

h-indices: an update on the performance of professors in nursing in the UK

Introduction

Professors are supposed to be leaders in their field and, while there are many ways to demonstrate leadership, we consider that it is simply not possible to display academic professorial leadership without publishing peer reviewed scholarly work and, in turn, having that work cited by others. Whether the citation reflects on the work in a positive or a negative light is immaterial; someone who has published and ‘got it wrong’ has achieved a great deal more than someone who is right but has never published.

The h-index

The h-index continues to be used as a combined measure of publication productivity and impact by measuring the citations to a set of a person’s most cited articles. For example, if someone has ten articles that have been cited ten times then they have an h-index of 10 (Thompson & Watson 2009). It does not matter if the first nine articles have been cited more than ten times; the h-index is insensitive to that, but it does matter that the 11th article has not yet been cited 11 times and that all of the higher cited articles may not have been cited 11 times. To increase the h-index by one unit—for example from 10 to 11—means that all 11 top cited articles have to be cited at least 11 times, and so forth for any other unit increase in impact factor. Thus, the h-index is insensitive to a handful of extremely highly cited articles at the top end of a person’s citations and takes no account of the total number of articles or the total number of citations a person has. Therefore, while not a perfect measure of publication activity, it is one of the least malleable of citation indices. Naturally, individuals could focus on self-citation or coercion of others to cite articles which were just at the cusp of increasing their h-index (Purvis 2006), but considerable effort would be required simply to raise the h-index and, of course, such an effort may have to be applied to several papers to

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raise an h-index by one unit. We have no doubt this has been tried by many people but, in our experience, where it is possible to omit self-citations from the h-index calculation, there is usually only a reduction in one h-index unit (Hunt *et al.* 2011). The effort hardly seems worth it and the effect in terms of skewing the metric is negligible.

Background

A few years ago, two of us (DRT & RW) decided to calculate the h-indices of a select group of UK nursing professors (Thompson & Watson 2010) and, later, were involved in an analysis of the h-indices of Australian professors of nursing (Hunt *et al.* 2011). A similar exercise was conducted by Hack *et al.* (2010) for Canadian nursing academics, presenting data from the top 20 in each of the citation categories studied. We were curious about where the norms—if any—were for the citations of nursing professors in the UK and how these compared with other countries. It has to be acknowledged that the methods differed among these studies. Hack *et al.* (2010) and Hunt *et al.* (2011) both used Scopus as a search engine for citation data and Thompson and Watson (2010) used Web of Science. The latter is the more conservative in estimating h-indices as it is less inclusive of journals but it is our experience that the h-indices generated by Web of Science usually score individuals a unit lower than Scopus. Also, Hack *et al.* and Hunt *et al.* reported a range of citation generated data while Thompson and Watson only reported h-indices. The above studies only focused on select groups of nursing academics; in the UK study we focused on UK 2008 Research Assessment Exercise panellists or members of prestigious research council grant committees. The Canadian and Australian studies only reported the top cited authors, in the Canadian study, the top 20 in each category and in the Australian study, those with an h-index over 10. The highest h-indices in these articles was as follows: Canada (26: Annette O'Connor [2010 -

Scopus]); UK (22: David R Thompson [2010 - Web of Science]); Australia (26: Linda Kristjanson [2011 - Scopus]).

Methods

A unique opportunity is presented by virtue of the Royal College of Nursing (RCN) Research Society maintaining a complete list of professors of nursing in the UK. The list is updated regularly and the most recent version is that for 2013

(http://www2.rcn.org.uk/development/research_and_innovation/career/nursing_professoriate;

accessed 19 December 2015). Using the Scopus author search function, we extracted the *h*-index, total citations, highest number of citations for a single paper, and publishing years, for all of those on the list; a summary of these data is presented in Table 1. The professors' first and last names were used for the search; however, affiliation was omitted to allow for a more inclusive search. The correct listing(s) for each professor were then confirmed by ensuring university affiliation and subject area matched that reported on the RCN list. In cases where there was no match of affiliation, the author's listing(s) were confirmed by reviewing their staff profile on the university or organisational website to which they were associated, according to Scopus. We were also curious to know how many of those on the list had a Google Scholar page as this is increasingly becoming a popular way to have an internet profile that lists outputs and generates citation and *h*-index data. It should be noted that Google Scholar includes all outputs found on the World Wide Web and, thus, generates output lists, citations and *h*-indices many units higher than those of Web of Science and Scopus.

From heroes to zeroes

The results are summarised in Table 1 and the data extracted from Scopus are available in Supplementary Table 1. The highest cited professor of nursing is Christi Deaton (University of Cambridge) with 11468 citations (h-index = 29) who is also the highest in terms of citations per year (637.11) and h-index units per year (1.61). The professor of nursing with the highest h-index (35) is Nicky Cullum (University of Manchester) with 3846 citations and the highest cited article (1720) was published by Glenn Robert (King's College London: h-index 15). The nursing professor who has been on the Scopus record longest is Amanda Clarke (Northumbria University: 49 years; h-index = 13). For all of the parameters reported above and in Table 1 the lowest achievement was zero. Mike Cook (University of Bedfordshire), Anne Peat (University of Sheffield) and Margaret Smith (University of Dundee) all had zero h-indices and the latter two—who had risen to the ranks of Pro-Vice Chancellor and Dean, respectively—have zero publications recorded on Scopus. Only 23.1% of those on the list had Google Scholar pages and none of the above three zero h-index professors of nursing had one so it is difficult, in the cases of Peat and Smith, to ascertain if they have any scholarly output at all.

Conclusions

This analysis provides an objective and transparent assessment of data in the public domain, pertaining to a key indicator of the performance of professors of nursing in the UK.

Admittedly, it is only one indicator but an important one for judging scholarship. The wide variation in the h-index among the professoriate is of particular interest. The finding that two of the most senior professors, since promoted to the higher echelons of their universities, appear to have zero h-indexes and publications causes some concern. Some may interpret this as meaning that, to gain promotion, one is best to not publish. What it certainly indicates

is that, to gain promotion, it is not necessary to publish—at least, in the UK. According to some of our previous commentaries (Watson & Thompson 2006, 2008, 2010a, b), this view may not be without substance. So, rather than it being a case of ‘heroes to zeroes’ it may be a case of ‘zeroes to heroes’. Also, a note of caution is needed in the interpretation of the h-index and citation counts. For instance, some of the professors, such as Deaton, have a high citation count that is at least partially explained by being an author, along with multiple others, of clinical guidelines, many of which are often published in duplicate simultaneously among a family of journals, for example, in cardiology. This is evident from PubMed, for example. Nevertheless, with exercises such as the Research Excellence Framework being designed in future to take account of metrics such as the h-index and citations, the pressure on nursing professors—and other nursing academics—to demonstrate publication activity and impact will only grow and these will increasingly be used for the assessment and benchmarking of academic appointments, promotions and tenure.

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Table 1 Citation and h-index information for UK Professors of Nursing

Criterion	Minimum	Maximum	Median	Mode^a	Mean (SD)
Year on record	0	49	20	18	20.55 (7.46)
Total citations	0	11468	498.5	0	801.84 (1062.91)
Citations/year	0	637.11	24.04	8.6	37.09 (51.26)
Highest single citation	0	1720	70.5	36 ^a	130.02 (212.77)
h-index	0	35	12	11 ^a	12.60 (7.06)
h-index/year	0	1.61	0.56	0.50	0.62 (0.30)

a = where multiple modes, lowest mode reported.