

# A Bibliometric Study on SARS in MEDLINE

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## Introduction

The new respiratory disease called SARS (severe acute respiratory syndrome, the term first used by WHO spokesman Dick Thompson) that first emerged in Guangdong province, China in November 2002. A novel coronavirus was later identified in patients with SARS. The detection of the virus in those patients, its absence in healthy controls or other patients with atypical pneumonia, and the reproduction of a similar disease in a relevant animal model fulfilled Koch's postulates for implicating this corona virus as the causal agent of SARS. The full genome sequence was determined within weeks of the virus's identification (Poon, et al.2004). Hence, a dramatic increase of SARS-related publications would be expected shortly after the outbreak. This study was intended to analyze significant SARS publication patterns, especially, country of publication, country of author, size of publications, impact factors (IF) of journals, and language.

## Materials and Method

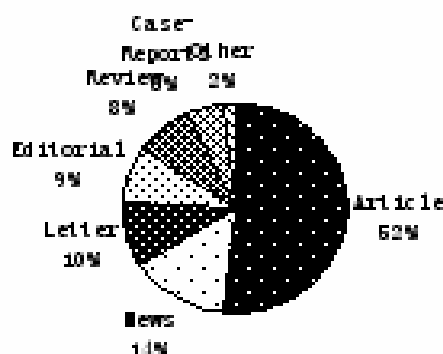
The source used was MEDLINE database in CD-ROM version (Ovid International) which has a wide coverage of biomedical and health science research publication from 86 countries in more than 4600 journals. The year-span included in the analysis was from Sep.2002 to Aug.2004, which available at the time of the search records were selected by searching "SARS-virus or severe acute respiratory syndrome" in Mesh in any field to cover SARS-related papers. Analysis parameters include journals, language, document type, country of publication and so on. Indexed journals were embodied in or not in Science Citation Index Extended (SCIE). The country was assigned according to the address fielding the MEDLINE record.

## Results and Discussion

The study found that total production was 3202 papers presented by 36 countries or regions and 49% of the total did not have an address indicated. The United States of America published most of the papers, next in turn were the United Kingdom, China, Canada, Germany, Australia, Switzerland and so on. The earliest retrieved 3 documents carried

respectively in J-Insur.-Med, Pac-Health-Dialog and Dev-Immunol. in September 2002 and these journals are not indexed in SCIE, while the earliest published paper in SCI was in March 2003 (CHIU,et al. 2004). Bio-medical special database MEDLINE embodying technical periodicals carried related papers earlier than the periodicals accepted by SCI. In this study, along with relative investigative development, we found that core journals played an important role in carrying SARS-related papers and released a lot of high quality research papers. Top 10 journals contributing to SARS-related papers had Lancet-, Emerging infectious diseases, BMJ-Clinical-research-Ed, CMAJ-Canadian-Medical-Association-journal, Science, New England Journal of Medicine, JAMA, the journal of the American Medical Association, Nature-, Chinese Medical Journal and Beijing-da-xue-xue-bao.-Yi-xue-ban.

The number of papers in English amounted to 2647, while that in other languages there was 555, which accounted for 83% and 17%, respectively.



Graph 1 The distribution of papers publication type

It suggested that researchers and scholars communicated on their scientific findings mainly in English. 52% of total share was published as articles, 14 % as news features, 10% as letters, 9% as editorial materials, 8% as reviews, 5% as case-reports, and 2% as congresses, interview, lectures, biography and so on, Graph1. We argued that a high

percentage share of news item might be a faster way of communication (CHIU, et al.2004).

3202 papers were published in 457 journals. The sorts of journals carrying 50 or more than 50 papers were 12, accounting for 3%, and the number of papers published in those journals accounted for 35% of the total. By analyzing 1646 documents with recorded addresses, we viewed that the China dominated the production accounted for 48% (785/1646) of the total share, and the total IF was 1456.4, followed closely by US with 15% (238/1646) and 873.2, respectively. 648 among 1646 papers considered from the 31 countries or regions have been published in journals that were not embodied in SCI. Publication counted and analyzed is one of the bibliometric analytic techniques. It involves studying the number of publications in a given field, or productivity of literature in the field, with the aim of comparing “the amount of research in different countries or areas, the amount produced during different periods, or the amount produced in different subdivisions of the field” (Hertz, 1987).

Table1 Comparison by bibliometrics indicators in mainland and Hong Kong

	Chinese mainland	Hong Kong
No.of papers	471	314
No.of journals abroad	95	307
No.of journals home	376	7
Total IF	360.212	1096.206
Mean IF	0.393	3.491
The highest IF	10.272	29.781
No.of papers without IF	319	81

A comparative study of the bibliometric on SARS-related literature between mainland China and Hong Kong was found that the quantity of papers accepted by journals abroad, total IF, the highest IF, and the mean IF on papers embodied in SCI of Chinese mainland are lower than that of Hong Kong region, which means that the international influence of the mainland is weaker than that of Hong Kong in SARS-related research (Table 1). SCIE embodied majority of documents in English (Van Leeuwen, et al.2001). Thus, scientists in non-English speaking countries may have disadvantages in publishing in SCI journals since English is lingua franca of science (GARFIELD, et al.1992; INGWERSEN. 2000). In a short period of time, English may not be the choice of communication language for those scientists who are not native speakers (CHIU, et al.2004).

## Conclusion

SARS is not only a recent emerged disease, but also a new research topic. In theory, core journals and certainly quality journals should report quickly on the important events happening all over the world. According to our statistics, however, there was an significant time lag between the real situation and articles reporting about them. The raw data and the results of the analysis show that the bio-medical speciality database, specifically the MEDLINE, released SARS –related papers earlier than that of integration database, for example SCI, in the first time of its outbreak. Along with relative investigative development, however, we found that core journals released a lot of high quality research papers. The comparative study of the quantity of papers accepted by journals abroad, the total IF, the highest IF, and the mean IF on papers embodied in SCI between Chinese mainland and Hong Kong was viewed that the correspond figures of Chinese mainland are lower than that of Hong Kong region, which means that the international influence of mainland is weaker than that of Hong Kong.

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