Journal of Pakistan Association of Dermatologists.2023;**33(2)**:359-360.

Editorial

Measuring the research impact of an author

Arfan ul Bari

Department of Dermatology, CMH Rawalpindi.

It is estimated that there are currently more than 30,000 academic journals, and the number continues to increase by about 5-7% per year.[1] Millions of research papers are published in a year. The biggest challenge is to keep up with this scientific explosion. This can be met through the appropriate selection of well-reputed scientific journals and reading the authors who have a significant scientific impact.

The research impact of a Journal is commonly measured through the journal impact factor (JIF) and is used to quantify the importance of a particular journal in its field.[2] Likewise to determine the research impact of an author, the Hirsch index, or the *h-i*ndex, is the most common metric which was proposed by American physicist J.E. Hirsch in 2005.[3] Research impact of an author is calculated as the highest number of papers included that have had at least the same number of citations. (*h-i*ndex= the number of papers (*h*) with a citation number ≥*h)*. For example, if an author has an *h*-Index of 9, it means that out of the total number of published documents by that author, 9 of those have been cited 9 times. For calculating H-index, available tools include Scopus, Publish or Perish, Web of Science, Google Scholar, and Researchgate.[2,3]

Address for correspondence
Brig. Dr. Arfan ul Bari
Consultant Dermatologist,
Head of Dermatology Department,
PNS Shifa, Karachi
Associate Professor of Dermatology,
BUMDC, Karachi, Pakistan.
Ph: 00923016547007.
Email: albariul@gmail.com

Hirsch's h-Index is an author-level metric that is able to distinguish between frequent strong publishers and publishers with fewer but more exceptionally popular papers. This means that an author can only achieve a higher h-Index if they have published frequently and his/ her publications have frequent citations too. Thus h-index attempts to measure both the productivity and impact of the published work of an author. It also helps in rating authors (among millions) with good quality of work for awarding grants, scholarships, tracking promotion, employment on meritApart from *h-i*ndex,

In addition to the h-index, there are other metrics to measure the impact of the author which include; Citation Analysis, Altmetrics, Impact Factor, Author-level Eigenfactor, *i*10-index, RG Score, Field-weighted Citation Impact, *m*-index, and *g*-index.

Above mentioned citation-based metrics aim to measure the popularity of journals and authors at a high level, rather than represent the merits of a single piece of research. These are based upon the assumption that influential works or scientists are cited more often than others.[4,5]

None of these measures work perfectly on their own, there are always anomalies and human judgment is required to interpret the results. A number of recent attempts to solve these problems have been suggested. One of the most successful of these has been the idea of

"altmetrics", or alternative metrics, based on evidence from the social web.[6-8]

References

1. https://publishingstate.com/how-many-academic-journals-are-there-in-the-world/2021/.
2. Garfield E. The history and meaning of the Journal Impact Factor. *JAMA*. 2006; **295(1)**:90-3.
3. Hirsch JE. An index to quantify an individual's scientific research output. *Proc Natl Acad Sci*. 2005;**102(46)**:16569-72.
4. Rossner M, Van Epps H, Hill E. Show me the data. *J Cell Biol*. 2007;**179(6)**:1091-2.
5. Bartneck C, Kokkelmans S. Detecting h-index manipulation through self-citation analysis. *Scientometrics*. 2011;**87(1)**:85-98.
6. Priem J, Taraborelli D, Groth P, Neylon C. Altmetrics: A manifesto; 2010. http://altmetrics.org/manifesto.
7. Piwowar H. Altmetrics: value all research products. *Nature*. 2013;**493**:159(2013).
8. Das, Anup Kumar (2015). Introduction to Research Evaluation Metrics and Related Indicators. In: Mishra, S. & Sen, B.K. (eds.), Open Access for Researchers, Module 4: Research Evaluation Metrics. Paris: UNESCO, p. 5-18.