Jointly published by Akadémiai Kiadó, Budapest
and Kluwer Academic Publishers, Dordrecht

Scientometrics,
Vol. 56, No. 3 (2003) 369–382

Citation patterns in the Kuwaiti journal *Medical Principles and Practice*: The first 12 years, 1989-2000

CHARLENE L. AL-QALLAF

Kuwait University, Department of Library and Information Science (Kuwait)

This study investigates the citation patterns in the journal, *Medical Principles and Practice* from its inception in 1989 through 2000 (volumes 1-9). The data set includes 4740 references appended to the 221 original research articles. All of the citations were entered into a ProCite database for analysis. Specifically, this study addresses: (1) bibliometric patterns of cited works in terms of publication format, subject scatter, authorship characteristics, age of citations, geographic distribution, and language distribution; (2) productivity of journal titles; (3) the role of self-citation; and (4) how selected bibliometric indicators apply. Some of the findings include: journal articles are most frequently cited; English language publications dominate the literature; there is a trend of multiple authorship; and the pattern of aging is below the norm for medical literature. The results of the study can provide a benchmark to measure the user behavior of a particular group of researchers as well as for the provision of collection development and management decisions.

Introduction

The field of medicine is a heterogeneous discipline. Medicine's disparate nature and increasing integration with other disciplines adds to its complexity. Therefore, its literature can differ greatly in scope, in quality, in audience, and in utility.[1] One means of studying the literature of a discipline is to apply the well-established scientometric technique called bibliometrics. The most common type of bibliometric research is concerned with citations. The study of citations contributes to the cognitive, social, and organizational development of a discipline, its researchers, and its literature.

The purpose of this study is to examine the citations appended to the research articles in the first 12 years of *Medical Principles and Practice* (*MPP*) in order to identify and describe their trends and patterns. *MPP*, the journal of Kuwait University Health Sciences Centre is a major source of formal communication in English for health care professionals in Kuwait. The inside cover of the journal states, that it publishes "peer-reviewed articles of current international interest in the form of papers, solicited

Received October 14, 2002.

Address for correspondence:
CHARLENE L. AL-QALLAF
Kuwait University, Department of Library and Information Science
P. O. Box 5969 Safat, 13060, Kuwait
E-mail: charlene@kuc01.kuniv.edu.kw

0138–9130/2003/US $ 20.00

reviews, case reports, short communications, conference proceedings, discussion forums and letters." The publisher of *MPP* is S. Karger AG.

Specific questions addressed are:

1. What are the bibliometric patterns of cited works in terms of: publication format, subject scatter, authorship characteristics, age of citations, geographic distribution, and language distribution?
2. What is the productivity of journal titles in terms of citation yield? What are the titles most frequently cited by publishing researchers in medicine?
3. What is the role of self-citations?
4. How do selected bibliometric indicators apply?

The study of *MPP*'s citation history will provide a benchmark for the assessment of scientific communication behavior of medical professionals in Kuwait as well as in the region. By identifying the bibliometric characteristics, the editorial staff can fulfill or redefine the mission and objectives of the journal. Such a study will also assist local information providers to formulate policy guidelines for the selection and acquisition of information resources.

Literature review

Citation studies have been used for many decades either to determine the impact of the literature on a field of study or to analyze research activity. Such studies cross disciplinary and geographic boundaries.

There have been a number of studies of citation patterns of specific pre-clinical science disciplines and populations. *Hafner* identified and described selected characteristics of the physiology literature by examining the citation patterns of eight physiology journals.[2] Ninety-one percent of the references were to serial titles with 25 percent of the citations published during a five-year period. *Aziagba* studied the citation patterns and selected bibliometric characteristics of the source articles in the *Nigerian Journal of Micorbiology*.[3] *Hurd* et al.[4] and *Lascar* and *Mendelsohn*[5] examined the formats and subjects of materials cited in published articles of molecular biology faculty and structural biologists respectively. Both studies found an overwhelmingly majority of the citations was to the journal literature.

Similar studies in the field of medicine are not as common. Of the bibliometric studies conducted in the medical sciences, most are in the area of journal impact factors and author productivity. Few studies have examined citation characteristics. *Devin* and *Kellogg* provided a summary of data on serial versus monograph use by examining 66

citation studies.[6] The only citation study they examined referring to medicine was published in 1932 and it showed the ratio of journal literature to other types was 85:15. In a similar study, *Burdick* et al. chose ten top general internal medicine serials and seven well-known medical textbooks and compared citation frequency with current library practice.[7] They found that internal medicine serials cited 91 percent serials and textbooks cited 79 percent serials.

A few studies have been published which examined specialty areas in medicine. *Thorpe* tested the applicability of the *Gross* and *Gross* method for the evaluation of periodicals in the literature of rheumatology.[8] Sources for the samples of citations were the 1970 volumes of *Annals of the Rheumatic Diseases* and *Arthritis and Rheumatism*. He found a relatively small number of journals, the majority of which were to non-rheumatology titles, contained a high percentage of relevant citations. *Brennen* applied Bradford's law of bibliographic distribution to determine journal concentration in the literature of tropical medicine.[9] He analyzed the citations in *Tropical Diseases Bulletin* for a four-year period according to the journal in which they were published and the language in which they appeared. Results showed a high concentration of articles in a relatively low number of journal titles and that English was the most important language in the literature of tropical medicine.

Methodology

The present study analyzes volumes 1-9 of *MPP*, published during 1989-2000. (Issue 3/4 of volume 2 was excluded due to its unavailability at the time of the study.) Data were collected for all 4740 citations appended to the original papers appearing in that period. Letters, reviews, etc. were excluded on the grounds they were not research articles. Using ProCite (version 5.0), a database was set up to record selected elements of each citation: author(s), article title, journal title, monographic title, publication type, subject of source title, language, country of publication, number of pages, volume, issue, and date of publication. Each citation was also given a unique identifier. A second database contained information about the source articles that was used for crosschecking. Again, a unique identifier was given that linked the source article to the citation.

Subject categories were assigned at the journal level using the Institute for Scientific Information's (ISI) *Journal Citation Reports*. If a title was not available in *JCR* then *Ulrich's International Periodical Directory* (*Ulrich's*) 2001 CD-ROM version was consulted. Because of the high subject dispersion of titles in medicine, *Ulrich's* also was used to classify the subjects into broader categories so that the data was more

manageable. Sixty-eight journal titles representing 112 citations could not be identified in these tools. While there was some subjectivity in assigning topics to these citations, most decisions were relatively straightforward and unproblematic. For those citations that had inaccurate or missing information, several standard sources such as MEDLINE, DIALOG, and WebPacs were used. These sources were also consulted when country of publication and language information needed verification. Descriptive statistics were used to quantify the data. In addition, several bibliometric indicators were used to test the 'solidness' and the 'scholarliness' of the citations.

Results and discussion

The nine volumes of the journal *MPP* produced 221 original research articles that generated 4740 references.

One method of measuring the scholarliness and maturity of the cited literature is by examining the ratio of source papers without references to those with references.[10] The references in *MPP* 'tested' very well by this standard, with a ratio of 0:100. In other words, all 221 source articles contained references. According to *Price*, another measure to test the scientific nature of a literature is to calculate the average number of citations per article.[11] *Price*'s studies suggested that the norm of scholarship for a paper is ten to twenty-two references. Papers rising far above this norm indicate a review article rather than research and those falling far below the norm indicate a technical literature. The average number of citations per article found in this study is 21.45, which falls in *Price*'s upper quartile but within the norm indicating that this body of literature is at the research end and is demonstrative of 'scholarliness'.

Citation errors

Citation errors in this study are defined as incorrect or missing information that interfered with the identification of the document in question. Such errors represent 1.71 percent (n=81) of the citations and all errors are to journal citations. Information for eight citations (0.17%) remains unconfirmed. Other studies have also reported that the inaccuracy of references in medical journals is not uncommon.[12–15]

Forms of literature

This section provides statistics on the type of publications cited. Table 1 presents a breakdown by number and percentage of the citations according to form of literature. It is clear that journals constitute the largest single category. Of the 4740 publications cited, 4255 (89.77%) citations are from journals, 356 (7.52%) from monographs, and only 23 (0.48%) are from conference proceedings. The high proportion of journal citations in this study is consistent with established theory that the majority of scholarly communication in the medical community follows this medium. There is such a low dispersion of citations among the remaining categories that collectively, they comprise less than 2.5 percent of the total. It is significant to note that in this age of electronic information only four citations are to an electronic resource, of which one is a Web page.

Table 1. Forms of cited materials

Type of publication	Number of citations	Percent of citations
Journals	4,255	89.77
Books	356	7.52
Reports	85	1.79
Conference proceedings	23	0.48
Others	21	0.44
Total	4,740	100.00

Distribution of subjects

The macro-analysis of the 4740 citations, based on subject distribution, provides a disciplinary profile of the study (Table 2). As expected, subjects in the area of medical sciences are the most used regardless of document type (78.57%). The next five medical related subjects – biology; pharmacology and pharmacy; public, environmental, and occupational health; health care sciences and services; and nutrition and dietetics contribute 775 citations (16.35%). Together these six subjects consist of 4499 citations (94.92%). Twenty additional subjects comprise the remaining 5.08%.

Of the 4255 citations that span the journal literature, 3388 cited papers (79.62%) are classed under the subject heading, medical sciences. Forty-two medical sub-classes were tabulated. Table 3 presents the ten most frequently cited subsets of the medical fields. Medicine, general and internal represents the largest medical subset of journal citations (18.98%). Obstetrics and gynecology is the next largest category of cited papers (7.85%), followed closely by immunology, cardiac and cardiovascular systems,

surgery, and pediatrics. Together these six subsets represent 52.32 percent of the medical sciences citations and 41.67 percent of the entire journal citation population. The remaining 36 sub-classes contribute 47.68 percent of the citations.

In terms of groupings of books, 241 citations are classed in the medical sciences, 29 in biology, and 22 in statistics, yielding 292 citations. These three classes represent 82.02 percent of the total number of book citations. Of the 85 citations to reports, 61 are in medical sciences with 16 engineering citations being a distant second.

Table 2. Distribution of cited materials by subject

Subject group	Citations to journals		Citations to books		Citations to reports		Others		Total number of citations	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Medical sciences	3,388	(79.62)	241	(67.70)	61	(71.77)	34	(77.27)	3,724	(78.57)
Biology	461	(10.83)	29	(8.14)	–	–	2	(4.55)	492	(10.38)
Public, environmental, & occupational health	113	(2.65)	–	–	–	–	–	–	113	(2.38)
Others	293	(6.90)	86	(24.16)	24	(28.23)	8	(18.18)	411	(8.67)
Total	4,255	(100)	356	(100)	85	(100)	44	(100)	4,740	(100)

Table 3. Top 10 medical subjects of cited journals

Medical subject area of cited journal	Cited journal titles		Citations to journals	
	No.	(%)	No.	(%)
Medicine, general & internal	128	(17.90)	643	(18.98)
Obstetrics & gynecology	36	(5.03)	266	(7.85)
Immunology	35	(4.89)	239	(7.05)
Cardiac & cardiovascular diseases	30	(4.19)	235	(6.93)
Surgery	31	(4.33)	202	(5.96)
Pediatrics	26	(3.63)	188	(5.55)
Radiology, nuclear medicine, & medical imaging	29	(4.05)	140	(4.13)
Genetics & heredity	16	(2.24)	109	(3.22)
Orthopedics	17	(2.37)	101	(2.98)
Infectious diseases	17	(2.37)	97	(2.86)

Dispersion of journal titles

Journal title dispersion is defined as the degree to which the number of cited papers are scattered through the number of journals used. The ranking of journal titles is a measure of their level of importance to the citing authors as well as to the discipline that

they reflect. Since it is not unusual for a journal title to change its name, *Ulrich's* was used to check each cited title in order to assign all citations to a specific title under the most recent title. There are 1025 unique journal titles covering the 4255 journal citations.

To test journal productivity, Bradford's Law of Scattering is applied. In this study, a multiplier of 4.2 was calculated giving the least percentage error of 2.4. A core or nucleus of 46 titles was formed contributing to one-third of all the citations (zone 1). The graphical representation of the distribution of data is illustrated in Figure 1. It is observed that the curve follows closely the well-known shape of the Bradford curve.

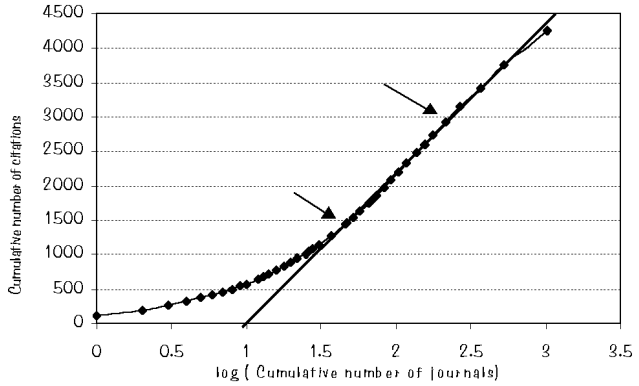

Figure 1. Graphical distribution of cited journals and references

Table 4 lists in descending order the most frequently cited journal titles in zone 1. The most productive cited journals in the study are *Lancet*, *American Journal of Obstetrics and Gynecology*, *New England Journal of Medicine*, and *British Medical Journal*. Table 4 also reflects, that, as a rule, *MPP* authors tend to cite articles appearing in the well-established journals with greater frequency. It is worth mentioning that the three general science journals, *Nature*, *National Academy of Sciences Proceedings (U.S.)*, and *Science* included in zone 1, are among the most frequently cited journals, which is consistent with other studies.[16–18] Furthermore, *MPP* is also among the titles in zone 1 having been cited 21 times.

Table 4. Most frequently cited journals (Zone 1 titles)

Journal title	Rank	Number of citations	Percent of citations	Cumulative percent
Lancet	1	111	2.60	2.60
American Journal of Obstetrics and Gynecology	2	79	1.85	4.45
New England Journal of Medicine	3	75	1.76	6.21
British Medical Journal	4	63	1.48	7.69
JAMA-Journal of the American Medical Assoc.	5	46	1.08	8.77
Obstetrics and Gynecology	6	45	1.06	9.83
Circulation	7	42	0.99	10.82
Journal of Bone and Joint Surgery (American)	8	41	0.96	11.78
Infection and Immunity	9	40	0.94	12.72
Journal of Clinical Microbiology	10	37	0.87	13.59
Others	–	856	20.11	33.70

Author characteristics

The referencing patterns of both cited authors and source authors are described in this section. It should be noted that this study could not account for editorial decisions with respect to author treatment in the cited journals and to author indexing decisions in databases. That is to say, how does a journal or database decide who is an author or how many authors to list? Does the notation 'et al.' mean one author, two authors, three authors, four authors, and so on? Based on these limitations only authors listed in the citations were counted.

A total of 12,728 unique authors consisting of single authors, co-authors, and corporate bodies contributed 4734 citations (in six cases, authorship could not be determined). The vast majority, 11,000 authors (86.43%), contributed only one citation. The most prolific author was cited 349 times.

The distribution of author collaboration to both cited and source articles are shown in Table 5. Three or more authors contributed to more than half of the cited papers (59.59%) and two-author publications account for 19.14 percent, while sole-author items comprise only 18.4 percent. These statistics reveal that the majority of cited publications (78.73%) contain collaboration. The ratio of cited authors to citations is 2.69:1. Similarly, of the 221 source articles published, 204 (92.31%) are co-authored by two or more individuals while; the majority of these (76.92%) are written by three or more authors. The ratio of source authors to source articles 2.78:1. This high incidence of author collaboration concurs with data provided by the ISI. According to the figures listed in the 2000 *Science Citation Index Guide*, the average number of authors per source item in scientific disciplines is increasing steadily from 1.84 in 1966 to 3.98 in 2000.[19]

A final characteristic examined is the country affiliation of the primary source author. Most of the source authors are affiliated with institutions in Kuwait (84.16%), of which 11.31 percent collaborated with authors from outside Kuwait. Only 15.84 percent of the articles have been published by authors from other countries with 3.62 percent of these from other Arab countries.

Table 5. Distribution of author collaboration

Number of authors	Authors of cited articles		Authors of source articles	
	No.	(%)	No.	(%)
One	875	18.48	17	7.69
Two	907	19.16	34	15.39
Three or more	2,824	59.65	170	76.92
Corporate bodies	128	2.71	–	–
Total	4,734	100.00	221	100.00

Patterns of self-citations

In this section, self-citations are considered as a sub-group of citations. A reference was considered self-cited if it had been authored or co-authored by one of the authors of the citing paper. From the 4740 citations, only 376 (7.9%) are self-cited. This finding is considerably lower than found in other studies.[20,21]

To determine if there were any distinguishing features of this particular type of citation, four characteristics are examined in relation to the self-cited references. They are type of self-cited document, self-cited journal titles, age of self-citations, and author collaboration. As is the case with most references to scientific research, authors who cite themselves, generally cite their journal publications. From the 342 self-cited journal references, there are 161 unique titles. The top five most frequently self-cited journal titles account for 42.24 percent of the self-citations. The source journal, *MPP* is self-cited 15 times and all the citations to the journal *Biology of the Neonate* are self-citations. The age of the self-citations covers a 33-year time span with a little more than half (194) being ten years old or less. When compared to the age of all the citations, self-citations tend to be more recent.

The final characteristic examines multiple-authorship. Generally, author collaboration increases the probability that one or more of the authors will have a previously published document to which they refer. This is true in this case. The majority (88.03%) of the self-cited items are written by two or more authors, of which

252 (67.02%) have more than three authors. Only 47 (11.97%) self-citations are single authored publications. These figures are consistent with the co-authoring patterns of all the citations.

Age of cited references

Age data are available for 4732 of the 4740 cited items. For eight references, the publication date is not available. The age of the citations is calculated by subtracting the year of publication of the cited item from the year of publication of the source item. The time span of citations ranges from 0 to 134 years. Citations more than 50 years old contribute to less than one percent of the total. It is found that as this group of citations increase in age, the possibility of citing foreign language publications increases as well, with most of the oldest citations (75%), pre-twentieth century, being to foreign language publications.

Table 6 displays the aging of the citations measured in five-year intervals. The data shows that the number of citations for the most recent literature (5 years old or less) is only slightly higher than for those in the next interval (6-10 years old). This reflects an atypical pattern for scientific literature.

Table 6 also shows that references which are five years old or less account for approximately 33 percent of the citations. This percentage represents the value of Price's Index (PI) for citations in *MPP*. *Price* argued that this percentage could be used to determine the archival or research front of a journal, institution, author, a single paper, etc.[11]

Table 6. Age of the cited literature

Years	Number of citations	Cumulative number	Percentage of citations	Cumulative percentage
0	61	61	1.29	1.29
1-5	1,481	1,542	31.30	32.59
6-10	1,367	2,909	28.88	61.47
11-15	804	3,713	16.99	78.46
16-20	481	4,194	10.16	88.62
21-25	251	4,445	5.30	93.92
26-30	114	4,559	2.41	96.33
31-35	74	4,633	1.56	97.89
36-40	38	4,671	0.80	98.69
41-45	24	4,695	0.51	99.20
44-50	10	4,705	0.21	99.41
> 50	27	4,732	0.59	100.00

Archival referred to the tendency of a discipline to cite materials regardless of their age while research front referred to the importance of current materials (less than six years old). That is, the higher the percentage of citations less than six years old, the greater the research front. In this study, the value of 33 falls within the 'median' of PI, in neither the lower (soft science) nor the upper quartile (high research front; hard science). This indicates that the cited literature is part archival with an average research front and could be categorized as a 'medium' science.

The value, 33, for Price's index is much lower than one might have expected. In fact, it suggests that the citation practices found in *MPP* more closely favor those of researchers in the social rather than the pure sciences. It is noteworthy to mention, however, that over the 12-year history of the journal there is a steady increase in the number of recent citations. In fact, over one-third of the citations less than six years old are from the last two years of the publication of the journal, as compared to a ten-year period covering the remaining citations.

Origin of publications

Another characteristic of cited materials that can be quantified is the national origin of publications. Table 7 shows the geographical distribution of the citations based on country of publication. Although 47 countries are covered representing six continents, the United States with 2594 cites (54.73%) and the United Kingdom with 1,031 cites (21.94%) account for 3625 citations (76.67%). Other European countries contributing to-a-lesser degree are the Scandinavian countries, Germany, Switzerland, and the Netherlands, with a cumulative total of 623 (15.78%). These findings concur with a recent study that examined the distribution of biomedical journal publications listed in Medline with regard to place of publication.[22] Arab countries, surprisingly, contributed only 127 citations (2.68%) with Kuwait accounting for the majority (76.4%).

Table 7. Distribution of citations by region

Region	Number of citations	Percent of citations
North America	2,645	55.80
British Isles	1,055	22.26
Mainland Europe	748	15.78
Others	292	6.16
Total	4,740	100.00

Languages of publications

As shown in Table 8, English-language publications comprise the overwhelming majority of citations in this study. References in English account for 4606 (97.17%) of the total with the remaining 134 citations (2.83%) written in 19 other languages. Although having very low percentages, the next three languages after English are German, Dutch, and French. *Hafner* in his study of physiology literature reported similar results.[23] Publications in Arabic account for a very low percentage (0.15%). A reason for this is that the medical literature in Arabic is handicapped by the absence of bibliographic coverage that contributes to a deficiency in the scientific communication process.

Table 8. Distribution of citations by language

Language	Number of citations	Percent of citations
English	4,606	97.17
German	32	0.68
Dutch	28	0.59
French	25	0.53
Others	49	1.03
Total	4740	100.00

Conclusion

This study illustrates scholarly communication patterns by studying citation characteristics in the journal *MPP,* from its inception in 1989 through 2000. The findings from several bibliometric indicators reveal that *MPP* is a maturing journal and showing healthy signs of scholarship.

Citations used by the source authors indicate a traditional, paper-based use of primary information resources heavily dependent on journals as the major means of scientific communication. They prefer English language materials that have a citation age of not more than 20 years and tend to cite publications that are American or British in origin. Although a cross-disciplinary approach is acceptable, the authors prefer to stay within their own area of the medical sciences. Given the wide array of subjects covered, however, the authors support not only the clinical aspects of medicine but also social and educational matters as they relate to the practice of medicine and the medical profession.

Although, this study did not yield too many unusual citation results, several notable findings are worth mentioning:

- Conference proceedings and electronic resources are rarely cited.
- The degree of immediacy is below the norm for medical literature with only 32.59 percent of the references being less than six years old.
- The majority of the primary source authors are from Kuwait or other Arab countries (87.78%), yet the number of citations from Arab countries is very low (2.68%).
- The geographic base of *MPP* is in Kuwait, yet, the Arabic language citations contribute less than half a percent.
- The incidence of self-citation is less common. Source authors cited themselves 376 times, 7.9 percent of all citations.

It is expected that further analysis of both this journal and other sources of health sciences literature will provide a more concise and conclusive vision of the field of medicine and research output in this region. In addition, further local exploration of bibliometric studies can assist in developing a core list of journals. Further studies in these areas would not only be useful to health science researchers, but also to information professionals concerned with collection management in the health science fields.

*

The author would like to thank Professor Mumtaz Ali Anwar, Department of Library and Information Science, Kuwait University for reading and commenting on this manuscript. In addition, the author is grateful to Mrs. Ajitha Nair for her technical assistance in data entry.

References

1. E. J. HUTH, Mapping the land of medical journals: Some new applications for citation data from Science Citation Index, In: S. P. LOCK (Ed.), *The Future of Medical Journals: In Commemoration of 150 Years of the British Medical Journal,* British Medical Journal, London, 1991, pp. 81–93.
2. A. W. HAFNER, Citation characteristics of physiology literature, 1970-72, *International Library Review*, 7 (1975) 85–115.
3. P. C. AZIAGBA, Scientific journal selection based on the study of a local journal, *Information Processing and Management*, 29 (1) (1993) 83–93.
4. J. M. HURD, D. B. BLECIC, R.VISHWANATHAM, Information use by molecular biologists: Implications for library collections and services, *College & Research Libraries*, 60 (10) (1999) 31–43.
5. C. LASCAR, L. D. MENDELSOHN, An analysis of journal use by structural biologists with applications for journal collection development decisions, *College & Research Libraries*, 62 (5) (2001) 422–433.
6. R. B. DEVIN, M. KELLOGG, The serial/monograph ratio in research libraries: Budgeting in light of citation studies, *College & Research Libraries*, 45 (1) (1990) 46–54.

7. A. J. BURDICK, A. BUTLER, M.G. SULLIVAN, Citation patterns in the health sciences: Implications for serials/monographic fund allocation, *Bulletin of the Medical Library Association*, 81(1) (1993) 44–47.
8. P. THORPE, An evaluation of the rheumatology periodical literature used in Britain and the USA, *Methods of Information in Medicine*, 11 (2) (1972) 119–121.
9. P. W. BRENNEN, W. P. DAVEY, Citation analysis in the literature of tropical medicine, *Bulletin of the Medical Library Association*, 66 (1) (1978) 24–30.
10. D. A.WINDSOR, D. M. WINDSOR, Citation of the literature by information scientists in their own publications, *Journal of the American Society for Information Science*, 24 (5) (1973) 377–381.
11. D. J. DE SOLLA PRICE, Citation measures of hard science, soft science, and nonscience, In: C. E. NELSON, D. K. POLLOCK (Eds), *Communications among Scientists and Engineers*, D. C. Health and Company, Lexington, MA, 1970, pp. 3–22.
12. S. HOLT, R. SIEBERS, A. SUDER, R. LOAN, O. JEFFERY, The accuracy of references in Australian and New Zealand medical journals, *N Z Medical Journal*, 113 (1119) (2000) 416–417.
13. P. M. GEORGE, K. ROBBINS, Reference accuracy in the dermatologic literature, *Journal of the American Academy of Dermatology*, 31 (1) (1994) 61–64.
14. J. T. EVANS, H. I. NADJARI, S. A. BURCHELL, Quotational and reference accuracy in surgical journals: A continuing peer review problem, *Journal of the American Medical Association*, 263 (10) (1990) 1353–1354.
15. P. EICHORN, A. YANKAUER, Do authors check their references? A survey of accuracy of references in three public health journals, *American Journal of Public Health*, 77 (8) (1987) 1011–1012.
16. Ref. 5, p. 430.
17. Ref. 4, p. 37.
18. R. WALCOTT, Local citation studies – A shortcut to local knowledge, *Science & Technology Libraries*, 14 (3) (1994) 1–14.
19. Institute for Scientific Information. (2000). *SCI Science Citation Index 1999: Guide and List of Source Publications*. Philadelphia, PA: ISI.
20. Ref. 2, p. 98.
21. B. J. COX, I. WESSEL, G. R. NORTON, R. P. SWINSON, Citation patterns in anxiety disorders research in 14 journals: 1990-1991, *American Journal of Psychiatry*, 151 (6) (1994) 933–936.
22. A. A. WAHEED, England and US corner journal market, *Nature*, 405 (6787) (2000) 613.
23. Ref. 2, p. 108.