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EDITORIAL COMMENT



Bibliometrics aim to determine the scientific impact of a source item; eg, a medical research publication. However, the internet and social media have changed the way medical researchers disseminate and consume scholarly work. Twitter is arguably the most widely used social media platform in academic medicine and urology has been at the forefront of academic tweeting.¹ In addition to expediting and facilitating knowledge transfer, Twitter extends the reach of medical research beyond fellow physicians.

Altmetrics measure the real-time digital attention garnered by a source item by analyzing its mentions in mainstream media, blogs, and on social media sites such as Twitter. Traditional bibliometrics overlook the digital impact of medical research and take years to quantify the impact of a source item. In this study, the authors sought to quantify the association between altmetrics and bibliometrics by comparing Twitter mentions and citation counts.

The authors quantified Twitter mentions of original research articles from the January 2015 print publication of 7 prominent urology journals. The number of Twitter mentions was compared to citation counts 3 years after publication. About three-quarters of these articles were mentioned at least once on Twitter and virtually all Twitter activity ceased 1 year after print publication. The authors found that tweeted articles had twice the number of citations compared to nontweeted articles. An additional increase in citation count was seen for publications tweeted by 1 of its authors.

This article is limited by a small sample size; however, we can conclude that the immediate digital attention received by a publication may reflect its long-term scientific impact. Alternatively, tweeted articles may prime the research community to recall and cite the article at a later date. Future work in this space should aim to adjust for confounders such as the number of Twitter followers or the journal's impact factor. Also, studies should avoid emphasizing a causal effect on traditional bibliometrics, as the purpose of altmetrics is to transcend the established measures of scholarly success.²

Altmetrics quantify the broader impact of a publication on society. Unlike the citation count or *h*-index, these measures capture references within public policy documents, patents,

Wikipedia pages, and the popular press.³ We as a profession should determine how altmetrics are to be valued. Bibliometrics are strongly considered in academic promotion review, grant funding, and committee membership.⁴ Is it time to consider evaluating researchers and educators on not only their *h*-index, but also their digital presence?

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AUTHOR REPLY



The widespread dissemination and accessibility of scholarly articles on the internet has led to the advent of “altmetrics” which quantify the online reach of a publication. This is in comparison to more traditional bibliometrics which use citation number to generate an estimation of impact. Previous studies into nonmedical literature have found that “highly-Tweeted articles were 11 times more likely to be highly cited than less-Tweeted articles.”¹

We sought to determine if this relationship holds true in the urologic literature. As the commentator mentioned Twitter is one of the more prominent social media platforms for urology.^{2–4} This can be seen in the increased Twitter activity at academic urology conferences, uptick in publications regarding urology and social media, and the presence of well-known individual Twitter accounts such as that of Stacy Loeb (@LoebStacy, 11K followers) and Matt Cooperberg (@dr_coops, 6.4K followers).

The primary objective of our study was to quantify the relationship between the number of Twitter mentions and the number of academic citations a urology publication receives. Our study found that about 75% of all Twitter activity happens in the period between online and print publication. When an article is mentioned on Twitter it was associated with a 2-fold increase in traditional citations.

Yet our study is not without limitations. In our opinion, it should be viewed more as a proof of concept that it is possible to quantify the connection between Twitter and academic literature. We recognize the inherent nature of social media is that of constant change, and that our specific numbers represent a snapshot in time.

The strength of the study comes from the evaluation of a wide variety of urologic topics and journals, and we believe that the findings go along with the trend toward increased use of social media in academics. It also supports institutional policy changes that now include online presence and prestige in evaluation of faculty advancement.⁵

Although we do not propose there is a causal relationship between Twitter mentions and academics, we do believe that social media may play a role in how academic research will be evaluated in the future. In the spirit of the article we would like to keep the conversation going in real time, so please feel free to reach out in the Twittersphere. @MMSiddiquiMD @SolomonHayon.

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