

SCIENTOMETRICS

## Variations of author origins in *World Journal of Gastroenterology* during 2001-2007

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### Abstract

**AIM:** To discuss the variations and distributions of authors who published their papers in *World Journal of Gastroenterology (WJG)* during 2001-2007 and evaluate the development of *WJG* and gastroenterology core journals in recent years by comparing the contributions of the authors.

**METHODS:** *WJG* articles published in 2001-2007 were searched from *MEDLINE* database (by ISI Web of Knowledge). The variations (cooperation degree, cooperation rate) and distributions of the first authors were analyzed with bibliometric methods. SCIE was used to collect articles published in *Am J Gastroenterol*, *Gastroenterology*, *Scand J Gastroenterol* and *WJG* in 2007, and comparison of the data was made. Comparison indicators included the article number of annual journals, cooperation degree of authors, cooperation rate, mean number of articles published in each *WJG* issue, number of countries of the first *WJG* authors, geographical distribution and article contribution ratio of all *WJG* authors and domestic authors.

**RESULTS:** Of the 5851 articles covered in *MEDLINE*, 173, 236, 633, 826, 1496, 1382 and 1105 articles were cited from 2001 to 2007. The cooperation degree was 5.11, 5.56, 5.75, 5.76, 6.31, 5.90 and 5.64 respectively. The cooperation rates was 94.80%, 99.15%, 98.89%, 98.55%, 99.13%, 96.67% and 95.66%, respectively. The mean number of articles published in each *WJG* issue from 2001 to 2007 was 28, 39, 52, 34, 31, 28 and 23, respectively. The number of countries of the first *WJG* authors was 8, 8, 27, 32, 49, 61 and 56, respectively. The first authors of *WJG* came from 3 continents in 2001 and covered 6 continents in 2006-2007. The number of articles written by Asian authors was 136 (79.07%), 227 (96.19%), 575 (90.98%), 713 (87.81%), 1111 (75.32%),

712 (53.98%) and 555 (53.21%), respectively in 2001-2007. The number of articles written by European & American authors increased from 36 (20.93%) and 8 (3.39%) in 2001-2002 to 563 (42.68%) and 452(43.34%) in 2006-2007. The number of countries except for China contributing papers was increased. The number of articles written by first authors of Japan rose from 0 (0%) in 2001-2002 to 287 (12.15%) in 2006-2007. The number of articles written by American authors increased from 6 (1.47%) in 2001-2002 to 158 (6.69%) in 2006-2007. The number of articles written by Chinese authors was 136 (79.07%), 227 (96.19%), 548 (86.71%), 669 (82.39%), 884 (59.93%), 380 (28.81%) and 320 (30.68%), respectively, in 2001 to 2007. The number of articles published in *Am J Gastroenterol*, *Gastroenterology*, *Scand J Gastroenterol* and *WJG* was 565, 586, 238 and 1118, respectively in 2007. The cooperation degree was 4.77, 6.14, 5.95 and 5.64, respectively, in 2007. The cooperation rate was 95.40%, 84.18%, 96.63% and 95.66%, respectively, in 2007. The number of countries of authors contributing papers was 44, 35, 42 and 62, respectively, in 2007.

**CONCLUSION:** The geographical distribution of *WJG* authors is wide for the past 2 years. *WJG* has made a step onto international publishing, and drawn even more attentions from gastroenterology researchers. Its authors are distributed over 74 countries in 6 global continents, and the journal has become the main intermediary for international gastroenterology researchers to demonstrate their research accomplishments.

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**Key words:** Bibliometrics; *World Journal of Gastroenterology*; Science citation index

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### INTRODUCTION

*World Journal of Gastroenterology (WJG)* was first published

in 1995. This English journal is edited and published by The WJG Press and can be retrieved with the following citation tools: Current Contents®/Clinical Medicine, Science Citation Index Expanded (also known as SciSearch®) and Journal Citation Reports/Science Edition, Index Medicus, MEDLINE and PubMed, Chemical Abstracts, EMBASE/Excerpta Medica, Abstracts Journals, Nature Clinical Practice Gastroenterology and Hepatology, CAB Abstracts and Global Health, *etc.* In recent years, Ma *et al.*<sup>[1]</sup> has analyzed the articles covered in SCIE during 1998-2004, claiming that the self-citation rate is decreased. However, the citation rate by others is increased and the journal citation status is improved. The variations of *WJG* authors' data in 2001 to 2007 were comparatively analyzed. The cooperation degree, cooperation rate, number of countries and author publishing ratios of domestic journal issues in *American Journal of Gastroenterology*, *Gastroenterology*, *Scandinavian Journal of Gastroenterology*, were also comparatively analyzed using the SCIE database.

A bibliometric analysis of the variations in distributions of authors was made to show the improvements and shortcomings of *WJG* and speed up its development.

## MATERIALS AND METHODS

*WJG* articles were searched from MEDLINE (by ISI Web of Knowledge)<sup>[2]</sup> in 2001-2007. Variations (cooperation degree, cooperation rate) and distributions of the first authors were analyzed with bibliometric methods. Articles published in *Am J Gastroenterol*, *Gastroenterology*, *Scand J Gastroenterol* and *WJG* covered in SCIE<sup>[3]</sup> in 2007 were analyzed using Web of Science (meeting summaries were not covered). The authors, titles, addresses and other relevant data of the four journals in 2007 were processed through the SCIE's 'Refine Results' function, and countries of authors, *WJG* authors, research institutions and their distribution were closely consistent with the current status and authors of articles published in *WJG* experienced difficulties.

## RESULTS

### *WJG* articles retrieval status with MEDLINE citation in 2001-2007

*WJG* was published bimonthly in 2001-2002, monthly in 2003, semimonthly in 2004, and weekly from 2006. In 2001-2007, 173, 236, 633, 826, 1496, 1382 and 1105 articles published in *WJG* were covered in MEDLINE. The number of articles published in each issue of *WJG* was 28, 39, 52, 34, 31, 28 and 23, respectively, in 2001-2007.

### Co-author articles published in *WJG*

A total of 5851 articles published in *WJG* during 2001-2007 were cited. The number of authors of these papers was 34415 and the cooperation degree was 5.11, 5.56, 5.75, 5.76, 6.31, 5.90 and 5.64, respectively, with a mean cooperation degree of 5.88. The number of articles written by a single author was 137, accounting for 2.34% of all articles. The number of co-author articles published in 2001-2007 was 5714 and the cooperation rate was

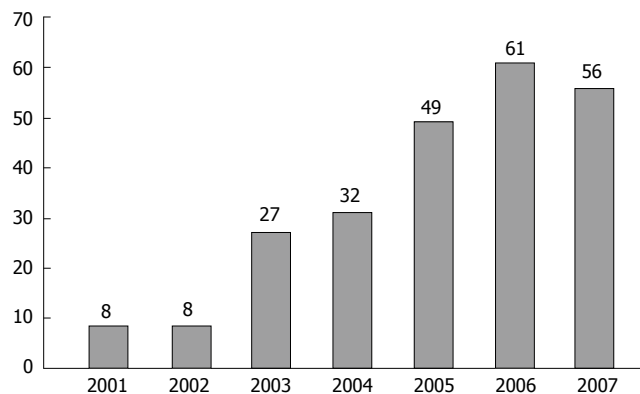


Figure 1 Distribution of first authors and countries in 2001-2007.

94.80%, 99.15%, 98.89%, 98.55%, 99.13%, 96.67% and 95.66% respectively, with a mean cooperation rate of 97.66%. The cooperation degree was slightly increased from 2001 to 2005 (Table 1).

### Distribution of first authors in *WJG*

Only addresses of the first authors were marked in MEDLINE, and 5851 articles published in *WJG* were retrieved in 2001-2007, in which only 5689 articles had available addresses. The number of countries with their articles covered in MEDLINE was 8, 8, 27, 32, 49, 61 and 56, respectively (Figure 1). The geographical distribution of *WJG* authors was increasingly broadened, especially in 2006 and 2007 during which the number of countries increased multiple folds.

The geographical distribution of the authors with addresses in 5689 articles was categorized into 6 continents (Table 2). During 2001-2005, the majority authors were from Asia, accounting for 136 (79.07%), 227 (96.19%), 575 (90.98%), 713 (87.81%) and 1111 (75.32%), respectively. During 2006-2007, the number of authors from Asia was 712 (53.98%), 555 (53.21%) respectively, showing that the number of Asian authors is declining. During 2006-2007, the geographical distribution of *WJG* authors covered all the 6 continents and the number of European and North America authors increased from 36 (20.93%) and 8 (3.39%) in 2001-2002 to 563 (42.68%) and 452 (43.34%) in 2006-2007 respectively.

### Geographical distribution of the first authors

In order to reflect the geographical distributions of authors, a comparison of the distribution of *WJG* authors was performed. The number of articles contributed to *WJG* by the top 15 countries (Table 3) was 5167 (90.82%), the number of articles contributed to *WJG* by Chinese authors was 136 (79.07%), 227 (96.19%), 548 (86.71%), 669 (82.39%), 884 (59.93%), 380 (28.81%) and 320 (30.68%), respectively, in 2001-2007. The number of articles contributed by Japanese authors increased from 0 (0%) in 2001-2002 to 287 (12.15%) in 2006-2007, the number of articles contributed by the American authors was also increased from 6 (1.47%) in 2001-2002 to 158 (6.69%) in 2006-2007. All countries, except for China showed an increased number of contributed articles.

**Table 1** Co-author articles published in *WJG* during 2001-2007

| Yr    | Distribution of co-author articles |     |     |     |     |     |     |     |     |     |      | Total (articles) | Authors | Cooperation degree | Cooperation rate (%) |
|-------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------------------|---------|--------------------|----------------------|
|       | 1                                  | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | > 11 |                  |         |                    |                      |
| 2001  | 9                                  | 18  | 20  | 33  | 26  | 20  | 20  | 14  | 5   | 2   | 6    | 173              | 884     | 5.11               | 94.80                |
| 2002  | 2                                  | 20  | 23  | 44  | 35  | 39  | 30  | 20  | 10  | 2   | 11   | 236              | 1313    | 5.56               | 99.15                |
| 2003  | 7                                  | 30  | 65  | 88  | 131 | 110 | 79  | 55  | 25  | 22  | 21   | 633              | 3637    | 5.75               | 98.89                |
| 2004  | 12                                 | 47  | 82  | 112 | 146 | 154 | 105 | 71  | 43  | 25  | 29   | 826              | 4755    | 5.76               | 98.55                |
| 2005  | 13                                 | 59  | 113 | 188 | 243 | 273 | 202 | 154 | 86  | 56  | 109  | 1496             | 9434    | 6.31               | 99.13                |
| 2006  | 46                                 | 111 | 149 | 169 | 210 | 191 | 150 | 119 | 74  | 57  | 106  | 1382             | 8160    | 5.90               | 96.67                |
| 2007  | 48                                 | 107 | 129 | 148 | 158 | 139 | 120 | 83  | 48  | 59  | 66   | 1105             | 6232    | 5.64               | 95.66                |
| Total | 137                                | 392 | 581 | 782 | 949 | 926 | 706 | 516 | 291 | 223 | 348  | 5851             | 34415   | 5.88               | 97.66                |

**Table 2** Geographical distribution of the authors in *WJG*

| Yr   | Distribution of the authors in 6 continents |      |        |               |         |               |
|------|---|------|--------|---------------|---------|---------------|
|      | Africa                                      | Asia | Europe | North America | Oceania | South America |
| 2001 | 0   | 136  | 32     | 4             | 0       | 0             |
| 2002 | 0   | 227  | 6      | 2             | 1       | 0             |
| 2003 | 1   | 575  | 45     | 6             | 2       | 3             |
| 2004 | 3   | 713  | 85     | 6             | 0       | 5             |
| 2005 | 7   | 1111 | 314    | 28            | 4       | 11            |
| 2006 | 11  | 712  | 453    | 110           | 10      | 23            |
| 2007 | 9   | 555  | 359    | 93            | 13      | 14            |

**Table 3** Distribution of the top 15 countries in *WJG* during 2001-2007

| Country name   | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | Total |
|----------------|------|------|------|------|------|------|------|-------|
| China          | 136  | 227  | 548  | 669  | 884  | 380  | 320  | 3164  |
| Japan          |      |      | 6    | 19   | 133  | 170  | 117  | 445   |
| Germany        | 10   | 2    | 4    | 10   | 68   | 92   | 66   | 252   |
| Italy          |      |      | 9    | 15   | 56   | 79   | 56   | 215   |
| United States  | 4    | 2    | 5    | 6    | 19   | 77   | 81   | 194   |
| Turkey         |      |      | 17   | 24   | 31   | 43   | 62   | 177   |
| South Korea    |      |      | 5    | 9    | 37   | 53   | 38   | 142   |
| Greece         |      |      | 2    | 6    | 34   | 45   | 31   | 118   |
| United Kingdom | 18   |      | 3    | 1    | 16   | 28   | 22   | 88    |
| India          |      |      | 5    | 2    | 7    | 35   | 30   | 79    |
| Spain          |      |      | 1    | 2    | 13   | 34   | 21   | 71    |
| Poland         |      | 1    | 2    | 6    | 31   | 17   | 4    | 61    |
| Hungary        |      |      | 2    | 12   | 20   | 20   | 5    | 59    |
| Iran           |      |      | 2    | 2    | 7    | 25   | 18   | 54    |
| Thailand       |      |      | 1    | 4    | 14   | 16   | 13   | 48    |

Among the top 15 countries, 7 are in Asia, 7 in Europe, and 1 in North America.

**Data comparisons of gastroenterology-related journals**

The articles of *Am J Gastroenterol*, *Gastroenterology* and *Scand J Gastroenterol* were selected to compare with those of *WJG*. *Am J Gastroenterol* is an official publication of the American College of Gastroenterology, and its IF was 5.608 in 2006, ranking 5<sup>th</sup> in Journal Citation Report (JCR). *Gastroenterology* is the official journal of the American Gastroenterology Association (AGA) and its IF was 12.457 in 2006, ranking 1<sup>st</sup> in JCR. *Scand J Gastroenterol* published by Taylor & Francis Group is the membership journal of the Gastroenterologic Societies of Denmark, Finland, Iceland, Norway and Sweden, and its IF was 1.869 in 2006. These four journals are most typical of all journals related to the field of gastroenterology. The number of articles published in *Am J Gastroenterol*, *Gastroenterology*, *Scand J Gastroenterol* and *WJG* covered in SCIE was 565, 586, 238 and 1118, respectively, in 2007. The cooperation degree of authors was 4.77, 6.14, 5.95 and 5.64, respectively; the cooperation rate was 95.40%, 84.18%, 96.63% and 95.66% respectively, in 2007. The geographical distribution of authors' was 44, 35, 42 and 62, respectively (Table 4). In 2007, The number of American authors contributing to *Am J Gastroenterol* and *Gastroenterology* accounted for 47.43% and 50.85% respectively, the number of Swedish authors contributing to *Scand J Gastroenterol* accounted for 18.07%, the number of Northern Europe authors contributing to *Scand J Gastroenterol* accounted for 45.38%, the number of Chinese authors contributing to *WJG* accounted for 30.4%.

**DISCUSSION**

In 2001-2007, the number of articles covered in

*MEDLINE* was 173, 236, 633, 826, 1496, 1382 and 1105 respectively, the mean number of articles published in each issue was 28, 39, 52, 34, 31, 28 and 23 respectively. The number of articles published increased by 932 (638.73%) in 2007 compared to 2001.

In 2001-2007, the cooperation degree was 5.11, 5.56, 5.75, 5.76, 6.31, 5.90 and 5.64 respectively (mean 5.88), the cooperation rate was 94.80%, 99.15%, 98.89%, 98.55%, 99.13%, 96.67% and 95.66% respectively (mean 97.66%). The mean number of co-authors and single authors showed a tendency to increase from 2001 to 2005, while slightly decreased in 2006 to 2007.

The geographical distributions of authors in *WJG* were expanded from 4 continents in 2001 to the 6 continents in 2006-2007, the number of countries increased in multiple folds. The number of authors from Europe and North America increased while that from Asia decreased. The number of countries increased from 8, 8, 27, 32 and 49 in 2001-2005 to 61 and 56 in 2006-2007.

The number of Chinese authors accounted for 79.07%, 96.19%, 86.71%, 82.39%, 59.93%, 28.81% and 30.68% respectively, in 2001-2007, showing a maximum decrease of 67.38%. The number of Japanese, American, German and Italian authors increased greatly, showing an increasing trend of international authors contributing to *WJG*.

When compared with *Am J Gastroenterol*, *Gastroenterology*, *Scand J Gastroenterol*, the geographical distribution of

Table 4 Data comparisons of the 4 representative gastroenterology journals in 2007

| Journal name                 | Articles published in 2007 | Cooperation degree in 2007 | Cooperation rate in 2007 | Geographical distribution of authors | Ratio of articles contributed by domestic authors (%) |
|------------------------------|----------------------------|----------------------------|--------------------------|--------------------------------------|---|
| <i>Am J Gastroenterol</i>    | 565                        | 4.77                       | 95.40                    | 44                                   | United States 47.43                                   |
| <i>Gastroenterology</i>      | 586                        | 6.14                       | 84.18                    | 35                                   | United States 50.85                                   |
| <i>Scand J Gastroenterol</i> | 238                        | 5.95                       | 96.63                    | 42                                   | Sweden 18.07  |
| <i>WJG</i>                   | 1118                       | 5.64                       | 95.66                    | 62                                   | China 30.4  |

authors in *WJG* was greatly expanded in the order of China, Asia and 6 continents. The mean number of published articles in each issue showed a prominent decrease, which may improve the quality of articles published in *WJG*. The cooperation degree and rate were reasonable, and the number of Chinese authors was slightly increased in 2007.

In conclusion, the geographical distribution of *WJG* authors is worldwide. *WJG* has made a step onto international level, thus drawing more attentions from gastroenterology researchers. The journal has become the main intermediary for international researchers in

gastroenterology to demonstrate their research accomplishments.

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