
Mapping the literature of dietetics

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Research on the literature of dietetics, apart from the broader field of nutrition, has not been reported in the literature. The purpose of this bibliometric study was to identify the core journals of dietetics and to determine the extent of indexing coverage for these journals. The study was conducted as part of a larger project, the Project for Mapping the Literature of Allied Health, sponsored by the Nursing and Allied Health Resources Section of the Medical Library Association. Citations appearing in three journals between 1995 and 1997 were analyzed by the methodology common to studies in the project. Results revealed that dietetic literature relies heavily on journal literature and on those journals that are from associated health sciences fields. Of the indexing services examined, EMBASE/Excerpta Medica and MEDLINE provided the most complete coverage of the literature. The study's findings have implications for those involved with the literature of dietetics.

INTRODUCTION

The American Dietetic Association describes dietetics as, "the high-tech science of applying food and nutrition to health" [1]. It is one of several narrower fields of study encompassed by the subject of human nutrition [2]. Certified dietetic professionals are designated by the use of the initials "DTR" for "Dietetic Technician, Registered" or the initials "RD" for "Registered Dietitian." Dietetic technicians have completed a two-year college degree. Registered dietitians have completed a four-year college degree. Both apply their knowledge in a wide range of institutions including hospitals, wellness centers, and long term care facilities, to universities, government agencies, and food companies [3].

The modern era of dietetics is associated with the founding of the American Dietetic Association in 1917. Its founding was stimulated both by World War I and advancing scientific knowledge in nutrition [4]. Since the association's humble beginnings with thirty-nine charter members [5], it has grown to be one of the largest organizations representing food and nutrition professionals [6]. Through the Commission on Accreditation/Approval for Dietetics Education (CAADE), the association accredits educational programs in the field. The credentialing agency for the association, the Commission on Dietetic Registration (CDR), registers professionals through standardized exams [7].

Bibliometric studies designed to develop a core list

of journals for the field of dietetics have not been reported in the literature. The literature has reported a small number of bibliometric studies designed to develop a core list of journals for the broader field of nutrition. The most significant of these studies, The Core Agricultural Literature Project, was conducted by the Albert R. Mann Library at Cornell University. The project examined seven agricultural subject areas, the fifth area being food science and nutrition [8]. To arrive at a core journal list for food science and nutrition, 47,000 citations from fifty monographs were analyzed [9]. The study's results were published in 1995. Another article, published in 1988, identified core journals in nutrition by using data from the 1986 *Science Citation Index* [10]. An earlier study, published in 1973 within a collection of student papers from the University of Maryland, analyzed 600 citations from two nutrition journals [11]. These studies did not compare their core list of journals to the indexing coverage of bibliographic databases.

The purpose of this paper is to identify the core journals of dietetics and to determine to what extent indexing services cover the identified journals. Individuals responsible for building and maintaining a collection in dietetics and those involved with reference services for dietitians will find the results of this study valuable. Database producers and researchers interested in knowing which journals are most widely cited in the area of dietetics will also find value in the study's results.

Table 1
Cited format types by source journal frequency of citations

Cited type format	No. citations in source journals			Citations	
	JADA	J Nutr Edu	Nutr Today	No.	Frequency %
Journal articles	6,827	2,343	1,653	10,823	76.0%
Books	1,168	690	451	2,309	16.2%
Government documents	417	221	76	714	5.0%
Miscellaneous	178	172	34	384	2.7%
Internet resources	4	6	1	11	0.1%
Total	8,594	3,432	2,215	14,241	100.0%

This study is part of a larger project, the Project for Mapping the Literature of Allied Health. The project is sponsored by the Nursing and Allied Health Resources Section of the Medical Library Association. A thorough description of the project is found in the "Project Overview" [12].

METHODOLOGY

A common methodology, as described in the project overview [13], was followed. Three key journals in the field of dietetics were chosen to be the source journals for the study. References appearing in the source journals over a three year period were analyzed. The journals receiving two-thirds of the cited references from the source journals, as determined by applying Bradford's Law of Scattering [14], were checked for indexing coverage in five indexing services reporting coverage of dietetic literature.

To determine the source journals for this study, the Brandon/Hill "Selected List of Books and Journals in Allied Health" [15] was consulted. Two of the four nutrition journals on the list were selected, *Journal of the American Dietetic Association* and *Journal of Nutrition Education*. The *Journal of the American Dietetic Association* is the official journal of the American Dietetic Association; all members receive a subscription. It has been in publication since 1925. The *Journal of Nutrition Education*, published by Decker Periodicals, represents the important role of education within dietetics. It has been in publication since 1969. The remaining two journals on the Brandon/Hill list, *Journal of the Canadian Dietetic Association* and *Journal of Nutrition for the Elderly*, were not selected due to their narrow focus. *Nutrition Today*, first published in 1985, was the final source journal selected. The journal provides coverage of a wide range of issues and topics in dietetics, not necessarily addressed by the two source journals previously selected. It is published by Williams & Wilkins. The resulting source journals for the study—*Journal of the American Dietetic Association*, *Journal of Nutrition Education*, and *Nutrition Today*—collectively represent key components of the dietetic journal literature. All three journals are widely accessible to dietetic professionals.

Citations from all full-length feature articles in the source journals from 1995 to 1997 were examined. For each cited item, the source journal, format type, publication year, and referenced journal title, when applicable, were recorded. Format type consisted of the following five categories: journal articles (including government published journals), books, government documents, Internet resources (citations referencing a URL), and miscellaneous items (non-U.S. government publications, dissertations, letters, interviews, unpublished data, oral presentations, pamphlets, etc.). Using SERLINE, cited journals were united under their most current title as of 1996.

The resulting data set was analyzed. Cross tabulations were used to compare format type to publication year. Following Bradford's Law of Scattering, cited journals were ranked in order of citation frequency and divided into three equal zones according to number of citations. Zone 1 journals represented the most frequently cited journals in the field and formed the core list of journals in the field. Zone 3 journals represented those least cited in the field. Using the method described in the project overview, journals in Zones 1 and 2 were checked for indexing coverage in AGRICOLA, CAB Abstracts, Cumulative Index to Nursing and Allied Health Literature (CINAHL), EMBASE/Excerpta Medica, and MEDLINE. The indexing services' coverage of each journal title was scored based on the following scale: 5 (100%–95%), 4 (94%–75%), 3 (74%–50%), 2 (49%–25%), 1 (24%–1%), 0 (< 1%).

RESULTS

From the three source journals, 446 articles met the criteria for inclusion in this study. The 446 articles cited 14,241 references. The *Journal of the American Dietetic Association* contained 259 qualifying articles. The *Journal of Nutrition Education* contained 114 qualifying articles. *Nutrition Today* contained 73 qualifying articles. Analysis by format type, as shown in Table 1, revealed a predominance of citations to journal articles (76%). Journal article citations, along with references to books, comprised 92.2% of the total references. The percent of citations to journal articles varied by source journal: *Journal of the American Dietetic Association* ar-

Table 2
Cited format types by publication year periods

Publication year	Journal articles		Books		Government documents		Miscellaneous		Internet		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1990–1998*	5,944	54.9%	1,091	47.2%	451	63.2%	243	63.3%	11	100.0%	7,740	54.4%
1980–1989	3,763	34.8%	837	36.2%	197	27.6%	120	31.3%	0	0.0%	4,917	34.5%
1970–1979	745	6.9%	212	9.2%	58	8.1%	12	3.1%	0	0.0%	1,027	7.2%
1960–1969	180	1.7%	72	3.1%	4	0.6%	3	0.8%	0	0.0%	259	1.8%
Pre-1960	191	1.8%	97	4.2%	4	0.6%	6	1.6%	0	0.0%	298	2.1%
Total	10,823	100.0%	2,309	100.0%	714	100.0%	384	100.0%	11	100.0%	14,241	100.0%

* Includes materials in press and submitted.

ticles (79.4% of 8,594 citations), *Journal of Nutrition Education* (68.2% of 3,432 citations), and *Nutrition Today* (74.6% of 2,215 citations).

The citations were also analyzed by publication date (Table 2). There were three references from 1997 source journals, to articles in publication that provided complete citations with 1998 publication dates. To accommodate these references, the label for the most recent time span included 1998.

Overall, 54.4% of the citations were from the most recent time span (1990 to 1998). The most current format type was Internet documents, with 100% of the citations giving a 1990 to 1998 accessed or published date. Books were the least current of the format types; only 47.2% had 1990 to 1998 publication dates.

Bradford's Law of Scattering divided the list of cited journals into three equal zones based on citation distribution (Table 3). Zone 1 data showed that the eight most cited journals in the list were responsible for one-third of the total number of journal article citations. The *Journal of the American Dietetic Association*, the most frequently cited journal, accounted for 35% of the citations in Zone 1. Zone 2 was comprised of seventy-eight journals. Zone 3 consisted of the remaining 1,282 journals. Journals from Zone 1 and 2 accounted for 6.3% of the cited journals and two-thirds of the cited references.

The ranked list of Zone 1 and Zone 2 journals, and the thoroughness of coverage by several indexing services, is shown in Table 4. None of the indexing ser-

vices indexed every journal in Zones 1 and 2. The most complete indexing coverage was provided by EMBASE/Excerpta Medica and MEDLINE. EMBASE/Excerpta Medica indexed $\geq 50\%$ of the contents of 81% of the journals. MEDLINE indexed $\geq 50\%$ of the contents of 79% of the journals. The remaining services each provided that level of indexing for less than 15% of the journals.

The total indexing coverage scores reflected these overall strengths and weaknesses of the indexing services for the dietetic literature. MEDLINE received a total indexing coverage score of 332. EMBASE/Excerpta Medica received a total indexing coverage score of 316. None of the other three indexing services had a score above 100.

DISCUSSION

This study found several characteristics of citation use in the dietetic literature. A strong dependence on journal literature was revealed, as expected for a discipline in the health sciences. Of the citations analyzed, 76% were to journal literature. Five of the Zone 1 journals, considered core titles for the field, were not directly related to dietetics. This statistic indicated a strong reliance on journal literature from associated fields. The 5% of citations to government documents showed a relatively high level of use for this format type. Internet sources, the least cited of the format types, accounted for only 0.1% of the citations. This low number was likely due to the newness and evolving nature of the format, as well as caution by authors in citing it. A strong reliance on recent literature was shown. Over half of all citations (54.4%) were published in the 1990 to 1998 time span.

Indexing coverage was greatest by EMBASE/Excerpta Medica and MEDLINE. Both had high indexing coverage of Zone 1 journals with one important exception, *Journal of Nutrition Education*. Neither *Journal of Nutrition Education* nor *Nutrition Today*, source journals for this study, were indexed by either EMBASE/Excerpta Medica or MEDLINE. The indexing coverage of

Table 3
Distribution by zone of cited journals and references

Zone	Cited journals		Cited journal references		Cumulative total	
	No.	%	No.	%	No.	%
Zone 1	8	0.6%	3,651	33.5%	3,659	34.3%
Zone 2	78	5.7%	3,590	33.2%	3,668	38.9%
Zone 3	1,280	93.7%	3,582	33.1%	4,862	126.8%
Total	1,366	100.0%	10,823	100.0%	12,189	200.0%

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

Cited journal	No. of citations	AGRICOLA	CAB abstracts	CINAHL	EMBASE	MEDLINE
Zone 1 (8 titles, 3,651 citations)						
1. J Am Diet Assoc	1,275	3	2	5	3	4
2. Am J Clin Nutr	889	0	4	4	4	5
3. J Nutr Educ	508	3	2	5	0	0
4. NEJM	259	1	1	1	4	5
5. JAMA	204	0	1	0	5	5
6. Am J Epidemiol	180	0	1	1	4	5
7. Lancet	178	1	1	0	4	5
8. Am J Public Health	158	0	0	2	3	5
Zone 2 (78 titles, 3,590)						
9. J Nutr	155	1	4	0	5	5
10. Pediatrics	154	1	1	1	5	5
11. Prev Med	116	0	2	0	4	5
12. BMJ (formerly Br Med J)	101	0	0	0	3	5
13. Diabetes Care	99	1	1	0	4	5
14. Health Educ Q (cont'd by Health Educ Behav)	97	0	0	2	0	5
15. JPEN J Parenter Enteral Nutr	95	0	3	3	5	5
16. J Sch Health	86	0	0	5	0	4
17. Circulation	80	0	1	0	5	5
18. J Pediatr	76	1	1	0	5	5
19. Ann Intern Med	75	0	1	1	2	5
20. J Natl Cancer Inst	69	0	1	0	3	5
21. Arch Intern Med	63	0	1	0	5	5
22. Am J Cardiol	62	0	0	0	3	5
23. J Am Geriatr Soc	60	0	0	3	3	5
24. Nutr Cancer	60	2	0	0	5	5
25. Nutr Rev	59	3	3	5	5	5
26. Int J Eat Disord	58	2	2	2	5	5
27. Arch Pediatr Adolesc Med (formerly Am J Dis Child)	57	0	0	0	4	5
28. Nutr Today	57	2	1	0	0	0
29. Int J Obes Relat Metab Disord (formerly Int J Obes)	56	0	4	0	5	5
30. Eur J Clin Nutr	51	2	4	0	5	5
31. Cancer Res	50	0	0	0	5	5
32. Am J Health Promot	48	0	0	2	4	0
33. J Appl Physiol	48	0	1	0	5	5
34. MMWR	48	0	0	0	0	5
35. Am J Physiol	47	1	1	0	4	5
36. J Consult Clin Psychol	46	0	0	0	5	5
37. Public Health Rep	46	1	1	2	3	5
38. Med Sci Sports Exerc	46	0	0	4	5	5
39. J Am Coll Nutr	46	4	4	0	4	5
40. Ann NY Acad Sci	45	0	0	0	4	4
41. Cancer	44	0	0	0	5	5
42. Science	44	0	0	0	5	3
43. Nutr Res	43	5	5	0	5	0
44. Appetite	42	3	4	0	4	5
45. Int J Cancer	42	0	1	0	5	5
46. Diabetes	40	0	1	2	5	5
47. Am J Pathol	40	0	1	0	4	5
48. Health Educ Res	39	0	0	1	5	0
49. Metabolism	39	0	1	0	5	5
50. Clin Chem	37	0	1	0	4	5
51. J Canc Diet Assoc	35	2	1	5	0	0
52. Ecol Food Nutr	34	5	4	0	0	0
53. Pediatr Res	33	0	1	0	5	5
54. Nature	32	1	1	0	4	3
55. Health Psychol	32	0	0	0	0	0
56. Br J Nutr	32	1	4	2	5	0
57. J Clin Invest	31	0	1	0	5	0
58. Atherosclerosis	31	1	2	0	5	0
59. Am J Obstet Gynecol	29	0	1	0	5	0
60. Soc Sci Med	29	0	1	1	5	0
61. Top Clin Nutr	28	0	1	5	0	0
62. World Rev Nutr Diet	28	0	0	0	0	5
63. Nutr Clin Prac	27	0	0	5	0	5
64. Food Technol	27	2	0	0	0	0
65. Ann Surg	27	0	0	0	4	5

Table 4
Continued

Cited journal	No. of citations	AGRICOLA	CAB abstracts	CINAHL	EMBASE	MEDLINE
66. <i>Physiol Behav</i>	27	0	2	0	4	5
67. <i>Arterioscler Thromb Vasc Biol</i> (formerly <i>Arterioscler Thromb</i>)	26	0	1	0	5	5
68. <i>FASEB J</i> (formerly <i>Fed-Proc</i>)	26	1	1	0	4	5
69. <i>Dev Med Child Neurol</i>	25	0	1	0	5	5
70. <i>Am J Prev Med</i>	24	0	0	0	4	5
71. <i>Acta Paediatrica</i> (formerly <i>Acta Paediatrica Scand</i>)	24	0	1	0	5	5
72. <i>J Clin Endocrinol Metab</i>	23	0	1	0	5	5
73. <i>Epidemiology</i>	23	0	1	0	4	5
74. <i>Arch Dis Child</i>	23	0	1	0	5	5
75. <i>Cancer Causes Control</i>	22	0	1	0	5	5
76. <i>J Health Educ</i> (formerly <i>Health Educ</i>)	22	2	0	5	0	0
77. <i>J Food Sci</i>	22	2	2	0	0	0
78. <i>J Am Coll Cardiol</i>	22	0	0	0	5	5
79. <i>Gut</i>	21	0	1	0	5	5
80. <i>Child Dev</i>	21	0	1	0	0	4
81. <i>Sch Food Serv Res Rev</i>	20	5	0	0	0	0
82. <i>J Adolesc Health</i> (formerly <i>J Adolesc Health Care</i>)	20	0	1	5	5	5
83. <i>Obstet Gynecol</i>	20	0	0	0	5	5
84. <i>Am J Med</i>	20	0	1	0	5	5
85. <i>J Abnorm Psychol</i>	19	0	0	0	5	5
86. <i>Gastroenterology</i>	19	0	1	0	5	5
Total indexing coverage score		59	97	79	313	332

Indexing coverage scale: 5 (95%–100%); 4 (75%–94%); 3 (50%–74%); 2 (25%–49%); 1 (1%–24%); 0 (< 1%).

the remaining indexing services, proved extremely poor. This lack of coverage might be explained, in part, by the fact that many of the Zone 1 and Zone 2 journals fell outside the scope of dietetics. Although overall coverage of the journal literature by these indexing services was limited, they did index journals not indexed by EMBASE/Excerpta Medica and MEDLINE. For example, AGRICOLA, CAB Abstracts, and CINAHL, indexed *Journal of Nutrition Education*.

CONCLUSION

The journal literature of dietetics is widely dispersed. Among the core journals in Zone 1 were titles devoted to topics in general medicine, epidemiology, and public health. Additionally, journals covering topics in psychology, food technology, and basic sciences were found in Zone 2. Only EMBASE/Excerpta Medica and MEDLINE offered acceptable indexing coverage of the journals in the top two zones.

Dealing with the widely dispersed journal literature of dietetics requires different approaches, depending on intent. When thorough searching of the dietetic journal literature is needed, using more than one indexing service is recommended. Librarians responsible for maintaining dietetic collections need to ensure the inclusion of journal titles from related fields, especially those titles in the list of core journals in Zone 1. They should also be aware of the field's high reliance

on government documents. Indexing services that claim coverage for nutrition or allied health literature should examine the list of journals from Zone 1 and Zone 2 for potential additions to their databases.

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