

Unpublished results considered

From: [Key Concepts for assessing claims about treatment effects and making well-informed treatment choices \(Version 2022\)](#)

2.2b Consider whether unpublished results were considered.

Explanation

Many fair comparisons are never published, and outcomes are sometimes left out from those that are published. Those that are published are more likely to report favourable results. Consequently, reliance on published reports alone sometimes results in the beneficial effects of treatments being overestimated and the adverse effects being underestimated.

For example, among trials of antidepressant drugs submitted to the U.S. Federal Drug Administration (FDA) or the Swedish drug regulatory authority, efficacy trials reporting positive results and larger effect sizes were more likely to be published subsequently. A review of trials supporting new medicines approved by the FDA between 1998 and 2000 found that over half of all supporting trials for FDA-approved drugs remained unpublished more five or more years after approval [[Lee 2008 \(RS\)](#)]. Selective reporting of trial results was found for commonly marketed medicines.

Biased under-reporting of research is a major problem that is far from being solved. It is scientific and ethical malpractice and wastes research resources. Selective reporting is an important reason why fair comparisons of treatments should begin with [protocols](#) that are registered and searchable in registries such as [clinicaltrials.gov](#). This can also help to reduce selective reporting of some outcomes but not others in published reports, depending on the nature and direction of the results.

Basis for this concept

Many registered trials (comparisons of treatments) are not published [[Chapman 2014 \(SR\)](#), [Hopewell 2009 \(SR\)](#)]. A systematic review of [publication bias](#) found five studies that examined the association between trial results and publication of registered trials [[Hopewell 2009 \(SR\)](#)]. The studies compared publication of trials with “positive findings” (that were “[statistically significant](#)”, perceived to be important or striking, or indicating a desirable treatment effect) and with “negative findings” (that were not “statistically significant”, perceived to be unimportant, or indicating an undesirable treatment effect or lack of effect). It found that trials with positive findings were nearly twice as likely to be published as studies with negative findings. Two studies that examined time-to-publication found that among the published trials, trials with positive findings tended to be published after four to five years compared to those with negative findings, which were published after six to eight years. A more recent systematic review found 20 studies and also found strong evidence of publication bias [[Dwan 2013 \(SR\)](#)]. A systematic review of comparisons between the results of trials found in “grey literature” (e.g., conference abstracts, research reports, book chapters, dissertations, policy documents, personal correspondence) compared to trials found in journals observed that published trials also tend to have larger effects than trials found in the grey literature [[Hopewell 2007 \(SR\)](#)]. When not recognised and addressed in systematic reviews, publication bias can sometimes result in overestimation of effects [[Schwab 2021 \(SR\)](#)].

Discrepancies between the outcomes that researchers say they will measure in trials and what they report are common [[Fleming 2015 \(SR\)](#), [Jones 2015 \(SR\)](#)]. Outcome [reporting bias](#) occurs when researchers select for publication a subset of the original recorded outcomes based on knowledge of the results. Comparisons between trial protocols and reports of results have shown that outcomes

are more likely to be reported when there is a “statistically significant” effect than when there is a “statistically nonsignificant effect” [Dwan 2013 (SR)]. When not recognised and not addressed in systematic reviews, outcome reporting bias can result in overestimation of treatment effects [Kirkham 2018, Kirkham 2010 (RS)].

Requiring researchers to register trials in databases such as clinicaltrials.gov has helped to address and reduce publication and reporting bias but has not eliminated the problem [Baudard 2017 (SR), Dechartres 2016 (RS), Köhler 2015 (RS), Manheimer 2002 (RS), Papageorgiou 2018 (SR)]. It is important that systematic review authors address these risks [Kirkham 2018].

Implications

Be aware of the possibility of biased underreporting of fair comparisons and assess whether the authors of systematic reviews have addressed this risk.

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