

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.¹ 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.¹ 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.² 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 new publication).³ We have also noted the emergence of a range of socially undesirable behaviours associated with the h-index. We outline the behaviours and discuss their implications for medical researchers and practitioners.

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 fact that having a less h-endowed namesake also reduces the likelihood of a Google search revealing the subject's personal home page at the top of the search result. The fear of h-index dilution, coupled with home page obscurity within the Google search, creates the state of home-ophobia. Particularly prevalent among academics named Smith, Jones, Cohen, and Patel.

H-bomb—Where disclosure or discovery of an individual's h-index has an immediate,

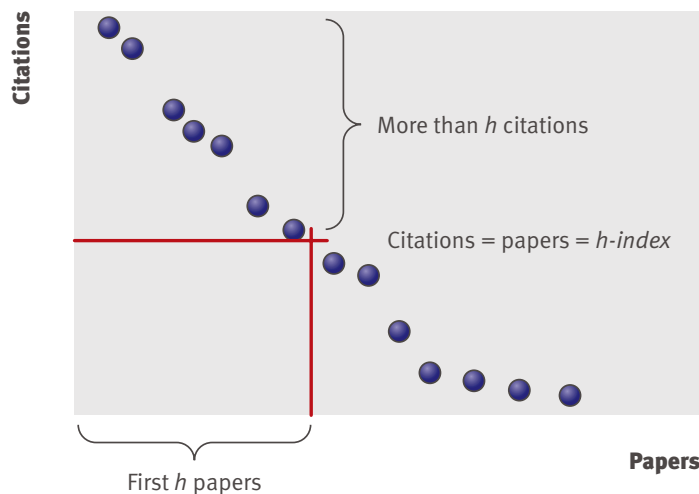


Illustration of h-index calculation

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 traumatic stress disorder), and occasionally by psychHosis (see below).

PsychHosis—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

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, psychHosis can also affect people with uncommon surnames, who can succumb to the delusional belief that they have authored a *Nature* paper.⁴

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.⁵⁻⁷ This should not be confused with general self citation³ where any one of an author's papers is shamelessly referred to in the author's own article.^{8,9}

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.¹⁰

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-story* (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.¹¹

There are also implications for medical practitioners. Beliefs¹² and behaviour¹³ can influence health and we anticipate that general

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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.¹⁴ Some cases may be managed by education¹⁵ and cognitive behaviour therapy¹⁶ but many will require medication.¹⁷ 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.¹⁸ Moreover, being academics, they are likely to be dissatisfied with standard information¹⁹ 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.^{20,21} It could, in future, be applied to compare the research contribution of medical specialities 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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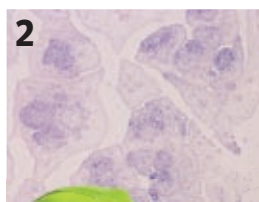
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Christmas quiz: Answers The five figures combined show Christmas lunch.



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

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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 7x7x5 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 tan 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.