

Remembering nursing policy research: a bibliometric study of published nursing research

by Michael Traynor (FRCN 2019)



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In August 1996, I started work at the newly created Centre for Policy in Nursing Research. It was an initiative proposed jointly by Christine Hancock, then general secretary of the Royal College of Nursing, and Nick Black, professor of health services research at the London School of Hygiene and Tropical Medicine, and funded by the Nuffield Trust. The centre was located in the school's Health Services Research Unit. The director

was Anne Marie Rafferty. Though I think it is accurate to say that it was the UK's first centre set up to examine research policy in nursing, our work carried on a tradition of the Nursing Policy Studies Centre at Warwick University, established by Professor Jane Robinson and Phil Strong, who had worked at the School of Hygiene before his death in 1995. One of our pieces of work was a bibliometric study of published nursing research, and it is that article that underpins this article.

Endogenous and exogenous research? Findings from a bibliometric study of UK nursing research

Abstract

Aims This article uses the findings of a recent bibliometric analysis of published UK nursing research to ask whether the field is characterised by a fundamental split between two underlying areas of research interest. These can be termed 'endogenous' and 'exogenous'. The former term describes research which tends to be concerned with problems and issues to do with nursing as a profession; the latter is concerned with problems and issues centring around the nursing of patients.

Design and methods Articles in the Wellcome Trust's Research Outputs Database (ROD), a database of UK biomedical research, were analysed. Nursing articles published between 1988 and 1995 numbered 1,845, just less than 1% of the total articles in the ROD.

Results Analysis of the subfield identified that nursing research was atypical of biomedical research in several ways. One difference was that usually in biomedical research there is a general correlation between numbers of funders acknowledged in an article, and of authors, and esteem of the journal in which an article appears. In nursing, there was a tendency for highly esteemed articles to have fewer authors and be less likely to have acknowledged funding. However, the apparently endogenous and exogenous articles have quite different characteristics. This article explores this apparent difference and possible reasons for this difference, and will briefly compare nursing research with some other newly emerging social and academic groups.

Conclusions Thinking of nursing research outputs in this way can provide insight into the existence of different reward systems influencing nurse researchers. However, it is impossible to draw too confident a differentiation without reading each individual article and making judgements about whether they are 'endogenous' or 'exogenous', a practice generally beyond the scope of bibliometric practice.

Citation

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Introduction and background

The Centre for Policy in Nursing Research set out to promote research in nursing, based on an investigation into the state of research in the profession. We produced a series of working papers, with black covers and clever typographical devices that once prompted Nick Black to ask, rather hesitantly, whether there was something wrong with one of our computers. Our third working paper was a bibliometric analysis of published nursing research based on articles that had appeared between 1988 and 1995 (Rafferty et al 2000).

This foray into bibliometrics, which I had never heard of, came as a result of a meeting with Grant Lewison who ran the Research Outputs Database at the Wellcome Trust. Through a fortuitous combination of the School of Hygiene's reputation, and Anne Marie Rafferty's natural networking and relationship-forming abilities, we had the privilege of meeting and sometimes going on to work with an impressive range of scholars. I noted at the time that the field of work of these scholars and their personal style usually had an obvious match. The radically relativist Steve Woolgar, for example, was ironic, self-reflexive and funny over the dinner table. Others, whose work was no less excellent but far less subversive, seemed more 'straight down the line'.

The Wellcome Trust had invested in the Research Outputs Database as part of an effort to see how far funders' investment in research had resulted in publications. This was a database of published biomedical research accessible to computerised searching, which at the time was something of a novelty. It had been set up in 1993 by the Unit for Policy Research in Science and Medicine (PRISM) at the Wellcome Trust. It was made up of the Science Citation and the Social Sciences Citation indices focusing on UK-based biomedical publications.

As of mid-1999, the database contained about 275,000 articles (Dawson et al 1998). Grant worked with us to see what the tool could reveal about the character of published nursing research. Although a colleague in the school mischievously likened the ROD project to trainspotting (the apparently pointless practice of noting and recording train numbers on station platforms, not the film of the same name, which is rather more exciting), I was impressed with the insights that all this counting could fuel.

We started our collaboration with Grant in 1997 by working with him to develop a nursing filter for use with the database. This was a small piece of computer programming that interrogated the database with a combination of keywords and journal titles. The aim was to retrieve as many articles that represented 'genuine' nursing research as possible while excluding false positives. Because it was vital to agree what we meant by nursing research, we included research on topics likely to be of relevance to nurses and which was likely to have been carried out by nurses. We considered that this would capture activities that might build up the knowledge base available to nurses as well as research capacity in the profession. We agreed a list of nursing journals along with a range of keywords that we thought could describe the main fields of work. We focused on the following characteristics of the articles we retrieved:

- » The number of articles published, their proportion of all published biomedical research, trends in the numbers of publications.
- » Subject, for example mental health, elderly care, nurse education, based on our examination of their titles.
- » Co-authorship, based on the numbers of authors.
- » Potential impact, based on surveys of nursing researchers and practitioners regarding the relative importance of the leading journals to research and practice.
- » Citations, based on a sample of articles in the leading journals.
- » Funding, based on the sources of support acknowledged in the articles or implicit from their addresses.

The filter identified 2,584 articles, so these 'nursing' publications represented a very small proportion of all biomedical UK publications. However, comparing the two periods 1988-1991 and 1992-1995, we could see a significant growth in the field. In fact, the number of nursing journals also grew in and just after this period. Mental health was by far the most published topic area followed by articles on the education of nurses. This latter field more than doubled in size between the two periods.

Journal impact factors and the citation counts of individual publications are commonplace today. In our study we tried to assess the 'impact', in terms of citation, in the different topic areas that we had identified.

The process was not straightforward and involved two surveys of perceived esteem of our range of nursing research journals, because in these journals the usual patterns of citation noted in scientific publication do not pertain, or did not at that time. We devised a weighted esteem factor based on formal measurement along with the results of our surveys (Lewison 2002).

It appeared that theoretical issues predominated in the high esteem journals, such as the *Journal of Advanced Nursing*. In the 13 subjects with the highest esteem factors, the mean number of authors did not appear related to esteem factors. Neither did likelihood of funding. Many of the subjects associated with high esteem factors were the least likely to include an acknowledged funding source and the general tendency was an inverse relationship. This is in stark contrast to biomedical publication, where the three factors more usually coincide (Dawson et al 1998).

One of the advantages of interdisciplinary research is the possibility of new insights from across disciplinary fields. The aspect of our findings that we chose to focus on was an apparent distinction between two fundamental categories of research interest in the subfield. It was Grant Lewison, to the best of my memory, who first tentatively named these categories 'endogenous' and 'exogenous', the former term describing research which tended to be concerned with issues to do with nursing as a profession, the latter concerned with the nursing of patients.

In our sample, the topics most strongly associated with high esteem journals tended to be 'endogenous', for example 'theory and models' or 'profession and professional issues', while topics associated with esteem factors below the mean for all topics tended, unexpectedly, to be 'exogenous', for example 'geriatrics/elderly care' or 'quality of life'. We also noted that these two groups of articles had contrasting characteristics in addition to those already discussed.

The endogenous articles appeared to have:

- » A rapid growth in output (mostly more than double between 1988-1991 and 1992-1995).
- » Fewer authors per article (56% having only a single author).
- » Appeared in highly esteemed journals.
- » Much less chance of obtaining external funding (typically 20% or less).

The exogenous research by contrast appeared to have:

- » A lower rate of growth in output.
- » More authors per article (61% multi-authored).
- » Articles in lower rated journals.
- » More chance of being externally funded (typically 40% or more).

Influence and impact

For me, the most interesting part of this project was our speculation on possible causes for this inverted characteristic of published nursing research. We came up with three explanations and I suspect all of them applied, and still apply today. The first is the observation that endogenous research is cheap. It does not tend to require reagents, equipment or the salaries of large teams. In addition, it seems more likely that research funders will prioritise research that promises direct effects on patient outcomes than investigations into the philosophical foundations of nursing work.

Our second speculation was that the stimulation for much journal submission emerged from a combination of a pressure on university employees to publish (nursing had moved into the university sector only recently in the UK), and desire for the work done in PhDs and other research degrees, themselves possibly done as a response to nurse education's new home, to see the light of publication – hence the tendency to individual authorship. One of our previous working papers had shown the large growth in PhD work done by nurses during this period.

Finally, and perhaps most interestingly, we wondered whether an endogenous preoccupation reflected the identity formation of an emerging group, in this case nursing in the academy. We asked whether research activity that focused on the characteristics of nursing and of nurses themselves provided a medium and an arena for consciousness raising and self-definition for the profession, or at least for groups within it, such as those working in universities. We drew parallels between this and similar drives in other disciplinary and social groups.

My involvement in this piece of work, and my work in the centre, as a whole, taught me two, possibly contradictory, lessons. The first is that there can be value, sometimes immense value, in simply counting what had not been counted before. This can reveal trends, differences, disadvantage and discrimination. But at the same time, I came away from this

research, and have the strongest memories of this project, which we completed more than 20 years ago now, with the conviction that it is the interpretation of the results of the counting that is what gives this potentially train-spotting activity its meaning and significance.

The interpretation and speculation are always hazardous because they return into the research activity the investigators' prior knowledge, beliefs and positionality. Nevertheless, it is the speculative explanations that contribute to informed debate and sometimes, the development of a major field of intellectual and cultural work. Finally, this piece of research is an example of the synergy that was found between our particular desire to map and contribute to an understanding of nursing research and the then emerging technical ability to subject computerised publication databases to relatively complex analysis.

Current and future relevance

Some years after this project, we undertook, also with Grant Lewison, an update of this analysis. We found that published nursing research had begun to more closely resemble biomedical research. Perhaps, this can be understood as the discipline moving towards some concept of maturity. Since our work was published, many other bibliometric analyses of nursing research have emerged from different countries and regions in the world. An internet search on this topic reveals nearly one million hits, however, the objectives of such studies are not always clear. Sometimes they have been undertaken for similar reasons to our own, that is, to evaluate the development of an emerging discipline (Godin 2005).

Bibliometric studies can help the global nursing research community to assess and monitor the character of research published by nurses, its contribution to global health and its development as a significant global profession.

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