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# **AT THE MILLENNIUM: A SLICE OF SCHOLARSHIP**

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## **INTRODUCTION**

This study was undertaken to provide insights into the characteristics of journal articles written by Australian nurse-academics and the relationship between these characteristics and the professional characteristics of the principal authors. Refereed journal articles are the 'gold standard' by which scholarly output is judged by academia and by DETYA for the purposes of the component of university funding on which it is based. Scholarship is defined as the 'creative intellectual activity that involves generation, evaluation, synthesis and integration of knowledge based on theory, research and practice' (Roberts, 1995c). The production of scholarship, or scholarly productivity, is viewed by academia as an indicator of the strength and rigour of the discipline. Scholarly productivity was defined for the purposes of this study as authorship of journal articles.

In contrast to traditional academic disciplines, mainstream Nursing education has only recently entered the tertiary education system, in the mid-1980s. Nurse academics had to adjust firstly to a College of Advanced Education environment in the latter half of the 1980s and secondly to the university sector in the early 1990s. The CAE sector provided a transition period, with an emphasis on teaching and curriculum development,

to which the nurse-academics could transfer their values from the hospital school ethos. However, with the transfer to the university, the nurse-academics found themselves having to also adopt the ethos of research and publishing, with a concomitant expectation of increasing their qualifications to at least a master's degree and preferably a doctorate. This resulted in an expansion of scholarly productivity in nurses during this period.

Earlier studies, discussed below, established early patterns of nursing scholarship, mostly concerning journal articles. With the approach of the millenium, the authors judged it appropriate to determine what changes if any had occurred in the characteristics of journal articles and their principal authors since the earlier studies. It was also their intention to establish a 'turn of the century' benchmark for future studies.

### ***Previous findings***

Articles in nursing journals form the largest group of publications by Australian nurse-academics (Roberts, 1997). Two initial studies explored the content of the first eight volumes and the first decade of the Australian Journal of Advanced Nursing (AJAN) (McConnell & Paech, 1993; Roberts, 1995a). These were followed by a study of four major nursing journals (Jackson, Raftos, & Mannix, 1996) and a study of one year of nursing scholarship (Roberts, 1996).

McConnell and Paech found that subject matter of the first eight years of the AJAN focussed almost equally on clinical practice, professional nursing issues and education, with few articles about research or administration (McConnell & Paech, 1993). Roberts

(1995a) found that in the first decade of the AJAN, the articles were predominantly research reports, with theoretical scholarship the second largest group, and clinical scholarship the smallest. In the study by Jackson et al., clinical practice, the practice of research and professional issues were well represented in four Australian nursing journals (Jackson et al., 1996).

When she analysed articles from the population of nurse-academics by means of an audit of CINAHL, Roberts (Roberts, 1996) found that most appeared in domestic journals, particularly the AJAN, Contemporary Nurse and ANZ Journal of Mental Health Nursing. Clinical journals and advanced scholarship journals accounted for the rest. Foreign journals accounted for about a third of articles, with proportionally more research and teaching scholarship articles, while domestic journals accounted for a higher proportion of theoretical and clinical scholarship articles. Roberts also found that most journal articles written by nurse-academics were refereed. (Roberts, 1996; Roberts, 1997)

McConnell and Paech and Roberts also found that the majority of articles in the AJAN had one author (McConnell & Paech, 1993; Roberts, 1995a), (Roberts, 1996).

The largest group of research articles in the first decade of the AJAN and the CINAHL audit focussed primarily on clinical practice research, followed by role and characteristics of the practitioner (Roberts, 1995a; Roberts, 1996). In the first decade of the AJAN, theoretical scholarship articles focussed mainly on education and clinical scholarship articles focussed on nursing practice, predominantly mental health and general nursing (Roberts, 1995a). In the CINAHL audit, the focus was on professional issues and administration (Roberts, 1996). The methodology of most (71-80%) research

articles in both of these studies was quantitative with few qualitative and the rest mixed (Roberts, 1995a; Roberts, 1996).

Roberts also found three-quarters of articles (74%) were written by females, who comprised 84% of the nurse-academics. They were more likely than males to write clinical scholarship articles and research articles about education, administration, and research method. Males were more likely to write teaching scholarship articles. The majority of articles were written by senior (level C to E) academics (Roberts, 1995b; Roberts, 1996), but there was no influence of academic rank on type of article, or type of scholarship (Roberts, 1995b; Roberts, 1996).

In summary, the previous findings on Australian nurse-academics' scholarship suggest that there has been a concentration on refereed research articles that used a quantitative methodology and focussed on clinical practice, professional nursing issues and education. Previous findings also demonstrate that there was proportionately more scholarship in domestic journals, with articles more likely to focus on mental health and general nursing. In comparison with their proportion in the population, males and academics at higher ranks have been over-represented in the authorship.

## **METHODOLOGY**

### ***Design of the Study***

The design of this study was descriptive and correlational. It aimed to describe the type of articles published by nurse-academics in 1998-9 and investigate the influence of professional characteristics of the principal authors on these articles.

The unit of analysis was a journal article. Articles published by authors selected for another study and described elsewhere (authors, submitted) were analysed. In brief, all professors and associate professors in the population were included in the sample and half of the senior lecturers and one-fifth of lecturers and associate lecturers were randomly sampled.

Inclusion of other forms of publication such as conference papers and book chapters would have entailed contacting each nurse-academic in the study personally, which was beyond the scope of this study. The researchers acquired information about the sample's publications by means of an audit of CINAHL and by exploring relevant staff lists of university websites. In searching CINAHL, the researchers entered the author's name and selected articles on the basis of the author affiliation. Care was taken to avoid duplicate names.

A database was constructed that contained all articles. For each article, the following information was entered into the database: the title of the article, the year published, title of journal, whether domestic or foreign journal, type of publication (e.g. refereed). Concerning the authorship, the following were entered: number of authors, first author, second or later author if on the list, highest qualification and academic rank of first author and size of first author's university. Universities of authors were broken down into categories on the basis of the number of staff. The categories were: small (25 staff or less), medium (26-39) and large (40 or more). Thirteen universities were small (for example Southern Cross University), nine universities were medium-sized (for example Griffith University) and seven universities were large, (for example University of Western Sydney).

The researchers analysed the content of the articles using a tool developed for this study. Categories for classifying information were: journal, refereed or not, number of authors, type of scholarship (theoretical, research, clinical, and teaching), research design, and specialty focus. The researchers analysed each article independently then compared their analyses. Where there were differences the researchers discussed them until consensus was reached.

The data were analysed using descriptive statistics such as frequency distributions. Inferential statistics such as chi square, t-tests and ANOVA were used to detect interactions between article characteristics, principal author characteristics and author/article characteristics.

In order to analyse the professional characteristics of principal authors once only, only one article from each principal author was left in the data base.

### ***Ethical Aspects***

Permission to conduct this study was obtained from the University's Human Research Ethics Committee. No consent was required for the part of the data collection that involved information publicly available on websites, from the electronic database CINAHL or from professional journals. Consent was obtained from a few participants who were contacted by telephone to clarify authorship. Some were asked to provide copies of their articles.

## RESULTS

### ***Years: 1998-9***

The sample of 302 nurse-academics produced 175 articles in 1998 and 191 in 1999. This was an average of 183 per year. There was a slight rise between the two years, with 48% of the articles published in 1998 and 52% published in 1999.

### ***Type of journal***

No journal accounted for more than 10% of the articles; however seven nursing journals accounted for between 6% and 9% each. These were: Contemporary Nurse (9%), The International Journal of Nursing Practice (9%), The Australian Journal of Advanced Nursing (8%), Journal of Advanced Nursing (7%), Collegian (6%), Nursing Inquiry (6%) and the Australian and New Zealand Journal of Mental Health Nursing (6%). Six of these are Australian publications whereas the Journal of Advanced Nursing emanates from the United Kingdom. Only the latter is a specialty clinical journal.

Sixty per cent of articles were published in domestic journals and the remainder in foreign journals. Clinical specialty journals accounted for about one third (33%) of the articles and generalist journals that combined theory, research, professional issues and some clinical articles accounted almost for two-thirds (63%). The remainder were in education journals.

### **Type of article**

Most articles (78%) were refereed. Editorials (12%) comprised the next largest group. Non-refereed articles, short articles, letters and book reviews accounted for the remainder (Fig 1).

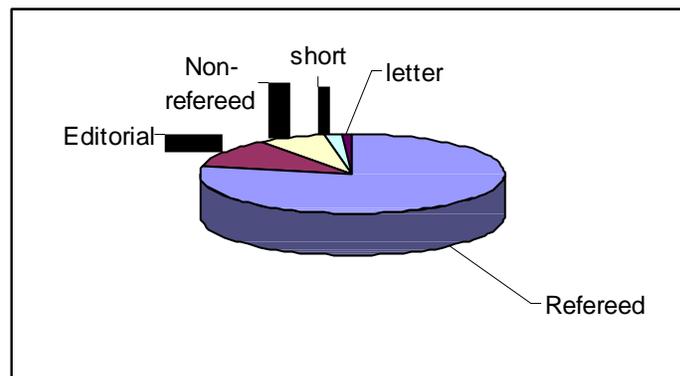


Figure 1: Type of journal article (%)

Of all of the types, refereed articles were most strongly represented in foreign journals (46%). Almost all of the non-refereed articles (70%), short articles (83%), editorials (91%) and letters (100%) were published in domestic journals ( $p < 0.0001$ ). Between 1998 and 1999, the proportion of refereed articles rose significantly from 75% to 80% while the proportion of non-refereed articles fell from 11% to 4% ( $p = 0.03$ ).

The mean number of authors per article was 2.2. Almost half (45%) of the articles were written by a sole author. One-quarter (26%) of the articles were written by two authors and the remainder by three or more authors (Figure 2).

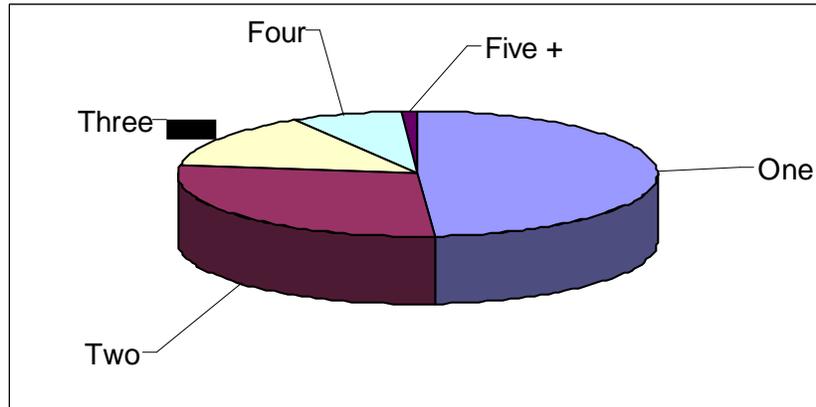


Figure 2: Number of authors per article (%)

As Figure 2 shows, the proportion of articles was inversely proportional to the number of authors per article. Articles published in foreign journals had on average more authors (2.5) than those in domestic journals (1.9) ( $p = 0.0003$ ).

Contrary to expectations, there was little relationship between size of university and number of articles generated. Large and medium-sized universities produced almost equal proportions of articles (37% and 35% respectively). The output from small universities was almost as high (29%).

Size of university, did, however, affect the characteristics of articles. Articles in foreign journals were more likely to emanate from large universities, whereas articles in domestic journals were more likely to originate from medium and small universities ( $p = 0.02$ ). There were fewer refereed articles and editorials from small universities and more refereed articles from large universities than would have been expected on the basis of their proportions in the population ( $p < 0.0001$ ).

## **Content/characteristics of articles**

### Scholarly focus

The majority of articles (59%) were classified as research. Approximately one-third (34%) were theoretical scholarship, while few (5%) were teaching scholarship and almost none (2%) were clinical scholarship (Figure 3).

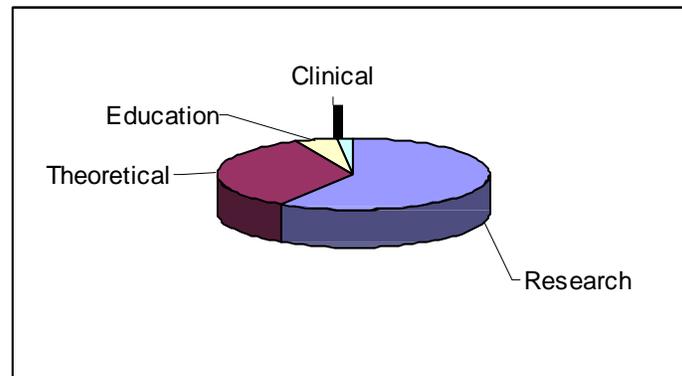


Figure 3: Types of scholarship (%)

Theoretical scholarship was significantly more likely to be published in domestic journals while clinical scholarship was significantly more likely to be published in foreign journals ( $p = 0.049$ ). Research and clinical articles were more likely to be refereed than theoretical or education articles ( $p = 0.2$ ). The average number of authors for theoretical scholarship was significantly less than for the other categories ( $p = 0.0001$ ).

## Content focus

Clinical practice and professional issues were the most common content focus, while ethics and informatics were the lowest (Figure 4).

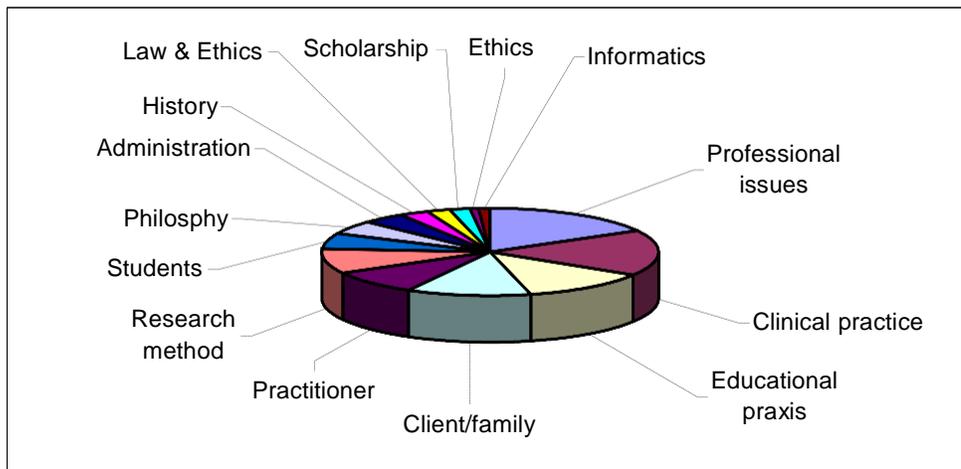


Figure 4: Content focus of articles

There was no difference in the content focus for refereed and domestic articles ( $p = 0.14$ ), size of university ( $p = 0.05$ ) or type of article ( $p = 0.9$ ). Articles on informatics and educational practice had the highest average number of authors, while articles on law and ethics had the lowest number (0.04). Clinical practice was the most common focus of research articles, while professional issues was the most common focus of theoretical articles ( $p = 0.0001$ ). Not surprisingly, education praxis and students were the content focus of education articles, while clinical scholarship focussed exclusively on clinical practice.

## Methodology of articles

The majority of research articles (52%) had a qualitative methodology. Quantitative methodology accounted for 40%, with the remainder having a mixed methodology.

Articles with a qualitative methodology or mixed method were more likely to be published in domestic journals, while those with a quantitative methodology were more likely to be published in foreign journals ( $p = 0.03$ ). Small universities were more likely to produce research papers with quantitative methodology, while articles with qualitative methodology were more likely to emanate from medium sized and large universities.

## Clinical specialty focus

General nursing and gerontology accounted for the highest proportion of articles while adolescent health and paediatrics accounted for the lowest (Figure 5).

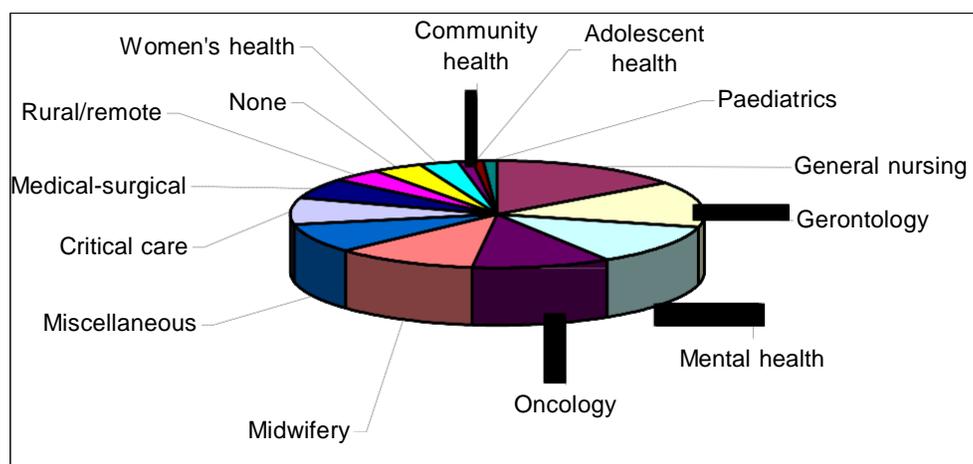


Figure 5: Clinical specialty focus of articles

Articles with a paediatrics, community health and mental health focus were predominantly published in domestic journals, while those with a general nursing, midwifery or adolescent health focus were more likely to be published in foreign journals ( $p = 0.04$ ). Small universities were more likely to produce articles on mental health, rural/remote health or women's health. Medium sized universities, however, were more likely to produce articles on paediatrics, community health or adolescent health, with large universities more likely to produce articles on rural/remote health, gerontology and midwifery ( $p = 0.001$ ).

### ***Characteristics of principal authors and their effect on the articles***

#### General characteristics

There were 111 principal authors for this group of articles. Most (85%) were females. As might be expected, there was a direct linear relationship between number of principal authors and size of university with the largest group (40%) coming from large universities and the smallest group (25%) coming from small universities and the remainder from medium sized universities.

#### Qualifications

The influence of qualifications was strong. Two-thirds (68%) of principal authors had a doctorate, almost one-third (30%) had a masters degree and the remainder had a bachelor's degree. Since there were only eight principal authors in the sample who had a

bachelor's degree, they will not be commented upon further. Of the principal authors, those with a doctorate were more likely to produce works of research, clinical and education scholarship, while those with a master's degree produced predominantly research. Those with a doctorate were publishing more articles on clinical practice than any other topic, while those with a master's were publishing educational praxis and professional issues papers.

### Academic rank

The largest groups were professors and senior lecturers (32% each). Associate professors (17%) and lecturers (19%) comprised the minorities. Refereed articles and editorials were written predominantly by professors, while non-refereed articles were written predominantly by senior lecturers. In terms of type of scholarship, professors wrote the majority of the theoretical papers and the clinical papers, and more research than any other academic rank, while lecturers were principal authors on more education papers than the other groups ( $p = 0.01$ ). Professors and associate professors were focussing on writing about clinical practice and professional issues, senior lecturers were focussing on clinical practice and the client/family, while lecturers were focussing on educational praxis and students ( $p = 0.0002$ ). In terms of nursing specialty, professors were focussing on general nursing and midwifery, associate professors were focussing on mental health and medical-surgical nursing, senior lecturers were focussing on oncology and lecturers were focussing on general nursing and gerontology ( $p = 0.03$ ).

In summary, Australian nurse-academics' scholarly output in terms of journal articles continued to be published predominantly in domestic journals, to concentrate on refereed research reports, and to focus on clinical practice, professional issues, and general

nursing. There was a remarkable shift towards qualitative methodology of research reports. There was a strong link between principal authorship, academic rank and qualifications, but no relationship between size of scholarly output and size of university.

## **DISCUSSION**

### ***Type of articles***

This study demonstrated some changes in the patterns of journal articles written by nurse academics since the 1996 study by Roberts. A paradigm shift in research methodology was striking. There was also an increasing proportion of research articles, with a corresponding drop in the number of papers with an education or clinical focus. This change in scholarship focus may be an indication of the increasing professional maturation of the discipline of nursing.

In the previous audit of one year of articles in CINAHL, there were 75 articles produced in one year (Roberts, 1996) In the present study, there was an average of 183 per year. This rate has more than doubled in the last five years.

There was no change since the previous audit of CINAHL in the location of journal in which articles were published: the majority continued to appear in domestic journals. However, the share of articles in domestic journals dropped from 69% to 60%. The continued dominance of domestic articles is not surprising since nurses would be more familiar with and thus gravitate to their 'own' journals.

The *Australian Journal of Advanced Nursing*, *Contemporary Nurse* and the *Australian and New Zealand Journal of Mental Health Nursing* continued to be among

the pre-eminent journals, being joined by the newer journals *Collegian*, the *International Journal of Nursing Practice* and *Nursing Inquiry*. Despite the large increase in the overall amount of scholarship since 1994, the 'market share' of the older journals dropped considerably: the AJAN dropped by 16%, while *Contemporary Nurse* and the *Australian and New Zealand Journal of Mental Health Nursing* dropped by 11% each. It would seem that in addition to the domestic share dropping slightly, the newer journals have made inroads into the domestic market.

Most journal articles were refereed rather than non-refereed, as was found by Roberts (1996). The proportion of refereed articles dropped very slightly (2%) since 1994; however within the present study there was a rise of 5% from 1998 to 1999. It is surprising that the proportion of refereed articles was relatively stable, given the emphasis of DETYA on them and the influence that they have on promotion.

Articles also continued to be predominantly research focussed, with theoretical scholarship the second largest group. Clinical scholarship articles continued to be the smallest group. This may reflect the exclusion of clinical scholarship articles from the DETYA scoring system for scholarly productivity. Teaching scholarship articles remained about the same proportion, which reflects a continuing interest of nurse-academics in education scholarship. The decrease in teaching scholarship had already occurred by the middle of the 1990s (Roberts, 1996) and reflects the maturing of the academic discipline of nursing, with a focus on nursing research instead of education.

This study showed a nine per cent increase in research articles from the 50% in 1994 reported by Roberts. This is not surprising since such output is more likely to be rewarded by promotion rather than course development or excellence in teaching. The

limited DETYA perspective of scholarship values research more highly than other forms of scholarship, and traditionally nursing has not been in tune with this philosophy. Curriculum development, innovative teaching methods and exemplary clinical practice are also forms of nursing scholarship, yet are not rewarded in the same way as research.

Clinical practice and professional issues continued to be predominant in terms of content focus. The client and family became a clinical focus in the last five years, in keeping with an increasing research interest on the client. This was accompanied by a decreased focus on the practitioner role and characteristics. This, too is an indication of the maturing of nursing as a discipline.

One of the most striking findings of this study was that the majority of research articles (52%) had reported using a qualitative methodology, with only 40% using a quantitative methodology. This is in inverse proportion to the findings of Roberts (1996) for five years ago, when 71% of articles used a quantitative approach, and the remainder used a qualitative approach. Clearly, the nursing research pendulum has swung from quantitative to qualitative research in the last five years. This undoubtedly reflects a greater acceptance of the qualitative research paradigm and recognition that many of the important nursing questions are best answered by qualitative methodology.

General nursing continued to be the major focus for content. Mental health and gerontology continued to be well represented, while oncology and midwifery appeared as specialty foci. The latter may well reflect the movement of midwifery education into the tertiary sector.

## **Authorship**

Another interesting finding was that the proportion of articles with collaborative authorship rose from 40% in 1994 (Roberts, 1996), to 65% in 1999. This represents an increase of 25%. This may reflect some development of nursing research teams in universities and an increase in mentoring. It may also be an indication of increasing professional maturation. Collaborative authorship has the advantage of a broader range of perspectives, and facilitates teamwork and mentorship. It is also more advantageous for academics trying to balance ever-increasing workloads, study and research.

Given the greater staff numbers and increased opportunities for group authorship in large universities, it is reasonable to think that they might have generated a larger proportion of the articles than small universities, however there was little difference demonstrated. There was a trend for quantitative articles to emanate more from the larger universities, while smaller universities showed a trend toward qualitative methodology. This may be the influence of individuals, or perhaps a characteristic of the older, more traditional universities. Larger universities were more likely to publish in foreign journals, perhaps because older universities are attracted to journals with more perceived status.

The link between professorial rank and scholarly output was very clear (Level E). This was not unexpected given that research and publications are core business for nurses at that level. For example, most editorials emanated from professors. Because professors are more likely to be editors of journals, more opportunity exists for them to write editorials. Furthermore, professors are more likely to have the scholarly status and visibility to be asked to write guest editorials. What is surprising is that senior lecturers

were first authors on almost twice as many articles as associate professors, whereas one would have expected the opposite. Perhaps this is related to promotion, where there is a hard bar between Levels C (senior lecturer) and D (associate professor). The greater than expected proportion of articles with senior lecturers as authors, may be explained by the senior lecturers seeking promotion through establishment of a reputation for scholarship.

There was also a trend towards theoretical papers from authors with a bachelor degree. This was in contrast to a predominance of research articles from those at masters and doctorate level. At bachelor level, research skills have yet to be fully developed and honed, and thus academics with a bachelor degree may be more comfortable writing about theoretical issues.

The findings of this study were that the gender of authors almost exactly mirrored the gender balance of nurse-academics generally, in which 84% of nurse-academics are female (Roberts & Turnbull, 2002). This is a change from 1994 in which females wrote 10% fewer articles. This may also indicate a professional maturation and redressing of a previous imbalance.

It is not surprising that qualifications had a strong influence on principal authorship. Firstly, the first author is more likely to be the highest ranking author, and academic rank is strongly associated with academic qualifications (Roberts & Turnbull, 2002). Secondly, the academics with a doctorate are usually more qualified and experienced in research and writing. Finally, when freed of the necessity to increase their own qualifications, they are more able to concentrate on research and publishing. Principal authors with a doctorate were also more likely to be first authors on clinical research articles, although they may be more distant from the clinical sphere than those

with other degrees. However, they have had the research training and are more likely to be leading research teams and thus be first authors.

Academic rank was strongly associated with principal authorship. Again this is not surprising given the link between academic rank, research training and academic qualifications.

### ***The Study***

The strength of this study was that it used a sample that was randomly drawn from the whole population and also that it mostly replicated the methodology of Roberts (1996) and thus allowed many comparisons over time. The sample was also biased towards nurse-academics of higher academic rank, thus concentrating the research effort in the area of known productivity. Since lecturers account for a very small proportion of nurse-academics' scholarship (authors, submitted), using only a small proportion of them in the sample would not have resulted in omission of many articles from the article data base. However, this sampling bias meant that the finding of association of academic rank with authorship would have been exaggerated.

Another strength was the independent analysis of articles by two researchers who then reached consensus on the classification of each article in the various data categories, thus giving greater validity to the findings. Validity was also increased by using data for two years rather than the one year of the previous study by Roberts (1996). However, a weakness of this study is that it only focusses on journal articles, which do not represent the entirety of nursing scholarly output. However, given the focus of DETYA on this form of scholarship as an index of scholarly productivity, journal articles are arguably

the most important form of scholarly productivity in academia and therefore most worthy of study.

Five years ago, Roberts (1997) showed that refereed journal articles represented a minority of nursing scholarship. It would be advantageous to establish the proportion of refereed journal articles in nurse-academics' current scholarly output. This would identify any shift towards production of journal articles, which would be important, considering the emphasis accorded them by DETYA.

In conclusion, this study has contributed to the knowledge about nurse-academics' scholarship in the form of journal articles. Positioned as it was at the turn of the century, it has established benchmark data that will invite longitudinal comparisons as nursing continues to develop as an academic discipline.

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