Evidence-based medicine seeks the best, unbiased evidence to make appropriate decisions to improve patient care. For optimal care, accurate knowledge of both benefits and harms are needed.

Randomized trials are usually designed with sufficient statistical power to observe differences between interventions for their primary outcome. However, they are known to be poor at identifying and reporting harms (2-8). Well designed, conducted, and reported RCTs can paint an incomplete and potentially biased picture due to their emphasis on efficacy results combined with their inadequate reporting of harms (2-8). A single trial is usually not powered for the assessment of adverse events (AEs); unless this is explicitly acknowledged, a misconception may be perpetuated that a given intervention is safe, when its safety is actually unknown (2-8). For example, the majority of newly released drugs usually do not add many benefits in comparison to current treatments and the full investigation of adverse events can be the decisive factor in choosing between different treatment options (2).

Systematic reviews (SRs) compound poor reporting of harms in primary studies by failing to report harms or doing so inadequately (9-17). Such reviews can be misleading as they do not represent the true risk-to-benefit ratio of a given treatment (2, 6, 12-15). As many harms are rare and not the primary outcome of included studies, the search strategy, eligibility of study designs, screening method, data collection and statistical methods may differ from reviews of efficacy.

The number of reviews exclusively designed to measure harms represents less than 10% of the total number of reviews (9-12). In 1994, only five reviews retrieved from Database for Abstracts of Reviews of Effects (DARE) and the Cochrane Database (CDSR) were specifically designed to address an unintended effect of an intervention. This number has increased over the years. In 2010, 104 reviews addressed a harm as a primary outcome (11), although this may reflect the increased number of SRs in general as the proportion of reviews of harms in comparison to efficacy reviews remains stable at 5% during this period (11).

A recent review (10) of SRs from CDSR and DARE identified 296 DARE reviews and only 13 Cochrane reviews with a singular primary intent to measure harms of interventions. Even though many systematic reviews increasingly try to include all outcomes (both beneficial and harmful) for consideration, data on
AEs may be more fragmented and incomplete, and given more cursory treatment than efficacy data. Some reporting deficiencies identified included: lack of a clear definition of the event reviewed; lack of specification regarding study designs selected for inclusion; and no report on length of follow up or measurement of any associated risk factors (10).

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) Statement was published in 2009 (1) to offer guidance to review authors, peer reviewers, and journal editors on reporting standards when publishing a systematic review or meta-analysis of randomized clinical trials [RCTs]. PRISMA helps authors ensure they report in a complete and transparent fashion. Thus far, PRISMA has focused mainly on effectiveness. We are developing the PRISMA Harms extension to improve harms reporting in SRs and to encourage a more balanced assessment of benefits and harms of interventions.

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References:


