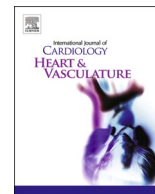




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## Social media: Are Twitter/X influencers in cardiology really influencing?

Social media (SoMe) refers to online social networking sites including Twitter, YouTube, TikTok, Facebook, Snapchat, Reddit, Instagram, WhatsApp, and blogs. It is a new and ever-changing field. Access to SoMe platforms are able to make health information available and accessible. Although healthcare professionals historically use the statistics of a journal to identify which is the most appropriate to subscribe to, SoMe now allow physicians to access a wider range of journals and to select what is the most relevant for them [1].

The quality, strength and importance of medical journals is usually assessed by means of mathematical indexes such as the Mendeley reader counts, the number of citations (i.e. Impact Factor), and the Altmetric Attention Score. Similarly, scientific researchers are usually evaluated based upon their publications as well as the number of citations these publications received [2–5]. One of the key ways to increase citations is to expose the research output to a wider audience because people can only cite articles that they are aware of. In the near future, writing a high quality article in a top journal will only give a 50% chance of getting cited, while the promotion and broad dissemination of the publication will be essential to complete the other 50%. Accordingly, though most journals make attempt at increasing the visibility of the articles they publish, the authors of these articles can play a major role to promote their papers.

SoMe use has greatly increased in the last decade, with Pew Research Center reporting an increased usage among American adults from 7% in 2005 to 65% in 2015. The upsurge in SoMe use has affected several aspects like politics, healthcare, education, and is currently having an increasingly growing effect on research. SoMe provides an informal and quick means of informing people about one's research by simply posting it or creating a link to the article online. If used appropriately, promoting research via SoMe enables quick feedbacks, allows researchers with similar interests to connect, reveals research that people may not have been able to find otherwise and provide an alternative way of demonstrating the impact of research.

Preliminary research has shown that Twitter/X promotion has the potential to increase citation rates in medical journals. A recently published randomized trial on the official journals of the European Society of Cardiology showed that a dedicated Twitter/X promotion resulted in a higher number of citations and a higher Altmetric Attention Score [6]. However, although this study showed a favorable effect, the role of Twitter/X promotion on classical impact measures of scientific articles remains controversial [7].

In this issue of the Journal, Betz et al. aimed at verifying whether the effect of a SoMe promotion strategy on impact indicators [8]. To this end, they carried out the “#TweetTheJournal” study, a randomized, controlled study [9]. Articles published in seven subsequent issues of the

*International Journal of Cardiology: Heart & Vasculature* between April 2021 and April 2022 were randomized to a Twitter/X promotion arm – articles were posted four times – and to a control arm – without active posting. Results showed that SoMe promotion of articles showed no statistically significant difference in Mendeley reader counts or number of citations at one year follow up, but resulted in a significantly higher Altmetric Attention Score in the intervention compared to the control group. On the basis of these findings, the authors conclude that a dedicated SoMe promotion strategy did not result in statistically significant differences in early impact indicators as the Mendeley reader count in an upcoming journal, but increased the Altmetric Attention Score, which is a novel measure of article dissemination [8].

The authors of this study should be acknowledged for addressing a timely and relevant novel issue that has been poorly investigated in the past. The findings by Betz et al. resemble those previously published by Tonia et al., who found that a social media exposure did not affect significantly article download and citations [10], but are different from the results by Ladeiras-Lopes et al., who, however, did not include consecutive articles, but selected studies published in top journals [6].

Which are possible explanations of the findings of the present study? A possible explanation lies on the fact that cardiologists are generally not very active on Twitter, and this is reflected by the fact that their mentions on Twitter are low as compared to their citations in medical journals (low Kardashian index). As a consequence, the presence on SoMe social media does not appear to have a beneficial effect on the Impact Factor. This finding is consistent with the evidence that most cardiologists still prefer to read their journals in print rather than online, though social media participation is likely to change rapidly with younger physicians. This does not rule out the possibility that participation on SoMe such as Twitter/X may increase awareness, dissemination, and discussion of research data. This participation does not seem to affect the number of citations and Impact Factor, but might raise the Altmetric Attention Score.

Another possible reason might be that the life expectancy of a story shared on SoMe is very short with respect to the lifespan of an article published in a medical journal (Fig. 1). It is estimated that a Facebook post has an average lifespan of 6 h, an Instagram post or a LinkedIn post of 48 h, and a tweet on Twitter only 18 min. These figures are obviously affected by the so-called “influencers”. The longer SoMe users actively access the information, the more discussion it generates and the greater the SoMe impact. The shorter the active lifespan, the more frequently one must post to that channel to maintain engagement.

Which is the ‘take home’ message of the study by Betz et al.? SoMe promotion of scientific articles in medical journals might not be unable to lead to statistically significant differences in impact indicators such as

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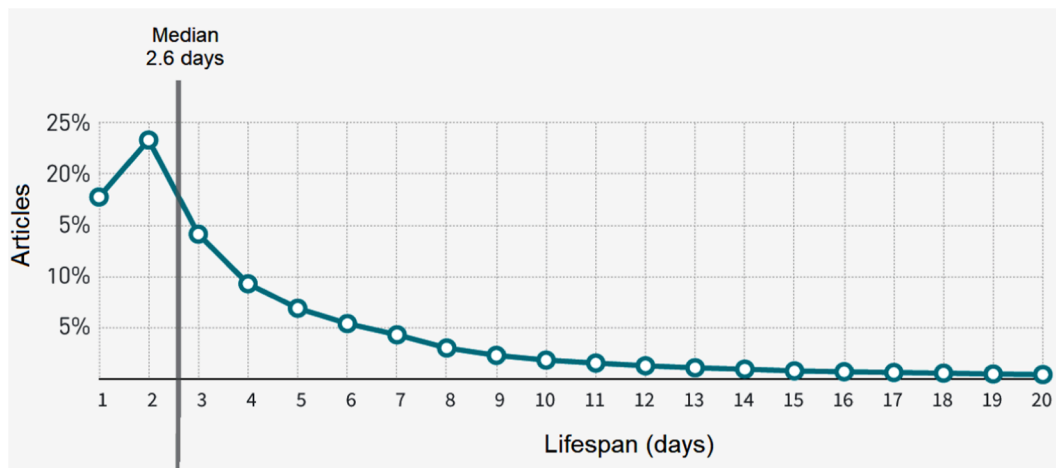


Fig. 1. Estimation of an article lifespan. (Modified by <https://blog.parse.ly/data-on-article-lifespans/>).

the Mendeley reader counts and the number of citations after approximately one year of follow-up after publication [11,12]. However, a SoMe strategy might increase an article Altmetric Attention Score, thus indicating successful and promising impact on online visibility of articles featured through the official journal Twitter/X handle.

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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