A proposal for characterization of research scientists in scientific databases

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In the June issue of The Skeptik 2013 (1) we throwed doubt on h-index, (2) that it is inappropriate for estimation of research scientist ouput, at least for scientists whose h-indexes ranges between 12 - 31. The main problems of h-index is that Dr. Hirsch did not take into account that citations have to be devided by a number of authors on publications. Also, publications were not divided by a number of authors on individual papers (2).

Have a look to the practical life. Some house (publication) costing let´s say 100.000 Eur, which was builed up by 10 workers (authors), each of workers (authors) can receive only a part of the overall cost of the house (publication), but not the whole cost. The same holds true for citations. It is unclear why scientists should be characterized by another rule.

We made also a brief search in Medline and found that some scientists produce publications, ranging from appr. of 10 to up 20 of authors. Although a lot of authors are needed for clinicacal studies and multicentric investigations of e.g., new drugs, they are unusual for original research papers and reviews. This fact further substantiate that h-index favorizes big groups of scientists over small groups and even over groups of about 3 to 6 researchers (classical papers). Therefore there is the need to change citation reports of research scientists in scientific databases.

Here we suggest that research scientists in scientific databases should be characterized by the following parameters:
1. Citation points (We previously called this as kg-index (1)). There is a quite good agreement that citations reflecte the impact of authors on the development of sciene. But the present form in citation´s report in scientific databases is inapropriate.
2. Publication points (is the sum of each author´s publication devided by a number of authors on indivual papers),
3. The first authorship of published papers. It is assumed that the first author has major contribution to published papers), and
4. Mean Impact Factor (I.F.) of author´s published papers.
On one side, I.Fs. belong to the jounals and not to authors. I.Fs. increase with time. (Note: at present, Web of Science core presents 5-year I.Fs. of journals). On the other side, editorial boards compete with other journals to have manuscripts for publication at highest levels as possible. Also, editorial boards of high I.F.´s journals have very high rejection rates of manuscripts sent for publication. Finally, quite new thoughts usually have strong impacts on the development of individual scientific fields in high I.F.´s journals.

Concluding, a spectrum of parameters of research scientists would be usefull for scientific databases in their citation reports. Grant agencies will have a help to make decision why an individual researche scientist can be awarded by a grant.

Note: Data on h-index and citation points published in the June 2013 issue (1) were taken from Web of Knowledge. At present Web of Science and Web of Knowledge created Web of

Science core. Web of Science core in citation reports uses h-indexes as suggested in PNAS of USA (2).

References:

1. Kukan M, Ginter E. h-index, a missleading value for evaluation of scientist research output. The Skeptik 2013;2:87-88
2. Hirsch JE. An index to quantify an individual's scientific research output. Proc. Natl. Acad. Sci. U S A. 2005;102:16569-16572.