

Medline-based bibliometric analysis of gastroenterology journals between 2001 and 2007

Li-Fang Chou

Li-Fang Chou, Department of Public Finance, National Chengchi University, Taipei 11623, Taiwan, China

Author contributions: Chou LF conceived the study, performed the analysis and drafted the manuscript.

Correspondence to: Li-Fang Chou, Department of Public Finance, National Chengchi University, No. 64, Section 2, Chih-Nan Road, Taipei 11623, Taiwan,

China. lifang@nccu.edu.tw

Telephone: +886-2-29387310 Fax: +886-2-29390074

Received: November 16, 2008 Revised: May 16, 2009

Accepted: May 23, 2009

Published online: June 21, 2009

Abstract

AIM: To analyze the MEDLINE-indexed publications in gastroenterology specialty journals from 2001 to 2007. Special attention was paid to specific types of articles, the number of publications for individual authors and the author count in each journal.

METHODS: The bibliographic entries of papers belonging to journals listed under the subject heading of "gastroenterology" were downloaded from MEDLINE on the PubMed web site. The analysis was limited to journal articles published between January 1, 2001 and December 31, 2007. The analytical dimensions of an article included journal, publication year, publication type, and author name (the last name and initials).

RESULTS: According to MEDLINE, 81561 articles were published in 91 gastroenterology journals from 2001 to 2007. The number of articles increased from 9447 in 2001 to 13340 in 2007. Only 12 journals had more than 2000 articles indexed in MEDLINE. The "World Journal of Gastroenterology" had the largest number of publications (5684 articles), followed by "Hepato-Gastroenterology" (3036) and "Gastrointestinal Endoscopy" (3005). Of all the articles published, reviews accounted for 17.2% and case reports for 15.4%. Only 3739 randomized controlled trials (4.6% of all articles) were published and their annual number increased from 442 in 2001 to 572 in 2007. Among 141741 author names appearing in the articles of gastroenterology journals, 92429 had published only in one journal, 22585 in two journals, 9996 in three journals, and 16731 in more than three journals. The "World Journal of Gastroenterology" had the greatest number of authors (17838),

followed by "Gastroenterology" (12770), "Digestive Diseases and Sciences" (11395), "American Journal of Gastroenterology" (10889), and "Hepatology" (10588).

CONCLUSION: Global gastroenterology publications displayed a continuous growth in the new millennium. The change was most striking in certain journals. Regular bibliometric analyses on the trends and specific topics would help researchers publish more efficiently and allow editors to adjust the policy more accurately.

© 2009 The WJG Press and Baishideng. All rights reserved.

Key words: Bibliographic databases; Bibliometrics; Biomedical research; Gastroenterology; MEDLINE

Peer reviewers: Liang-Ping Hu, Professor, Consulting Center of Biomedical Statistics, Academy of Military Medical Sciences, Beijing 100850, China; Sheng-Li Ren, PhD, Department of Publication, National Natural Science Foundation of China, Beijing 100085, China

Chou LF. Medline-based bibliometric analysis of gastroenterology journals between 2001 and 2007. *World J Gastroenterol* 2009; 15(23): 2933-2939 Available from: URL: <http://www.wjgnet.com/1007-9327/15/2933.asp> DOI: <http://dx.doi.org/10.3748/wjg.15.2933>

INTRODUCTION

Gastroenterology is a highly competitive and productive field of medical research. Researchers in this field usually have a stronger need for bibliographic information than those in other fields. In the past few years, several bibliometric researches have been devoted to the global research trend^[1], the research output in specific regions^[2,3] and countries^[4-6], and the share of author origins in specific journals^[7-9] in gastroenterology. However, there still seemed to be a lack of a comparative overview of all gastroenterology specialty journals in the world.

The aim of the current study was to analyze the publications in gastroenterology journals in the new millennium, based on MEDLINE which is freely offered over the internet by the National Library of Medicine in the United States of America. Special attention was paid to specific types of articles, e.g. randomized controlled trials. Because researchers might not publish solely in

one journal during a period of several years, a new analytical method was also proposed to calculate the share of authors publishing in only one journal among all authors in each journal. This new indicator may serve as another dimension to author origins in a journal.

MATERIALS AND METHODS

Journal selection and data sources

The specialty journals of gastroenterology were limited to those listed under the subject heading of “gastroenterology” in MEDLINE. The master file of journals in MEDLINE was first downloaded (<ftp://ftp.nlm.nih.gov/online/journals/lisi2008.xml>, accessed on September 8, 2008) and a total of 141 gastroenterology journals were identified. Due to cessation of publication and name changes, not all journals were still available.

The bibliographic entries of papers belonging to selected journals were downloaded from MEDLINE on the PubMed web site (<http://www.ncbi.nlm.nih.gov/sites/entrez/>, accessed on September 8, 2008). The downloading consisted of journals with a Perl script. The retrieval was limited to papers published since 2001. The format type of the retrieval was MEDLINE.

Study design

One bibliographic record with the MEDLINE format contains pairs of tags and data, e.g. PMID-14647050 and AU-Lee SD, where PMID (PubMed unique identifier) and AU (author) are tags. Some types of tags, e.g. AU, PT (publication type) and MH (medical subject headings term), might appear more than once in one record. Some types of tags are not obligatory and might not be present in every record.

The downloaded datasets with MEDLINE format were merged and transformed into one single file with the structure of entity-attribute-value (EAV)^[10] for further efficient processing, where entity stood for the PMID of a paper, attribute for the tag, and value for the data. For example, the pair “AU-Lee SD” in the paper of “PMID-14647050” would be converted into “14647050 [tab] AU [tab] Lee SD”.

From the EAV file, the numbers of papers in each journal during the years of coverage were first calculated. The processing was limited to papers categorized as “journal article” in the publication type field. In addition, only papers published between January 1, 2001 and December 31, 2007 were included in this analysis.

The articles were also counted according to their publication type. An article might not contain only one publication type. For articles with the publication type of randomized controlled trial, their distribution in journals over the years was computed.

In computing the productivity of individual researchers in all gastroenterology journals, the methods of “total author counting”^[11] was adopted. Each author of an article was recognized as having written one article, and then the number of articles authored or coauthored by each researcher during the 7-year period was counted.

Because an author’s full name has been indexed in

MEDLINE since 2002 and one fifth of the original publications did not contain the full author name^[12], authors in the current study were identified according to the conventional author indexing of MEDLINE, i.e. last name, up to two initials of first and middle names, and/or a suffix abbreviation. Different authors with the same last name and initials would not be specifically differentiated in aggregate statistics. However, the name ambiguity would be considered in listing the most prolific authors.

For each journal, the total number of authors who had published in the journal during the 7-year period was calculated as the denominator and then the number of authors who had never published in other gastroenterology journals during the 7-year period was computed as the numerator. The fractional number for each journal might suggest the breadth of author origins.

Statistical analysis

The programming scripts with Perl version 5.10.0 (<http://www.perl.com/>) were written for downloading and computing. As a popular computer language since the internet era, Perl belongs to the open source software and can be freely downloaded and distributed for use. The National Library of Medicine also provides examples of Perl scripts for use of Entrez programming utilities from PubMed.

Only descriptive statistics, frequency in count and percentage, were displayed.

RESULTS

According to MEDLINE, 81 561 articles were published in 91 gastroenterology journals from 2001 to 2007 (Table 1). The number of articles increased from 9447 in 2001 to 13 340 in 2007. The “*World Journal of Gastroenterology*” had the largest number of publications (5684 articles), followed by “*Hepato-Gastroenterology*” (3036) and “*Gastrointestinal Endoscopy*” (3005). Only 12 journals had more than 2000 articles indexed in MEDLINE. By comparing the situations in 2001 and in 2007, the “*World Journal of Gastroenterology*” had the highest growth rate of publications (5.0-fold increase), followed by “*BMC Gastroenterology*” (2.3-fold), “*Revista de Gastroenterologia de Mexico*” (2.2-fold), “*International Journal of Colorectal Disease*” (2.0-fold), and “*Inflammatory Bowel Diseases*” (2.0-fold). The highest absolute growth was also claimed by “*World Journal of Gastroenterology*” (867 more articles), followed by “*Journal of Gastroenterology and Hepatology*” (208), “*Zhonghua Ganzhangbing Zazhi (Chinese Journal of Hepatology)*” (200), and “*Digestive Diseases and Sciences*” (180). In contrast, 21 journals had fewer publications in 2007 than in 2001.

As to the publication type of these articles, reviews accounted for 17.2% (14 005 articles) of all articles from 2001 to 2007 and case reports 15.4% (12 539) (Table 2). There were only 3739 randomized controlled trials (4.6% of all articles) among 4627 clinical trials (5.7%). The annual number of randomized controlled trials increased from 442 in 2001 to 572 in 2007. Randomized controlled trials were most frequently published in “*Alimentary Pharmacology & Therapeutics*” (536 articles), followed by

Table 1 Publication trend of articles in gastroenterology journals, 2001-2007

Journal	2001	2002	2003	2004	2005	2006	2007	Total
<i>Abdom Imaging</i>	126	117	147	116	119	146	126	897
<i>Acta Gastroenterol Belg</i>	45	52	38	45	66	51	47	344
<i>Acta Gastroenterol Latinoam</i>	34	17	30	16	27	52	49	225
<i>Aliment Pharmacol Ther</i>	246	305	372	416	363	390	338	2430
<i>Am J Gastroenterol</i>	543	466	425	338	363	383	340	2858
<i>Am J Physiol Gastrointest Liver Physiol</i>	331	289	267	272	298	289	354	2100
<i>Ann Hepatol</i>		30	29	29	48	56	47	239
<i>Arq Gastroenterol</i>	44	42	45	49	46	61	63	350
<i>Best Pract Res Clin Gastroenterol</i>	64	67	66	90	66	68	67	488
<i>BMC Gastroenterol</i>	14	23	34	32	39	43	46	231
<i>Can J Gastroenterol</i>	98	79	98	95	66	85	97	618
<i>Chin J Dig Dis</i>				35	43	39		117
<i>Clin Colorectal Cancer</i>	27	31	34	43	60	54	49	298
<i>Clin Gastroenterol Hepatol</i>			62	153	219	231	275	940
<i>Clin Liver Dis</i>	52	56	53	49	44	48	50	352
<i>Colorectal Dis</i>	68	105	93	92	104	139	149	750
<i>Curr Gastroenterol Rep</i>	81	70	79	77	76	71	80	534
<i>Curr Issues Intest Microbiol</i>	5	5	8	7	7	10	5	47
<i>Curr Opin Gastroenterol</i>	91	85	66	78	86	81	78	565
<i>Dig Dis</i>	47	40	43	53	36	33	53	305
<i>Dig Dis Sci</i>	390	415	345	324	406	376	570	2826
<i>Dig Liver Dis</i>	129	172	174	166	153	176	200	1170
<i>Dig Surg</i>	95	96	78	70	60	65	78	542
<i>Digestion</i>	88	69	62	71	69	77	70	506
<i>Dis Colon Rectum</i>	263	245	255	270	301	246	257	1837
<i>Dis Esophagus</i>	63	68	75	66	80	91	92	535
<i>Dysphagia</i>	37	42	36	35	42	40	43	275
<i>Eat Weight Disord</i>	35	42	55	49	56	52	47	336
<i>Eksp Klin Gastroenterol</i>		145	120	94	96	81	119	655
<i>Eur J Gastroenterol Hepatol</i>	263	222	212	217	217	216	192	1539
<i>Gastric Cancer</i>	33	45	57	35	42	45	40	297
<i>Gastroenterol Clin Biol</i>	196	195	185	213	172	190	177	1328
<i>Gastroenterol Clin North Am</i>	54	74	54	59	46	49	51	387
<i>Gastroenterol Hepatol</i>	89	90	87	109	95	142	84	696
<i>Gastroenterol Nurs</i>	48	53	47	55	65	68	51	387
<i>Gastroenterology</i>	361	437	402	468	428	439	456	2991
<i>Gastrointest Endosc</i>	436	491	447	429	374	412	416	3005
<i>Gastrointest Endosc Clin N Am</i>	47	55	52	59	51	61	52	377
<i>Gut</i>	322	406	348	346	342	320	299	2383
<i>Hepatobiliary Pancreat Dis Int</i>		128	121	128	120	115	114	726
<i>Hepatogastroenterology</i>	414	422	580	443	426	209	542	3036
<i>Hepatology</i>	344	389	335	353	319	346	388	2474
<i>Hernia</i>	47	44	50	84	86	104	98	513
<i>Indian J Gastroenterol</i>	104	87	105	85	88	104	93	666
<i>Inflamm Bowel Dis</i>	66	70	65	156	160	147	200	864
<i>Int J Colorectal Dis</i>	63	64	86	89	74	123	191	690
<i>Int J Gastrointest Cancer</i>	43	46	43		51	23		206
<i>Int J Pancreatol</i>	25							25
<i>J Clin Gastroenterol</i>	185	180	156	177	177	177	157	1209
<i>J Dig Dis</i>							36	36
<i>J Gastroenterol</i>	125	206	192	170	156	147	172	1168
<i>J Gastroenterol Hepatol</i>	239	279	213	265	327	365	447	2135
<i>J Gastrointest Surg</i>	100	127	140	161	175	195	258	1156
<i>J Gastrointestin Liver Dis</i>						61	69	130
<i>J Health Popul Nutr</i>	32	45	43	47	44	57	56	324
<i>J Hepatobiliary Pancreat Surg</i>	88	107	76	84	91	97	98	641
<i>J Hepatol</i>	226	231	304	268	282	276	227	1814
<i>J Pediatr Gastroenterol Nutr</i>	256	268	207	234	273	244	219	1701
<i>J Viral Hepat</i>	62	64	71	80	90	117	126	610
<i>JOP</i>	55	18	24	68	69	79	87	400
<i>Korean J Gastroenterol</i>			81	103	136	144	133	597
<i>Korean J Hepatol</i>				41	51	57	59	208
<i>Liver</i>	58	87						145
<i>Liver Int</i>			75	96	153	159	172	655
<i>Liver Transpl</i>	184	186	234	256	225	297	281	1663
<i>Minerva Gastroenterol Dietol</i>	27	42	32	35	29	41	36	242
<i>Nat Clin Pract Gastroenterol Hepatol</i>				27	126	121	138	412
<i>Neurogastroenterol Motil</i>	55	64	64	114	104	105	128	634
<i>Nippon Shokakibyo Gakkai Zasshi</i>	127	155	141	112	130	120	144	929

Pancreas	128	134	154	147	143	116	131	953
Pancreatology	74	58	55	38	72	54	56	407
Rev Esp Enferm Dig	57	61	73	99	89	91	110	580
Rev Gastroenterol Disord	13	28	47	51	35	27	32	233
Rev Gastroenterol Mex	31	83	66	82	105	88	99	554
Rev Gastroenterol Peru	34	32	34	35	39	39	46	259
Rom J Gastroenterol		48	47	50	63			208
Ross Gastroenterol Zh	29							29
Scand J Gastroenterol	218	235	209	222	219	210	235	1548
Scand J Gastroenterol Suppl	16	18	30	15		25		104
Semin Gastrointest Dis	26	23	23					72
Semin Liver Dis	43	41	44	60	47	39	38	312
Surg Endosc	376	454	505	393	292	362	463	2845
Surg Laparosc Endosc Percutan Tech	86	89	90	80	92	107	144	688
Taehan Kan Hakhoe Chi		67	42					109
Tech Coloproctol	41	43	39	130	54	67	59	433
Trop Gastroenterol	65	66	59	55	56	43	51	395
Turk J Gastroenterol		48	59	58	53	65	49	332
World J Gastroenterol	172	236	632	812	1478	1315	1039	5684
Z Gastroenterol	134	156	127	115	90	90	93	805
Zhonghua Ganzangbing Zazhi	114	193	325	325	341	308	314	1920
Zhonghua Weichang Waike Zazhi					109	108	105	322
Total	9447	10663	11178	11663	12610	12660	13340	81561

“*American Journal of Gastroenterology*” (278), “*Gastrointestinal Endoscopy*” (186), “*Surgical Endoscopy*” (183), “*World Journal of Gastroenterology*” (176), and “*Gastroenterology*” (171). Among these journals, the “*World Journal of Gastroenterology*” had the greatest increase in randomized controlled trials: from 5 in 2001 to 34 in 2007 (detailed data not shown in tables).

If only the last name and initials of the authors were considered, 141 741 author names appeared in the articles of gastroenterology journals from 2001 to 2007. The “*World Journal of Gastroenterology*” had the greatest number of authors (17 838), followed by “*Gastroenterology*” (12 770), “*Digestive Diseases and Sciences*” (11 395), “*American Journal of Gastroenterology*” (10 889), and “*Hepatology*” (10 588) (Table 2). Among all authors, 82 174 had published only one article, 22 192 two articles, 10 672 three articles, and 26 703 more than three articles. On the other hand, 92 429 authors had published only in one journal, 22 585 in two journals, 9996 in three journals, and 16 731 in more than three journals. The share of authors publishing only in one journal among all authors of the journal was generally higher in journals with apparently narrower research fields or locality, e.g. “*Ekspiermental'naia i Klinicheskaia Gastroenterologija (Experimental & Clinical Gastroenterology)*” (95.5%), “*Revista de Gastroenterologia del Peru*” (84.0%), “*Eating and Weight Disorders*” (81.0%), “*Revista de Gastroenterologia de Mexico*” (79.4%), and “*Journal of Health, Population, and Nutrition*” (78.0%) (Table 2).

The top 10 prolific researchers in these gastroenterology journals are listed in Table 3. They were from seven institutions in six countries: three in the USA, four in Europe, and three in Asia. Only two of the top-ranked researchers were surgeons (Masatoshi Makuuchi and Markus W Buchler).

DISCUSSION

The current study demonstrated the most recent trend in publications from gastroenterology specialty

journals worldwide. Gastroenterology publications have continued to prosper in the new millennium, not merely due to the expanded coverage of MEDLINE or the growth of a single journal. The number of randomized controlled trials has also increased, but their growth rate has slightly lagged behind that of other articles. Numerous researchers participated in gastroenterology publications; a substantial number of the authors were active in research and had multiple publications. Gastroenterology journals thus showed diverse authorships in which many authors of a journal also published in other specialty journals.

The current study chose MEDLINE as the data source because of its open access and international visibility. To compare the “quality” of scientific publications, people have adopted the controversial citation statistics and “impact factor” in recent years. Because the quantity of citations has increased tremendously and the databank of citations is not freely open to the public, the monopolized data from the black box cannot be extensively verified. Normally, most researchers just need a quick orientation in the field of interest, e.g. the features of journals, the most prolific authors or facilities, or the hottest subjects. Such requests can be easily satisfied by free MEDLINE after processing, without resorting to commercial databases which most individual researchers around the world can hardly afford.

Despite collective growth since 2001, the increases and decreases in individual gastroenterology journals could be observed. Among all journals, the “*World Journal of Gastroenterology*” was most striking. Not only had it published the greatest number of articles since 2003, but it had also attracted the most authors. Along with quantitative growth, the “*World Journal of Gastroenterology*” also had more randomized controlled trials. According to an earlier bibliometric analysis on the “*World Journal of Gastroenterology*”, the author origins of the Journal had become more diverse by geographic distribution since 2003. From the analysis in the current study, the majority

Table 2 Articles of gastroenterology journals stratified by selected publication type and author type, 2001-2007

Journal	No. of all articles	Review	Case report	Clinical trial	Multicenter study	Randomized controlled trial	No. of authors	No. of exclusive authors ¹	Share of exclusive authors ¹ (%)
<i>Abdom Imaging</i>	897	184	310	7	1	7	3094	1360	44.0
<i>Acta Gastroenterol Belg</i>	344	137	92	8	4	3	1113	435	39.1
<i>Acta Gastroenterol Latinoam</i>	225	36	52	5	4	2	815	542	66.5
<i>Aliment Pharmacol Ther</i>	2430	674	10	556	273	536	8177	2108	25.8
<i>Am J Gastroenterol</i>	2858	302	169	279	150	278	10889	2753	25.3
<i>Am J Physiol Gastrointest Liver Physiol</i>	2100	126		55		27	7045	2689	38.2
<i>Ann Hepatol</i>	239	89	58	10	2	7	705	332	47.1
<i>Arq Gastroenterol</i>	350	34	21	6	5	10	1067	689	64.6
<i>Best Pract Res Clin Gastroenterol</i>	488	459	6				1145	341	29.8
<i>BMC Gastroenterol</i>	231	6	47	12	6	13	934	164	17.6
<i>Can J Gastroenterol</i>	618	187	137	17	18	18	1579	556	35.2
<i>Chin J Dig Dis</i>	117	23	2	2		5	400	71	17.8
<i>Clin Colorectal Cancer</i>	298	130	25	25	17	14	910	552	60.7
<i>Clin Gastroenterol Hepatol</i>	940	153	198	64	76	89	4079	918	22.5
<i>Clin Liver Dis</i>	352	349	1				522	78	14.9
<i>Colorectal Dis</i>	750	91	11	32	14	33	2202	895	40.6
<i>Curr Gastroenterol Rep</i>	534	418	1	6	1	5	791	139	17.6
<i>Curr Issues Intest Microbiol</i>	47	24					133	81	60.9
<i>Curr Opin Gastroenterol</i>	565	245					735	144	19.6
<i>Dig Dis</i>	305	202	5	7	2	8	852	128	15.0
<i>Dig Dis Sci</i>	2826	183	649	148	58	135	11395	3418	30.0
<i>Dig Liver Dis</i>	1170	239	146	78	45	56	4634	1270	27.4
<i>Dig Surg</i>	542	96	148	9	3	13	1997	514	25.7
<i>Digestion</i>	506	106	45	49	28	41	2332	483	20.7
<i>Dis Colon Rectum</i>	1837	130	256	219	57	143	6506	2349	36.1
<i>Dis Esophagus</i>	535	71	145	21	7	15	2226	709	31.9
<i>Dysphagia</i>	275	16	33	13	1	6	850	579	68.1
<i>Eat Weight Disord</i>	336	35	21	17	5	14	1070	867	81.0
<i>Eksp Klin Gastroenterol</i>	655	138	23	76	1	18	984	940	95.5
<i>Eur J Gastroenterol Hepatol</i>	1539	315	378	83	93	87	6606	1966	29.8
<i>Gastric Cancer</i>	297	40	54	30	9	7	1301	249	19.1
<i>Gastroenterol Clin Biol</i>	1328	603	326	35	36	16	3188	1623	50.9
<i>Gastroenterol Clin North Am</i>	387	373	3				614	107	17.4
<i>Gastroenterol Hepatol</i>	696	229	184	12	3	3	2259	1235	54.7
<i>Gastroenterol Nurs</i>	387	114	29	12	1	9	430	293	68.1
<i>Gastroenterology</i>	2991	352	205	169	106	171	12770	4003	31.3
<i>Gastrointest Endosc</i>	3005	220	1275	230	100	186	8547	2426	28.4
<i>Gastrointest Endosc Clin N Am</i>	377	338	2				581	87	15.0
<i>Gut</i>	2383	343	227	132	139	144	9785	2612	26.7
<i>Hepatobiliary Pancreat Dis Int</i>	726	64	67	40	9	20	2128	464	21.8
<i>Hepatogastroenterology</i>	3036	145	654	155	31	100	9648	2952	30.6
<i>Hepatology</i>	2474	211	15	148	105	131	10588	3502	33.1
<i>Hernia</i>	513	60	151	20	18	32	1627	822	50.5
<i>Indian J Gastroenterol</i>	666	66	355	16	2	17	1791	893	49.9
<i>Inflamm Bowel Dis</i>	864	158	37	43	34	31	3266	854	26.1
<i>Int J Colorectal Dis</i>	690	63	74	57	21	40	3249	930	28.6
<i>Int J Gastrointest Cancer</i>	206	36	52	14	2		968	279	28.8
<i>Int J Pancreatol</i>	25	3	9				137	9	6.6
<i>J Clin Gastroenterol</i>	1209	320	241	59	31	56	4326	1192	27.6
<i>J Dig Dis</i>	36	6	3	2	1	1	160	29	18.1
<i>J Gastroenterol</i>	1168	219	299	45	24	29	4429	734	16.6
<i>J Gastroenterol Hepatol</i>	2135	274	351	93	37	91	7661	1672	21.8
<i>J Gastrointest Surg</i>	1156	114	132	23	16	24	4329	1476	34.1
<i>J Gastrointestin Liver Dis</i>	130	22	41	4	3	3	484	216	44.6
<i>J Health Popul Nutr</i>	324	16	1	8	2	16	1185	924	78.0
<i>J Hepatobiliary Pancreat Surg</i>	641	142	207	8	4	6	2345	427	18.2
<i>J Hepatol</i>	1814	259	114	120	56	81	8036	2200	27.4
<i>J Pediatr Gastroenterol Nutr</i>	1701	257	389	93	36	119	5894	3239	55.0
<i>J Viral Hepat</i>	610	74	16	81	48	56	3255	887	27.3
<i>JOP</i>	400	124	168	7		2	1396	473	33.9
<i>Korean J Gastroenterol</i>	597	65	128	7	4	8	1249	372	29.8
<i>Korean J Hepatol</i>	208	25	28	2		3	585	89	15.2
<i>Liver</i>	145	14	20	14	1	5	759	164	21.6
<i>Liver Int</i>	655	68	38	39	16	19	3613	751	20.8
<i>Liver Transpl</i>	1663	223	261	72	43	49	5517	2025	36.7
<i>Minerva Gastroenterol Dietol</i>	242	87	15	5	1	2	788	284	36.0
<i>Nat Clin Pract Gastroenterol Hepatol</i>	412	128	35	8	10	8	693	91	13.1

<i>Neurogastroenterol Motil</i>	634	111	5	52	5	39	1874	478	25.5
<i>Nippon Shokakibyo Gakkai Zasshi</i>	929	326	594	1	1	1	3464	856	24.7
<i>Pancreas</i>	953	60	109	35	16	9	3966	1144	28.8
<i>Pancreatology</i>	407	108	55	16	5	2	1627	399	24.5
<i>Rev Esp Enferm Dig</i>	580	80	145	28	5	13	2185	1234	56.5
<i>Rev Gastroenterol Disord</i>	233	154	4				124	10	8.1
<i>Rev Gastroenterol Mex</i>	554	204	112	15		8	1224	972	79.4
<i>Rev Gastroenterol Peru</i>	259	50	74	8		6	824	692	84.0
<i>Rom J Gastroenterol</i>	208	51	66	24	5	4	590	318	53.9
<i>Ross Gastroenterol Zh</i>	29	5	2	2			90	44	48.9
<i>Scand J Gastroenterol</i>	1548	80	128	151	65	120	6465	1817	28.1
<i>Scand J Gastroenterol Suppl</i>	104	92	2	1	1		270	28	10.4
<i>Semin Gastrointest Dis</i>	72	64	43				121	11	9.1
<i>Semin Liver Dis</i>	312	264	29	2			598	80	13.4
<i>Surg Endosc</i>	2845	229	430	203	73	183	9117	4404	48.3
<i>Surg Laparosc Endosc Percutan Tech</i>	688	45	318	23	4	24	2523	871	34.5
<i>Taehan Kan Hakhoe Chi</i>	109	4	30	4		2	417	61	14.6
<i>Tech Coloproctol</i>	433	53	82	26	14	23	1283	500	39.0
<i>Trop Gastroenterol</i>	395	84	166	11	1	7	929	440	47.4
<i>Turk J Gastroenterol</i>	332	11	87	7	4	6	1096	460	42.0
<i>World J Gastroenterol</i>	5684	584	637	338	46	176	17838	6839	38.3
<i>Z Gastroenterol</i>	805	198	193	39	14	14	1917	737	38.4
<i>Zhonghua Ganzangbing Zazhi</i>	1920	95	33	34	11	34	3693	1117	30.2
<i>Zhonghua Weichang Waike Zazhi</i>	322						1096	262	23.9
Total	81561	14005	12539	4627	2090	3739	141741	92429	65.2

[†]Exclusive authors denote the authors who had published in only one journal during the study period.

Table 3 The most prolific authors in gastroenterology journals, 2001-2007

Author	Affiliation	No. of articles
Nicholas J Talley	Mayo Clinic, Rochester, USA	205
Michael P Manns	Hannover Medical School, Germany	170
Peter Malfertheiner	University of Magdeburg, Germany	166
Todd H Baron	Mayo Clinic, Rochester, USA	165
Masatoshi Makuuchi	University of Tokyo, Japan	163
Markus W Buchler	University of Heidelberg, Germany	160
Shou-Dong Lee	Taipei Veterans General Hospital, Taiwan, China	155
Giovanni Gasbarrini	Catholic University of Rome, Italy	147
William J Sandborn	Mayo Clinic, Rochester, USA	141
Full-Young Chang	Taipei Veterans General Hospital, Taiwan, China	140

of authors in the “*World Journal of Gastroenterology*” did not only publish in this Journal during the study period. Both of these facts indicated that the “*World Journal of Gastroenterology*” had established its position in international gastroenterology publications.

The global research community has frequent fervent disputes about the quality of journal articles^[13]. There appears to be a growing discontent about the misuse of the impact factor in hiring, promoting and grant-awarding. Researchers usually consider several factors when choosing a journal to publish their research results. A research article should be judged by its content, and not merely by the journal in which it was published. That is, the impact of an individual article should not be evaluated by the journal impact factor. The function of the academic journal as an effective platform for scientific communication can never be overestimated. Time will show which editorial team acts best.

The major limitation in the current study was the separation of distinct authors. The ambiguity of

author names is an unresolved problem of bibliometric research^[14]. Although MEDLINE started to index full author names in 2002, the problem still remains. Not every journal print author names in full. Besides, not every author spells their forename consistently in different articles. For example, Buchler MW appeared as Markus W Buchler, Markus-W Buchler, and Markus Wolfgang Buchler. Most cases of ambiguity existed in authors of East Asian origin. Because of homonymous features in Chinese/Japanese/Korean characters, a lot of distinct authors might share the same full name spelled in Latin letters. Therefore, the share of exclusive authors (never publishing in other journals) in each journal in the current study represented only the lowest estimate.

In conclusion, global gastroenterology publications demonstrated a continuous growth in the new millennium. The change was most striking in certain journals. Regular bibliometric analyses on the trends and specific topics would help researchers publish more efficiently and allow editors to adjust the policy more accurately.

ACKNOWLEDGMENTS

The author thanks Professor Tzeng-Ji Chen for his professional advice.

REFERENCES

- 1 Lewison G, Grant J, Jansen P. International gastroenterology research: subject areas, impact, and funding. *Gut* 2001; **49**: 295-302
- 2 Sorrentino D, De Biase F, Trevisi A, Bartoli E. Scientific publications in gastroenterology and hepatology in Western Europe, USA and Japan in the years 1992-1996: a global survey. *Digestion* 2000; **61**: 77-83
- 3 Gao R, Liao Z, Li ZS. Scientific publications in gastroenterology and hepatology journals from Chinese authors in various parts of North Asia: 10-year survey of

- literature. *J Gastroenterol Hepatol* 2008; **23**: 374-378
- 4 **Lewison G**. Gastroenterology research in the United Kingdom: funding sources and impact. *Gut* 1998; **43**: 288-293
 - 5 **Maeda K**, Rahman M, Fukui T. Japan's contribution to clinical research in gastroenterology and hepatology. *J Gastroenterol* 2003; **38**: 816-819
 - 6 **Chen TJ**, Chen YC, Hwang SJ, Chou LF. The rise of China in gastroenterology? A bibliometric analysis of ISI and Medline databases. *Scientometrics* 2006; **69**: 539-549
 - 7 **Hart PA**, Ibdah JA, Marshall JB. Internationalisation of high-impact gastroenterology journals, 1970-2005. *Gut* 2007; **56**: 895-896
 - 8 **Yang H**, Zhao YY. Variations of author origins in World Journal of Gastroenterology during 2001-2007. *World J Gastroenterol* 2008; **14**: 3108-3111
 - 9 **Cappell MS**, Davis M. A significant decline in the American domination of research in gastroenterology with increasing globalization from 1980 to 2005: an analysis of American authorship among 8,251 articles. *Am J Gastroenterol* 2008; **103**: 1065-1074
 - 10 **Nadkarni PM**, Brandt C. Data extraction and ad hoc query of an entity-attribute-value database. *J Am Med Inform Assoc* 1998; **5**: 511-527
 - 11 **Egghe L**, Rousseau R, van Hooydonk G. Methods for accrediting publications to authors or countries: Consequences for evaluation studies. *J Am Soc Inf Sci* 2000; **51**: 145-157
 - 12 **Nahin AM**. Full author searching comes to PubMed®. *NLM Tech Bull* 2005; e4. Available from: URL: http://www.nlm.nih.gov/pubs/techbull/mj05/mj05_full_author.html
 - 13 **Simons K**. The misused impact factor. *Science* 2008; **322**: 165
 - 14 **Scoville CL**, Johnson ED, McConnell AL. When A. Rose is not A. Rose: the vagaries of author searching. *Med Ref Serv Q* 2003; **22**: 1-11

S- Editor Tian L **L- Editor** Webster JR **E- Editor** Lin YP