H-index pathology

The h-index has quickly become the standard method by which medical schools judge the impact of medical researchers. Rob Horne, Keith Petrie, and Simon Wessely describe a cluster of potentially pathological behaviours associated with the index.

In 2005 Jorge Hirsch proposed the h-index as a means of measuring the productivity and impact of a researcher. A researcher’s h-index is determined by the highest number of papers they have published to receive at least that many citations (figure). So a scientist with an h-index of 40 has written 40 papers that have received at least 40 citations. The h-index can be obtained through the subscription databases of Web of Science and Scopus, or through using Publish or Perish software, which is based on the Google Scholar database, enabling brave (or reckless) authors to check their own h-index.

Although the h-index is not without its drawbacks, it has quickly become the standard measure by which medical schools judge the value of academic staff. The process of observing or assessing performance can influence behaviour and the h-index is no exception. The increasing importance of citation rate as an index of success has led to an increase in self citation (where the author’s earlier work is cited in their own article). This should not be confused with general self citation where any one of an author’s papers is shamelessly referred to in the author’s own article.

H-index behaviours

Home-ophobia—Irrational hatred of people with similar names who may dilute or diminish your h-index. The name of this syndrome derives from the delusional belief that they have authored a paper. Sometimes linked to a failure to appreciate the influence of having a common surname, it is, in this respect, the reverse of home-ophobia. Unlike home-ophobia, psychosis can also affect people with uncommon surnames, who can succumb to the delusional belief that they have authored a Nature paper.

H-bomb—Where disclosure or discovery of an individual’s h-index has an immediate, catastrophic effect on career aspirations, professional standing, and sense of self. Often manifested in the short term by an explosive venting of emotion, sometimes accompanied by fainting (H-ysteria) followed by chronic psychosomatic illness (post traumaHtic stress disorder), and occasionally by psychosis (see below).

Psychosis—A delusional state in which the sufferer perceives their h-index to be much higher than it really is and behaves accordingly (for example, with understated academic swagger).

Retaining a dignified aloofness to the h-index is difficult for those with scores of less than 30

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One h-manship—Surrounding oneself with individuals with a lower h-index in order to boost self esteem. This may involve attending meetings which would ordinarily be avoided, such as seminars in cultural studies and general practice conferences.

h-indexism—Appointing people to academic positions based on their h-index rather than the traditional factors of appearance, high school attended, or whether they are Chelsea Football Club season ticket holders.

h-Cite—Self citation of a paper based solely on the fact that more citations of this particular paper will raise the author’s h-index. This should not be confused with general self citation where any one of an author’s papers is shamelessly referred to in the author’s own article.

HAART (highly articulate angry response to teaching)—Reaction exhibited when, on the basis of a low h-index, the academic is “invited” by the head of department to make the provision of undergraduate teaching his or her “core mission.” Not to be confused with highly active antiretroviral therapy.

Dropping your h’s—Letting one’s h-index slip in social company in order to boost social standing. Sometimes causing arguments with h-eretics who question the validity of the index. For those with a low h-index, this can take the form of a h-istory (story fabricated to explain a low h-score).

Comment

We believe that the cluster of behaviours described here has implications for medical researchers and practitioners. An awareness of the existence of these behaviours in others may help medical researchers to avoid any h-index linked professional embarrassment. However, retaining a dignified aloofness to the h-index is difficult for those with scores of less than 30. For this reason, researchers may also wish to increase their h-index as quickly as possible by publishing innovative work or through cunning self citation.
Researchers may wish to increase their h-index as quickly as possible by publishing innovative work or through cunning self citation and specialist physicians will see a large increase in the incidence of h-index related presentations, perhaps taking on new psychosomatic forms like those discussed above. Some cases may be managed by education and cognitive behaviour therapy but many will require medication. Prescribing creates a further challenge because many h-index patients will not perceive themselves to be ill, and consequently doubt that they need medication, leading to nonadherence. Moreover, being academics, they are likely to be dissatisfied with standard information demanding more detailed explanations and discussion about the condition and treatment. There are also important considerations for medicine as an academic discipline. The h-index is typically calculated for an individual. However, it can also be applied to groups of researchers. It could, in future, be applied to compare the research contribution of medical specialties in a medical school or of medical schools in universities with implications for the wellbeing of deans and editors of medical journals.

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1 Hirsch JE. An index to quantify an individual’s scientific research output. Proc Natl Acad Sci USA 2005;102:16609-72.

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Christmas quiz: Answers The five figures combined show Christmas Lunch.

1 Macroscopic: Two legs, two wings, weight 3 kg
Microscopic: Abundant skeletal muscle fibres with their peripherally placed nuclei
Diagnosis: Christmas turkey
Comment: Ice crystal artefact reveals author as a user of frozen turkey

2 Macroscopic: A multilayered green oval lump with a distinctive aroma
Microscopic: A complex swirling arrangement of vegetable matter is seen
Diagnosis: Brussels sprout

3 Macroscopic: Cup shaped tan material 7 x 7 x 5 cm; crispy outer texture, soft inside; a liquid brown substance on the surface
Microscopic: Amorphous material with alveolar-type spaces
Diagnosis: Yorkshire pudding

4 Macroscopic: Multiple rounded balls of fan material with a varied texture
Microscopic: A complex intermixture of vegetable matter, skeletal muscle, and fat
Diagnosis: Stuffing

5 Macroscopic: An elongated, tan coloured cylinder wrapped in dark red material
Microscopic: Two distinctive adjacent areas, with skeletal muscle surrounding amorphous material
Diagnosis: Sausage in bacon
Comment: Note the complete absence of muscle fibres from the sausage compared with the bacon.