

Limitations of H-index as a measure of academic influence and the importance of innovation in research: Lessons for the anesthesiology community

H-index is one of the most famous bibliometric indexes used as a measure of an individual's academic productivity and influence, which is calculated by analyzing the number of papers published and by the number of citations those papers have received. Formerly, it was defined as the number of articles (N) published by an author that have each received at least N citations. H-index values are widely accepted and recognized within the scientific community, with higher values indicating greater productivity and impact. However, H-index has several limitations that are well known among academics (for example, the number of authors does not influence the H-index, H-index does not consider the position of the author within the author list, it is influenced by self-citation and is strongly correlated by the researcher's scientific age).^[1] Despite criticisms, H-Index remains a significant factor in determining academic promotion.^[2] Given this context, it begs the question: "What H-Index score must an anesthesiologist attain to establish themselves as a pioneering and influential researcher in regional anesthesia?" To answer this provocative question, we sought to investigate the H-index of anesthesiologists who have contributed to the development of innovative techniques in regional anesthesia. For this, we identified the first authors of papers describing these new techniques and retrieved their publication history from the Scopus database. The authors conducted an analysis by excluding all articles published or cited before the year when the new technique was described. They aimed to calculate a new H-index, and the results were quite surprising. The H-index ranged from a minimum of 0 for the transversus abdominis plane (TAP) block, which was described by Rafi in 2001,^[3] to a maximum of 9 for the ultrasound-guided supra-inguinal fascia iliaca block, described by Hebbard.^[4] In addition, the analysis revealed interesting findings for other blocks, such as the erector spinae plane (ESP) block, described by Forero in 2016 with an H-index of 2,^[5] and the interpectoral and pecto serratus blocks, both described by Blanco with H-indexes of 2 and 3, respectively. Furthermore, the trans-muscular quadratus lumborum block, described by Börglum in 2013, had an H-index of 8.^[6,7] The majority of the authors had an H-index lower than 10, although nowadays, they are all renowned in the regional anesthesia field. The key message of this editorial is that the most

important element of a researcher is his/her ideas and the potential impact of those ideas on the community. A valid idea should be supported by the researcher's institution, the academic world, and their colleagues, irrespective of their H-indexes. The academic world should focus on fostering a culture of innovation and creativity, where researchers are encouraged to explore new ideas and collaborate with their peers for the greater good of humanity. H-index is not an accurate gauge of the quality of research being produced. It only measures the number of times a researcher's work has been cited in other publications. Other factors, such as originality, accuracy, and relevance to the community, contribute to the quality of research. Therefore, institutions and the academic world should prioritize the innovative ideas of researchers, regardless of their H-indexes, to encourage them to think outside the box and come up with new solutions to the problems facing society. Our analysis presents certain limitations that warrant further discussion. Firstly, it was solely conducted on the Scopus database, and we acknowledge that employing an alternative database may have yielded varying results. Secondly, we utilized a subjectively selected group of regional techniques, and we acknowledge that opting for a dissimilar set of techniques may have produced different outcomes. We believe that the H-index is a valuable metric for measuring the productivity and impact of a researcher; however, it should not be the only measure of their work. It is crucial to encourage innovative ideas and creativity among researchers to solve the problems facing the community.

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