

BRIEF REPORT OPEN ACCESS

# Research Publication Performance of the Australian and New Zealand Nursing and Midwifery Professoriate

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## ABSTRACT

**Aim:** To analyse research publication performance of Australian and New Zealand professors and associate professors of nursing and midwifery, and compare with 2016 data.

**Methods:** A search of university websites was conducted to identify all nursing and midwifery professoriate in Australia and New Zealand. Each individual was then searched in the Scopus database to identify individual total citations, h-index, number of publications, first author Field Weighted Citation Impact (FWCI) and overall FWCI. Comparisons with 2016 data were also undertaken.

**Results:** A total of 304 academics were included, comprising 270 from Australia and 34 from New Zealand, and 169 full professors and 135 associate professors. Overall, total publications and citations had increased. Maximum h-index had increased; however, median only changed slightly.

**Conclusion:** The study provides contemporary data that can support cases for academic promotion along with other benchmarking activities.

**Impact:** Findings reflect the current research publication performance of the Australian and New Zealand professoriate and provide invaluable data for academic benchmarking in those countries and also in many others.

**Patient or Public Contribution:** No patient or public contribution.

## 1 | Background

The increasing drive for nursing and midwifery academics to publish their research has been gaining momentum since the disciplines transitioned into higher education. Over time, increasing competition in the sector, as well as research funding models, has led universities and other education and research organisations to place increasing emphasis on research productivity and measurement of publication quantity and quality (Aprile

et al. 2021). In 2016, our research team conducted an analysis of the research publication performance (quantity, quality and impact) of Australian professors and associate professors of nursing and midwifery (McKenna et al. 2018). Since that time, we have received many requests to use our work as a benchmark for nursing and midwifery academics' promotion and position applications. There has also been growing interest in bibliometric analysis of nursing and midwifery research performance. Given the increasing focus on research and publication performance,

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and the time that had subsequently passed, we decided to update our original work and to include New Zealand academics in the new analysis.

### 1.1 | Growing Interest in Bibliometric Analysis in Nursing and Midwifery

Bibliometric analysis has become an area of increasing interest in nursing over recent years (Kokol and Vošner 2019). Much of this interest has focused on key areas of nursing research, such as nursing management (Su et al. 2022) and leadership (Al Hajri 2024; Kantek et al. 2022). In recent work, Holmberg (2024) examined the top 1000 cited nursing articles using a range of characteristics to rank activity and research topics, while Abdelwahab et al. (2024) sought to identify and analyse the top 100 most influential papers and authors in nursing education. Wang et al. (2020) conducted an analysis of 109,782 nursing papers from Web of Science from 2009 to 2020, concluding that overall publication numbers were increasing globally, but identified issues around research funding, regionally focused research and fewer international collaborations involving developing regions. Zhu et al. (2021) conducted similar work, focusing on analysing nursing publications arising from funded research, and identified the USA, Australia and the UK as being the leading countries from which these were sourced. In a similar analysis, Yanbing et al. (2020) conducted a longitudinal bibliometric analysis of global nursing research from 2000 to 2019. Their analysis showed most research coming from North America, Europe and Oceania, with disproportion between high-income and middle- and low-income countries.

In midwifery, bibliometric analysis has also evolved over recent years. In 2022, He et al. (2022) examined midwifery literature in China published from 2010 to 2020, noting a steady growth and highlighting contemporary topics. Li et al. (2023) undertook a bibliometric analysis of midwifery articles in Web of Science, identifying the most cited papers and associated universities.

### 1.2 | Measures of Research Activity

Various measures have been described for determining the activity of researchers. The most applied include total citation numbers and h-index. This latter measure, originally described by Hirsch (2005), calculates a researcher's number of publications and their impact. Simply stated, if an author has five publications and each of these is cited five or more times, their h-index is five. While objective and simple to calculate and understand, the h-index cannot be readily applied across different fields and can be manipulated through self-citation. Other more complex indices largely employ h-index as a basis, such as the e-index that includes excess citations not included in h-index and the m-index, which divides the h-index by the number of years the researcher has been active (Mallick et al. 2023). As an improvement to the h-index, Egghe (2006) developed the g-index which sought 'to measure the global citation performance of a set of articles. If this set is ranked in decreasing order of the number of citations they received, the g-index is the (unique) largest number such that the top g articles received

(together) as least  $g^2$  citations'. (131). However, despite other options being available, the h-index remains the most prominent metric in use.

Another useful measure is the author's field weighted citation impact (FWCI), which indicates how the number of citations received by an author's publications compares to the average or expected number of citations received by other similar publications in the particular field. Hence, this metric gives an indication of the author's *impact* in the field (Scelles and da Silva 2025). A FWCI of 1 indicates impact performance at the global average. Accordingly, a FWCI of < 1 indicates impact performance below the global average, and more than 1 indicates impact performance above the global average; for example, a FWCI of 1.53 means 53% more citations than expected. An additional variation is the first author FWCI, which measures the impact of the first author, typically the author who has made the most significant contribution to the research and manuscript. Measures of FWCI overcome differences in quantity and type of publications, the author's profile and age, and are a useful way to evaluate the impact of an author's citation performance.

### 1.3 | Nursing and Midwifery Researchers

Several researchers have focused on analysing nursing and midwifery researchers' activity, such as Hack et al. (2019), who ranked individual Canadian nurse researchers by their total citations and h-index. In a study of authors in nursing education, Abdelwahab et al. (2024) examined a range of characteristics, including numbers of publications, total citations, h-index, g-index and m-index. In 2016, we undertook an analysis of research publication rates of Australian professors and associate professors of nursing and midwifery, finding that research performance was high and comparable with the international context. Given the rapid pace of research activity in Australia and New Zealand over recent years, we sought to refresh our original study and include New Zealand within this updated analysis.

## 2 | Methods

In December 2024, all Australian and New Zealand higher educational institutions' web profiles were searched for all associate professors and professors (all professorial roles in Australia and New Zealand). The Scopus database was then searched by each author for the total number of citations, h-index, number of publications, first author FWCI and overall FWCI. Scopus was selected to be as inclusive as possible, as it is a large source of nursing and midwifery journals, and many of these journals are not indexed in Web of Science or PubMed. Data were extracted into a Microsoft Excel spreadsheet by one member of the team and reviewed by a second member for accuracy prior to analysis and review by the full research team.

## 3 | Findings

In total, 304 academics were included in the analysis. These comprised 270 from Australia and 34 from New Zealand. The population included 169 full professors (154 from Australia;

15 from New Zealand) and 135 associate professors (116 from Australia; 19 from New Zealand). In comparison with 2016 data, the maximum numbers of publications for both groups showed an increase of almost 20%, but with much wider variation and lower median and mode (Table 1). Total citations were considerably higher, but with large variation. While the maximum h-index was much greater, the median was only slightly increased and the mode unchanged (Table 1).

In further analysis, we separated data for professors and associate professors. In relation to total publication numbers, the maximum achieved by one professor was 637, with median of 109 and mode of 59 across the group (Table 2). Publication numbers were more modest across the associate professor group with one having 151 publications, but a median of 38 and mode at 16 (Table 3). Notably, across both groups there were large standard deviations indicating wide ranges. Of

concern, minimum publication numbers were very low in both groups.

Across both groups, total citations also demonstrated large ranges. Maximum citations were extensive for one individual in each group (Tables 2 and 3). Again, minimum total citations reflected only a small number of individuals and again may be the result of practice-based roles.

In relation to FWCI, there was less variation between the two groups (Figures 2 and 3), suggesting that both were publishing in the same types of journals. Note, in Figure 1, one extreme professor outlier was removed, and in Figure 2, one was removed from each group to enable snapshots to be interpretable and meaningful. These were significantly different from the remainder of the dataset, largely through participation in sizeable global studies, and their inclusion skewed data too greatly.

**TABLE 1** | Combined 2024 data compared with 2016 (McKenna et al. 2018).

Criterion		Minimum	Maximum	Median	Mode	Mean (SD)
No. of publications	2016	2	436	69	35	76 (55)
	2024	1	637	61	29	91.17 (90.93)
	% difference	-50	46.10	-11.59	-17.14	19.96 (55.33)
Total citations	2016	1	6378	677	13	886 (912)
	2024	9	54,204	1003	9	2212.26 (4023.22)
	% difference	800	749.86	48.15	-30.77	149.69 (341.14)
H-index	2016	1	33	14	14	14.3 (6.6)
	2024	1	60	16	14	19.67 (12.01)
	% difference	0	81.82	14.29	0	37.55 (81.97)

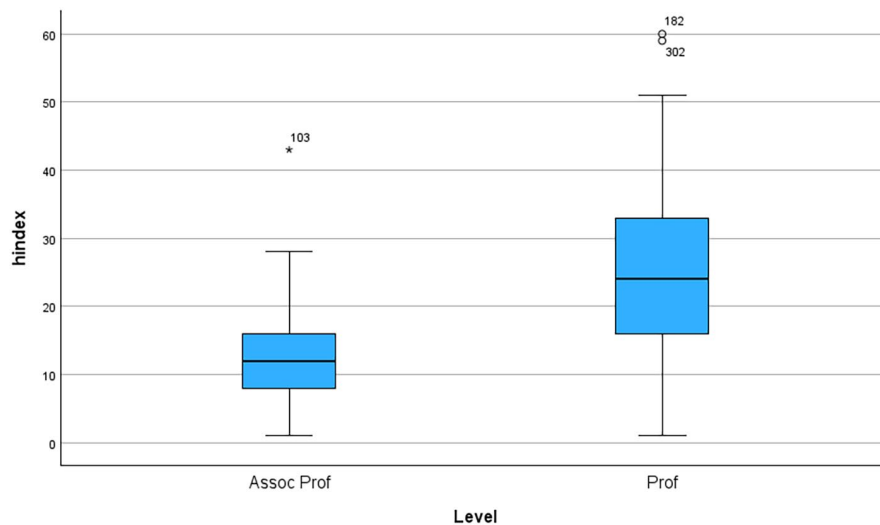
**TABLE 2** | Professors ( $n = 169$ ).

Criterion	Minimum	Maximum	Median	Mode	IQR	Mean (SD)
No. of publications	2	637	108	59	105.0	128.39 (102.334)
Total citations	9	54,204	1940	377	3056.5	3289.33 (4924.95)
H-index	1	60	24	15	17.0	25.27 (12.28)
FWCI first author	0	9.995	1.399	0	1.12	1.579 (1.171)
FWCI overall	0.4	40.99	1.4	0.84	0.84	1.803 (3.121)

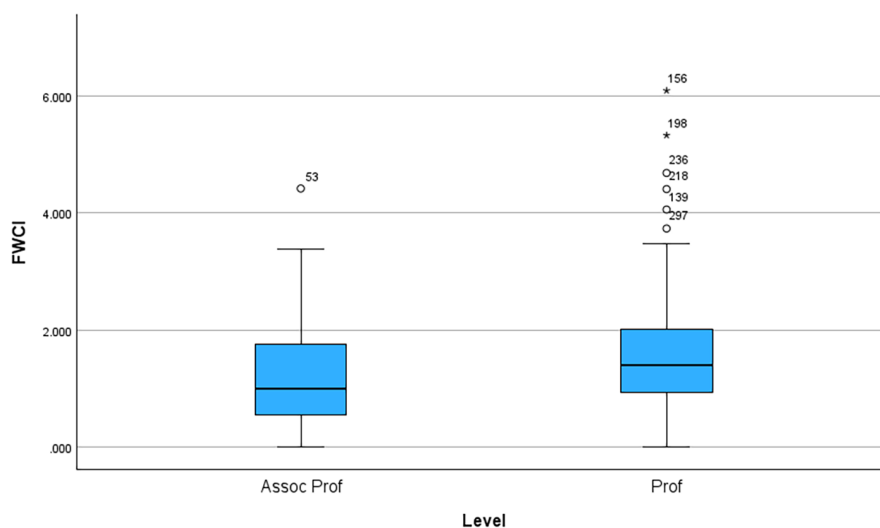
**TABLE 3** | Associate professors ( $n = 135$ ).

Criterion	Minimum	Maximum	Median	Mode	IQR	Mean (SD)
No. of publications	1	151	38	16	37.00	43.04 (28.64)
Total citations	9	11,357	556	90	665.0	784.01 (1128.89)
H-index	1	43	12	14	8.00	12.60 (6.20)
FWCI first author	0	4.422	0	0	1.21	1.128 (0.8198)
FWCI overall	0.13	33.84	1.255	0.9	0.72	1.617 (2.97)

Note: H-index was higher and interquartile range (IQR) was greater in the professor group than for associate professors (Figure 1).



**FIGURE 1** | H-index by academic level. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jan.70130)]



**FIGURE 2** | First author FWCI by academic level. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jan.70130)]

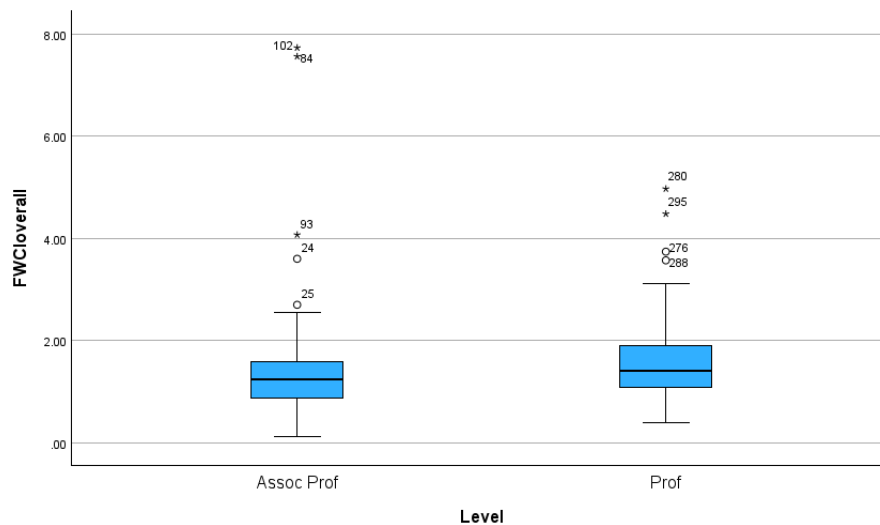
## 4 | Discussion

Research performance is a key requirement of nurse and midwife academics and forms a prominent component of academic promotion applications. This study sought to analyse research publication performance of Australian and New Zealand professors and associate professors of nursing and midwifery and compare it with 2016 data (McKenna et al. 2018). Hence, this analysis provides updated data on publication research performance of professors and associate professors across Australia and new data for New Zealand. Large variations were found across the groups in relation to overall numbers of publications, citations and h-index. Hence, median and mode values provide the most reliable and representative insights and may provide the most accurate benchmarks. In some instances, data for a small number of individuals was significantly high, influenced by global papers with large authorships that are published outside of nursing and midwifery journals. Although beyond the direct scope of this paper, this situation also raises concerns about whether minimal thresholds for authorship have been met in terms of significant intellectual contribution (National Health

and Medical Research Council, Australian Research Council and Universities Australia 2019).

On the other hand, it was also concerning that in our analysis there were also some individuals in both groups with exceptionally low numbers of publications, citations and h-indices. This raises questions about whether some professorial appointments are being made without regard for research performance, and possibly, based on other expertise, such as clinical or policy and as clinical professors or professors of practice ‘who occupy a middle ground between business/industry and academia’ (Ramsay and Brua 2017, 25). These roles are usually undertaken by professionals with extensive industry, rather than academic expertise, to provide a bridge between industry and academia (Ramsay and Brua 2017). Hence, these professors may not be research active. The overall scale of their adoption in nursing and midwifery in Australia and New Zealand is unclear, but warrants further exploration.

Our findings provide updated baseline information about research publication for professorial appointees in Australia and



**FIGURE 3** | Overall FWCI by academic level. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jan.701.30)]

New Zealand. They suggest that, as a comparator, a professor would reasonably expect to have between 59 and 108 total publications, 377 and 1940 total citations and an h-index of 15 to 24. For an associate professor, total publications sit between 16 and 38, total citations between 90 and 556 and h-index between 12 and 14. Overall, however, h-indices are modest when compared with other disciplines, resulting from having initial clinical careers followed by academic careers later. Overall, FWCI medians indicate that the publications of Australian and New Zealand professors and associate professors have impact above the global average. However, first author FWCI in both groups included some individuals who scored 0, suggesting that they had not been a first author on a publication or if they had, the publication had never been cited. Either interpretation does not reflect well on the research leadership impact of some individual professors and associate professors. These data provide important information that academics can benchmark their own performance against for supporting academic promotion and career progression. This is particularly important where university promotions committees often comprise academics from disciplines with different research performance expectations. The review highlighted large growth in maximum numbers across all measures from those in 2016. This is attributed to a few very productive associate professors and professors who have been engaged in extensive research activity over many years and have remained in primarily research-focused roles. It also reflects the ongoing growth expectations for research outputs within universities and research centres.

Wide variations noted across the sample suggest that some professorial staff hold significant non-research responsibilities that impact on their abilities to publish extensively. These may encompass leadership, teaching or clinically focussed positions with less emphasis on research and publication. We were unable to ascertain role type from website data; hence, that is a noted limitation. Regardless, university leaders may need to consider strategies to support the non-research-only professoriate to increase research publication productivity where this is low. Such support could include peer support and mentoring, resourcing for research assistance and backfilling aspects of non-research roles.

There are acknowledged limitations to this current snapshot. Firstly, New Zealand data were not included in the 2016 dataset, so comparisons may not be fully reflective in initial figures. Secondly, the use of h-index may be contentious, as there can be gaming of citations, such as inflated self-citations (Ioannidis and Boyack 2020); however, it was considered the most practical metric for use in this review. Likewise, the FWCI is an average calculation, and thus, for authors with a small number of publications, a few highly cited (or poorly cited) papers can disproportionately overestimate (or underestimate) impact. Nonetheless, as a widely accepted measure of impact, it was used in this review. Hence, we diversified the metrics included in this analysis. There were also a few individuals whose data significantly skewed statistics for total citations and FWCI, and, as outliers, needed to be removed from calculations of these metrics to enable meaningful results.

## 5 | Conclusion

Research publication is a key requirement of academic nursing and midwifery roles. Benchmarking in this area provides an indication of one's performance in relation to their overall field and developmental needs to achieve academic promotion. The findings of this analysis provide contemporary data that can be utilised to enable existing professors and associate professors to evaluate their position in the field and support the academic progression of those aspiring to such roles. Universities can utilise the data to set realistic benchmarks and expectations of professorial staff. Similar studies exploring other non-professorial academics in nursing and midwifery would be beneficial.

### Author Contributions

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE\*). Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content.

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## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

Data are available upon reasonable request.

## Peer Review

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/jan.70130>.

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