



Title	Dissemination and Publication of Research Findings: An Updated Review of Related Biases
Agency	NETSCC, HTA, NIHR Evaluation and Trials Coordinating Centre Alpha House, University of Southampton Science Park, Southampton, SO16 7NS, United Kingdom; Tel: +44 2380 595 586, Fax: +44 2380 595 639; hta@soton.ac.uk, www.hta.ac.uk
Reference	Volume 14.08. ISBN 1366-5278. www.hta.ac.uk/project/1627.asp

Aim

To update a 2000 HTA monograph on publication bias by synthesizing findings from previously and newly identified studies.

Conclusions and results

The objectives were: to identify and appraise empirical studies on publication and related biases published since 1998; to assess the usefulness and limitations of available methods to deal with publication and related biases; and to examine measures taken in a random sample of published systematic reviews to prevent, reduce, and detect different types of dissemination bias.

The updated review confirmed findings from the previous HTA report that studies with significant or positive results are more likely to be published than those with nonsignificant or negative results. The existence of outcome reporting bias has been demonstrated by recently published empirical studies. Studies with significant results tend, on average, to be published earlier than studies with nonsignificant results, although new evidence is less clear than was suggested in the previous review. New empirical evidence suggested that published studies tend to report a greater treatment effect than those of grey literature. Exclusion of non-English language studies appears to result in a particularly high risk of bias in some areas of research, eg, complementary and alternative medicine. Consequences of publication and related biases are different for different types of research studies. The most important consequences of dissemination bias include avoidable suffering of patients and waste of limited resources. This updated review identified only a couple of new cases that indicate the detrimental impact of publication and related biases. Publication bias is often due to investigators' failure to write up and submit. The interests of research sponsors, particularly industry's commercial interests, can restrict the dissemination of the research findings. The compulsory policy of trial registration adopted by the International Committee of Medical Journals in 2004 may be the most influ-

ential initiative to promote prospective registration of clinical trials. The impact of dissemination bias may be reduced by systematic searching for grey literature or unpublished studies. All statistical methods, simple or complex, for assessing or adjusted for publication bias in systematic reviews are often based on certain assumptions that can be difficult to justify. The available statistical methods may be useful for the purpose of sensitivity analyses. See Executive Summary link at www.hta.ac.uk/project/1627.asp.

Recommendations

See Executive Summary link at www.hta.ac.uk/project/1627.asp.

Methods

See Executive Summary link at www.hta.ac.uk/project/1627.asp.

Further research/reviews required

1) Further research is needed to strengthen the development of prospective registration of clinical trials and to initiate prospective registration of basic research and observational studies. 2) Evidence is lacking on the impact of publication bias on health decision making and the outcomes of patient management. 3) There is a lack of methods that can be used to qualitatively assess the risk of publication bias in systematic reviews. 4) Many available statistical methods to test publication bias have never, or rarely, been used in systematic reviews. Further research should focus on the practical application of these statistical methods.