Systematic reviews have three times the impact of narrative reviews and primary papers: a bibliometric analysis

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Abstract

Objective: Systematic reviews are increasing in popularity owing to the transparent, unbiased and reproducible means by which they review published data. Virtue of the rigorous search techniques they employ, systematic reviews can be more time-consuming to produce than other publications. Here, we used bibliometrics to evaluate whether the added investment is reflected by a high impact on the literature.

Research design and methods: All systematic reviews, narrative reviews and primary papers across three client accounts published in peer-reviewed journals between 2003 and 2011 were included. Each paper was authored by, received professional medical writing support from, or was coordinated by writers at Oxford PharmaGenesis. An analysis of all citations of each paper was carried out using Google Scholar (April 2012). The time since publication and number of citable years were calculated for each paper. Current impact factors of the publishing journals were captured using Journal Selector (Sylogent, Pennsylvania, USA).

Results: We analysed 125 papers (31 systematic reviews, 14 narrative reviews and 80 primary manuscripts). Mean citations per citable year were 11.0 for systematic reviews, 4.1 for narrative reviews and 4.9 for primary manuscripts. Systematic reviews were, in general, published in high-ranking journals; mean impact factor of publishing journal: 5.02 for systematic reviews, 2.10 for narrative reviews, 3.98 for primary manuscripts. (Please note, citation data have been updated since submission of abstract; updated data reported in the Results section in the main text.)

Conclusions: Well-conducted systematic reviews are accepted by high-ranking journals, form a legitimate component of a clinically focused publication plan and are valued by the scientific community.

INTRODUCTION

• Well-conducted systematic reviews provide a transparent and reproducible means of summarizing published data.
• Here, we evaluate the impact of systematic reviews by analysing the number of citations they receive in comparison with other types of article.

METHODS

• Our sample included all systematic reviews, narrative reviews and primary papers across three client accounts in gastroenterology, respiratory medicine and rheumatology, which were published in peer-reviewed journals between 2003 and 2011.
• The included articles comprised 31 systematic reviews, 14 narrative reviews and 80 primary papers, each of which was authored by, received professional medical writing support from, or was coordinated by employees at Oxford PharmaGenesis Ltd.
• Google Scholar (http://scholar.google.co.uk) was used to collate all citations of each paper. Limits were set to ‘articles’, with the exclusion of patents and legal documents.
• Initial searches were carried out in April 2012 and these were updated in November 2012 to allow inclusion of citations since April 2012.
• The time since publication and number of citable years were calculated for each paper. In calculating the number of citable years, an average lead-time of 1 year was allowed for the production and subsequent publication of any citing article.
• Current impact factors of the publishing journals were captured using Journal Selector (Sylogent, Newtown, PA, USA).
• To evaluate whether or not any of the articles had been cited in management guidelines, the ‘search within citing articles’ function of Google Scholar was used.

RESULTS

Citations

• The mean number of citations per citable year was 18.2 for systematic reviews, 5.0 for narrative reviews and 6.0 for primary papers (Figure 1). The publication dates of each article type were evenly distributed across the period studied.
• The most highly cited article included in our analysis was a systematic review, which received 785 citations to date, equating to a mean of 112 citations per citable year. For comparison, the most highly cited narrative review and primary paper have received a mean of 7 and 47 citations per citable year, respectively.

We analysed the distribution of articles according to the total number of citations received for (a) systematic reviews, (b) narrative reviews and (c) primary papers. More than 75% of all systematic reviews (23), narrative reviews (13), and primary papers (21) were cited within five years of publication (Figure 2). There were notable differences in the distribution of article types included:
• a smaller proportion of systematic reviews than narrative reviews or primary papers in the fewest citations (0–15 category)
• a considerably larger proportion of systematic reviews than narrative reviews or primary papers in the higher cited categories (61–75 and > 75 citations)

Impact factors

• Systematic reviews were the article type that appeared most commonly in high-ranking journals. 13% of all systematic reviews appeared in journals with an impact factor > 10. The corresponding proportions were 0% for narrative reviews and 6% for primary papers (Figure 3).
• The median published impact factor of the publishing journal was 3.9 for systematic reviews, 2.0 for narrative reviews and 3.7 for primary papers.
• In total, 88% of systematic reviews and 69% of primary papers were published in journals with an impact factor > 2. For narrative reviews, the proportion was considerably smaller (29%).

CONCLUSIONS

• Systematic reviews receive a greater number of citations than other publication types. Our data show that systematic reviews are cited, on average, more than three times as often as narrative reviews or primary papers, which supports the findings of previous studies.
• In addition, systematic reviews are cited in higher impact journals and are more frequently cited among guideline documents than either narrative reviews or primary papers.

References


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