Early recognition of high quality researchers of the German psychiatry by worldwide accessible bibliometric indicators

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Background: Publication and citation rates mark the research activity and research quality of scientists.

Question: Are bibliometric indicators valid instruments for early recognition of high quality researchers?

Subjects and methods: The number of publications and citations of 26 assistant, associate and full professors of German psychiatry born after 1947 was analysed in their 30th and 31st year of age and between 1996 and 2000.

Results: 58% of the selected 30 or 31 year old scientists had at least one publication in a journal with an impact factor, 93% of these as first or single author. 42% in this age group were at least cited once. Publication and citation rates in the early stage of a career provide hints on the later bibliometric data and the academic degree of scientists.

Conclusion: High quality researchers can be recognised early in their careers by means of worldwide accessible bibliometric indicators.

Introduction

Reliable judgement of scientists’ research achievement gains more and more importance with regard to staffing, appropriation of funds and course of career.1–4 It becomes very important to distribute grants most efficiently in the context of reduced...
research budgets. Therefore it is in public interest to recognise high quality researchers early in their careers and to support these persons targeted.5

There were trials to determine the quality and the potential of scientists by means of suitable bibliometric indicators.6 Such indicators are provided by the Science Citation Index (SCI) expanded and the Social Science Citation Index (SSCI) issued by the Institute for Scientific Information (ISI) in Philadelphia.1,7–11 These tools list authors and their articles in journals with an impact factor and provide also citation rates, showing the number of citations in a given year or a certain period. The resulting publication and citation rates mark the research activity and quality of scientists. In principle it is possible for everybody to gather current and retrospective information on specific authors and their papers by means of the ISI database.

**General questions**

The number of publications of an author and their citations stand as a measure of his research achievement.7,11,12 Especially citations provide hints on the quality of the scientific work.7,9,12,13 These indicators were viewed and analysed relatively late in the career of a researcher so far.

Now the question arises, if researchers who had been chosen according to their high scientific quality later in their careers can be identified early by already existing international bibliometric values, e.g. shortly after obtaining the licence to practise medicine14 at a time when they apply for a scientific position. It has been proven for astronomers that the best of them were earlier successful than their less gifted colleagues.15,16 First class scientists like Nobel laureates publish much more than other researchers in the early stage of their careers.17 Furthermore it was shown that among 23 investigated 43 to 49 year old assistant, associate and full professors of surgery, neurology, psychiatry and medical psychology the SCI-values were significantly different in the 34th and 35th year of age almost as clear as in their later years.18 The rank correlation was very high for the 34 (rho = 0.94) and 35 (rho = 0.96) years old scientists compared to the respective values measured 12 years later. Data before the 34th year of age were not included at that time.

Therefore it is interesting if very successful scientists show this superiority over their colleagues directly after obtaining the licence to practise medicine. Additionally it has to be asked if scientists who later achieve higher academic positions had early higher bibliometric values too.