INTRODUCTION:

Randomised controlled trials (RCTs) represent the gold standard methodological design to evaluate the effectiveness of a treatment in humans but the reporting of these is subject to bias, including study publication bias and outcome reporting bias (ORB). National and international organisations and charities give recommendations for good research practice in relation to RCTs but to date no review of these guidelines has been undertaken with respect to reporting.

A previous study demonstrated that the selective non-reporting of outcomes within a study can have a substantial effect on meta-analysis when the amount of missing data is large, however in four of the five meta-analyses examined, the impact on conclusions was minimal due to the small amount of missing data [1].

AIMS AND OBJECTIVES:

To estimate the impact of ORB on the meta-analysis of the primary outcome in an unselected cohort of Cochrane reviews and to assess the guidelines issued by organisations and charities that fund clinical trials.

METHODS:

Assessment of impact

Reviews were eligible if any of the studies included in the review did not report on the primary outcome of the review or if studies were excluded due to no relevant outcome data. Eligible studies were then classified for suspicion of ORB. Reviewers were contacted to find out if eligible studies not reporting the outcome of interest would be included in the reviews’ meta-analysis of the primary outcome. The maximum bias bound approach [2,3] was used to assess the impact of ORB so results were comparable across reviews.

Guidelines

National and International organisations and charities were contacted to establish whether they fund clinical trials and if they issued guidelines to researchers. These guidelines were assessed to see what guidance was given regarding publication. Issues relating to publication bias and ORB were reviewed, including trial registration and protocol adherence [4].

RESULTS:

Assessment of impact

To date; only 23% (34/151) of reviews had one meta-analysis of the primary outcome. 23% (35/151) involved no meta-analysis and 54% (82/151) included more than one meta-analysis related to the primary outcome. The robustness of the conclusions of the original analyses were assessed with a sensitivity analysis (Figure 1). This is an example as the work is ongoing. It was found that a median of 51% (range 6% and 99%) of data may be missing from the meta-analysis from studies that were eligible for the review and a median of 17% (range 0 to 97%) had a high suspicion of ORB.

Guidelines

Seventeen organisations and 56 charities were eligible of 140 surveyed for this review, although there was no response from 11 (Table 1). Trial registration, protocol adherence, trial publication and monitoring against the guidelines were often explicitly discussed or implicitly referred too. However, only eleven of these organisations or charities mention the publication of negative as well as positive outcomes and just three of the organisations specifically state that the statistical analysis plan should be strictly adhered to and all changes should be reported.

CONCLUSIONS:

Assessment of impact

Reviewers should scrutinise trials with missing outcome data and ensure that an attempt to contact triallists is made if the study does not report results. Trials should then be assessed for suspicion of outcome reporting bias. The lack of reporting of specified outcome(s) should not be an automatic reason for exclusion of studies.

Guidelines

There is a need to provide more detailed guidance for those conducting and reporting clinical trials to help prevent the selective reporting of outcomes. Current guidelines need to be updated, many include statements regarding the publication of ‘negative’ studies to prevent publication bias but do not go as far as mentioning ORB.

REFERENCES: