

Utilization of Altmetric and PlumX scores in evaluating the top 100 trending psoriasis articles in social media



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Introduction

- ❖ Social media has critically impacted the way individuals communicate research.
- ❖ Traditional methods public health researchers have used to communicate their work have had a limited influence, constrained to the smaller scientific community.
- ❖ Social media allows public health researchers to target specific audiences and shape their messages to directly influence millions of people throughout the world.
- ❖ This broadened scope requires measurement of alternative metrics, 'altmetrics,' to redefine a publication's impact.
 - ❖ Altmetric Attention Score (AAS)
 - ❖ PlumX Metrics
- ❖ Identify articles most captivating to the general public by utilizing number of
 - ❖ Posts, retweets, likes
 - ❖ Across a variety of social media platforms such as Twitter and Facebook
- ❖ A positive correlation has been demonstrated between traditional bibliographic metrics and altmetrics across variable fields, indicating its potential utility in modern scientific research.

Methods

- ❖ Altmetric Explorer → top 100 trending psoriasis articles from 2018-2021 with article components shown in Table 1
- ❖ Web of Science → Citation count
- ❖ Scopus → PlumX scores
- ❖ AAS, PlumX, citation count log transformed and adjusted +1 for linear regression
- ❖ Spearman correlation coefficients used for correlation analyses.

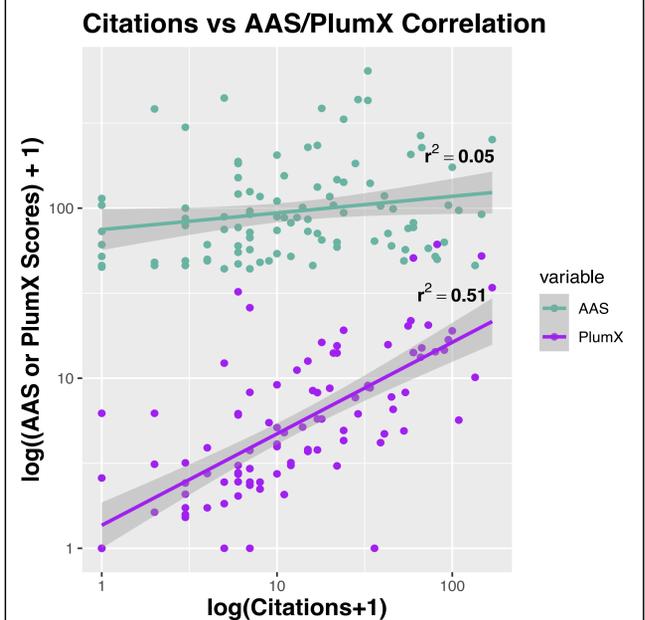
Discussion

- ❖ Altmetrics provide insight into an article's current reach by including the influence of social media
- ❖ Of the Altmetric scores reviewed for the top 100 psoriasis articles, PlumX scores correlated with citation count, likely due to its inclusion in PlumX score calculation.
- ❖ Calculation of AAS scores does not factor citation count, explaining the lack of correlation.
- ❖ Previous literature shows variability in the prediction of citation count using AAS scores, likely explained by the exclusion of social media mentions in calculations.
- ❖ Social media platforms are growing in popularity as a means of disseminating research. Therefore, metrics used to measure research impact should accurately reflect this trend.

Table 1. Characteristics of the top 100 psoriasis articles by altmetric scores

Characteristic	No. (%) (N = 100)
Journal Type	
Dermatology*	61
General Medicine	23
Medical Subspecialty†	5
Immunology/Rheumatology‡	6
Cell & Molecular Biology§	5
Altmetric Score, median (range)	85.5 (43-640)
PlumX Score, median (range)	3.915 (0-60.2)
Journal impact factor, median (range)	13.21 (0.2-74.7)
Traditional citation, median (range)	11 (0-168)
News mentions, total (range)	1473 (0-85)
Blog mentions, total (range)	58 (0-4)
Policy mentions, total (range)	1 (0-1)
Twitter mentions, total (range)	4824 (0-361)
Facebook mentions, total (range)	152 (0-18)
Wikipedia mentions, total (range)	11 (0-3)
Google+ mentions, total (range)	15 (0-3)
Reddit mentions, total (range)	6 (0-2)
No. of Mendeley readers, total (range)	6987 (1-713)
No. of Dimension citations, total (range)	2883 (0-179)
Article Type	
Original Investigation	56
Conference Report	1
Review	18
Editorial	16
Viewpoint/Clinical Pearls	0
Guidelines/Specific Statement	9
Open Access	72
Study design of original investigations	
Clinical observational	33
Clinical trial	15
Basic science	8
Region of article's authors	
North America	45
South America	0
Europe	24
Asia	13
Australia	0
Multiregional	17

Results



- Highest AAS scored article was a prospective population-based cohort study describing association between psoriasis and diabetes risk (AAS = 640; citation count = 32).
- All articles had AAS > 43, indicating articles within top 5% of all scientific output (min AAS = 20).
- Twitter was most popular social media platform used (median = 32 mentions, total = 4824)
- There was a positive correlation between citation count and PlumX score ($r^2 = 0.51$; $P < .001$), but not with AAS ($r^2 = 0.05$; $P = .02$) (Figure 1).

Conclusions

- ❖ Scientific information published online and promoted through social media can be heavily manipulated, reaching millions.
- ❖ Lack of standardization of studies on altmetrics; the citation count can vary depending on search engines.
- ❖ As more "modern" bibliographic metrics evolve, researchers can learn ways to reach larger audiences and impact the greater scientific community through social media engagement.