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Highly cited occupational therapy articles in the Science Citation Index Expanded and Social Science Citation Index: A bibliometric analysis

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Abstract

Objective: A bibliometric analysis was completed of highly cited occupational therapy literature published from 1900-2014, and accessible in the databases Science Citation Index Expanded and Social Science Citation Index.

Method: Articles that were referenced >100 times were categorized as highly cited articles (HCA).

Results: A total of 6486 articles were found and only 31 were categorized as HCA. The *American Journal of Occupational Therapy* (*AJOT*) published the largest number of HCA (n=8; 26%). The 31 HCA were distributed across seven countries: US (20 articles), Canada (3), UK (3), Australia (2), Netherlands (1), New Zealand (1), and Sweden (1). The three authors with the highest Y-index were S.J. Page, F. Clark, and W. Dunn.

Conclusion: There appears to be a latency period of 4-5 years post-publication needed for a journal article to gain citations. The largest proportion of HCA was published in *AJOT* by American authors.

Introduction

Allied health professions have distinctive bodies of empirical and theoretical knowledge. One primary repository of this knowledge is refereed journals. Several key occupational therapy journals publish quantitative and qualitative studies as well as differing articles types (e.g., editorials, opinion pieces, letters to the editor, conference abstracts, book reviews). Examples of occupational therapy journals with long histories of publication are the *American Journal of Occupational Therapy* (*AJOT*) published 1947-present; *Canadian Journal of Occupational Therapy* (*CJOT*), 1933-present; *British Journal of Occupational Therapy* (*BJOT*), 1938-present; and *Australian Occupational Therapy Journal* (*AOTJ*), 1952-present. The *Occupational Therapy Journal of Research* (*OTJR*) was first published in 1980. Occupational therapists also publish in related journals including the *Journal of the American Medical Association* (*JAMA*), *Stroke, Journal of Hand Therapy, Child Care Health and Development, International Journal of Rehabilitation Research*, and *Journal of Rehabilitation Research and Development* (Potter, 2010; Rodger, McKenna, & Brown, 2007).

With the advent of electronic databases and greater publication access using web-based search engines, a new field of study called *bibliometrics* has evolved. Bibiometrics involves the statistical analysis of publications (e.g., journals, books) to "... measure the "output" of individuals/research teams, institutions, and countries, to identify national and international networks, and to map the development of new (multi-disciplinary) fields of science and technology" (OECD, 2002, p. 3). It is also used to "... uncover characteristics, patterns, and relationships to demonstrate individual investigator or research team productivity, quality, or impact" (Carpenter, Cone, & Sarli, 2014, p. 1161). Two frequently used bibliometric analytic approaches are content analysis and citation analysis.

The most widely known quantitative metric applied to peer-reviewed journals is the Impact Factor (IF). For an IF to be calculated, journals must be included in one of two Thomson Reuters

databases: Science Citation Index Expanded (SCI-Expanded) and Social Sciences Citation Index (SSCI). Several occupational therapy-specific journals are included in SCI-Expanded and SSCI and have an IF (e.g., *AJOT, CJOT, BJOT, AOTJ, OTJR, Physical and Occupational Therapy in Pediatrics*, *Occupational Therapy International*, *Hong Kong Journal of Occupational Therapy*, and *Scandinavian Journal of Occupational Therapy*), while other peer-reviewed occupational therapy journals are not included (e.g., *Occupational Therapy in Health Care* (*OTHC*); *Occupational therapy in Mental Health* (*OTMH*)*; Open Journal of Occupational Therapy* (*OJOT*)*; Physical and Occupational Therapy in Geriatrics* (*POTG*); *Journal of Occupational Therapy, Schools & Early Intervention; South African Journal of Occupational Therapy; Asian Journal of Occupational Therapy; Indian Journal of Occupational Therapy*.

Highly cited articles (HCA) in a specific field are referred to as classic papers or top publications (Korevaar & Moed, 1996). The analysis of HCA in a profession provides a unique window into which specific authors, articles, and topics influence that sphere of knowledge and research. The purpose of this study is to present the bibliometric analysis of occupational therapy articles published from 1991-2014, included in SCI-Expanded and SSCI, and cited >100 times. The publication year, journals, authors, institutions, countries, life citation cycles, and traits of occupational therapy HCA were examined.

Method

Data were obtained from the online databases of SCI-Expanded and SSCI, accessible through Thomson Reuters' Web of Science Core Collection (WSCC) (updated on March 02, 2016). "Occupational therapy," "occupational therapist," and "occupational therapists" were terms searched in publication titles, abstracts, and author keywords of articles published from 1900-2014. *KeyWords Plus,* which substantially augments title-word and author-keyword indexing, supplied additional search terms extracted from the titles of article references (Garfield, 1990). Only the document type "article" was considered in the search.

In total, 6,486 articles were found. Article yearly citations and journal IF (IF_{2014}) were recorded from the 2014 Journal Citation Reports (JCR). Two additional filters, "number of citations until 2014" (TC_{year}) (Wang, Fu & Ho, 2011) and the "front page" text of each article (Fu, Wang & Ho, 2012) were applied to retrieve HCA. Total citation number (from initial publication to December 2014) of each article was obtained from WSCC and recorded as the TC_{2014} metric for each article. "Front page" was used to identify articles with specific keywords on their front page (e.g., in titles, abstracts, and author keywords) (Fu et al., 2012).

Sixty-three articles had a $TC_{2014}\geq100$ and were categorized as occupational therapy HCA. "C_{2014}" referred to total citations in 2014 alone and "CPP_{year}" referred to citations per publication ($CPP_{2014}=TC_{2014}$/publication) (Chuang & Ho, 2015). The advantage of using TC_{year}, C_{year}, and CPP_{year} is that they are invariable and ensure repeatability compared with the citation index from WSCC (Fu et al. 2012). To examine publication performance, five indicators were proposed by Ho and colleagues, including total publications (*TP*), independent publications (*IP*), collaborative publications (*CP*), first authored publications (*FP*), and corresponding authored publications (*RP*) (Chiu & Ho, 2005; Ho, 2014a).

While some articles used "occupational therapy," "occupational therapist," or "occupational therapists" in article titles, abstracts, or keywords, they did not relate to occupational therapy. Thus, articles that could be found only through *KeyWords Plus* were excluded (n=5), leaving 58 HCA. These 58 HCA were manually checked and 27 of them were further excluded. The remaining 31 articles (0.48% of 6,486 total articles) were selected as HCA that were specifically relevant to occupational therapy.

Results

1. Publication year

A total of 31 occupational therapy-specific HCA with a $TC_{2014}\geq100$ were published in SCI-Expanded and SSCI from 1900-2010 (see Table 2). The highest TC_{2014} retrieved was 512 and the

average TC_{2014} was 162. Figure 1 illustrates the distribution of these 31 HCA over years of publication and citations per publication (CPP_{2014}) (Chuang & Ho, 2015). No HCA were published in 1995, 1996, 2003, and 2008.

In 2009, only one article had a CPP_{2014}≥100, titled "Early Physical and Occupational Therapy in Mechanically Ventilated, Critically Ill Patients: A Randomized Controlled Trial" (Schweickert et al., 2009) by 16 authors from the Universities of Pennsylvania, Chicago, and Iowa, US, with TC_{2014}=512. In 1999, there were five articles published with a CPP_{2014}≥100 including "Prevention of Falls in the Elderly Trial (PROFET): A Randomized Controlled Trial" (Close et al., 1999) by six authors from King's College Hospital, UK, with TC_{2014}=456 (2nd); and "Rehabilitation of Persons with Traumatic Brain Injury" (Ragnarsson et al., 1999) by 16 authors from 18 American institutions, with TC_{2013}=300 (3rd).

The earliest HCA, published in 1991, was titled "Occupational Science: Academic Innovation in the Service of Occupational Therapy's Future" (Clark et al., 1991), written by eight America authors from the University of Southern California (USC) with TC_{2014}=109. The most recent HCA was published in 2010: "Early Physical Medicine and Rehabilitation for Patients with Acute Respiratory Failure: A Quality Improvement Project" (Needham et al., 2010) by eight authors from Johns Hopkins University with TC_{2014}=114.

2. Journals and Web of Science Categories

JCR 2014 indexes 8,618 journals in 176 WSCC categories and 3,143 journals in 56 WSCC categories in SCI-Expanded and SSCI, respectively. The occupational therapy HCA were published in 16 journals listed in 12 WSCC categories. Of these 16 journals, nine (56%) published only one HCA: *American Journal of Psychiatry* (IF_{2014}=12.295), *Schizophrenia Bulletin* (IF_{2014}=8.450), *Neurology* (IF_{2014}=8.185), *Journal of Pediatrics* (IF_{2014}=3.790), *Journal of Autism and Developmental Disorders* (IF_{2014}=3.665), *Age and Ageing* (IF_{2014}=3.642), *Gerontologist* (IF_{2014}=3.231), *Social Science & Medicine* (IF_{2014}=2.890), and *Archives of Physical Medicine and*

Rehabilitation (IF_{2014}=2.565). *AJOT* (IF_{2014}=1.532) published the largest number of HCA with eight articles (26% of 31 articles), followed by *Journal of the American Geriatrics Society* (*JAGS*) (IF_{2014}=4.572), and two articles each for *Lancet* (IF_{2014}=45.217), *JAMA* (IF_{2014}=35.289), *British Medical Journal* (*BMJ*) (IF_{2014}=17.445), *Stroke* (IF_{2014}=5.761), and *Clinical Rehabilitation* (IF_{2014}=2.239).

3. Publication Performances: Countries

The 31 HCA were distributed in seven countries: US (20 articles), Canada (3), UK (3), Australia (2), Netherlands (1), New Zealand (1), and Sweden (1). Of the 31 articles, none were internationally collaborative.

4. Publication Performances: Institutions

The 31 HCA with a CPP_{2014}≥100 were affiliated with a total of 65 institutions in seven countries. Fourteen (45%) were single institution articles originating from a total of 13 institutions; 17 (55%) were cross-institutional collaborative articles originating from a total of 56 organizations. The 65 institutions were in the US (40), UK (7), Canada (6), Australia (4), New Zealand (4), Netherlands (2), and Sweden (2).

The nine institutions that published at least two articles with a CPP_{2014}≥100 are listed in Table 1. USC, US, ranked at the top for publishing the largest number of occupational therapy HCA (*TP*=3), single institution articles (*SP*=2), first authored articles (*FP*=3), and corresponding authored articles (*RP*=3); USC also ranked 6th in cross-institutional collaborative articles (*CP*=1). Five institutions (University of Wisconsin, US; University of Sydney, Australia; Concord Repatriation General Hospital, Australia; University of Iowa, US; University of Maryland, US) published two cross-institutional collaborative articles while the other 51 institutions published one only.

5. Authors' Publication Performances

Ho (2012, 2014a) developed the Y-index as an indicator of publication intensity and

characteristics of contributing authors, institutions, and countries. The Y-index provides insight into the features of contribution to journal article publication. The construction of the Y-index involves two parameters (*j*, *h*) to assess both publication intensity and contribution characteristics as a single index. It relates to numbers of first author publications (*FP*) and corresponding author publications (*RP*), defined as:

$$j = FP + RP \quad (1)$$

$$h = \tan^{-1}\left(\frac{RP}{FP}\right) \quad (2)$$

Authors with high *j* have more publications as first or corresponding author (leadership roles). *h* differentiates the nature of the leadership role. When $h>0.7854$, this indicates *more* corresponding author publications; when $h=0.7854$, this shows the *same* number of first and corresponding author publications; and when $h<0.7854$, this signifies *more* first author publications. When $h=0$, *j* is the number of first author publications and when $h=\pi/2$, *j* is the number of corresponding author publications.

Using the Y-index, the 31 articles (with a $CPP_{2014}\geq 100$) by 156 authors in occupational therapy were analyzed. Only 24 (15%) of the 156 authors were both first and corresponding authors of the HCA. Four (2.6%) of 156 authors had an $h>0.7854$ and four had an $h<0.7854$. Twenty-three (15%) authors had the same numbers of first and corresponding author articles ($h=0.7854$) and 125 (80%) authors were located on the origin. Figure 3 displays the distribution of the 156 authors where *j Cos h* and *j Sin h* are chosen as the *x* and *y* coordinate axes. Each dot represents one value that could be one author or many authors when they had the same publication intensity and characteristics.

The author with the highest publication intensity was S.J. Page with a *j* score of 6. Page published three articles as both first and corresponding authors using the affiliations of Kessler Medical Rehabilitation Research and Education Corporation in 2001 and 2002, and the University

of Cincinnati in 2007. Publication characteristics constant, *h*, can help to obtain the proportion of corresponding author articles (*RP*) to first author articles (*FP*). This can identify author performance differences, particularly when author *j* scores are the same. For example, the *j* scores of B.B. Johansson, R.A. Kenny, J.P. Kress, J. Davison, K. Johansson, M.A. Kientz, and W.D. Schweickert were the same at 3, indicating that they had the same publication intensity. However, the *h* of Johansson, Kenny, and Kress was $\pi/2$, indicating that each published only corresponding author articles. The *h* of Davison, Johansson, Kientz, and Schweickert was 1, suggesting that they published only first author articles. Additionally, W. Dunn published both first and corresponding author articles with an index of $h>0.7854$.

Discussion

Publication year

Between 1991 and 2010, 31 occupational therapy-specific articles with >100 citations were published in journals indexed in SCI-Expanded and SSCI. No HCA were published between 1900 and 1990 or during the most recent four years of the search (2011-2014). It is a generally accepted fact that a time span needs to pass post-article-publication so that citations can accumulate (Solomon, Laakso, & Bjork, 2013). It appears to take a minimum of 4-5 years for an article to be published, read and integrated, and cited in other researchers' work that have been accepted for publication in peer-reviewed journals listed in SCI-Expanded and SSCI (Dašić, Moldovan, & Grama, 2015). Therefore one could hypothesize that the older the article publication date, the better its potential for having a high number of citations (Björk & Solomon, 2012).

No occupational therapy HCA were published prior to 1991; however, this is not the situation for other health care professions including medicine and nursing who have a longer tradition of publishing articles with high impact (Lefaivre, & Shadgan, & O'Brien, 2011; Wong, Tam, Wong, & Cheung, 2013). Furthermore, time since publication may not be the most significant reason why an article is highly cited (Chen & Ho, 2015). The year with the most published occupational therapy

articles that were cited >100 times was 1999 with five articles, followed by 1993 (4 articles), and 2000 (3 articles). No occupational therapy HCA were published in 1995, 1996, 2003, and 2008.

Reasons why journal articles are highly cited may relate to article topic and type. For example, articles that address popularly used interventions would likely be cited more frequently. Similarly, review articles (e.g., scoping, integrative literature, and systematic reviews) are often more frequently cited than journal articles reporting original research in a subject area (Harzing & Alakangas, 2016). It has also been reported that articles with shorter titles (Paiva, Lima, & Paiva, 2012) and titles with colons and acronyms, get more citations (Jacques & Sebire, 2010). Open access journal articles commonly have higher citation rates compared to subscription-based journal articles (Wohlrabe & Birkmeier, 2014).

Journals

Thirty-one occupational therapy HCA were published in 16 journals listed in SCI-Expanded and SSCI. *AJOT* published the largest number of HCA with eight articles (26% of 31 articles), followed by *JAGS* (n=3, 9.7%). Each of the following journals published two HCA (6.5%): *Lancet*, *JAMA*, *BMJ*, *Stroke*, and *Clinical Rehabilitation*. The occupational therapy HCA were published in both high and low IF journals. Similarly, a large number of HCA were published in non-occupational therapy-specific journals such as those listed above (Schroeder, 2008). This highlights the need for occupational therapy students, educators, clinicians, and researchers to search for relevant literature outside the sphere of occupational therapy-specific peer-reviewed journals to source empirical evidence (Bennett et al., 2007; Rodger et al., 2007).

Publication Performances: Countries

The 31 occupational therapy HCA were published in seven different countries. The US published the largest number with 20, followed by Canada and the UK (3), Australia (2), and one each for the Netherlands, New Zealand, and Sweden. That the US published 65% of HCA was not surprising given it has the largest number of occupational therapy university courses which employ

many academic staff with doctoral degrees (Li, Shankar, & Tang, 2009). However, given the much smaller number of education programs and number of occupational therapists with doctoral qualifications involved in research in Australia, Canada, and the UK compared to the US, these three countries have also been major contributors to the occupational therapy body of knowledge through journal publication. The journals published by the national associations of these countries (e.g., *AJOT, CJOT, AOTJ, BJOT*) are another factor influencing the high number of published articles.

Publication Performances: Countries and Institutions

A total of 65 institutions in seven countries (US, n=40, 61.5%; UK, n=7, 10.8%; Canada, n=6, 9.2%; Australia, n=4, 6.15%; New Zealand, n=4, 6.15%; Netherlands, n=2, 3.1%; Sweden, n=2, 3.1%) were affiliated with the 31 HCA. As an institution, USC in the US dominated the publishing area for high ranking occupational therapy journal articles. USC ranked at the top for publishing the largest number of HCA, single institution articles, first authored articles, and corresponding authored articles. Five institutions published two cross-institutional collaborative articles: University of Wisconsin, US; University of Sydney, Australia; Concord Repatriation General Hospital, Australia; University of Iowa, US; and University of Maryland, US. Considering the much smaller number of occupational therapy education programs and practicing occupational therapists in Australia compared to the US, the number of HCA published by Australian institutions was notable.

Authors' Publication Performances

Ho (2012; 2014a) developed the Y-index metric to evaluate both the publication intensity and characteristics of contributing authors, institutions, and countries. The Y-index has been applied in HCA in biomass research (Chen & Ho, 2015), materials science (Ho, 2014b), and health care sciences (Hsu & Ho, 2014). Three occupational therapy authors from the US with >100 citations had the highest Y-index (an indicator of publication intensity): *Page* (Y-index=6), Associate

Professor, Division of Occupational Therapy, Ohio State University; *Clark* (Y-index=4), Associate Dean, Chair, and Professor, Division of Occupational Science and Occupational Therapy, USC; and *Dunn* (Y-index=3), Professor and Chair, Department of Occupational Therapy Education, University of Kansas Medical Center.

Page published three journal articles that received >100 citations: Page, Levine, and Leonard (2007) (TC_{2014}=146); Page, Levine, Sisto, and Johnston (2001) (TC_{2014}=124); and Page, Levine, Sisto, Bond, and Johnston (2002) (TC_{2014}=102). All three articles by Page were published in non-occupational therapy-specific journals. Clark also published three articles that received >100 citations: Clark et al. (1997) (TC_{2014}=217); Clark (1993) (TC_{2014}=109); and Clark et al. (1991) (TC_{2014}=108). It is notable that the study published by Clark et al. (1997) in *JAMA* received the largest number of citations of all occupational therapy publications. Dunn authored two publications with >100 citations: Kientz and Dunn (1997) (TC_{2014}=139); and Dunn, Brown, and McGuigan (1994) (TC_{2014}=116). Of all HCA published by the three authors with the highest Y-index, only one was a single author article: Clark (1993).

Limitations

Data for this bibliometric analysis were obtained only from the online databases of SCI-Expanded and SSCI. Based on the 2014 JCR, 8,618 journals in 176 WSCC categories and 3,143 journals in 56 WSCC categories in SCI-Expanded and SSCI are indexed, respectively. Therefore only 36.5% (3,143/86,148) of the journals in WSCC were included in the analysis for this study. Also, journals not indexed in WSCC were excluded from this bibliometric analysis. There are several occupational therapy-specific journals not included in WSCC: *OTHC, OTMH, POTG, OJOT, Journal of Occupational Therapy, Schools & Early Intervention, South African Journal of Occupational Therapy, Asian Journal of Occupational Therapy, Indian Journal of Occupational Therapy.* It is estimated that WSCC only has 15% of all English language indexed journals (Carpenter, Cone, & Sarli, 2014). It is possible that key occupational therapy journal articles were

missed or excluded from this analysis. This is an acknowledged limitation.

Only the document type, "article," in WSCC was included in this bibliometric analysis. Other document categories (e.g., conference abstracts, book reviews, letters to the editor, editorials) were excluded since they may not have yielded sufficient study details. This is a second acknowledged limitation of the current bibliometric analysis. The third limitation relates to temporal coverage—occupational therapy articles published before 1900 and after 2014 were not included in the current bibliometric examination.

Future Research

Future research could include the examination of occupational therapy HCA in individual countries to determine the most research productive institutions and authors from national perspectives. This would provide valuable information for national and international bench marking purposes. It is also recommended that a bibliometric analysis of HCA specific to occupational therapy practice areas (e.g., neurology, pediatrics, mental health, geriatrics, rehabilitation, community-based care) or subject areas (e.g., health promotion, population health, activity participation, occupational performance, occupational science) be completed so that key journals, institutions, and authors in these areas can be identified.

Implications for Occupational Therapy Research

- The number of occupational therapy HCA continues to grow.
- The majority of HCA were published by American authors in *AJOT*.
- Notable numbers of HCA were also published by Australian, Canadian, and British authors.
- Several HCA were published in non-occupational therapy journals with high IF.
- Ongoing tracking of high impact occupational therapy publications is recommended.

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Table 1. Characteristics of the nine institutions that published at least two occupational therapy HCA

Institution	Rank (*TP*)	Rank (*SP*)	Rank (*CP*)	Rank (*FP*)	Rank (*RP*)
• University of Southern California, US	1 (3)	1 (2)	6 (1)	1 (3)	1 (3)
• Concord Hospital, Australia	2 (2)	N/A	1 (2)	N/A	N/A
• Johns Hopkins University, US	2 (2)	2 (1)	6 (1)	4 (1)	4 (1)
• Kessler Medical Rehabilitation Research and Education Corporation, US	2 (2)	2 (1)	6 (1)	2 (2)	2 (2)
• King's College Hospital, UK	2 (2)	2 (1)	6 (1)	4 (1)	4 (1)
• University of Iowa, US	2 (2)	N/A	1 (2)	N/A	N/A
• University of Maryland, US	2 (2)	N/A	1 (2)	N/A	N/A
• University of Sydney, Australia	2 (2)	N/A	1 (2)	2 (2)	2 (2)
• University of Wisconsin, US	2 (2)	N/A	1 (2)	N/A	N/A

TP=total HCA; *SP*=single institution HCA; *CP*=inter-institutionally collaborative HCA; *FP*=first author HCA; *RP*=corresponding author HCA; N/A=not available.

Table 2. 31 most HCA in occupational therapy, 1991-2014

Rank (TC_{2014})	Rank (C_{2014})	Articles
1 (512)	1 (108)	Schweickert et al. (2009). Early physical and occupational therapy, mechanically ventilated, critically ill patients: A randomised controlled trial. *Lancet*.
2 (456)	5 (20)	Close et al. (1999). Prevention of falls, the elderly trial (PROFET): A randomised controlled trial. *Lancet*.
3 (300)	7 (14)	Ragnarsson et al. (1999). Rehabilitation of persons with traumatic brain injury. *JAMA*.
4 (221)	2 (37)	Law. (2002). Distinguished scholar lecture: Participation, the occupations of everyday life. *AOTA*
5 (217)	4 (27)	Clark et al. (1997). Occupational therapy for independent-living older adults: A randomized controlled trial. *JAMA*.
6 (197)	26 (4)	Cumming et al. (1999). Home visits by an occupational therapist for assessment and modification of environmental hazards: A randomized trial of falls prevention. *J Am Geriatr Soc*.
7 (157)	7 (14)	Clemson et al. (2004). The effectiveness of a community-based program for reducing the incidence of falls, the elderly: A randomized trial. *J Am Geriatr Soc*.
8 (146)	6 (18)	Page et al. (2007). Mental practice, chronic stroke: Results of a randomized, placebo-controlled trial. *Stroke*.
9 (145)	18 (7)	Needham et al. (2010). Early physical medicine and rehabilitation for patients with acute respiratory failure: A quality improvement project. *Arch Phys Med Rehabil*.
10 (139)	18 (7)	Kientz & Dunn. (1997). A comparison of the performance of children with and without autism on the Sensory Profile. *AJOT*.
11 (137)	7 (14)	Liberman et al. (1998). Skills training versus psychosocial occupational therapy for persons with persistent schizophrenia. *Am J Psychiatry*.
11 (137)	23 (5)	Gitlin et al. (2001). A randomized, controlled trial of a home environmental intervention: Effect on efficacy and upset, caregivers and on daily function of persons with dementia. *Gerontologist*.
13 (132)	31 (1)	Campbell et al. (2005). Randomised controlled trial of prevention of falls, people aged ≥75 with severe visual impairment: The VIP trial. *BMJ*.
13 (132)	14 (9)	Christiansen. (1999). Defining lives: Occupation as identity: An essay on competence, coherence, and the creation of meaning: The 1999 Eleanor Clarke Slagle lecture. *AJOT*.
15 (129)	18 (7)	Hunt et al. (1993). Driving performance, persons with mild senile dementia of the Alzheimer type. *J Am Geriatr Soc*.
16 (128)	14 (9)	Graff et al. (2006). Community based occupational therapy for patients with dementia and their care givers: Randomised controlled trial. *BMJ*.

17 (125)	26 (4)	Kalra et al. (1993). Improving stroke rehabilitation: A controlled-study. *Stroke*.
18 (124)	16 (8)	Page et al. (2001). A randomized efficacy and feasibility study of imagery, acute stroke. *Clin Rehabil*.
19 (120)	23 (5)	Johansson et al. (1993). Can sensory stimulation improve the functional outcome, stroke patients? *Neurology*.
19 (120)	23 (5)	Mattingly. (1994). The concept of therapeutic emplotment. *Soc Sci Med*.
21 (118)	16 (8)	Dawson & Watling. (2000). Interventions to facilitate auditory, visual, and motor integration, autism: A review of the evidence. *J Autism Dev Disord*.
22 (117)	13 (10)	Wilson et al. (2000). Reliability and validity of a parent questionnaire on childhood motor skills. *AJOT*.
22 (117)	10 (13)	McHale & Cermak. (1992). Fine motor activities, elementary-school: Preliminary findings and provisional implications for children with fine motor problems. *AJOT*.
22 (117)	26 (4)	Spaulding et al. (1999). Effects of cognitive treatment, psychiatric rehabilitation. *Schizophr Bull*.
25 (116)	26 (4)	Dunn et al. (1994). The Ecology of Human-Performance: A framework for considering the effect of context. *AJOT*.
26 (114)	3 (29)	Fehlings et al. (2000). An evaluation of botulinum: A toxin injections to improve upper extremity function, children with hemiplegic cerebral palsy. *J Pediatr*.
27 (111)	18 (7)	Davison et al. (2005). Patients with recurrent falls attending Accident & Emergency benefit from multifactorial intervention: A randomised controlled trial. *Age and Ageing*.
28 (109)	10 (13)	Clark. (1993). Occupation embedded, a real-life: Interweaving occupational science and occupational-therapy - 1993 Slagle, Eleanor, Clarke lecture. *AJOT*.
29 (108)	22 (6)	Sager et al. (1992). Measurement of activities of daily living, hospitalized elderly: A comparison of self-report and performance-based methods. *J Am Geriatr Soc*.
29 (108)	26 (4)	Clark et al. (1991). Occupational science: Academic innovation, the service of occupational therapy's future. *AJOT*.
31 (102)	12 (12)	Page et al. (2002). Stroke patients' and therapists' opinions of constraint-induced movement therapy. *Clin Rehabil*.

TC_{2014}=number of citations until 2014; C_{2014}=number of citations in 2014

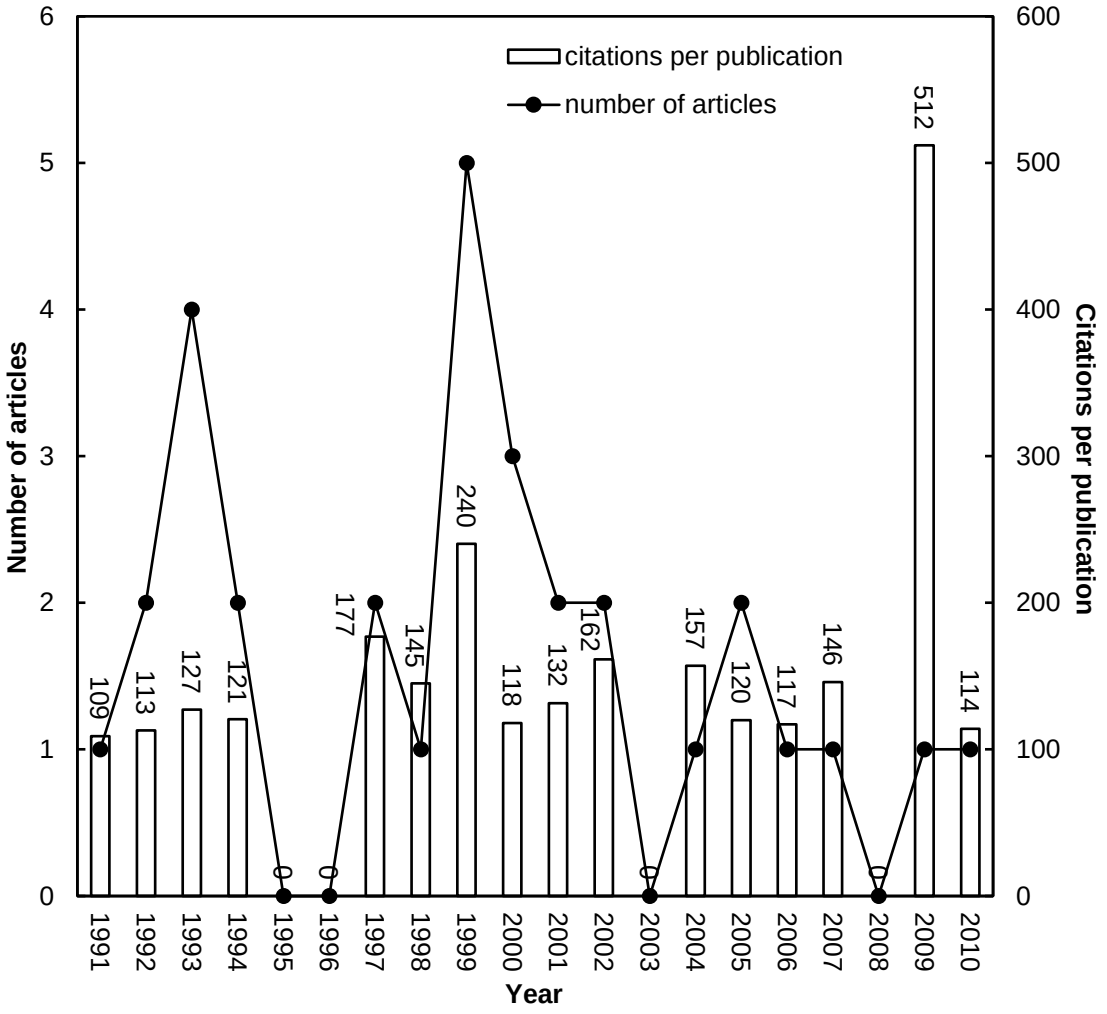

Figure 1. Number of occupational therapy HCA and citations per publication by year

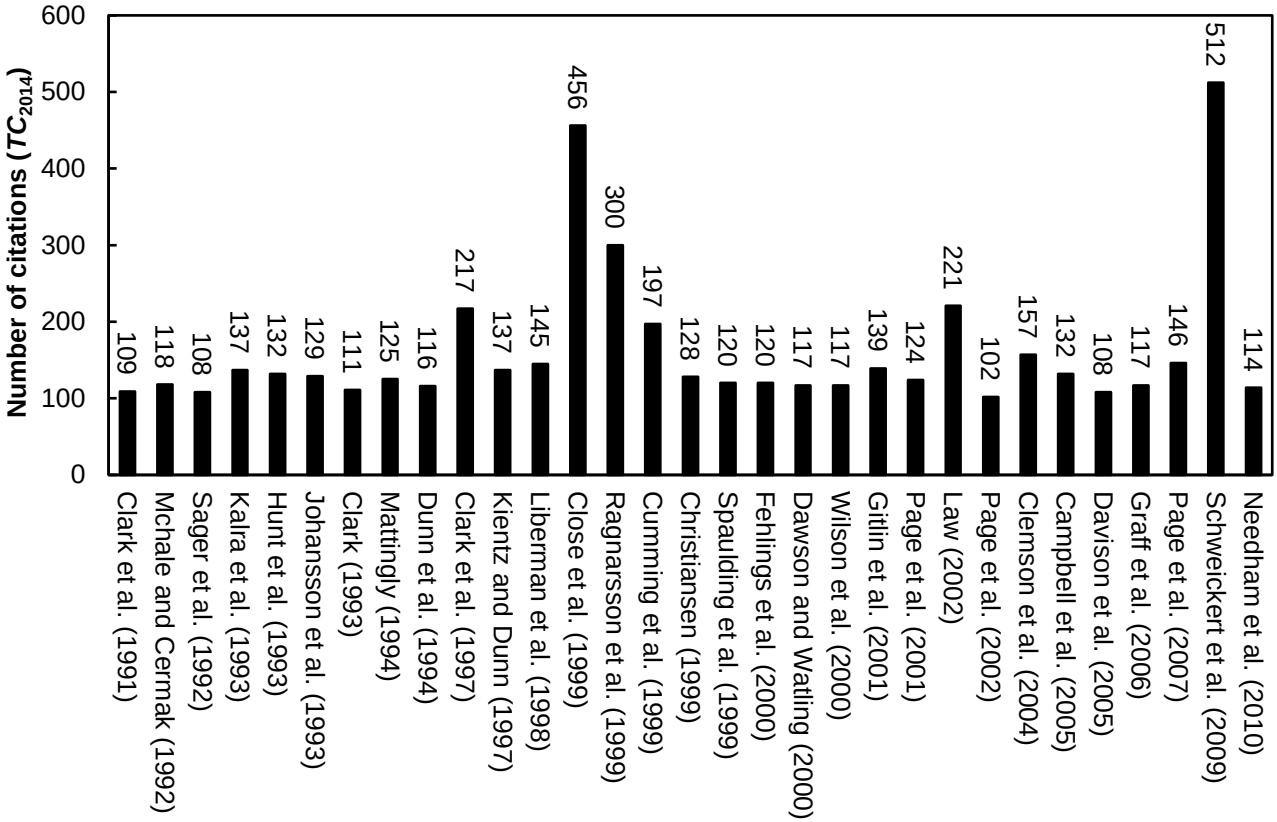

Figure 2. TC_{2014} and authors of occupational therapy HCA according to order of publication years

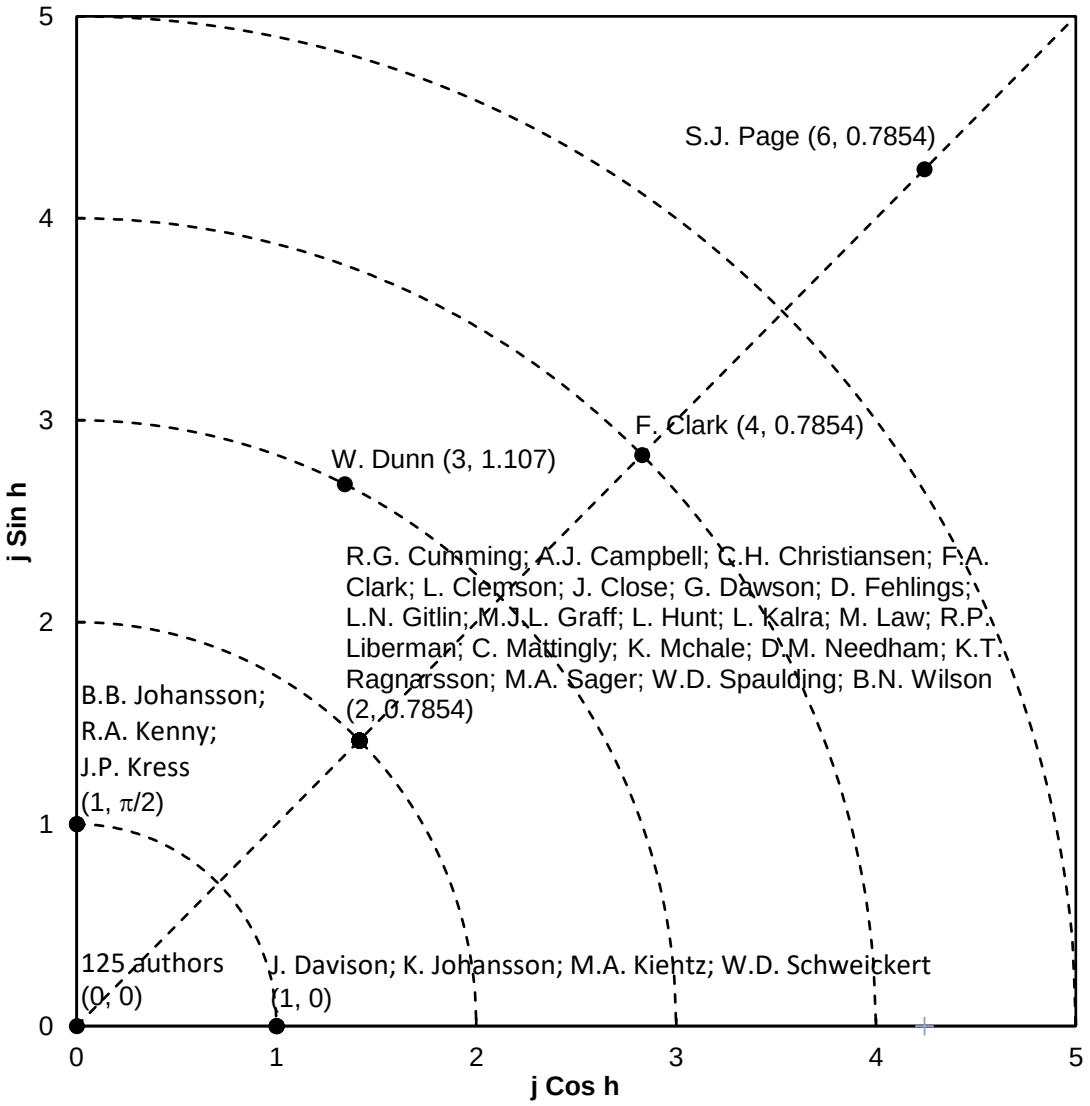

Figure 3. Distribution of 156 occupational therapy authors by Y-index

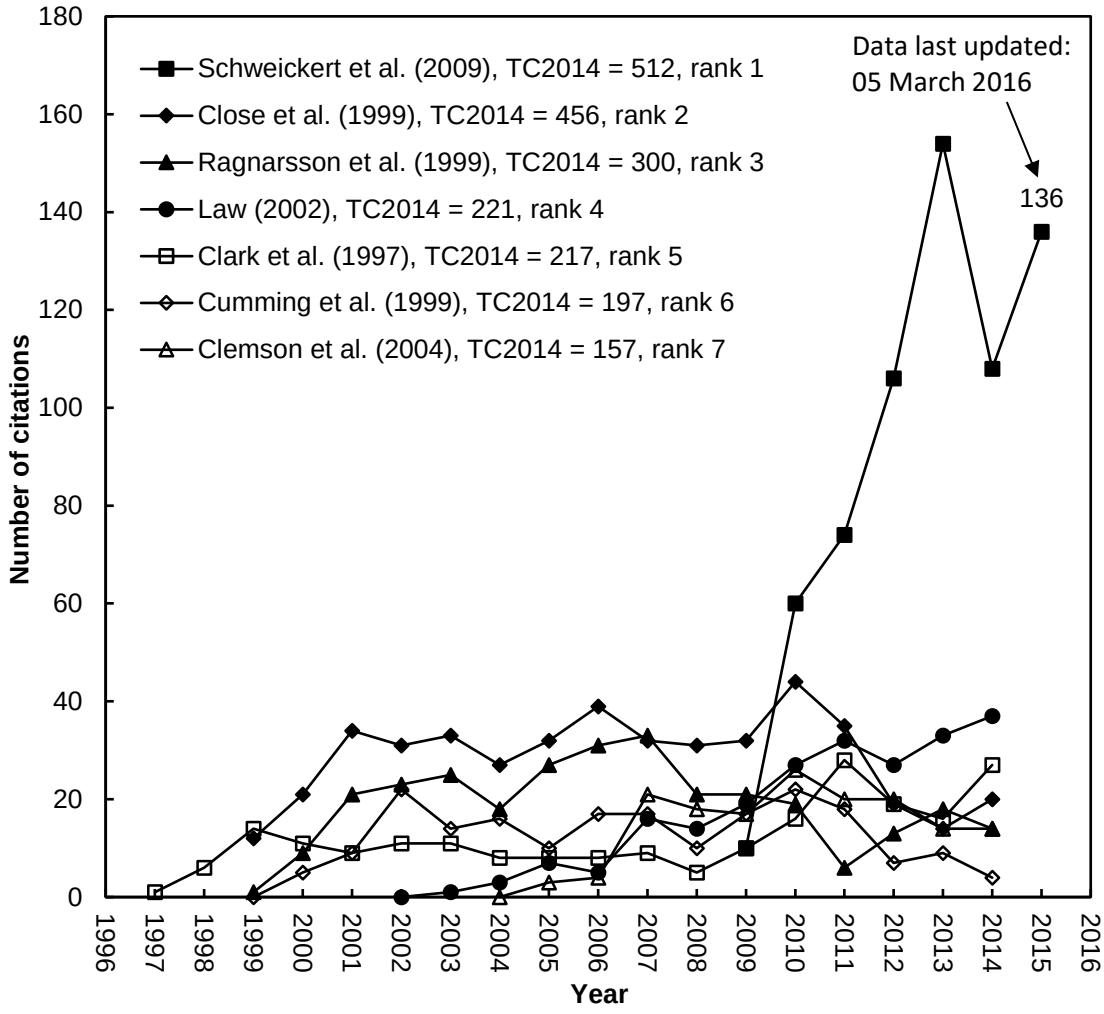

Figure 4. Illustration showing life of the top seven most frequently cited occupational therapy articles (TC_{2014}>150)