Impact of Nursing Education in Slovenia on Nurses' Publishing in Their Professional Journal

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Abstract

The paper discusses influences of developments in nursing education in Slovenia on the structure and contents of publications in the Slovene journal of the nursing profession – the Review of Nursing. Undergraduate nursing education in Slovenia changed from Associate Degree to Diploma level, while the B.S.N. type programme was of brief duration. Bibliometric data was gathered on all the scientific and technical papers published in the Review of Nursing between 1977 and 2001. Statistical analyses were carried out to study characteristics and inter-relations of authorship, cited references and contents. A positive impact of improved and extended education of nurses on quantity and quality of their publications has been confirmed. The paper is part of a larger study on nursing education in Slovenia and its relation to the works published in the Review of Nursing.

Keywords:

Nursing Education; Publishing; Periodicals; Bibliometrics; Citations; Slovenia

1. Introduction

1.1. Nursing Education and the Nursing Profession

Several researchers have studied self-concept of nurses. Kalisch and Kalisch [1] studied nurse image in the media and found it to be subordinate to MD's or receded into the background of events. In Slovenia, Pahor [2,3] found that the role of the nurse in the health-care system is marginal compared to the MD, which blocks nurses' potentials, impedes communication and causes conflicts. She argues that in our country, a gap has opened up over the last decades between nurses' education and their work, since higher education extends capabilities more than work experience. Nurses with a diploma or university degree demonstrated better competence than their less educated colleagues, even though the latter had more work experience on average. Higher education also correlated with better conceptualisation ability, emotional stability, positive self-concept, positive expectations, independence and reflective thinking, as well as willingness to help and ability to influence and train co-workers. Focusing on the MD-nurse relationship, she argues that there is a long history of MDs' dominance and nurses' subordination based on class and gender discrimination.

Witt [4] investigated the influence of nursing education on nurses' self-concept and found university level study to encourage better self-image, autonomy, higher self-esteem and more respect for others. Similarly, a research [5] comparing the B.A. and the A.D. nursing students in Ljubljana confirmed higher average self-esteem in the B.A. group. The sample consisted of 118 students in Health Education (HE – B.A. level) or Nursing (A.D. level) in the academic year 1996/97, which represented 50.4% of the total enrolled population.

Compared to their Nursing peers, the HE programme students were more optimistic regarding their future and their ability to introduce improvements into the health-care system, while they pictured themselves more easily as leaders. The HE students defined professional success mainly as research and teaching at university level while Nursing students aspired to team leadership in hospital setting, which speaks in favour of positive effects of university level education on nurses' self-concept.

1.2. Nursing Education in Slovenia

Presently, there are two institutions of higher education in the field of nursing in Slovenia: one in the capital Ljubljana and one in the second largest city Maribor.

1.2.1. Nursing Education in Maribor

In 1993, the College of Public Health was established in Maribor, which was transformed into the School of Public Health in 1995, whereby the entire curriculum of the older Ljubljana school was adopted. In addition to teaching, the staff are involved in professional activities, professional development and consulting [6]. The Nursing study lasts for 6 terms, offering full-time as well as part-time option. Since the A.D. programme was abandoned, the graduates receive the Diploma in Nursing academic title.

The primary goal of the school is to grow into a faculty of nursing/public health. To achieve it, graduate level courses are developed in co-operation with the Ljubljana school [7]. Between 1996 and 2001, 223 A.D. and 323 Diploma degrees in nursing were awarded in Maribor.

1.2.2. Nursing Education in Ljubljana

College-level education of nurses begun in 1951 with a three-year programme at the Nursing School in Ljubljana, which became the Nursing College in 1954. Subsequently, the curriculum has often been modified because of the changes in legislation and the developments in nursing. In 1993, the school was transformed into the School of Public Health, which is a member of the University of Ljubljana. Presently, the school has 7 Departments: of Nursing, Nursing in Gynaecology and Obstetrics, Physiotherapy, Occupational Therapy, Orthopaedic Technology, Sanitary Engineering and Radiology [8].

In 1996, the last generation of A.D. programme students was enrolled, while the Diploma in Nursing programme started in 1997. Between 1980 and 2001, 2589 A.D. and 533 Diploma degrees were awarded.

The notion that nurses in Slovenia should have access to university level education in their profession dates back to the sixties. The Bachelor level programme in Health Education was developed in co-operation with the Faculty of Education in Ljubljana as a two-year supplement to the A.D. study. With this programme, Slovenia joined the large family of European countries with B.S.N. programmes. The curriculum was based on four interrelated fields: theory and practice of nursing, health education, research in nursing, and health-care organisation and management. The first students were enrolled in the academic year 1993/94, all part-time, while the last enrolment year, with only full-time students, was 1995/96. A total of 129 students were enrolled.

2. Materials and Methods

The paper is based on bibliometric analyses, applying basic statistical methods. They were performed with the SPSS for Windows 10.1 package, while Microsoft[®] Excel was used for data management and some graphical displays.

The scope of our analysis was the only professional journal in the field of nursing in Slovenia, i.e. the Review of Nursing (*Obzornik zdravstvene nege* in Slovene). All the issues published from 1976 to 2001 were examined, whereby only the contributions published in the Articles section were analysed. An average of 9.5 articles were analysed per issue, with average length of 6.5 pages per article. The analysed material totalled to 26 volumes, 118 issues, 843 articles and 5540 pages.

Data were gathered on

- article type (original research, technical, review),
- authors (number, gender, undergraduate and graduate education, academic title),
- cited references (number and type) and
- contents¹ (MESH keywords, content classification code).

We wanted to find out whether the changes in nursing education in Slovenia have been reflected in the publications (co)authored by nurses. More specifically, we investigated the structure of undergraduate education of all the authors in the Review of Nursing and graduate education of the nurses. We also investigated the trend in the number and average age of cited references over time, as well as the share of journal articles and non-Slovene publications among the references. Descriptive statistics were followed by inference where applicable.

3. Results and Discussion

The articles were written by 1030 authors, 68% of them female. Ninety-seven percent of authors were from Slovenia and only 3% from abroad, which indicates that there is little international co-operation. Eighty-four percent of the articles were written by a single author, 11.9% by two authors and only 2.8% of articles had three authors. The maximum number of authors was five.

Author structure is depicted in Figure 1. A little less then one quarter (22.9%) of the authors were listed without a title indicating their undergraduate education. From the nursing profession there were the 26.8% of authors with A.D. in Nursing and the 15.7% of nurses with a Bachelor degree, whereby 5.5% of authors had A.D. in Nursing and subsequently graduated from the Faculty of Organisational Sciences (which is a member of the University of Maribor) and 5.6% of authors held the B.A. degree in Health Care. Nineteen percent of authors were from the medical profession (MDs, many of them psychiatrists, or dentists).

Among the 286 authors with listed graduate-level title, 180 (63%) held a Ph.D. and 11 of those were from abroad; among the 69 (24%) authors holding a M.Sc./M.A., only 7 were from abroad, hence foreign authors do not markedly heighten the educational level. An indication of the fact that nursing is still establishing itself as a profession in Slovenia is the small number of nurses with graduate education among the authors: there were only 28 in total, while only two of them have obtained a doctoral degree.

¹ Due to space constraints, analyses of articles' contents are not discussed in this paper.



Figure 1 – Undergraduate education of the authors (total number in brackets)

Overall, 400 (47.4%) articles were (co)authored by nurses with at least A.D. education. There was statistically significant difference between two-year periods in the proportion of articles with at least one nurse among authors (χ^2 test: *p*<0.001): a general increasing trend can be observed over time (Figure 2).



Figure 2 - Percentage of articles in two-year period with at least one nurse among authors

Of the 843 analysed articles, 625 listed references (6449 publications in total). The twoyear periods differed significantly in the total number of cited references (Kruskal-Wallis test: p<0.001). The distributions are summarised with box-plots (depicting 1st and 9th decile, 1st and 3rd quartile and median) in Figure 3. The rise in the number of cited references in the recent years can be at least partly attributed to the increased publishing by nurses with university-level degree.

The average age of cited references was 6.9 years. Contrary to our expectations, no significant differences were found between time-periods regarding median reference age (Kruskal-Wallis test: p=0.409).



Figure 3 – Number of cited references in two-year period (N=number of articles in the period)

We were also interested in the article-level share of journal articles in the cited references. The results of this analysis are presented in Figure 4, whereby the total number of cited monographs and journal articles in the article was chosen as the most appropriate base. On average, journal articles account for 37.8% of cited monographs and journal articles. We also found the abovementioned percentage of cited journal articles to significantly differ between two-year periods (Kruskal-Wallis test: p<0.001), but no clear trend could be observed.



Figure 4 – Share of cited journal articles in the total cited journal articles and monographs within article

We expected that the increasing share of nurses with university degree among the authors and the growing number of cited references would lead to an increased proportion of cited foreign journal articles, but this was unfortunately not the case.

Finally, article type was analysed with regard to author's education. Almost one third (30.8%) of the research articles (following the IMRaD scheme) were contributed by nurses with a Bachelor degree. Among the selected health-care professionals, MDs were the most frequent authors of review articles, while nurses contributed the largest share (29.2%) of technical articles.

4. Conclusion

The presented results are only a part of a larger study on nursing education in Slovenia and its relation to the works published in the national Review of Nursing.

We demonstrated that higher educational level of nurses leads to their more frequent publishing in the journal under investigation. One of the reasons for this is that any university-level study provides them with basic training in scientific and technical writing.

The number of foreign authors is small which calls for more international co-operation. At the same time it is reasonable to expect that noteworthy results arising from Slovenian researchers in the field of nursing working together with their colleagues from abroad get published in internationally renowned journals, rather in the Review of Nursing.

An increasing trend in the number of cited references per article over time was confirmed, but the average age of cited references was not found to differ between two-year periods. We expected the increasing share of nurses with university degree among the authors, together with the growth in the number of cited references, to bring about a rise in the percentage cited foreign-language journal articles, but this was unfortunately not the case.

When analysing article type, we found that almost one third of the research articles (i.e., following the IMRaD scheme) were contributed by nurses with a Bachelor degree. Among the health-care professionals, MDs were the most frequent authors of review articles, while nurses contributed the largest share of technical articles.

In conclusion, it should be stressed that nurses in Slovenia are still struggling for the right to study for a university degree in their own field. Research is the basis of any profession, and dissemination of new findings and existing knowledge in the field of nursing should be encouraged as the basis for further development of theory and practice of nursing.

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