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Mapping the Literature of Medical-surgical Nursing

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Background: Medical-surgical or adult health nursing is a complex specialty that requires a wide-ranging literature to inform its research and practice. Several excellent qualitative aids exist for collection development for this field, but quantitative studies are few. While one bibliometric study of journals exists, no recent work had been done in this area.

Method: The Mapping the Literature of Nursing Project protocol was used. Four source journals were selected, and a citation analysis of articles from 1996 to 1998 was conducted.

Results: A list of the most frequently cited journals was created, using Bradford's Law of Scattering. The list demonstrates that 1.2% of the cited medical-surgical nursing journals produced just over 33% of the citations. PubMed/MEDLINE, CINAHL, and Science Citation Index provided the most complete indexing coverage of all of the journals, with CINAHL providing the most complete coverage of nursing journals. Books were the second-most cited format.

Conclusions: Citation analysis of journal articles is a useful aid for selecting journals for medical-surgical nursing collections, but it did not prove to be as useful for selecting materials in other formats. Indexes in addition to PubMed/MEDLINE are necessary to provide access to the journal literature serving this specialty.

INTRODUCTION

This study is part of Phase I of a project to map the literature of nursing, sponsored by the Nursing and Allied Health Resources Section of the Medical Library Association [1]. Using the common project methodology described in the general overview article [2], the study attempts to determine the core literature in medical-surgical nursing by applying Bradford's Law of Scattering [3] to a citation analysis of representative medical-surgical journals and to examine the depth of coverage by bibliographic databases. Results of this research should assist librarians in selection decisions for both journals and databases. It will also aid researchers by providing guidelines for selecting databases to search. Database producers will also benefit in having documented evidence regarding titles to select for indexing.

Medical-surgical nurses, also known as adult health nurses, specialize in the care of adults with a ''known or predicted physiological alteration'' [4]. ''The care provided is holistic and is rooted in health promotion, disease prevention, and health maintenance'' [5] and may be carried out in community and institutional settings. Comprehensive, total patient care, rather than a focus on a particular organ system or problem, is an important aspect of this specialty [6]. Medical-surgical or adult health nurses may pursue advanced degrees and practice as clinical nurse specialists, nurse practitioners, and researchers. They also may pursue certification at the basic and advanced levels.

HISTORY OF MEDICAL-SURGICAL NURSING

During the late nineteenth and early twentieth centuries in the United States, adult patients in many of the larger hospitals were typically assigned to separate medical, surgical, and obstetrical wards. Nursing education in hospital training schools reflected these divisions to prepare nurses for work on these units [7]. Early National League of Nursing Education (NLNE) curriculum guides treated medical nursing, surgical nursing, and disease prevention (incorporating per-

sonal hygiene and public sanitation) as separate topics [8, 9].

By the 1930s, however, advocates recommended that medical and surgical nursing be taught in a single, interdisciplinary course, because the division of the two was considered an artificial distinction. Surgical nursing came to be seen as the care of medical patients who were being treated surgically [7]. The NLNE's 1937 guide called for a ''Combined Course'' of medical and surgical nursing [10]. Students were expected to learn not only the theory and treatment of abnormal physiological conditions, but also to provide total care of the patient by understanding the role of health promotion and the psychological, social, and physical aspects that affected a patient's health. While the integration of this approach into nursing school curricula was slow [7, 11], by the 1960s, nursing schools emphasized the interdisciplinary study and practice of medical and surgical nursing.

In the 1960s and 1970s, standards were developed for many nursing specialties, including medical-surgical nursing. *Standards, Medical-Surgical Nursing Practice,* written by a committee of the Division on Medical-Surgical Nursing of the American Nurses' Association (ANA), was published in 1974 [12]. It focused on the collection of data, development of nursing diagnoses and goals for nursing, and development, implementation, and evaluation of plans of care. *A Statement on the Scope of Medical-Surgical Nursing Practice* followed in 1980 [13]. In 1991, the Academy of Medical-Surgical Nurses (AMSN) was formed to provide an independent specialty professional organization for medical-surgical and adult health nurses. In 1996, the AMSN published its own *Scope and Standards of Medical-Surgical Nursing Practice,* building on similar ANA documents [14]. The second edition appeared in 2000 [15]. Both the ANA and AMSN documents stated that while only clinical nurse specialists were expected to participate in research, all medical-surgical nurses must incorporate research findings in their practice.

MEDICAL-SURGICAL NURSING TODAY

Recent trends affecting nursing as a whole have also affected medical-surgical nurses, including the increasing use of nursing case management, expansion of advanced practice nursing, total quality improvement, development of clinical pathways, changes in the professional practice model to include greater numbers of nonprofessional staff, health care reform, and the rise of managed care [16]. The trend toward increased acuity of patients, begun in the 1980s [17], has become a fact of life.

Given that medical-surgical nurses must master a wide range of topics and are expected to apply new research findings in their practice, what materials should libraries supporting medical-surgical nurses provide? Many useful collection development resources are available for nursing, but bibliometric studies of the journal literature specifically used to support medical-surgical nursing are rare. Moorbath included a citation analysis of the 1990 issues of the *Journal of Advanced Nursing* to represent adult nursing in his study of journals needed to support the Project 2000 nursing course in the United Kingdom [18].* His list of the forty journals most frequently cited by authors in *Journal of Advanced Nursing,* revealed the interdisciplinary nature of adult nursing. In addition to general nursing and medical research journals, the list included publications that focused on medical ethics, critical care, surgery, oncology, gerontology, psychiatry and mental health, obstetrics and gynecology, nursing administration, and nursing education. Moorbath's list included journals published in the United States and in Great Britain. He also found that nursing students tended to use journals from their schools' library collections or titles recommended by their instructors. As a result, he felt he could not recommend most of the US titles for purchase by British libraries [18].

METHOD

For this project, 4 source journals were selected for analysis, including 2 journals published in the United States and 2 published in Great Britain. *MEDSURG Nursing: The Journal of Adult Health* (*MN*) was chosen because it is the official journal of the Academy of Medical-Surgical Nurses (AMSN). Research articles make up approximately 17% of the issues, and it is indexed in both CINAHL and PubMed/MEDLINE [20]. The other 3 journals do not focus solely on medical-surgical nursing, but they include articles important to nurses specializing in this area. *Nursing Clinics of North America* (*NCNA*) was specifically mentioned in an article by former AMSN President Cecilia Grindel as being a disseminator of research for medical-surgical nursing practice [21], and it is one of the journals ''suggested for initial purchase'' on the Brandon-Hill nursing list [22]. While each issue contained lengthy review articles grouped around a common theme, a variety of topics were covered in the 3-year period under examination, and so it was supposed that no one topic would dominate the list of citations from all 4 journals. Approximately 5% of the articles from *Nursing Clinics* for 1996 to 1998 were classified as research articles [20].

The remaining 2 journals are published in Great Britain. While neither journal focuses solely on adult health nursing, each includes many articles of interest to medical-surgical nurses. The *Journal of Clinical Nursing* has an international focus. It includes research articles (67%) [20], literature reviews, and evaluations of current practice. The 4th source journal for this study, the *British Journal of Nursing,* continued *Nursing* (*London*) in 1992 and absorbed *Surgical Nurse* in 1995. Approximately 15% of its contents for 1996 to 1998 are research articles [20]. In addition to covering multidis-

* The term ''adult nursing'' as used in the United Kingdom is defined as ''nursing sick and injured adults back to health in both hospital and community settings'' [19]. It roughly corresponds to the term medical-surgical nursing used in the United States.

Table 1
Cited format types by source journal and frequency of citations

Cited format type	Number of citations in source journals				Citations	
	BJN	*JCN*	*MN*	*NCNA*	Total	Frequency %
Journal articles	6,880	3,532	1,964	4,310	16,686	69.6%
Books	3,047	1,418	636	637	5,738	23.9%
Government documents	607	245	52	110	1,014	4.2%
Internet resources	5	0	3	6	14	< 0.1%
Miscellaneous	259	127	61	68	515	2.1%
Unable to determine	0	2	0	0	2	< 0.1%
Total	10,798	5,324	2,716	5,131	23,969	100.0%

BJN = British Journal of Nursing.
JCN = Journal of Clinical Nursing.
MN = MEDSURG Nursing.
NCNA = Nursing Clinics of North America.

ciplinary topics, it contains supplements for specialties including adult health and geriatric nursing. The *British Journal of Nursing*, the *Journal of Clinical Nursing*, and *Nursing Clinics of North America* are covered by several US indexes, including CINAHL and PubMed/MEDLINE, in addition to the *British Nursing Index* [20].

This research used the methodology common to all the papers in the mapping project, as described in detail in the project overview article [2]. In addition, a list of the ten most frequently cited journals for the British and the US titles was derived from the data to see if the source journals published in Great Britain and the source journals published in the United States differed in citation patterns.

RESULTS

A total of 23,969 citations were tabulated (Table 1). Articles in the *British Journal of Nursing* contributed 45.0% of all the citations, followed by the *Journal of Clinical Nursing* (22.2%) and *Nursing Clinics of North America* (21.4%). Journals were the most frequently cited format in all 4 of the source journals, constituting 67.0% of all citations. Again, *British Journal of Nursing* dominated the journal citations with 41.2% of the total. *Nursing Clinics of North America* contributed 25.8% of the journal citations, followed by *Journal of Clinical Nursing*, with 21.2%. Book citations accounted for just over 25% of the total. *British Journal of Nursing* produced more than 53% of the book citations, although this type of citation constituted only 28.2% of its total citations. Almost 33% of *MEDSURG Nursing*'s citations were book citations. Less than 10% of the total citations referenced government documents, Internet resources, and miscellaneous items. Almost 10% of the citations in all formats were from 1996 or later (Table 2). Just over 50% the citations came from the 5 years preceding 1996, and approximately 90% were dated 1980 or later.

A total of 2,041 journals were cited. Twenty-three journals (1.1% of the total number of titles) accounted for approximately 33.0% of the citations (Table 3). Approximately 66.7% of the citations were concentrated in 176 titles (8.6% of the total). See Table 4 for a ranked title listing of the journals. Three of the source journals—*British Journal of Nursing, Journal of Clinical Nursing,* and *Nursing Clinics of North America*—were in Zone 1, the most frequently cited group. *MEDSURG Nursing* is in Zone 2. Same-journal citation seemed to prevail in the cases of *MEDSURG Nursing* and the *British Journal of Nursing*: almost 90.0% of the citations to *British Journal of Nursing* came from articles in that journal (9.6% came from *Journal of Clinical Nursing*); 84.0% of the citations to *MEDSURG Nursing* came from articles in that same journal (with the rest coming from *Nursing Clinics of North America*).

Journals published or originally published in Great

Table 2
Cited format types by publication year periods

Publication year	Books		Government documents		Internet		Journal articles		Miscellaneous		Total citations	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1996–year*	1,051	18.3%	264	26.0%	13	92.9%	3,171	19.0%	187	36.3%	4,686	19.6%
1990–1994	2,282	39.8%	523	51.6%	1	7.1%	7,461	44.7%	199	38.6%	10,466	43.7%
1980–1989	1,626	28.3%	171	16.9%	0	0	4,841	29.0%	98	19.0%	6,736	28.1%
1970–1979	461	8.0%	34	3.4%	0	0	837	5.0%	15	2.9%	1,347	5.6%
1960–1969	180	3.1%	8	0.8%	0	0	250	1.5%	2	0.4%	440	1.8%
Pre-1960	119	2.1%	13	1.3%	0	0	124	0.7%	11	2.1%	267	1.1%
Not available	19	0.3%	1	< 0.1%	0	0	2	< 0.1%	3	0.6%	25	0.1%
	5,738	99.9%†	1,014	100.1%†	14	100.0%	16,686	100.0%	515	99.9%†	23,967	100.0%

* Includes in press materials.
† Does not total 100.0% due to rounding.

Table 3
Distribution by zone of cited journals and references

	Cited journals		Cited journal references		
Zone	No.	%	No.	%	Cumulative total
Zone 1	23	1.1%	5,602	33.6%	5,602
Zone 2	153	7.5%	5,569	33.4%	11,171
Zone 3	1,865	91.4%	5,515	33.1%	16,686
Total	2,041	100.0%	16,686	100.1%*	

* Total does not equal 100.0% due to rounding.

Britain accounted for approximately 54.0% of the titles in Zone 1 and approximately 40.0% of the journals in Zone 2. Nursing titles made up 56.5% of the journals in Zone 1 and almost 38% of the journals in Zone 2.

ERIC, a general education index, was the only database that did not provide maximum indexing coverage for at least 1 title in Zones 1 and 2 (even though nursing education titles were present in both zones); therefore, it was not included in Table 4. EBSCO's Health Business Source had a score of 0 for Zone 1 journals and a score of 0.11 overall; therefore it also was not included in Table 4. Depth of coverage scores were not calculated for OCLC ArticleFirst, because it was discovered that article counts for this database were inflated due to the presence of duplicate citations. However, many journals in the project were not indexed by any other database, so the mapping team decided to include it in Table 4 with the fact of coverage noted with an X [2]. This database provided coverage for just over 92.0% of the journals in both Zone 1 and Zone 2.

PubMed/MEDLINE had the highest average level of indexing coverage for all journals in Zone 1, followed by, in order, CINAHL and Science Citation Index. PubMed/MEDLINE again had the highest average level of indexing coverage for journals in Zone 2, followed by, in order, Science Citation Index and CINAHL. CINAHL narrowly edged out Science Citation Index for 2nd place in average coverage of all journals in both Zones 1 and 2 (Table 4). However, CINAHL had the highest level of indexing coverage for nursing journals in either zone, with an average for both zones of 4.56 (out of a high score of 5.0), followed by PubMed/MEDLINE (3.64). Social Sciences Citation Index was 3rd in coverage for Zone 1 nursing journals (1.92), with an average for both zones of 1.36, while Gale's Health Reference Center Academic was 3rd in coverage for nursing titles for Zone 2 journals (1.25), and 4th for both zones with an average score of 1.11.

For non-nursing journals, Science Citation Index had the best average coverage of Zone 1 (4.30) and Zone 2 (3.90) titles, and an overall average of 3.94. PubMed/MEDLINE was next, with an average coverage for non-nursing journals of 3.20 for Zone 1 and 3.29 for Zone 2, with an overall average of 3.28. EMBASE was 3rd, with an average of 2.90 for non-nursing titles in Zone 1, 3.02 in Zone 2, and an overall average of 3.01.

DISCUSSION

The most frequently cited references for almost all formats are to publications from 1990 to 1995 (Table 2). This is not surprising—medical-surgical nursing relies heavily on advances in nursing and medical science, and current information is important. It takes time, however, for knowledge to diffuse, which may explain why only 9.9% of all the citations came from the source period, 1996 to 1998. The need for up-to-date information also would account for the fact that journals, which usually disseminate information more quickly, are the most frequently cited format. The majority of the Internet citations, however, come from the source period. This is not unexpected, when one considers that the first commercially successful Web browsers were developed in the early 1990s.

An examination of Table 4 reveals several general clinical and research medical and nursing journals in Zone 1, while titles relating to nursing specialties and medical titles of interest to medical-surgical and adult health nursing research are represented in both zones. Nursing titles account for just over 50% of the journals in Zone 1 but only for 38.6% of Zone 2's journals. As medical-surgical nursing is interdisciplinary in focus, it is not surprising that several pediatrics, obstetrics, and psychiatric journals were cited. However, of these journals, only one, *Pediatrics*, is in Zone 1. Over 60% of the citations to *Pediatrics* come from *Nursing Clinics of North America.* While *Journal of Clinical Nursing* and *British Journal of Nursing* frequently publish articles about pediatric topics and MEDSURG Nursing does so occasionally, *Nursing Clinics of North America* had several lengthy review articles and theme issues on the care of children during this time period.

The two source journals published in Britain produced the bulk of the citations, so it might not be surprising that the British journals slightly dominated Zone 1. While seven of the ten journals most frequently cited by the two British titles were nursing journals, nine of the ten most frequently cited journals by the US titles were biomedical journals (Table 5). The lack of citations to *MEDSURG Nursing* from the British source journals might result from a lack of coverage of that title by *British Nursing Index.* Another reason might be the relative youth of this journal, which had been published for only a few years at the start of the time period covered by this study. *Nursing Clinics of North America,* the other US source title, was indexed by *British Nursing Index.* It was cited twenty-six times by authors in *Journal of Clinical Nursing* and fifty-four times by authors in *British Journal of Nursing.* On the other hand, authors in the US publications did not frequently cite either of the British source journals, although both were indexed in CINAHL and PubMed/MEDLINE. The use of the source titles in research internationally may increase, however, because PubMed/MEDLINE is now available at no charge to users via the Internet, and these journals are now more widely available via full-text collections.

Differences were noted when looking at the top ten

Table 4
Distribution and indexing of cited journals in Zones 1 and 2

Cited journal	Total citations	Bibliographic databases: CINAHL	PubMed	EBSCO NAH Comp.	EMBASE	Health Ref. Center	PsycINFO	SCI	SSCI	OCLC ArticleFirst
Zone 1										
1. J Adv Nurs	931	2	2	3	0	0	0	0	5	X
2. Nurs Times	729	5	4	0	0	3	0	0	0	
3. Br J Nurs	450	5	4	0	0	0	0	0	0	X
4. BMJ	381	0	4	3	2	2	0	5	1	X
5. Nurs Stand	300	5	3	0	0	0	0	0	0	X
6. N Engl J Med	294	1	4	2	3	3	1	5	1	X
7. JAMA	265	1	3	3	3	5	1	4	1	X
8. Lancet	231	1	3	3	3	2	0	5	1	X
9. Prof Nurse (2002); absorbed Community Nurse 1995–2001	200	5	3	0	0	0	0	0	0	X
10. Nurs Res	193	5	0	0	0	0	0	0	0	X
11. Anesthesiology	158	0	2	0	2	0	0	5	1	X
12. Nurs Clin North Am	138	5	4	0	0	0	0	0	5	X
13. Ann Intern Med	133	1	4	3	4	2	3	5	1	X
14. JPEN J Parenter Enteral Nutr	130	3	5	0	5	0	0	4	0	X
15. Heart Lung	126	5	5	0	0	0	0	5	1	X
16. Am J Nurs	124	5	3	4	0	3	0	0	4	X
17. Pediatrics	116	1	2	2	2	2	0	5	1	X
18. J Wound Care	112	5	4	0	0	0	0	0	0	
19. J Am Geriatr Soc	111	1	2	0	2	2	1	5	5	X
20. J Clin Nurs	107	3	3	4	0	0	0	0	5	X
21. Soc Sci Med	105	2	3	0	3	1	2	0	5	X
22. J Gerontol Nurs	96	5	4	0	0	0	0	0	0	X
23. Nurse Educ Today	96	4	4	0	0	0	0	0	5	X
Zone 1 average database coverage		3.04	3.26	1.17	1.26	1.09	0.35	2.09	1.83	21.00
Zone 2										
24. Int J Nurs Stud	95	5	5	0	0	0	0	0	0	X
25. J Tissue Viability	92	0	5	0	0	0	0	0	0	
26. Br J Psychiatry (including supplements)	89	0	3	0	3	0	3	5	5	
27. Rehabil Nurs	88	5	4	0	0	0	0	0	0	X
28. Intensive Crit Care Nurs	85	5	5	0	0	0	0	0	0	X
29. Gerontologist	83	2	2	3	2	5	2	0	4	X
30. J Hosp Infect	82	0	4	0	5	0	0	3	1	X
31. ANS Adv Nurs Sci (quarterly)	78	5	4	0	0	4	3	0	5	X
32. Anesth Analg	76	0	2	0	2	0	0	5	0	X
33. Pain	74	1	5	0	5	0	3	5	1	X
34. Am J Med	72	0	4	4	5	3	0	4	1	X
35. Diabetes Care	72	2	4	0	4	0	0	5	1	X
36. J Nurs Adm	72	5	5	0	4	0	0	0	5	X
37. Cancer Nurs	70	5	5	0	5	0	0	5	5	X
38. J Nurs Scholarsh (2000–); continues Image J Nurs Sch	69	5	4	0	0	4	1	0	0	X
39. Res Nurs Health	66	5	4	0	0	0	3	5	5	X
40. J Neurosci Nurs	65	5	3	0	0	3	0	0	0	X
41. AORN J	63	5	3	0	0	5	0	0	0	X
42. Arch Intern Med	63	1	4	0	4	3	0	5	1	X
43. Infect Control Hosp Epidemiol	59	2	2	0	0	0	0	5	0	X
44. Am J Psychiatry	57	0	3	0	3	3	3	5	5	X
45. Clin Nurse Spec	54	5	4	0	0	0	0	0	0	X
46. Nurs Manage (London)	54	5	4	0	0	0	0	0	0	
47. Arch Dis Child	53	0	3	0	4	0	0	5	1	X
48. Nurs Manage	52	5	4	4	0	3	0	0	0	X
49. Nurs Outlook	52	5	3	0	0	0	0	0	4	X
50. Crit Care Med	51	0	4	0	4	0	0	5	1	X
51. J Burn Care Rehabil	51	2	4	0	4	0	0	5	1	X
52. Br J Anaesth	50	0	4	0	4	0	0	5	0	X
53. West J Nurs Res	50	3	3	3	0	3	3	0	5	X
54. Anaesthesia	49	0	4	5	0	0	0	4	0	X
55. J Nurs Educ	49	5	5	0	0	0	0	0	5	X
56. Neonatal Netw	49	5	3	0	0	0	0	0	0	X
57. Arch Gen Psychiatry	48	0	4	0	4	0	4	5	5	X
58. Psychiatr Serv (1995–); continues Hosp Community Psychiatry	48	2	3	0	2	0	2	5	5	X
59. Am J Clin Nutr	46	2	4	0	3	3	0	5	1	X
60. Am J Public Health	46	4	4	4	4	4	1	5	5	X
61. Br J Surg	46	0	1	1	1	0	0	5	0	X
62. Nursing	45	5	2	3	0	2	0	0	0	X
63. Oncol Nurs Forum	45	5	4	0	0	0	0	0	0	X
64. Holistic Nurs Pract	44	5	4	0	0	4	0	0	0	X
65. J Urol	44	0	2	0	0	0	0	5	0	X
66. Am J Infect Control	43	5	5	0	4	0	0	4	1	X
67. Am J Obstet Gynecol	43	0	4	3	4	3	0	5	1	X

Table 4
Continued

Cited journal	Total citations	Bibliographic databases: CINAHL	PubMed	EBSCO NAH Comp.	EMBASE	Health Ref. Center	PsycINFO	SCI	SSCI	OCLC ArticleFirst
68. MMWR Morb Mortal Wkly Rep	43	3	3	5	0	3	0	0	0	X
69. Arch Surg	42	0	3	0	3	0	0	5	1	X
70. Cancer	41	0	4	0	5	4	0	4	1	X
71. Geriatr Nurs	41	3	2	0	0	0	0	0	5	X
72. Med Care	41	0	5	0	0	0	2	5	5	X
73. Nutr Clin Pract	41	5	0	0	0	0	0	0	0	X
74. Age Ageing	39	2	2	4	4	3	0	5	2	X
75. Arch Phys Med Rehabil	39	5	4	0	4	0	0	5	1	X
76. Arthritis Rheum	39	0	1	0	1	0	0	5	1	X
77. BJU Int (1999–); continues Br J Urol	39	0	3	0	5	0	0	0	0	X
78. Paediatr Nurs	38	4	5	0	0	0	0	0	0	X
79. Patient Educ Couns	38	4	4	0	4	0	3	5	5	X
80. J Am Diet Assoc	37	4	3	0	3	3	0	5	1	X
81. Nature	37	0	2	4	4	0	1	5	1	X
82. Nurse Pract	37	4	3	0	0	5	0	0	0	X
83. Transplant Proc	37	0	5	0	4	0	0	5	1	X
84. Ann Surg	36	0	4	0	3	0	0	5	0	X
85. J Obstet Gynecol Neonatal Nurs	36	5	5	0	0	0	0	0	0	X
86. J Pediatr	36	1	4	0	5	0	0	4	1	X
87. J Trauma	36	3	4	0	0	0	0	5	1	X
88. Pediatr Nurs	36	5	4	0	0	4	0	0	0	X
89. Crit Care Nurs Clin North Am	35	5	4	0	0	0	0	0	0	X
90. J Infus Nurs (2001–); continues J Intraven Nurs	35	5	3	0	4	0	0	0	0	X
91. Obstet Gynecol	35	0	4	0	5	0	0	5	1	X
92. J Clin Endocrinol Metab	34	0	4	0	5	0	0	5	1	X
93. Postgrad Med	34	0	5	0	5	0	0	4	1	X
94. Science	34	0	3	0	5	0	1	5	1	X
95. Chest	32	1	4	0	5	4	0	5	1	X
96. J Psychosom Res	32	0	4	0	4	0	4	5	5	X
97. J Psychosoc Nurs Ment Health Serv	31	5	3	0	0	0	0	0	0	X
98. Int J Geriatr Psychiatry	30	0	4	0	4	0	3	0	5	X
99. J Med Ethics	30	2	3	5	3	1	0	4	4	X
100. J Pain Symptom Manage	30	2	5	0	5	0	3	5	1	X
101. Orthop Nurs	30	5	3	0	0	3	0	0	0	X
102. MEDSURG Nurs	29	5	4	0	0	4	0	0	0	
103. Nurs Adm Q	29	5	4	0	0	5	0	0	0	X
104. Psychosom Med	29	0	2	0	2	0	2	5	5	X
105. AIDS	28	0	3	0	3	0	1	5	1	X
106. Br J Perioper Nurs (2000–); continues Br J Theatre Nurs	28	5	3	0	0	0	0	0	0	
107. J Am Coll Surg	28	0	4	0	3	0	0	5	0	X
108. Health Psychol	27	0	5	0	5	0	5	0	5	X
109. J Acquir Immune Defic Syndr (1999–); continues J Acquir Immune Defic Syndr Hum Retrovirol and J Acquir Immune Defic Syndr	27	0	5	4	0	4	0	5	1	
110. Nurs Sci Q	27	4	4	0	0	0	0	0	5	X
111. Circulation	26	0	1	0	2	0	0	5	0	X
112. Crit Care Nurse	26	5	4	0	0	0	0	0	0	X
113. J Consult Clin Psychol	26	0	5	0	5	1	5	0	5	X
114. J Contin Educ Nurs	26	5	4	0	0	0	0	0	0	X
115. J Infect Dis	26	1	5	0	5	0	0	5	0	X
116. Transplantation	26	0	5	0	5	0	0	5	0	X
117. Arch Psychiatr Nurs	25	5	4	0	0	0	4	0	4	X
118. J Nurs Manag	25	2	2	5	0	0	0	0	0	X
119. Surgery	25	0	4	0	4	0	0	5	0	X
120. AACN Clin Issues (1995–); continues AACN CLIN Issues Crit Care Nurs	24	5	4	0	0	0	0	0	0	
121. Br J Learn Disabil	24	5	0	0	0	0	5	0	0	X
122. Burns	24	0	5	0	5	0	0	5	1	X
123. Can Nurse	24	5	4	0	0	0	0	0	0	X
124. Health Serv J	24	5	5	0	0	0	0	0	0	
125. Pediatr Clin North Am	24	1	4	0	4	0	0	5	2	X
126. Psychol Med	24	0	4	0	4	0	4	5	5	X
127. RN	24	4	2	5	0	2	0	0	0	X
128. Semin Oncol Nurs	24	5	4	0	0	0	0	0	0	X
129. Urology	24	0	4	0	5	0	0	5	1	X
130. Am J Cardiol	23	1	3	0	3	0	0	5	0	X
131. Appl Nurs Res	23	5	4	0	0	0	0	0	5	X
132. Gastroenterology	23	0	1	0	1	0	0	5	0	X
133. J Pers Soc Psychol	23	0	3	0	0	1	5	0	5	X
134. Nutrition	23	0	4	0	4	0	0	5	1	X
135. Phlebology	23	0	0	0	4	0	0	5	0	X
136. Adv Skin Wound Care (2000–); continues Adv Wound Care	22	5	4	0	0	4	0	0	0	

Table 4
Continued

Cited journal	Total citations	Bibliographic databases: CINAHL	PubMed	EBSCO NAH Comp.	EMBASE	Health Ref. Center	PsycINFO	SCI	SSCI	OCLC ArticleFirst
137. Am J Surg	22	0	5	0	4	5	0	4	0	X
138. Ann Emerg Med	22	4	4	0	4	0	0	5	1	X
139. Gut	22	0	2	0	2	0	0	5	1	X
140. Hosp Med (London) (1998–); continues Br J Hosp Med and Hosp Med	22	2	5	0	4	0	0	0	1	X
141. J Rheumatol	22	0	4	0	4	0	0	5	1	X
142. Sch Inq Nurs Pract	22	3	3	0	0	0	5	0	0	X
143. Spinal Cord (1996–); continues Paraplegia (1963–1996)	22	2	4	0	4	0	0	5	1	X
144. Arch Pedatr Adolesc Med (1994–); continues Am J Dis Child	21	1	4	0	4	4	0	5	1	X
145. Community Pract (1998–); continues Health Visit	21	5	0	0	0	0	0	0	0	X
146. Endocrinol Metab Clin North Am	21	0	4	0	5	0	0	5	1	X
147. Int J Obes Relat Metab Disord	21	0	5	0	0	0	0	5	1	X
148. MCN Am J Matern Child Nurs	21	5	4	0	0	0	0	0	0	X
149. Ostomy Wound Manage	21	5	3	0	0	0	0	0	0	X
150. Hastings Cent Rep	20	2	2	3	0	3	0	0	5	X
151. Issues Ment Health Nurs	20	5	4	5	0	0	4	0	0	X
152. J Perianesthes Nurs (1996–); continues J Post Anesth Nurs	20	5	3	0	0	0	0	0	0	
153. J Prof Nurs	20	5	5	0	0	0	0	0	5	X
154. Sociol Health Illn	20	0	0	3	0	0	0	0	5	X
155. Can J Anaesth	19	0	3	0	3	0	0	3	0	X
156. J Clin Psychiatry	19	0	4	0	2	0	3	5	5	X
157. Phys Sportsmed	19	3	0	5	2	2	0	4	1	X
158. Am J Crit Care	18	5	5	0	0	0	0	0	0	
159. Am J Epidemiol	18	1	2	0	2	1	0	5	1	X
160. Am J Ment Retard	18	0	5	0	4	0	4	0	0	X
161. Aust J Adv Nurs	18	4	5	0	0	0	0	0	0	X
162. Clin Pharmacol Ther	18	0	2	0	2	0	0	5	0	X
163. Endocrinologist	18	0	0	0	3	0	0	5	1	
164. Health Trends (1969–1998)	18	0	0	0	0	0	0	0	0	X
165. J Assoc Nurses Aids Care	18	5	4	0	0	5	0	0	0	X
166. J Gerontol A Biol Sci Med Sci (1995–); J Gerontol B Psychol Sci Soc Sci (1995–)	18	3	4	5	0	5	0	0	0	X
167. J Nurs Care Qual	18	5	4	0	0	4	0	0	5	X
168. J Perinat Neonatal Nurs	18	4	3	0	0	4	0	0	5	X
169. Patient Care	18	2	0	0	0	5	0	0	0	X
170. Pract Diabetes Int	18	3	0	0	5	0	0	0	0	X
171. Clin Orthop	17	1	5	0	0	0	0	5	0	X
172. J Am Acad Dermatol	17	0	4	0	4	0	0	5	1	X
173. Nurs Educ Perspect (2002–); continues Nurs Health Care and Nurs Health Care Perspect	17	3	2	0	0	3	0	0	5	X
174. Nurs Forum	17	4	5	3	0	4	0	0	0	X
175. Qual Health Care	17	3	4	0	3	0	0	5	2	X
176. Stroke	17	1	3	0	3	0	0	5	1	X
Zone 2 average database coverage		2.37	3.46	0.56	1.95	0.97	0.60	2.50	1.41	141
Average Zones 1 and 2		2.46	3.43	0.64	1.86	0.98	0.57	2.44	1.47	162

Based on database coverage score: 5 (95%–100%); 4 (75%–94%); 3 (50%–74%); 2 (25%–49%); 1 (1%–24%); 0 (< 1%).
EBSCO NAH Comp. = EBSCO Nursing & Allied Health Collection Comprehensive Edition.
SCI = Science Citation Index.
SSCI = Social Sciences Citation Index.

journals cited by the British source journals versus the top ten journals cited by the US source journals (Table 5). Eight of the top ten titles cited by the British source journals, including the top three, were nursing journals, while the top nine journals on the US source journals' list were biomedical titles. *Lancet*, a British journal, and *Nursing Research,* a US publication, were the only two journals appearing on both top ten lists. It also was interesting that they were the only two journals in the top ten lists to cross national borders: all of the other journals on the British source list were British journals, and all of the other journals on the US source list were US publications. Citation frequency tended to follow national lines as well: except for *Nursing Research,* British source journals provided the bulk of the citations for the British journals in the top ten lists, while US source journals provided the bulk of the citations for the titles published in the United States. These tendencies might reflect lack of access to indexes that covered these journals, lack of availability of these titles in researchers' libraries, restrictive interlibrary loan practices, or bias toward publications from the authors' own countries.

All but five journals from Moorbath's list of the top forty most cited journals in the issues of *Journal of Advanced Nursing* [18] appeared in Zone 1 and Zone 2 of

Table 5
Ten most frequently cited journals by British and US source journals

Great Britain			United States		
Name of journal	No. of citations in *BCN* and *JCN*	% of all citations for this title	Name of journal	No. of citations in *MN* and *NCNA*	% of all citations for this title
J Adv Nurs	885	95.1%	JAMA	203	76.6%
Nurs Times	715	98.1%	N Engl J Med	191	65.9%
Br J Nurs	446	99.1%	Anesthesiology	131	82.9%
BMJ	347	91.1%	JPEN J Parenter Enteral Nutr	113	86.9%
Nurs Stand	296	98.7%	Ann Intern Med	85	63.9%
Prof Nurse	172	98.9%	Pediatrics	73	62.9%
Lancet	163	70.6%	Lancet	68	29.4%
Nurs Res	130	67.4%	J Am Geriatr Soc	67	60.4%
J Wound Care	111	99.1%	Anesth Analg	65	85.5%
J Clin Nurs	103	98.1%	Nurs Res	63	32.6%

BJN = British Journal of Nursing.
JCN = Journal of Clinical Nursing.
MN = MEDSURG Nursing.
NCNA = Nursing Clinics of North America.

this study, although some appeared under a new title or as part of another journal. Three journals shared the same rank: *Journal of Advanced Nursing* (1), *Nursing Times* (2), and *BMJ* (4). This might be due in part to the preponderance of citations from the British source journals. *British Journal of Nursing,* ranked third in Zone 1 of this study, was thirty-ninth on Moorbath's list under its previous title, *Nursing* (London). (It should be noted that it also absorbed *Surgical Nurse.*) Ten journals in Zone 1 of this study did not appear on Moorbath's list: *Anesthesiology, Annals of Internal Medicine, JAMA, JPEN: Journal of Parenteral and Enteral Nutrition, Journal of Clinical Nursing, Journal of Wound Care, Journal of the American Geriatrics Society, Nurse Education Today, Nursing Standard,* and *Pediatrics*. Of those ten, one (*Nursing Standard*) began publication three years before 1990, the year that Moorbath studied, and two (*Journal of Clinical Nursing* and *Journal of Wound Care*) began publication in 1992. The difference between the time frames of Moorbath's study and this study also might have affected the results, due to possible differences in the hot topics of each period.

The books cited by references in the 4 source journals covered a wide variety of topics and titles and included items from nursing organizations in the United States and the United Kingdom, medical and nursing clinical texts, books on theory, and popular works. The presence of a large number of books for which dates were not available was due, in part, to eleven undated citations from an article that examined medieval medical manuscripts. Most books were cited only once, causing difficulty for collection developers if they wanted to use frequency of citation to determine which books to buy. Even the most frequently cited book, the 1992 edition of the United Kingdom Central Council's *Code of Professional Conduct for the Nurse, Midwife and Health Visitor* [23], cited 55 times by authors writing in the *British Journal of Nursing* (47 citations) and *Journal of Clinical Nursing* (8 citations), accounted for only 0.96% of the citations from books. The frequency of this title's appearance in references in the *British Journal of Nursing* might be explained by the presence of a column on legal issues in nursing in that journal. The next most frequently cited book was Benner's *From Novice to Expert* (51 citations) [24]. Forty-eight of the citations to this book, which presented examples from practicing clinicians to demonstrate how nursing expertise develops, were from the British journals. As most researchers writing journal articles use the newest sources of reliable information, in other words, other scholarly journal articles, it makes sense that most books were not cited more than once.

The paucity of Internet sites is not odd, given that the time frame covered saw the explosion of the Web as an information source. The number of Internet sites would be expected to be much greater for mapping studies analyzing more recent time periods.

CONCLUSION

Librarians serving medical-surgical and adult health nurses must consider many factors when deciding which journals to include in their collections, including budget and access to indexes, and citation analysis of medical-surgical journal articles may help them to narrow their choices. In this study, however, citation analysis of medical-surgical journal articles did not prove to be generally useful in recommending what books to purchase. Librarians should consider adding subscription databases, including CINAHL for its coverage of nursing journals and Science Citation Index for its coverage of biomedical journals, to the freely available PubMed/MEDLINE and other versions of MEDLINE for the most complete access to the literature of this discipline.

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