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Assessing the Impact and Value of Health Outcomes Publications Using Citation Data from Indices of Scholarly Literature

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Key Points of the Project

- Why did we do this research?
- How did we conduct the research?
- What were the results?
- How can we use this information to maximize value and usefulness of health outcomes publications?
- Future implications and next steps?

Background

- Clinical trial data are typically published in journals with a therapeutic area focus and accessed by researchers and health care professionals (HCPs) for the purposes of sharing knowledge and improving outcomes for patients.
- Pharmacoeconomic and health outcomes (HO) data are published for the same reasons, but often are most relevant to payers and other managed care decision makers.
- Yet, there is limited knowledge of:
 - what factors make HO publications most valuable to payers and HCPs, and
 - how HO decisions are influenced by publications.

Objectives

- Our goal was to assess the impact of HO-related publications using literature citation data from 2 major web search engines that index scholarly literature.
- We envision that enhanced understanding of how HO publications are subsequently used may improve the quality of future publications and maximize usefulness to HCPs, payers, and patients.

Methods

- In order to determine which types of papers were most read or used to inform subsequent studies, we:
 - identified a sample of HO papers published within the past 5 years, and
 - used Google Scholar and Science Citation Index to collect data on the number of times these papers were cited in subsequent research papers.

Methods (continued)

- How the subset of papers to research were selected:
 - Search limited to papers published between 2005 and 2009
 - Authored by internal sample of HO scientists with longevity in their field
 - Sample spanned 5 different therapeutic areas (Neuroscience, Women's and Men's Health, Endocrine, Oncology, and Cardiovascular/Critical Care)
 - Selected articles focused on or relevant to HO

Methods (continued)

- Two freely accessible Web search engines that index scholarly literature were used:
 - **Science Citation Index**
 - An international, multidisciplinary index to literature in science, technology, biomedicine, and related disciplines
 - Yielded search of papers published in peer-reviewed journals
http://thomsonreuters.com/products_services/science/science_products/a-z/science_citation_index
 - **Google Scholar**
 - An index of scholarly literature across formats and disciplines including features that facilitate rankings and linked references
 - Yielded number of times selected articles were cited by subsequent published articles
<http://scholar.google.com/>

Methods (continued) - Science Citation Index



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Methods – Google Scholar



health outcomes citation search [Advanced Scholar Search](#)
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Articles (include patents) Legal opinions and journals

Stand on the shoulders of giants

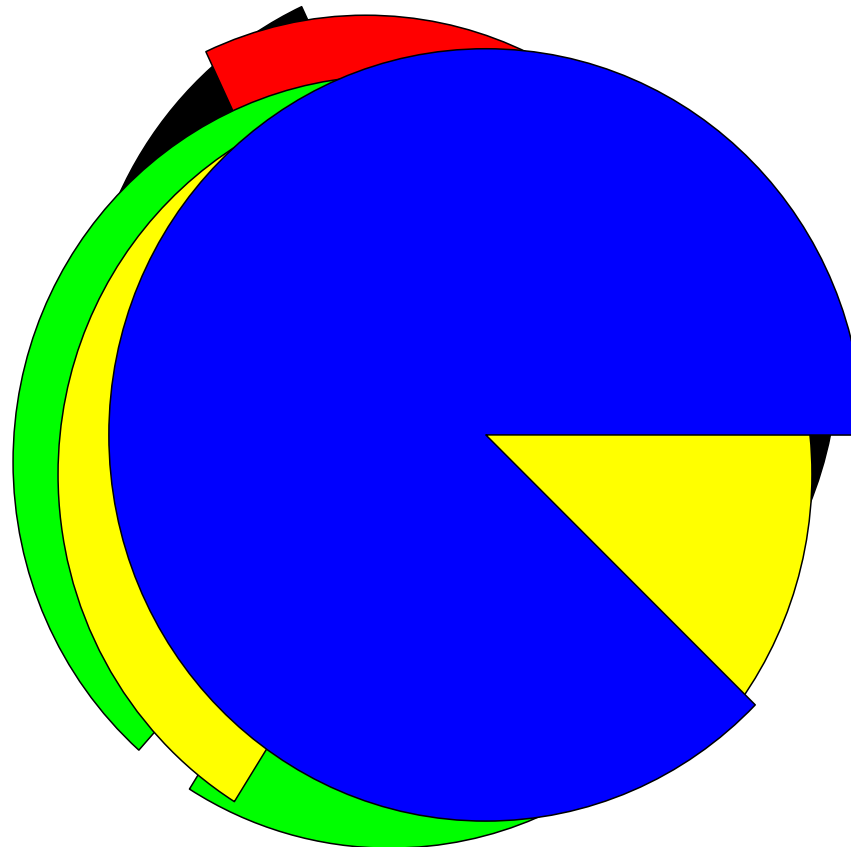
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Results

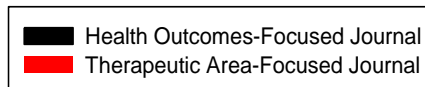
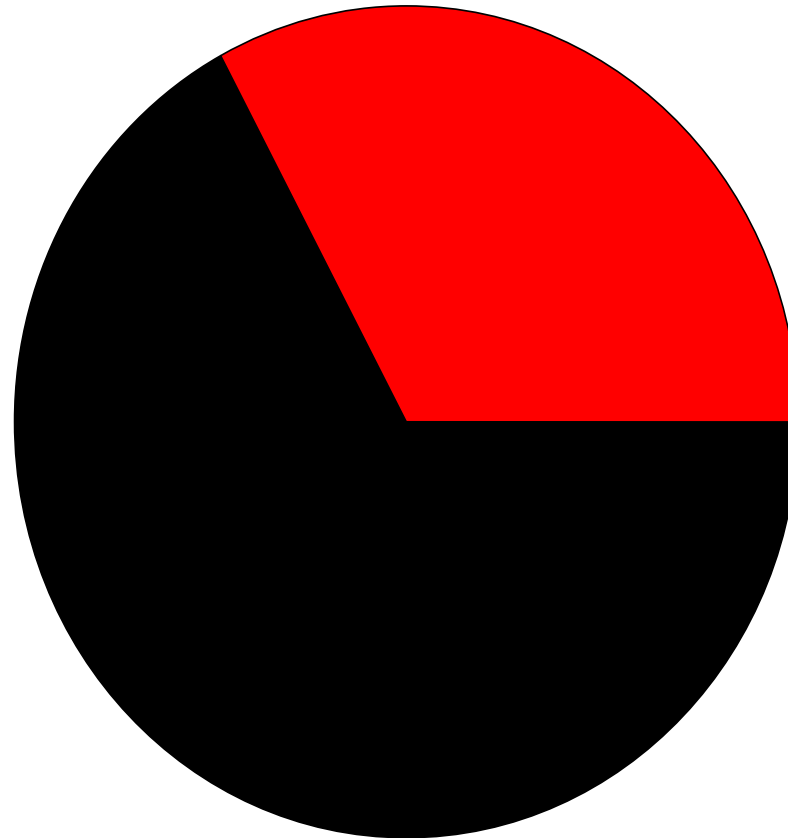
- Total number of citations recorded was 560 using the 61 relevantly selected publications
- Number of citations ranged from 0 – 51 per publication
- Average number of citations was 9.13 per publication
- Articles in therapeutically focused journals as well as cross-therapeutic HO-focused journals were frequently cited

Number of Times Papers Cited, by Key Topic



- Cost/Cost Effectiveness/Resource Use/Burden of Illness
- Outcomes/Patient-Reported Outcomes/Quality of Life
- Economics/Economic Modeling
- Adherence/Persistence
- Clinical Management/Treatment Effectiveness/Hospital Data, etc.

Number of Times Papers Cited, by Journal Type



Number of Times Papers Cited - Therapeutic vs. Health Outcomes Journals

Paper Type	Therapeutic Area Journals (times cited)	Health Outcomes Journals (times cited)
Cost/Cost-Effectiveness/ Resource Use/Burden of Illness	50	129
PRO/Outcomes/QoL	162	14
Economics/Economic Modeling	6	9
Adherence/Persistence	121	0
Clinical Management/ Treatment Effectiveness/ Hospital Data/Trends/ Patient Characteristics	37	32

Abbreviations: PRO = patient-reported outcomes; QoL = quality of life

Results

- Most cited paper types were those related to *costs* and *outcomes*
- Articles published in therapeutic area journals were cited more than those published in HO journals
- Overall, more citations for articles published in therapeutic area journals
 - Certain topics more clearly applicable to HO audiences
 - Costs/Resource Use/Cost-Effectiveness
 - Economics/Economic Modeling

Conclusions

These findings:

- Contribute to a growing understanding of the value of HO publications for payers, healthcare decision-makers, and researchers in academia, government, and industry
- Confirm that published HO studies heavily inform the planning and publication of subsequent/future research

Conclusions, concluded

These findings:

- Provide evidence that HO research is highly valued by editors and readers of journals that are focused on therapeutic areas (in addition to those traditionally focused on health outcomes)
- Suggest that knowledge of citation history may be used to maximize sharing of specific types of HO research, by guiding submissions to journals whose readers cite similar research topics
 - For example, economics and costs studies are heavily read and cited by readers of HO functional journals whereas PRO and persistence studies are cited by readers of therapeutically-focused journals, etc.

Limitations

- Limited to a small subset of published scientists (nonrandomized sample)
- Study focused only on short time frame of past 5 years; some papers may be too new to have been cited in subsequent publications
- More research needed to confirm the trends we found related to key topics, journal type, and frequency of citations in subsequent publications, and to understand implications of these findings on a larger scale

Future Goals

- Increase scope and reliability of project (for example, increase sample size; use random sample of journals/publications from across the HO field)
- Explore other channels, besides traditional journals, for disseminating HO publications to customers (for example, e-channels, social media)
- Identify additional methods by which to assess the impact and value of HO publications
- Include both qualitative and quantitative information, for example:
 - Survey payers, decision makers, and HO researchers to ascertain what information and which types of venues are most valuable
 - Identify the importance of journal impact factors in HO
 - Ascertain the importance of open-access to HO publications
 - Research the importance of journal publications and poster presentations in the context of other types of communications to payers
 - Study the timeliness of published information

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Question and Answer

