The 3Rs of nursing science

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Nursing Science and the 3 Rs - Ready, Rubric, & Recognition

Introduction

In recognition of the 200th anniversary of the birth of Florence Nightingale the World Health Organization (WHO) has designated 2020 as the year of the nurse and midwife (https://www.who.int/hrh/news/2019/2020year-of-nurses/en/). This combined with the preparations underway in several countries and regions, including the UK (https://www.ref.ac.uk/), Hong Kong (https://www.ugc.edu.hk/eng/ugc/activity/research/rae/rae2020.html) and Australia (https://www.arc.gov.au/archway-march-2018-ceo-column), for forthcoming assessments of research performance serves to stimulate reflection on the status of nursing and in particular nursing research. Central to the preparations of schools and departments of nursing for these external evaluations is the need to articulate the contribution to knowledge nursing research makes, and indeed give a clear account of what nursing research entails. However, concerns have been expressed about the nature of the process, as it is heavily weighted towards journal impact factors and other metrics that may not accurately reflect the performance and/or contribution of the discipline. This has led some to conclude that: an evaluation paradigm that takes into account multiple factors is critical in changing researchers' behaviours and attitudes, easing their transition to the demands of a more open and transparent scientific system (European University Association 2018, p2).

Against this background it is perhaps timely to re-visit the debate about 'Nursing Science', which was at its height in the late 1990s and early 2000s, to consider the continuing development of the discipline as the year of the nurse and midwife approaches.

Nursing Science?

It has been noted that trying to capture the meaning of nursing science is almost as difficult as trying to define love (Barrett 2002), and this is underlined by the fact that Barrett herself does not define it in precise terms anywhere in her paper. She draws on the work of others and summarises their suggestions but does not present a definition. Whittemore (1999) contends that through emulating the natural sciences and emancipating itself from them, nursing has emerged as a science in its own right. On the other hand Edwards (1999) challenges these claims, arguing that issues such as the attempt to distinguish nursing science from natural science by reference to the phenomenon of interpretation is problematic. Subsequently Winters and Ballou (2004) refuted the case put forward by Edwards on the basis that empirical science is only one mode of inquiry. Other contributions to this debate have included the identification of the need to develop a unitary caring science that evokes both science and spirit (Watson and Smith 2002); nurses taking responsibility to learn and live basic-science practice to transform practice (Parse 1999); and the need for integrative nursing research to build a nursing science that meets its disciplinary requirements and provides a more unified knowledge base for clinical nurses (Kirkevold 1997). However it was observed as early as 1969 that if nursing is to advance to the stage of empirically verifying the nursing theories and concepts developed there is a need for systematic, controlled empirical methods of scientific research (Mathwig 1969). There have certainly been advances in this respect in that there is a huge amount of research conducted by nurses that meets these criteria, which has had a beneficial impact on practice and people's lives. In what follows we suggest three broad terms that schools and departments facing various forms of external review can use to demonstrate the conduct of active nursing science.

The 3Rs

In the west the term the 3Rs is used in an ironic, shorthand way to emphasise the importance of three essential components of general education: reading, writing and arithmetic. The

phonetic spelling of ‘riting’ and dropping the ‘a’ from arithmetic is a common trope used to reinforce this view. We have appropriated and adapted it here to outline the 3Rs of marshalling nursing science to frame the presentation of nursing research: Ready, Rubric and Recognition.

Ready

Is nursing science ready to be counted? Although nurses have made strong contributions to research for a long time (Nightingale was a renowned statistician for example), nursing has only been recognised as an academic discipline—in its own right—relatively recently. Whilst some countries have a history of academic nurses performing high quality research (e.g. Sweden, the US), other countries struggle to recognise nursing as a science at all (European Nursing Research Foundation, 2019). In the UK a formal evaluation of the quality of research (the Research Excellence Framework (REF) exercise) is conducted every six or seven years, with the next one due in 2021(https://www.ref.ac.uk/). In earlier evaluations (the first was in 1986), apart from a few outliers, nursing science generally fared poorly in comparison to other disciplines. In subsequent years performance was on a clear upward trajectory. However, in the last exercise (2014) nursing was not assessed as a single discipline, but grouped with the allied health professions, dentistry, and pharmacy. This will remain the ‘unit of assessment’ for 2021 (https://www.ref.ac.uk/panels/units-of-assessment/), making it somewhat challenging to evaluate the overall strength of *nursing* research. Research in such exercises is no longer evaluated solely based on published outputs and environment. The impact of research and its societal benefit are also seen as key indicators of quality (Manville et al, 2015). In an analysis that identified and examined specific nursing case studies from the 2014 exercise, Kelly et al (2016) concluded that nursing was very successful in demonstrating impact in research. Indeed the overview report of the 2014 exercise suggested that nursing-related research was widely regarded as internationally excellent or world

leading (HEFCE, 2015). Moreover, a recent bibliometric analysis of publications in the six top ranked nursing journals found that nearly 4000 research outputs had been published between 2012 and 2017 (Gimanez-Espert & Prado-Gasco 2019). If the analysis had included other journals as well it is reasonable to surmise that the number of high-quality research outputs would have been far higher. So although there are numerous caveats that need to be acknowledged when conducting a global assessment of the state of nursing science, we suggest that nursing has been on the journey for some time and that there are encouraging signs of growth. In sum nursing is indeed 'ready'.

Rubric

The challenges involved in presenting a coherent account of nursing science are summarised by Barrett (2002) who observed: some pay lip service to nursing science, others use the term but do not define it in ways that relate to nursing frameworks and theories, whilst others do not define nursing science as distinct from general characterisations of science. In response then nursing schools and departments should make it as clear as possible in published outputs, internal documents, and externally facing communication (web pages, reports and so on), what theories and methodologies are used by researchers and how these relate to practice. This need not require extensive review and reflection to determine the 'position' of the school or department, indeed this may be unhelpful in potentially limiting the approaches used. Rather it would involve researchers having a thorough approach to their studies underpinned by theoretical development, conduct of rigorous research- whichever methodological approach is deemed appropriate for the research question/problem- and the identification of the impact on practice. If this is achieved the three key requirements underpinning the rubric of most research assessment processes will be met. Taking the UK Research Excellence Framework as an example, nursing science, if regarded as providing a clear account of work undertaken in schools/departments of nursing, has the potential to

direct efforts to achievement of success in the three key elements of- outputs (publications-reporting the research), impact (on practice and beyond), and the research environment (https://www.ref.ac.uk/about/what-is-the-ref/), as judged by the external review panel. Whilst not a perfect 'fit' it confers a practical utility on the concept of nursing science that may support its advancement and be pragmatically useful for academic nursing as it faces the next round of reviews.

Recognition

If nursing is found to be successful in terms of its research, as judged against the REF (and similar) rubrics, this will constitute wider and overdue recognition of the value of nursing science. In the UK in particular the need to gain such recognition is vital not only in terms of nursing research being established, recognised and celebrated in the year of the nurse and midwife, but also because without it continued central government funding will be directed only to what are regarded as 'strong' schools and departments. Although benefitting some, such an outcome risks reducing the number of active and productive centres of nursing research.

Conclusion

The debate about nursing science has been active since the 1960s and has informed the development of the discipline. Using it to focus on how to conduct and report theoretically informed, methodologically rigorous research in nursing which has a positive impact on practice, will help ensure it is an idea whose time has finally come.

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