficult to determine the order of authors when 2 or more authors have made similar contributions to a manuscript.

It is increasingly common for research articles published in medical journals to have 2 or more authors who have been explicitly assigned equal credit (eg, if the first 2 authors are given equal credit they are considered co-first authors).<sup>2,3</sup> I decided to evaluate the extent to which this practice is occurring in the pharmacy literature and determine the prevalence of articles with equally credited authors in pharmacy journals.

Three prominent pharmacy journals were included in the analysis – *American Journal of Health-System Pharmacy (AJHP)*, *Annals of Pharmacotherapy (The Annals)*, and *Pharmacotherapy*. All original research articles published in 2012 in these journals were evaluated to determine if there was documentation that 2 or more authors had contributed equally to the work. The data collected for each article in which authors had been equally credited included the total number of authors listed on the byline, the number of equally credited authors, and the position on the byline of the equally credited authors. The instructions to authors available on each journal's Web site were also examined in December 2012 to determine if there was any guidance regarding the assignment of equal credit. The primary outcome was the prevalence of research articles with equally credited authors (the number of research articles with equally credited authors divided by the total number of research articles). Microsoft Excel was used for data collection. Data was collected from publicly available information, and the study did not require institutional review board approval.

Overall, the prevalence of original research articles with equally credited authors was 2.5%. The fraction (%) of articles with equally credited authors for each journal was 0/80 (0%) for *AJHP*, 3/67 (4.5%) for *The Annals*, and 2/56 (3.6%) for *Pharmacotherapy*. Each of the articles with equally credited authors stated that certain authors had “contributed equally” to the work, manuscript, or analysis. This statement was listed in the author information

section in 4 of the 5 articles with equally credited authors. In the fifth article, the terminology to indicate equal credit was listed in a footnote. In 3 of the 5 articles with equally credited authors, the first 2 authors listed on the byline received equal credit. The other 2 articles gave equal credit to the first 3 authors. The mean  $\pm$  SD total number of authors for the articles with equally credited authors was  $9.2 \pm 4.7$ . None of the journals published a contribution statement describing each author's specific contribution to the manuscript, and none of the journals had a policy in their instructions to authors regarding the assignment of equal credit.

Articles with equally credited authors are also being published in medical journals. Akhabue and colleagues found that the proportion of research articles with equally credited authors was 4.4% in high impact medical journals in 2009.<sup>2</sup> Another study of research articles in critical care journals found that 12.4% of articles had equally credited authors in 2010.<sup>3</sup>

A positive factor associated with the assignment of equal credit is that 2 or more authors who make similar contributions are given the credit they deserve. One issue with authorship is that it usually requires collaboration between several individuals to complete a complex study, but 1 or 2 individuals receive most of the credit. The first and last author are viewed as the most important author positions by most academic rank committees, with “middle” authorship having a much smaller impact on promotion. The practice of assigning equal credit may encourage collaboration between researchers as there could be more than 1 first or last author. Individuals may not be willing to put a substantial amount of work into a project to be a “middle” author. The implications of assigning equal credit on evaluation for academic promotion should be assessed to determine whether co-first authorship shared among 2 or 3 individuals would be viewed similarly as sole first authorship.

One limitation of this study is that it is unclear whether the contributions of the equally credited authors were truly similar. Misappropriation of authorship is common, and it is possible that some individuals were assigned undeserved co-first authorship.<sup>4,5</sup>

In conclusion, research articles with equally credited authors are appearing in the pharmacy literature. Journals should consider providing guidance to authors regarding when and how to assign equal credit.

Bryan Dotson, PharmD

Department of Pharmacy, Harper University Hospital,

Detroit, Michigan

Eugene Applebaum College of Pharmacy and Health

Sciences, Wayne State University, Detroit, Michigan

## REFERENCES

1. Hinman F Jr. Sequence of authors' names in scientific articles. *JAMA*. 1970;212(4):618-619.
2. Akhabue E, Lautenbach E. "Equal" contributions and credit: an emerging trend in the characterization of authorship. *Ann Epidemiol*. 2010;20(11):868-871.
3. Wang F, Tang L, Bo L, Li J, Deng X. Equal contributions and credit given to authors in critical care medicine journals during a 10-yr period. *Crit Care Med*. 2012;40(3):967-969.
4. Dotson B, Slaughter RL. Prevalence of articles with honorary and ghost authors in three pharmacy journals. *Am J Health Syst Pharm*. 2011;68(18):1730-1734.
5. Wislar JS, Flanagan A, Fontanarosa PB, Deangelis CD. Honorary and ghost authorship in high impact biomedical journals: a cross sectional survey. *Br Med J*. 2011;343:d6128.